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Prof C. Ewan
Dean
Department of Public Health & Nutrition
University of Wollongong
Wollongong NSW 2500

Dear Prof. Ewan,

Re: Thesis entitled *Rehabilitation for workers with noise-induced hearing loss- a community health approach*

Declaration

This thesis is submitted to the Department of Public Health and Nutrition, University of Wollongong, in fulfilment of the requirements for the Honours Degree of Master of Science. It does not incorporate any material previously published or written by another person except where due reference is made in the text. The work described in this thesis is original work and had not been previously submitted for a degree or diploma in any university.

E.G. ~~Anthony~~ Hogan

May 22nd, 1992

**Rehabilitation for workers with Noise-Induced Hearing Loss -
A Community Health Approach**

**A thesis submitted in fulfilment of the requirements for the
award of the degree**

Master of Science (Honours)

University of Wollongong

by

E.G. Anthony Hogan, B.A. (Welfare Studies)

**Department of Public Health &
Nutrition**

1992

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Abstract

This study examines the feasibility of a community health worker offering a programme of rehabilitation for workers with noise-induced hearing loss in Australia. The programme was developed by Louise Getty and Raymond Hetu from the Acoustics Group, University of Montreal, Quebec Canada. Legal and psychological issues surrounding noise induced hearing loss are discussed. The Getty and Hetu process for rehabilitation is reviewed in the light of the community development in health literature. Barriers to the rehabilitation process such as workers' reluctance to acknowledge hearing difficulties or to understand the effects of hearing loss are discussed.

It is found that with minor cultural adaptations that it is feasible to use this programme in Australia. Upon completion of the process, workers were more able to acknowledge their hearing problems and took appropriate steps to improve their hearing and listening skills. However, following their participation in the programme, workers rated their hearing problems as being more serious. The feasibility of offering the Getty and Hetu process within the existing community health infrastructure is discussed and a collaborative intervention for the systematic provision of rehabilitation services for workers with noise induced hearing loss, involving health workers from a variety of professional backgrounds is presented.

Publications arising from this thesis

Hogan, A.

Industrial Deafness - Issues Concerning the Rehabilitation of Noise Injured Workers. Fairfield Community Resource Centre. Fairfield 1990

Hogan, A.

Rehabilitation for workers suffering Noise Induced Hearing Loss Australian & New Zealand Journal of Occupational Health & Safety 1991; 7(1):35-42

Hogan, A.

Workers with Noise Induced Hearing Loss Australian & New Zealand Journal of Occupational Health & Safety 1992; 8(2) - In press

Hogan, A.

Rehabilitation for workers with Noise-Induced Hearing Loss Conference Proceedings, Australian Society of Rehabilitation Counsellors - Annual Conference. Sydney; 1992

Hogan, A; Munnerley, G;

Framework for Managing Noise Induced Hearing Loss Occupational Health Magazine; No 48, March 1992

Hogan, A; Ewan, C; Noble, W; Munnerley, G;

Coping with Occupational Hearing Loss: The University of Montreal Acoustics Group Rehabilitation Program: An evaluation study In prep.

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The opportunity is taken to thank Dr Christine Ewan and Dr. William Noble for their support as supervisors of this project and Mr Glenn Munnerley for assisting me run the rehabilitation groups associated with this project. A special thanks goes to my wife Karen, for all her support and understanding throughout this project.

Thanks also to Mr Colin Slack (Metals and Engineering Workers Union) and Mr Martin Byrne (Institute of Marine and Power Engineers) for their help in recruiting workers for this project. And most of all, thanks goes to the workers and spouses who gave their time to participate in this project, in the sharing of their experiences and for teaching me so much about what it is like to live with a noise-induced hearing loss.

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A Guide to Reading this Thesis

This thesis is concerned with a community-based approach for providing rehabilitation to workers with noise-induced hearing loss. The first chapter of the thesis addresses noise-induced hearing loss in the Australian community with regard to what causes such a hearing loss and identifies which groups of workers are most at risk. The discussion then proceeds to review the legislative frameworks for rehabilitation, compensation and prevention in Australian. Finally, the discussion focuses on the impact noise-induced hearing loss has on the lives of the injured worker and their family.

In Chapter 2, a Canadian community-based model for providing rehabilitation for workers with noise-induced hearing loss, developed by Louise Getty and Raymond Hetu from the University of Montreal, is reviewed in the light of the current literature. It is concluded that the model provides a wholistic approach to aural rehabilitation. Based on this conclusion, the central concern of this study emerges:

"Is it feasible for a community health worker in Australia to reproduce Getty and Hetu's Model of rehabilitation for workers with noise-induced hearing loss and to achieve the same or similar results?"

Chapter 3 outlines methodological issues arising from the study while Chapter 4 gives a detailed description and evaluation of the rehabilitation process as it occurred.

In conclusion, Chapter 5 addresses the implications and broader applications of the programme with particular emphasis being given to injury prevention.

Format

To assist the reader, the document is formatted with major emphasis being given to each new section of a chapter. A new section or topic is presented with a section number (for example **1.2**) and a title such as **Hearing Loss in the Community**. The title and the section number are presented in bold and underlined. Thus the section addressing hearing loss in the community is presented as:

1.2 Hearing Loss in the Community

Sub-sections within a chapter (for example, the discussion on the nature of **Hearing** within the section on **Hearing Loss in the Community**) are simply presented in bold at the beginning of a new paragraph. Bold lettering is also used to give emphasis to a major conclusion or question as it arises within a chapter. As such, the central concern of this study as noted above is presented in bold. Occasionally the need arose to give particular emphasis to a word or a phrase that was not a major conclusion. In such cases *italics* are used to give the emphasis required.

Throughout this study, frequent reference is made to two papers, one written by Louise Getty and Raymond Hetu and the other by Raymond Hetu and Louise Getty. The reference to Getty and Hetu (1991) refers to the paper:

Getty, L; Hetu, R; Coping with Occupational Hearing Loss: The University of Montreal Acoustics Group Rehabilitation Programme in **Occupational Noise-induced Hearing Loss Prevention and Rehabilitation**. University of New England, Armidale, 1991.

while the paper referred to as Hetu and Getty (1991) refers to:

Hetu, R; Getty L; The Nature of the Handicaps Associated with Occupational Hearing Loss: Implications for Prevention in **Occupational Noise-induced Hearing Loss. Prevention and Rehabilitation** University of New England, Armidale, 1991.

Chapter 1

Noise Induced Hearing Loss in the Australian Community

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1.1 Introduction

In 1989 social work students Katherine Brown and Melissa Brown worked with me to prepare a profile of the Deaf Community in New South Wales using resources provided by the then Disability Services Co-Ordination Unit of the New South Wales Premier's Department. This profile was documented in a report entitled Project Knock! Knock! (Hogan et. al. 1990) which was published by the Deaf Society of New South Wales. The report detailed the social disadvantages experienced by this community of sign language users. During the course of this research the needs of another group of people - people who acquired a hearing loss from workplace noise - emerged as a major health issue which was not being addressed adequately in Australia.

With the assistance of the Premier's Department of New South Wales, I initiated a pilot study concerning the rehabilitation needs of workers with noise induced hearing loss (NIHL) in late 1989/1990. The findings of this project are documented in the report Industrial Deafness - Issues concerning the rehabilitation of noise injured workers. In summary this project found that:

- * Programmes existed in other parts of the world which assisted workers with NIHL to manage their hearing loss more effectively.
- * No Australian organisation or service provider was providing such a rehabilitation programme for industrially deafened workers.

* Workers who sustained a noise induced hearing loss continued to work in noisy work environments without the benefit of training or education to prevent further hearing loss to themselves or their co workers.

* None of the hearing impaired participants were aware of any assistance they might receive which could improve their ability to adjust to their acquired disability.

Studies undertaken by Louise Getty and Raymond Hetu (1991) of the University of Montreal, Quebec, Canada, reported that workers with NIHL did not realise that the interpersonal difficulties they were experiencing arose from their hearing impairment. Getty and Hetu also reported that workers with NIHL were reluctant to seek assistance for their hearing impairment through fear of being stigmatised. Since at least 10,000 Australians receive compensation for NIHL annually (Worksafe: Press release: October 24th, 1990), a programme of assistance and intervention is a matter of urgency. Whilst changes also need to occur in the workplace to eliminate the causes of industrial deafness, individuals whose lives are permanently altered by the disability they have acquired require access to appropriate rehabilitation services.

Getty and Hetu have developed and documented a programme based on a public health model, for the rehabilitation of workers who have sustained a noise induced hearing loss in their workplace. Getty and Hetu (1991:39) define the health problem experienced by affected workers as "reduced hearing and listening skills" stemming from extended exposures to workplace noise and demonstrate that this health problem is masked by three obstacles:

- * people misperceive the effects of their hearing loss;
- * people are reluctant to acknowledge the effect hearing loss has in their lives;
- * people have a fear of marginalisation and stigmatisation (Getty & Hetu:1991:41-45).

Work undertaken by Westbrook et.al. (1992) has demonstrated that Australian workers, like their Canadian colleagues also experience the barriers to rehabilitation of reluctance and misperception.

It will be argued that the Getty and Hetu approach to managing hearing loss is defined from the interactive perspective of the people needing to communicate - the noise affected person and those around them. This approach will be seen as distinct from current practice which primarily focus upon medical and legal interventions. In addition to such interventions, workers require assistance which will enable them to acknowledge and manage the handicap which they have acquired as a result of their hearing loss.

In the paper entitled Coping With Occupational Hearing Loss: The University Of Montreal Acoustics Group Rehabilitation Program, Getty and Hetu (1991) describe a programme of rehabilitation successfully used with a group of Canadian, male workers who had noise induced hearing loss (NIHL). Following the intervention the Canadian workers were more aware of their hearing problems and were more confident in dealing with them (Getty and Hetu:1991:52). This thesis is concerned with application of the Getty and Hetu methodology with a similar group of noise affected workers in the Sydney area by a community health worker.

The project is not a cross-cultural study as such; the aim is not to identify cultural differences or similarities. Rather, it is a community health project which concerns itself with the more fundamental question - is it feasible to reproduce Getty and Hetu's process of rehabilitation for workers with noise induced hearing loss and to achieve the same or similar results?

The programme as developed by Getty and Hetu is reviewed for its consistency with the principles of public health and community development in Chapter 2. Chapter 2 also examines the Canadian process against the existing literature on aural rehabilitation. Chapter 1 is concerned with the environments surrounding NIHL, of which a community health worker needs to be aware. Each of these environments is influenced by particular value systems, even if the actors in these environments remain unaware of such values. The community health worker needs to be aware of such values and how they influence the nature of services provided and therefore, the service users.

Sayer (1986) argues that the service provider's conceptual framework, or the lack of it, strongly influences the manner in which issues or problems are addressed. Citing Hall (1981), Sayer notes that "(H)ow we see ourselves and our social relations matters, because it enters into and informs our actions and practices". Traditional audiology, for example, works from values based on the biomedical model. In this model, "the body is looked upon as if it were a machine made up of individual parts fitting together like clockwork, each interdependent on the other parts in order to keep functioning" (HIC:1988:36). The nature of a malfunction is diagnosed by a clinician whose responsibility it is to locate the malfunction and remedy the problem. An individual's perception of the nature of their difficulty is then, of little relevance.

The community health worker is concerned not so much with the clinical diagnosis of hearing sensitivity, but with the interpersonal and social difficulties which arise from or which predispose a person to an injury or reduction in an ability such as hearing (see Hillier:1987). In order to properly undertake work in this field, it is necessary for the community health worker to understand the nature of hearing impairment from workplace noise and its impact on individuals. These issues are discussed below with specific attention being given to the legal framework within which these services are to be provided.

1.2 Hearing Loss in the Community

Hearing loss is one of the most common disabilities in Australia. Waugh (1991) analysed a variety of data on the extent of this disability in Australia in his paper Occupational Noise Exposure, Hearing Impairment And Rehabilitation - An Overview Of The Present Position In Australia and reported that "(H)earing impairment...is the second most common disability in the community". The information in the following paragraph is summarised from Waugh's paper.

A survey undertaken by the Australian Bureau of Statistics (ABS:1978) found that 7.4% of the population experienced difficulty hearing at some point in their lives. Waugh notes that this group was divided into the sub-groups of people who experienced hearing difficulty "most of the time" (2.0%), "some of the time" (4.5%) and "hardly ever" (0.9%). The Australian Bureau of Statistics' Disability Survey (1988) reported that 560,000 Australians aged 15 years or more, have had a loss of hearing for six months or more. Waugh applies the percentages of the 1978 study to the 1988 survey and remarks that "it would be expected that just under a million (937,140) people aged 15 or more in 1988 would have experienced

some difficulty hearing what people say". At the time of writing, the Australian Bureau of Statistics was preparing the next Disability Survey which is due to be undertaken in 1993.

Not all hearing losses are the same. Indeed some people have a very mild hearing loss which has no real impact on their life whilst others have such a profound loss that they can hear little or nothing at all. Some people are born with a hearing loss whilst most people acquire their hearing loss through ageing, disease or injury. This thesis is concerned with individuals who acquire a hearing loss from extended exposures to injurious levels of noise in their workplace. This type of hearing loss is commonly referred to as Industrial Deafness or Noise Induced Hearing Loss. Waugh concluded his analysis of the incidence of hearing loss in Australia by pointing out that:

"about half a million adults in the population - a little more than half the adults with impaired hearing - are hearing impaired primarily because of work-related noise exposure..."

Waugh also reports that approximately 500,000 Australians work in hazardous noise environments. Studies cited by Hetu and Getty (1991:66) (e.g. Frechet, 1988; Hetu, Boudrault et.al., 1987) point out "that the prevalence of hearing impairment to occupational noise exposure varies between 40% - 50% depending upon the industrial sector". They also remark that some 20 million Americans are regularly exposed to hazardous workplace noise.

It is evident then that noise-induced hearing loss is a significant health problem in Australia and in other Western countries. Hearing loss results in at least two outcomes for the person who acquires it. Firstly a reduced physical ability to hear and secondly, as Getty and Hetu argue, **reduced listening and communication skills.**

Hearing

The community health worker requires a basic understanding of the physiology of hearing so as to enable clients to be able to understand what has happened to their bodies. This is knowledge which clients may not have obtained or remembered when a clinician told them that they had a hearing loss. The section is included since it is information which clients should have access to as part of the overall process of empowerment.

The human body has five senses "which serve as receivers of stimulation from outside the body..the ear is the end-organ for hearing" (Myklebust:1971:11). Sound waves travelling through the air are gathered in the outer part of the ear called the pinna and travel through the auditory canal to what is commonly known as the middle ear. Sound waves set up vibrations of the tympanic membrane which separates the outer and middle ear. These vibrations are transformed via three small bones commonly known as the hammer (malleus), anvil (incus) and stirrup (stapes) so as to permit vibration of the fluid which fills the inner ear. The inner ear is known as the cochlea. The fluid filled cochlea resembles a snail shell. Inside it are thousands of hair cells called cilia. These hair cells have been by compared by Hetu¹ to new lawn which has just grown from seed. As grass moves to and fro in the wind, the cilia move to and fro in response to movements in the inner ear fluid which has been vibrated by incoming sound. Movement of the cilia discharges an electrical activity in the neurons that form the eighth cranial nerve, which connects the receptor surface of the cochlea with the central nervous system. Through developmental learning processes, differing forms

¹During a workshop at Fairfield Community Resource Centre on November 4th, 1990

and sequences of sound ultimately become associated with different events, objects and meanings. A person's ability to understand this variety of events, objects and meanings produced by sound is usually called hearing.²

The inability to hear generally stems from one of two causes. Firstly, conductive hearing loss which occurs when problems in the middle ear prevent it from conducting sound to the inner ear. The second type of deafness which is known as sensori-neural loss, results from damage within the cochlea itself, where the hairs cells are either damaged or destroyed. Hetu (Pers. Com. May 8th, 1991) notes that when such injury occurs the:

"sensation of the sound is impaired in different ways: faint sounds are not detected. There is also a loss of selectivity: the ability to perceive a sound in the presence of other sounds is considerably reduced, hence the difficulty of understanding speech in background noise. The temporal processing of sound in the inner ear may also be affected, further reducing the resolving power of the auditory system. Tinnitus can also result from damage to the inner ear; this can be intermittent or continuous."

Extended exposure to harmful levels of noise causes a sensori-neural hearing loss. Hearing impairment then can be classified according to type of loss such as sensori-neural or conductive loss. It can also be classified by the level of loss and by the time of onset.

Levels of hearing loss

The level or severity of a hearing loss is described by the range of sounds one can hear (for example the lowest to the highest piano note) and how softly one can hear such sounds. The range of sounds is measured in hertz or number of sound waves per second. The intensity of a sound is given in terms of a scale of decibels which usually ranges from 0 - 140 decibels

² A more detailed explanation of hearing loss can be found in E.D. Schubert's book entitled **Hearing: Its function and disfunction** (1980).

where 0 decibels represents the quietest level of hearing accessible to the average healthy human ear (See Table I). Levels of hearing loss are commonly referred to as mild/moderate, severe or profound, depending on how intense a sound has to be before one can hear it.

Table I Decibels produced by common sound sources.
Please see print copy for image



(Serra, Bailey & Jackson: 1986:102)

Decibels are often referred to as dB (A). "dB" refers to decibels and "A" refers to an A-weighting scale when "a noise level... has been taken using an electronic filter to approximate the frequency sensitivity of the human ear" (SRA:1990).

Time of onset

The time of onset of a hearing loss is divided into two categories: those who were born deaf or who acquired their hearing loss at a very early age and those who acquired a loss later in life. Upfold and Ispey (1982) report that in the post war period [1949-1980] the rate of congenital deafness in Australia was "2.605 cases for every 1000 live births". Of these births, Upfold and Ispey report that 41.2% of children had a severe or profound deafness and 11.06% of cases were due to maternal rubella. Using data collected from a variety of sources Hogan et.al. (1989:15) estimate that "over 12,000 people in New South Wales (presently)

have a significant hearing loss since birth or early childhood". This number is heavily qualified however, due to the method of data collection. A national survey of profoundly deaf people undertaken by Hyde and Powell (1991) at Griffith University in Brisbane confirmed that 14,000 people use sign language as their primary means of communication. Many of these deaf people identify themselves as belonging to the Deaf Community which claims its own language (AUSLAN)³ and culture. Upfold and Ispey point out that since 1976, children born with a hearing impairment tend to have mild to moderate hearing loss, rather than a profound loss. This would appear to have occurred through a drop in the rate of hearing loss caused by rubella (see also Upfold 1985). However, the phrase 'profoundly deaf' is still used to refer to deaf people who have very little hearing and who may involve themselves in the Deaf Community.

The book Seeing Voices by Oliver Sacks (1989) vividly describes the Deaf Community. Within the Deaf Community, deafness and its culture are things to be proud of - hence the concept of "Deaf Pride" (See Sacks:1989:147 & 150). The needs of members of the Deaf Community differ significantly from the needs of those who have acquired a hearing loss and who are referred to by some members of the Deaf Community as "pretend deafies". People who have acquired a hearing loss have generally grown up in a 'hearing culture' where the experience of hearing impairment is stigmatising⁴.

³ AUSLAN is recognised as a community language by the NSW Department of Ethnic Affairs and within the Federal Government's National Language Policy. The national deaf consumer group the Australian Association of the Deaf, identifies itself as a minority group discriminated against on the basis of its language, which is disabled by society's inability to communicate with them.

⁴ See later in this Chapter for a discussion on the personal impact of hearing loss.

Audiograms

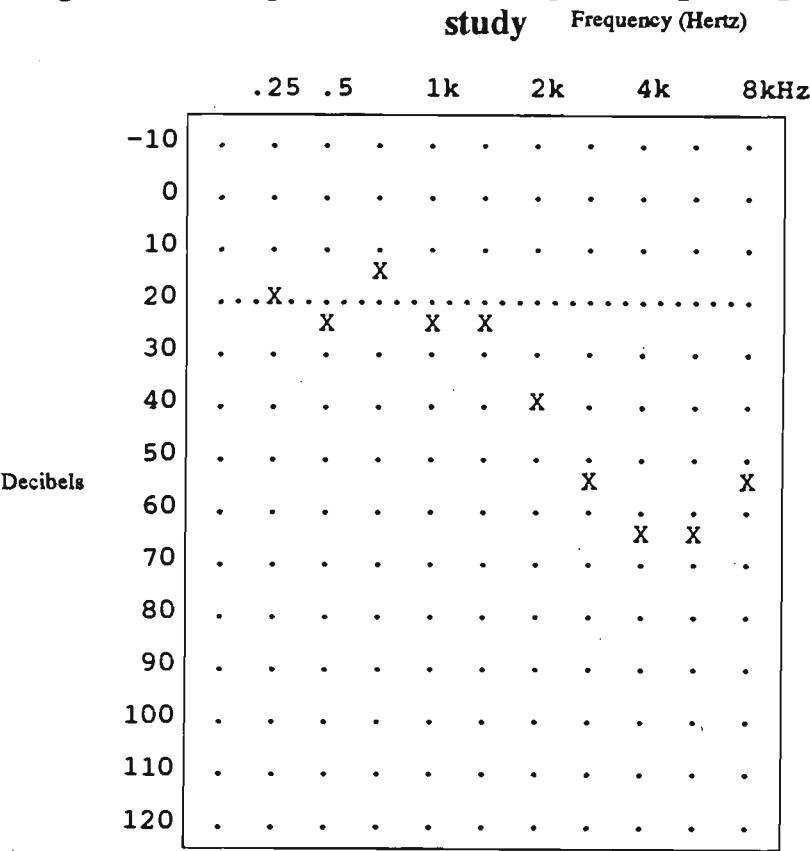
"The audiogram measures the sensitivity of the ear" (Hetu; Correspondence; 8th May, 1991) where sensitivity refers to one's capacity to hear sounds, especially weak or soft sounds. Noble (1978:63) points out that a listener's sensitivity can vary from one occasion to another. Having a cold is one variable which can effect a person's performance during a hearing test. The audiometric test consists of placing a set of headphones on a person's head and asking the individual to respond to whistles or sounds (known as pure tones) which will be played in either ear (See Katz 1985 and Carhart & Jerger:1959). The person giving the test then exposes the person to a range of sounds from 250 hertz to 8000 hertz at varying decibels in reference to a standard, which, according to Noble (1978:176ff) is based "at the average threshold level of listeners at the Bell Telephone Laboratory" and thus the standard was set at zero (0) decibels. Noble (1978:174) points out that the concept of normal hearing is useful for ascertaining the extent of injury to hearing from factors such as workplace noise.

During a hearing test, the quietest sound a person can hear at each frequency is mapped on a chart referred to as an audiogram. The audiogram represents the sensitivity of a person's hearing on the day they are tested. Diagram I pictures the mean audiogram of workers who with noise induced hearing loss who participated in this study.

Noble (1991b:60-63) points out that an assessment of the existence of a hearing loss in itself yields little information about the exact nature of the disability or handicap experienced by the affected individual. A person's perception of the level of difficulty caused by their hearing loss (their hearing handicap) may vary from individual to individual. Such difficulties are not expressed by an audiogram even though the level of hearing handicap may be "more highly correlated with measures of impairment in the worse ear than in the better ear" (Lutman et.al.: 1987:45-58). The degree of handicap is usually assessed using a self report scale. Noble (1991b:60) states that:

"(W)ithout direct inquiry into the lives and circumstances of the people who manifest signs of impairment on these tests, little useful knowledge is gained about the disabilities (functional hearing incapacities in the everyday world) and none whatever about the handicaps (the disadvantages for everyday living) experienced as a consequence of the impairment".

Diagram I Average bin-aural audiogram of participants in this study



Thus, the nature of interventions offered by service providers is concerned not simply with the existence of hearing loss but by the difficulties experienced by the individual concerned. As Hillier (1987:200) argues: "(I)t is no longer the clinical observations that can be made of patients which form the fundamental data of diagnosis and treatment, but the information about personal problems and difficulties which the patient supplies".

The nature of hearing handicaps will be discussed in more detail later in this chapter.

Hearing Aids

There is some debate as to the usefulness of interventions such as hearing aids for people who acquire a noise induced hearing loss. There are a number of aspects to this debate. Firstly, with a sensori-neural loss such as a noise induced loss, the difficulty arising is in the transmission or interpretation of stimuli into the brain via the hair cells. When the hair cells are damaged, a hearing aid is simply amplifying sound into the cochlea which, because of the damaged hair cells, transmits a stimulus to the brain which is not as clear as it would be were the hair cells not damaged. The usefulness of a hearing aid then would depend on whether or not the user found it produced clearer or better sound and whether or not the user found that they were able to distinguish between the sounds they wanted to hear and background noise.

Secondly, people with noise induced hearing loss have reduced ability to hear high frequency sounds (particularly in the range of 3000 hz to 6000 hz) whilst they remain able to hear lower and some higher frequency sounds. A hearing aid for this type of hearing loss is required which gives amplification to the higher frequencies whilst not blocking the ear canal so that lower frequency sounds can be heard without amplification. Older styles of hearing aids could not amplify higher frequencies whilst allowing lower frequency sounds through in the usual way. Newer aids on the market can achieve both functions.

The third issue surrounding this debate is background noise. Katz and White (1982:18) report that people with a high frequency loss "experience limited ability to locate the source of sounds and difficulty in blocking out background sounds, or understanding speech from another room". Unlike glasses which can restore vision to clear functioning, hearing aids are

just that, aids to hearing. Hearing aids will amplify background noise. Education on hearing aid use should inform the consumer of the limitations of the device so that consumers can know when the aid will be of benefit and when it will be of limited use.

Worksafe (1990:e) argues that aids tend to be of little benefit to a person with a sensori-neural loss because amplification of distorted sound will only lead to louder distortions. Plant⁵ argues that hearing aids can be of benefit, even if such benefit is limited. This view is supported by Getty and Hetu. The resolution of this debate does not seem to relate to the hearing aid itself but to the education of users and the community in general about the benefits and limitations of such devices.

Whilst debates about these issues will ebb and flow, the community health worker maintains the realisation that an intervention must always be assessed in the light of the users' needs and experiences.

1.3 Noise Induced Hearing Loss

Between 1982 and 1985 approximately 16,000 industrial workers sought compensation for noise induced hearing loss in New South Wales (Chardon, 1985). At a national level, Worksafe (1990:a) reports that approximately 10,000 workers receive compensation for industrial deafness each year. A recent Victorian study by Benke and Groenewald (1988) of the Victorian Department of Labour points out that three in every four workers who know that they have a Noise Induced Hearing Loss do not actually apply for compensation. *Given such a trend the actual number of workers with NIHL may be three to four times greater than*

⁵Interview 15/2/91

the official number reported by Worksafe. This variation in the actual number of compensable losses each year is acknowledged by Worksafe (See Waugh:1991:25).

Noise Induced Hearing Loss is not a new phenomenon. Noble (1991:8), in a paper entitled History And Politics Of Noise Induced Hearing Loss points out that "the earliest systematic appearance of hearing loss due to occupational noise exposure could have occurred some 14 to 17 thousand years before the present day". Noble reports that:

"the first truly epidemiological study of noise-induced hearing loss, published in 1881...(remarks) that metalworkers employed in the construction and maintenance of railway rolling stock suffer hearing loss due to the noise of their work...".

Munnerley et.al. (1991 - in prep.) recently reported that marine engineers, responsible for the maintenance and operation of engines for ocean going cargo ships also experienced NIHL due to the noise of the work.

Quilan and Bohle (1991:1) note that the recurrence of similar work injuries and fatalities over long periods of time serves "to illustrate the long-standing - we might even say resilient - nature of occupational health risks in Australia".

The two studies cited above highlight the fact that repeated exposure to injurious levels of workplace noise will lead to permanent damage to hearing and the longer the exposure and the higher the decibel level the greater the level of injury:

"It can be seen that, crudely, the higher the noise exposure, the higher the noise-induced hearing loss and therefore a dose-response relationship exists (Leigh & Morgan:1990:389).

The extent of a noise induced hearing loss can reasonably be predicted using the International Standards Organisations's "Acoustics Determination of Occupational Noise Exposure and Estimation of Noise Induced Hearing Impairment". This standard is generally referred to as ISO 1999. For a summary of this standard see Audiology in Practice - Number 7.

In which industries is noise induced hearing loss likely to occur?

According to the then Department of Industrial Relations and Employment [DIRE] (1985), in New South Wales the following workplaces have the highest levels of compensation claims for NIHL:

Table II - N.S.W. Compensation claims for NIHL by industry
(Chardon:1985)

Please see print copy for image

These six groupings represent 15,511 cases of compensation for NIHL. Changes in the manner in which statistics are collected in New South Wales has made it difficult to present a picture of claims over recent years. The Victorian Government's Accident Compensation Commission was able to provide figures for the period September 1985 - March, 1991. The Commission has not used the same parameters as the DIRE so direct comparison is not possible. The Commission listed 41 types of industry where noise induced hearing loss occurred. Consolidating the Victorian data under similar headings as New South Wales, the numbers of workers who sought compensation for NIHL are listed in Table III below. Details concerning which members of the community may be more exposed to NIHL can be

found in Chapter 5 where the possible provision of future rehabilitation programmes in New South Wales is discussed.

Table III Victorian Compensation Claims for NIHL by Industry
Victorian Accident Compensation Commission (1985-1991)

=====		
Manufacturing (food, textiles, clothing,paper, chemical /petrol, non metal)	15 %	(1,796 cases)
Metals industries	34 %	(4,157 cases)
Construction (general & trade)	11 %	(1,364 cases)
Elec/gas/water	7 %	(886 cases)
Transport industries	5 %	(557 cases)
Finance & Investment	14 %	(1,627 cases)
Agriculture, forestry and mining	2 %	(205 cases)
Other	12 %	(1,486 cases)
Totals	100 %	(12,075 cases)
=====		

1.4 Compensation

Niall (1990) points out that industrial deafness is referred to legally as an industrial disease. This is due to the difficulties which arose in determining the actual time during which the 'incapacity' of deafness was sustained (Milne-v- International Combustion Australia Ltd, [1953] WCR 80). Legally, to be eligible for compensation, an injury had to be sustained by a person in a particular place at a specified time and it had to result in that person acquiring some form of incapacity. Niall (1990) observes that not having an incapacity to work meant that the worker, in this case Mr Milne, did not have a date of incapacity. This legal problem "came to a head in Commissioner for Railways - v - Coates (1960) WCR 88 in the Supreme Court which provided a simple statutory formula for determining the date of injury, i.e. the date of the worker's application is deemed to be the date of onset of the disease. And under S.7(4B) (vide supra) the employer to sue is the last or current employer as of that date" (Niall:1990).

Following the logic that the worker did not have an incapacity to work also by inference meant that the worker did not have an incapacity which required rehabilitation for the purpose of restoring their ability to work. Treatment⁶ for the resulting disability fell in a gap since the person could work and thereby retained earning capacity. Treatment and rehabilitation services being concerned with equipping the person for work were not designed to address the implications of an industrial injury which resulted in the person having a disability but not necessarily an impairment to work.

Bohle et.al. (1991:281) note that the broad objective of workers' compensation legislation is:

"the provision of income security to injured workers, requiring employers to fund such benefits, enhancing and facilitating the rehabilitation of injured workers."

Similarly, Luntz (1975:65-66) points out that compensation relates primarily to a loss of earning capacity {"the impairment [a] the ability of that person to engage in work that is useful or gainful; or [b] the well-being of that person, or both"}. Rehabilitation, as previously noted, is concerned with either restoring the person to their ability to work or to retrain them in another job. The first difficulty which arises here is that since workers with NIHL do not lose earning capacity, what is there to compensate for? The Labor Council of New South Wales (seminar notes:28/8/91) reports that Section 66 of the New South Wales

⁶ The word treatment is used here even though it is inconsistent with the language used in this chapter. The word is used in this section because it is consistent with the wording of the Act which obligates the employer to provide treatment and rehabilitation for injured workers. Advice sought by the Labor Council of New South Wales on my behalf from the New South Wales WorkCover Authority suggests that a programme such as Getty and Hetu's would be seen as a treatment service under the Act.

Worker's Compensation Act says that:

"...a worker may claim a lump sum for the loss of efficient use of an organ or limb, for a work related injury or illness. If that loss is greater than 10% loss of the body the worker can claim for pain and suffering as well."

Pain and suffering is provided for under Section 67 of the same act and is generally referred to as the Table of Disabilities.

According to the Table of Disabilities (formerly referred to as the Table of Maims) published by the WorkCover Authority of New South Wales (October 1991), a 10% loss of the body equates to \$9,800. Thus, a worker's claim under Section 66 would have to equal or exceed \$9,800 to qualify them for reimbursement under the Table of Disabilities. Table 4a of the Table of Disabilities states that loss of hearing of both ears equates to 65% of total loss of body or \$63,700. These figures are regularly adjusted by the WorkCover Authority. For compensation purposes, loss of hearing is determined in percentages generally following the National Acoustic Laboratory's report No. 118 (Improved Procedure For Determining Percentage Loss Of Hearing - 1988). Since people with an average NIHL have binaural losses averaging 11% (Waugh:1991:23), the average claim for NIHL would be 11% of \$63,700 or \$7,007, thereby leaving most workers with NIHL ineligible for compensation for pain and suffering. If disagreement arises between a worker and his/her employer/insurer, Section 72 of the Act provides for a determination of the level of hearing loss by a medical panel. Section 71 allows a worker to submit a new claim for NIHL if they sustain a further loss of hearing due to workplace noise. The claim would be for the difference between their last claim and their current percentage loss of hearing.

At a federal level, Section 24 of the Commonwealth Employment Compensation and

Rehabilitation Act, sub-section 7 provides for monetary compensation for injury if the claimant has sustained 10% loss of whole of bodily function. Given the above data reported by Waugh (1991), it is unlikely that many workers under federal awards would be eligible for compensation.

1.5 Rehabilitation

In the event that an employee is injured at work, the New South Wales Workers Compensation Act (1987) obliges an employer to provide for the rehabilitation of the injured employee. It is noted that rehabilitation for workers with NIHL has not generally occurred. However, under the existing legislation, a worker is entitled to rehabilitation if he/she has been incapacitated so that he or she is unable to work. The goal of rehabilitation under this legislation is the return of the person to work as soon as possible. Industrial deafness is considered to be an industrial disease. An employer is obligated to provide treatment for an employee who has sustained a work induced disease under sections 59 and 60 of the Workers Compensation Act (1987).

Two procedural difficulties arise with the management of NIHL which inhibit the provision of treatment and rehabilitation. Firstly, the rehabilitation legislation emphasises reducing work time lost due to employee injury. The Australian Occupational Rehabilitation Guide (1989:7) reports that:

"the aim of rehabilitation is to reduce the cost of absence from work (for employer and employee alike), as a result of employment related injury and illness."

In Victoria, for the five years ended March 1991, 97% of workers who received compensation for NIHL did not miss work because of their hearing loss (Accident Compensation Commission:1991).

The second difficulty arising with the provision of rehabilitation for NIHL is that the need for rehabilitation is not felt (Getty and Hetu:1991), either by the worker or his/her employer. Therefore the procedures for rehabilitation are not followed and the overall aim of the legislation ("to assist a person injured or made ill at work to develop their fullest possible degree of physical, mental, social, economic and vocational usefulness" [Guide:1989:3]) is not achieved.

The process for the management of a workplace injuries in New South Wales is described in the Workplace Rehabilitation Manual (CCH:1990:56) which indicates that the first procedure to be followed is a reporting of the injury. In industry, an employer's awareness of an employee's NIHL is most likely to arise in two ways:

- a) the employee independently seeks out audiometry, learns that s/he has a NIHL and lodges a claim for compensation for the same with their employer or
- b) the employee undergoes audiometry as part of a workplace screening process or health check and both the employer and the employee learn that a NIHL has occurred. The employee may choose to lodge a claim for NIHL.

In both instances the employer is informed that an injury has occurred and the appropriate treatment and/or rehabilitation should be offered to the employee. The federal legislation noted above also provides for the rehabilitation of injured workers by accredited

rehabilitation providers.⁷ With the exception of the development of this project, only the National Acoustic Laboratory provides rehabilitation for workers with NIHL. Such rehabilitation is not readily available to workers and is generally limited to the offering of hearing aids to a very limited number of workers. As Waugh (1991:34), citing MacDougall (1988) observed:

"most rehabilitation services are limited to the provision of hearing aids and basic training in hearing aid use".

A gap in health service provision exists

It can be concluded that the occurrence of NIHL is a significant public health problem. The absence of appropriate rehabilitation services for workers with NIHL in New South Wales and other parts of Australia adds to the gravity of this problem. Getty and Hetu (1991:57) point out that employers will only begin to perceive the need to provide rehabilitation and injury prevention services for their employees as the employees and their personal networks begin to realise that they have been affected and community awareness is changed.

1.6 Towards a preventative approach

Whilst describing NIHL as an industrial disease overcame the legal difficulties that a compensation claim for industrial deafness confronted, it raises conceptual difficulties for promoting prevention of what is essentially an industrial injury.

⁷ Data relating to the various sections of the federal and state compensation acts was obtained at two seminars at the Labor Council of New South Wales on August 26 and 28th, 1991. The seminars were organised as part of Deafness Awareness Week for union members and delegates by Sherene Daniels and Jessica Fisher of Labor Council and myself. The legal input was given by David Stanton of the Sydney firm of solicitors McCellands.

The Oxford Dictionary defines disease as "morbid condition; (specific) disorder, illness" (1969:152). The notion of disease is that it is something one unwittingly catches such as a cold or cholera.

The disease concept suggests that NIHL is an unavoidable or unforeseen illness which one just catches. The notion of disease individualises the injury and draws one's attention away from causal factors within the work environment by tacitly suggesting that, as a disease, it is somehow related to the individual and their biology alone. Hillier (1987:215) argues that the medical model of disease "largely ignores the behavioural and environmental determinants of ill health, since, to acknowledge such causal factors would inevitably lead the community to seek environmental, not medical intervention".

Lin and Pearse (1990) argue that the persistent patterns of occupational injury year after year is strong evidence that there is little that is unforeseeable or accidental about the occurrence of occupational injuries. The use of the word injury to describe NIHL seems far more appropriate since, as noted above, one is able to reasonably predict from the details in Tables II and III above, which occupational groups are likely to be industrially deafened (see also chapter 5).

According to Worksafe Australia (1990), NIHL is a preventable injury. The best way to prevent industrial deafness is to eliminate noise by using engineering innovations and adaptations:

"It is widely recognised that reducing noise exposure by engineering means is the most effective method of preventing Occupational Hearing Loss" (Bruhn:1990:30).

Since NIHL is a preventable injury, a public health approach to injury prevention based on

a hierarchy of controls can be initiated by workplaces to reduce the level of injury to workers. This approach is based on the belief that "engineering controls, such as modifying machines or the work process or substituting a less hazardous substance or device, are the most reliable interventions and preferable to other methods" (U.S. National Committee for Injury Prevention and Control:1989:182).

Alternatives to noise

The Noise Management at Work Control Guide (1990) prepared by Worksafe utilises the hierarchy of controls process and lays out procedures for reducing workplace noise at its source. The Guide challenges the notion that action to reduce noise is always expensive and details a conservative estimate of the cost to business when they fail to act on noise. The Guide suggests that inaction on noise costs a company \$1800 per employee per year (1990: Module:6-9). The Guide is based on the National Health and Safety Commission's National Strategy for the Prevention of Occupational Noise-Induced Hearing Loss and is "endorsed by peak employer and union organisations and State, Territory and Commonwealth governments represented on the National Commission" (1990:iii).

Barriers to prevention

Whilst information, technology and skills are available to assist workplaces reduce workplace noise, industry's attitude to noise may in itself be a barrier to injury prevention. Sue Richards (1990), environmental community worker at the Fairfield Community Resource Centre observed that industry may perceive noise as being productive (i.e. the hustle and bustle of activity being associated with people hard at work in value adding processes).

In a preamble to the presentation of his paper entitled History and Politics of Noise Induced

Hearing Loss, Noble (1991a) points out that noise injuries can confer an aura of heroic virtue or of cultural acceptability on the affected individual given that such deafness is sustained whilst doing one's duty or job. Noble cites a story related by Mr David Lange, former Prime Minister of New Zealand on ABC radio upon his return from Iraq during the 1990 hostage crisis to illustrate his point:

"There was a camel who had served in battle for twenty years as a cannon carrier. At the conclusion of this Iraqi/Iranian war, it was decided to retire the camel from active service. Having given loyal service, Iraqi tradition held that the camel should have the keys to the city. This fact posed serious problems for stall holders since the camel would simply help itself to their produce. Since the camel was a war hero they could not send it away. So instead, the stall owners hired some local children to clap as the camel approached their stalls, hoping to frighten it away. Unfortunately for the stall holders, the camel had sustained industrial deafness from repeated exposure to cannon fire over twenty years and could not hear the clapping but proceeded to eat the stall holders cabbages and tomatoes..(Radio 2BL:Nov 16,1990: Andrew Ollie programme).

In many workplaces, NIHL could be described as an injury without a consequence. Injuries to limbs or backs and chemical injuries have a very real face in the workplace as they can be seen and they disrupt the workplace. It is ironic to read a company's safety sign stating that they have worked for so many days without an injury, only to enter the production area to be confronted by the deafening sound of heavy machinery in operation. In New South Wales, Section 15 of the Occupational Health and Safety Act (1983) requires that an employer provide a safe place of work for his/her employees. The Labor Council of New South Wales in a bulletin entitled Occupational Noise - Legislative Requirements cites subsection 1 this Act:

"...every employer, whether a corporation or an individual has a general duty to ensure the health, safety and welfare at work of all their employees (s.15(1)).".

A need for a coherent model

Once awareness of the need for rehabilitation and prevention of NIHL develops in the community, an integrated model for service provision will be required which services and employers can use to address both the immediate needs of workers with NIHL whilst working towards the reduction of workplace noise. Such a model is presented at the end of Chapter 5. Getty and Hetu suggest that rehabilitation of the individual can be the first step towards the prevention of NIHL. With this in mind, the personal experience of acquiring a hearing loss is discussed.

1.7 The personal impact of NIHL

Background

The personal impact of NIHL is not well documented in the literature as distinct from the impact of acquiring any form of hearing impairment. Thus, the discussion of acquiring and adjusting to hearing loss from workplace noise is developed in the context of the general literature on the impact of an acquired loss which can be broken into several distinct themes: managing change, hearing handicap, managing psychosocial difficulties, gender and family issues.

Research undertaken by Hetu and Getty (1991:74-80) has found that workers with NIHL may not realise the impact such a loss has on their relationships. They also report that when an individual acquires a NIHL, he/she fears that they may be stigmatised or marginalised from their community. This fear of marginalisation motivates the individual to be reluctant to acknowledge their hearing loss or to conceal or deny their hearing loss. The fear of

marginalisation leads to high levels of stress as the person is ever vigilant to hide their disability through fear of stigmatisation.

Alternately, the individual has to renegotiate their relationships so that they encompass new patterns of communication. Renegotiation requires skills which people may not have had the opportunity to develop. Noble (1991b:60-63), whilst reviewing the literature on the nature of a hearing handicap points out that disadvantages arise for the individual in everyday communication "be that in face-to-face interaction, telephonic conversation or picking up information from electronic media". Hetu and Getty (1991:64) report that the nature of difficulties experienced by workers with NIHL included "reduced listening abilities and communication problems in non-ideal acoustic conditions". Such difficulties manifested themselves as "effort, fatigue and stress, difficulties in family relationships, isolation and negative self image".

The difficulties experienced by workers and their families are discussed below.

Managing change

The process of acquiring a disability from hearing loss can be very slow and subtle. Even before a person who has NIHL begins to realise that they have a reduced ability to hear, a process of personal change has spontaneously begun between themselves and the people around them. The way they fit into relationships is now different. The way they see themselves and the way others see them is likely to change. The gradual change in self perception can affect one's sense of personal security which can result in an "unbearable state of powerlessness and aloneness" (Fromm:1984:121). Changes in relationships and self esteem

can cause feelings of stress whilst potentially changing their social status into one of membership of a minority or disadvantaged status. These changes in relationships are very complex and require the individual to either **renegotiate the structuring of existing relationships, create new or separate relations** or to **withdraw from relationships**. Horney (1945:315) when discussing the nature of basic anxiety describes these actions as the three basic strategies a person has at their disposal to cope with the anxiety which occurs during such personal adjustments; to move toward, against or away from people:

"In each of these three attitudes, one of the elements involved in basic anxiety is overemphasised - helplessness in the first, hostility in the second and isolation in the third".

It is argued that the dynamics of anxiety as described by Horney may arise for the hearing impaired person. Hetu and Getty (1991:72) report that the handicaps experienced by workers with NIHL include being more dependent on one's spouse (becoming *helpless* or more dependent), becoming *isolated* either through avoiding social interaction or actually feeling cut off in social situations. *Hostility* towards one's spouse or family members as a result of communication difficulties or misunderstandings is also reported by Hetu and Getty. For example, the hearing impaired person may be *angry* with their spouse because they do not speak slowly or clearly, or because they speak from another room or in the presence of background noises such as the television or radio. Anger may arise because the hearing impaired person is left out of conversations or simply because they feel left out. *Loneliness* as distinct from isolation is another major source of frustration and anxiety for the hearing impaired person. Rutman (1990) points out that whilst older people experience isolation from networks, the hearing impaired person is surrounded by people s/he often cannot understand. It is this sense of aloneness which results in the experience of *depression*.

At the same time, those most immediately involved in relationships with the hearing impaired person also experience anxiety, are stressed and feel disadvantaged. Hetu and Getty (1991:73) report that spouses of workers with NIHL experience stress, anxiety, negative self image, restricted social life and other handicaps in their relationship due to the impact of the hearing loss. Getty and Hetu report for example, that spouses experience handicaps due to increased "efforts and irritation, stress and anxiety, negative self image as a spouse, restricted social life as a couple, difficulties in the family relationship" , as well as sadness resulting from the isolation within the couple. The relationship difficulties described by Getty and Hetu connote a form of symbiosis (as suggested by Fromm:1984:136), where the relationship is moulded into a very tight union, dominated by social isolation and the other social consequences of acquired hearing impairment. In such a relationship, longer term change is achieved by changes in the overall relationship, as isolation is reduced and anxiety managed. The role of the spouse in the change process is then, clearly vital.

Hearing Handicap

Throughout the literature, the notion of hearing handicap is referred to. The World Health Organisation distinguishes between impairment disability and handicap. Handicap is defined as "a disadvantage for a given individual, resulting from an impairment or a disability, that limits or prevents the fulfilment of a role that is normal (depending on age, sex and social and cultural factors) for that individual (WHO, 1980 in Schow, 1990:7s). Hetu and Getty (1991:70-72) make clear distinctions between hearing impairment, disability and handicap. Impairments noted were tinnitus and an intolerance of background noises whilst disabilities arising from the impairment were reduced listening and communication abilities. The

disadvantages arising from the impairment and disability are listed by Hetu and Getty (1991:72) and are presented in the Table IV below.

Table IV. Repertory of the handicaps experienced by male workers
affected by Occupational Hearing Loss (Hetu & Getty:1991)

=====	
Efforts and fatigue	
	- sustained attention and conversation during conversations and meetings, etc.
	- effort required for speech reading
Stress and anxiety	
	-irritation and worries caused by tinnitus
	-irritation due to intolerance of background noises
	-irritation due to difficulties in social interaction
	-stress effects of daily noise exposure
	-worries regarding further degradation of hearing
Difficulties in family relationships	
	-misunderstandings due to communication difficulties
	-reproaches and misunderstandings due to loud television listening
	-impatience towards the children's noisy activities or towards their negative reactions to hearing difficulties
Isolation	
	-isolation during meetings, group conversations, parties etc
	-going out less often, avoiding group interactions
Negative self-image	
	-being ill at ease due to not understanding well, due to asking others to repeat themselves often
	-fear of being stigmatized as being 'deaf', handicapped' 'old' etc.

Implications of hearing handicap

An integral part of adjusting to hearing loss is overcoming the day to day difficulties of communication between individuals where the hearing impaired person has to constantly manage potentially difficult situations, including asking people to repeat themselves or to rephrase what they have to say. Stephens (1980:205-220) reports that many of the major difficulties confronted by the hearing impaired person such as the TV/radio, the doorbell, group conversation and the telephone bell can easily be remedied by technological adaptations.

Adjusting to people's reactions and expectations is also important and cannot be readily overcome by technology. This adjustment is most vital since it is a dynamic which the person will confront everyday. Effectively living with a hearing loss means communicating in different ways than perhaps people have been used to. Walker (1990) argues that strong emotional and cultural feelings are linked to the way we are expected to behave (such as gender roles). To ask people to change the way they involve themselves in taken-for-granted social situations by redefining the way communication should occur, is, in fact, to challenge the basis of the relationship. Goffman (1963:12) argues that our expectations of social interaction are linked with notions of social status and that when a person does not behave according to expectation "(H)e is thus reduced in our minds from a whole and usual person to a tainted, discounted one" . It is this tainting or discounting of the individual that gives rise to the concept of stigma - "...a societal reaction that 'spoils' normal identity " (Williams,:1987:139). The experience of identity spoiling is very true for a hearing impaired person when the social discourse does not flow well. Indeed, the devaluing of the hearing impaired person has occurred for thousands of years. The following paragraphs highlight some of these devaluing processes, drawing the reader's attention to the fact that the hearing impaired individual is well justified in fearing stigmatisation - that they will no longer fit in.

Confronting ignorance, stereotypes and insensitivity

In Western society there exists an absence of tolerance for ill health. Stemming perhaps from the Protestant ethic wherein one's fortune and good health reflected one's destiny in God's eyes, one as a consequence, hid any misfortune or ailment from the community and certainly did not complain about it. Alternately, a lack of tolerance for ill health may be best understood in the light of Parson's notion of the sick model wherein a person had an

obligation to participate in treatment and by implication, to get better⁸. Values such as these are exemplified by Lady Bracknell in Oscar Wilde's The Importance of Being Earnest:

"Well, I must say Algernon, that I think it is high time that Mr. Bunbury made up his mind whether he was going to live or to die. This shilly-shallying with the question is quite absurd. Nor do I approve of the modern sympathy with invalids. I consider it morbid. Illness of any kind is hardly a thing to be encouraged in others. Health is the primary duty of life. I am always telling that to your poor uncle, but he never seems to take much notice..."(1962:13-14).

Given that noise induced hearing loss cannot be cured, the hearing impaired person is likely to be devalued since, by inference, they have not properly participated in treatment and therefore something must be morally wrong with them. This notion of something being morally wrong with being deaf is reinforced by culturally valued processes such as organised religion. The Christian bible for example, has at least three symbolic meanings for deafness. Firstly deafness refers to stubbornness of heart, the refusal to listen, co-operate and obey. One who is deaf is thus disobedient and immoral.⁹

Secondly, deaf people and people with disabilities generally in biblical times, were poor outcasts, dependent on the charity of others for survival.¹⁰

Thirdly, being dumb (ie mute) is regularly linked with deafness throughout the bible. Of

⁸ See Parsons, role theory and health interaction, Uta Gerhardt, 1987 and The Sociology of Health and Medicine, Nicky Hart, 1985 for discussions of Parson's role theory.

⁹

1) Isa 33.15 he that stoppeth his ears from hearing
Jer 11.8 they obeyed not nor inclined their ear
Matt 11.15 He that have ears to hear, let him hear
Acts 28.27 their ears are dull.

¹⁰ Mark 7.32 they bring one unto him one that was deaf

course, today, being dumb relates to stupidity, so that deafness and stupidity are linked as consistent themes.¹¹

These symbolic uses of the concept of deafness are used metaphorically today. In the community, to be deaf is to be likened to being stubborn (stubborn as a mule), immoral and deserving of punishment, a charity case, needing care, a beggar and stupid. Indeed deafness also has several other meanings including being a phoney, an isolate, an incompetent, and simply an association with growing old.

The hearing impaired person quickly becomes aware of the attitudes the community has towards them and is well justified in fearing stigmatisation. For example, a lip-reading class was asked to list some of the labels used to describe hearing impaired people of which they were aware. Their responses included:

"Deaf, heedless, snobbish, inattentive, stupid, idiot, not with it, dumb, ignorant, useless, retarded, boring, arrogant, stubborn, slow, vague and psycho"(Self-reported labels gathered from a group of twenty hearing-impaired people in a lip-reading class:Hogan 1990b).

Symbolic meanings of hearing impairment are not unique to Western cultures or religion. Miles (1984) points out that in rural Asian communities " a family may conceal serious deafness in order to avoid the stigma of disability, which in many areas is regarded as a punishment for parental sins, and to protect a relative's eligibility for marriage. Disability

11

Mark 7.37 he maketh the deaf to hear and the dumb speak
Acts 8.32 like a lamb dumb before its shearer

is associated with the sins of the disabled person in a previous incarnation".

Westbrook (1991 - in prep) undertook a study to investigate whether or not Australians from different ethnic backgrounds explained the occurrence of a disability such as deafness in similar or differing ways. Distinct to Western culture, sinfulness and loss of karma were seen as significant contributing factors to hearing loss across cultures. Exposure to noise was not generally considered a cause of hearing loss.

The fear of being stigmatised relates to the way a person may 'fit' in or adjust to society's demands. As such, the concept of 'fitting in' needs to be seen as a structuring principle which influences all relationships at an individual level whilst having a direct impact on the person's social position as a person who now has a physical impairment. The person's fit influences all other aspects of their lives in society particularly with regard to the experiences of stress, coping, competence, self direction, relatedness to others and self esteem.

One's fit in the community is then concerned with a person's niche where "(N)iche refers metaphorically to the status occupied in the social structure by a particular group or individual and is related to issues of power and oppression" (Germain:1985:45). The question arises then as to how the person who has a NIHL can successfully renegotiate the structuring of their relationships from a disadvantaged point of negotiation. Goffman (1963:19) argues that:

"(T)he central feature of the stigmatised individual's situation in life...is a question of what is often , if vaguely, called 'acceptance'.

Most hearing impaired people have some residual hearing, so that they can hear some, if not many sounds. The fact that they may hear something generally leads others to believe or

assume that they have selective hearing, that they are playing on their loss or that they are not really deaf at all. This can be particularly so with noise injuries since such people can have quite good communication skills on a one-to-one basis when there is no background noise. For people ignorant of the effects of background noise on a hearing impaired person, such understanding or tolerance is often beyond comprehension. Either the person can hear or they cannot. 'With me they can hear, therefore they can hear in all circumstances, therefore they are lying that they have trouble hearing me now.' The inference again is that the person is somehow malingering.

Unlike disabilities which immobilise the individual and thus enforce a level of cognitive adjustment to self perception (see Locker, 1983), deafness does not immobilise the individual. Rather, it isolates him/her. Isolation becomes then, a matter of degree - how much or how little a person can participate in society.

The importance of legitimation

Being hearing impaired is like being a bit sick. One's ability to communicate is reduced enough to impair communication but not to the extent that one cannot communicate. As noted, a predominant cultural value dictates that one cannot complain since complaining shows weakness of character. If one were truly disabled, people could see this and understand. Thus, to claim to be partially deaf, is, in a sense, similar to claiming that one is a little bit sick - one would seem to be claiming to be a phoney, a put on, a bludger on one's mates. To have one's impairment accepted then the Noise Injured worker requires a legitimation of his experience as a hearing impaired person. Locker (1981:5) argues that:

"legitimation of the definition of an individual as ill may rest upon the verification of

that disorder either by an accepted authority such as a doctor or by the appearance of externally observable manifestations which are independent of the claims of the person concerned".

Legitimation of the Noise Injured worker's hearing impairment is problematic to say the least. Firstly, a community based deafness awareness study of forty-three (43) community organisations undertaken by Worksafe showed that helping professionals had very little knowledge about hearing impairment or points of referral¹². Secondly, since even the hearing impaired person often does not understand his/her hearing loss or audiogram, saying to others that one has a 5% loss tends to be quite meaningless. Does it mean that one only hears 5 of every 100 words or 5 of every 100 sounds or does one miss out on 5% of all communication?

Locker argues that the "appearance of externally observable manifestations" of the illness aids legitimation. The most obvious external manifestation here would be a hearing aid. Having access to a support group would also assist a person in negotiating legitimation amongst his/her peers. Locker (1981:103) remarks that behaviour such as not conforming to role expectations of the disabled person serves only to reduce one's chances to gain legitimation:

"...it may be assumed that nothing much can be wrong if the individual concerned is not prepared to suffer the inconvenience of appropriate activities".

According to Locker, the major difficulty confronting a group of people such as Noise Injured workers is that they are living within a community which has yet to formulate a way of understanding them which is acceptable to the group. Locker refers to a process wherein

¹² Report to the National Occupational Health & Safety Commission; December 16th, 1990.

a minority group develops a frame of reference which challenges or reconstructs existing 'social facts' about a specific problem such as hearing impairment (see Locker, 1981: 3-6). An example of such a process would be the "Access 2000" deafness awareness project which is being promoted by the Australian Deafness Council (1989), Self Help for Hard of Hearing and Better Hearing Australia.

A difficulty arising from Locker's argument is that it presumes that the affected people understand what has happened to them and are able to organise themselves in a socially active way. It has been noted that this is simply not the case for workers with NIHL. These people are either not aware that they have a hearing loss or that their hearing loss is affecting their relationships. They have not had access to information about their hearing and have been more likely to withdraw from social activities than to become involved in them. Workers with NIHL require access to information and skills enhancement so that they may become involved in such processes if they wish to do so.

The process of adjusting to living with a hearing loss then may require the individual to participate in some rite of passage which enables the individual, those close to them and the community in general, to develop a coherent understanding and legitimisation of the experience of acquiring a noise induced hearing loss. Since Getty and Hetu have given such weight to the dynamics of reluctance¹³, marginalisation and stigma in their papers, it follows that what they are promoting in their programme is the necessity for a rite of passage for individuals with acquired hearing loss and their spouse to move

¹³ The phenomena of reluctance, stigma and marginalisation are discussed in more detail in Chapter 2.

through changes in their relationship with each other specifically and with society in general. Such a rite of passage provides a vehicle for the legitimization of the difficulties experienced by individual, family members and friends.

Documenting hearing handicap

Dick Waugh, psychologist with Worksafe Australia and author of works on NIHL says that even if one has a minor threshold loss, one may have enormous difficulty communicating while someone who has a more severe threshold loss may not experience such difficulties (personal communication; 6/11/90). As Hetu (Pers. Comm. 8th May, 1991) remarks:

"the loss of sensitivity is a poor predictor of loss of selectivity which results in hearing difficulties in everyday life".

Hearing handicap is usually assessed using some form of self assessment. Noble (1978:307-319), when reviewing the Advantages, Disadvantages and Applications of Self-Report notes that such tests can yield meaningful and relevant information about an individual's experience of hearing loss whilst being quite easy to use. The major disadvantages arising from self report tests were seen as faking (either by over or understating the experience) by the client and possible interviewer bias. In a more recent paper, Kielinen and Nerbonne (1990) note that self report tests "often can provide additional information of a meaningful nature about an individual's hearing difficulties which cannot be derived from conventional data". This is a particularly important factor which was identified by Noble and which supports the use of self report tests - a person's degree of hearing handicap will depend upon the types of communication difficulties s/he encounters and the resources they have available to them to address such difficulties.

In this study, the Questionnaire on Hearing and Communication, Version 3 as developed by the Acoustics Group, University of Montreal (1988) was used as a self report inventory and as a before and after measure of programme efficacy.

1.8 Managing psychosocial difficulties

Realising the impact hearing loss has in one's life and negotiating the rites of passage through stigmatisation and marginalisation are serious challenges to be faced by the hearing impaired person. Adjustments have to be made in relationships and self identity.

Rutman (1990: 305-311) reviewed the psychosocial difficulties an adventitiously deafened person has to deal with. Rutman argues that the acquired hearing loss "deprives the individual of the type of social relationships, occupational goals and overall quality of life to which he or she was accustomed and which gave life meaning". Rutman reports that throughout the literature, acquired hearing loss is seen as a grief experience, a loss not just of life experiences but a loss of how one understood oneself and saw oneself in relation to others. Whilst the hearing impaired person may experience problems in the adjustment process, Rutman notes that very little empirical work has been done to document what these problems are or how people can deal with such difficulties. Summarising the literature, Rutman points out that the most pressing issues for hearing impaired people are loneliness, withdrawal and insecurity in new situations, a sense of loss, depression, lowered self esteem and a fear of seeming stupid, useless and excluded from social situations.

These findings relate well to Getty and Hetu's identification of the phenomenon of stigmatisation as a key to the rehabilitation process. Getty and Hetu's programme was

designed to assist the individual develop strategies to better manage potentially stigmatising events by confronting the demarginalising strategies of denial, minimisation of the problem, uneasiness in discussing hearing impairment and attempts at normalising one's behaviour. Dealing with stress and feeling competent in social situations relates to how one perceives interactions. Thus, hearing impaired individuals need to develop skills so that the outcomes of interactions are positive and image enhancing rather than stigmatising. Goffman (1963:31) points out that social situations will not always go well for the stigmatised person, that others will be aware of 'the difference':

"since the stigmatised person is likely to be more often faced with these situations than are we, he is more likely to become adept at managing them".

Rutman, citing the work of Meadows-Orlans (1985) points out that if interactions do not go well and do result in feelings of marginalisation, then the hearing impaired person is more likely to try to conceal their hearing loss, setting up a vicious cycle of vigilance, bluffing and concealment "which promote marginality, since privately they are all too acutely aware of their hearing loss" (Hunter, 1978 in Rutman 1990:308).

Getty and Hetu's programme is centrally concerned with enabling the hearing impaired person to develop their skills in managing social situations whilst trying to influence the way significant others relate to the hearing impaired person. This is a significant variation from Goffman's model in which the responsibility for change was on the stigmatised person. Getty and Hetu argue that managing relationships is two way and that both parties need to develop their relationship management skills. The onus for better communication therefore shifts from the individual to the interaction between the individual and society.

Goffman's thesis as noted argues that opportunities for stigmatisation arise when the social

routine is disrupted and that stigmatised individuals develop skills in managing potentially difficult situations. Getty and Hetu's model encompasses a number of strategies to assist people manage such situations. Firstly, they provide an opportunity for people to 'normalise' their experiences by sharing them with people who have similar experience. Secondly, through role plays and assertiveness training, people are given the opportunity to develop skills in difficult interactions. Thirdly, Getty and Hetu involve significant others in the change process so that others likely to be involved in the stigmatising process have their attitudes to the social routine changed. Education strategies aimed at the general community are utilised to influence wider society about changes in the social routine which are intended to take disruptions out of interactions.

Managing gender and family issues

The role of gender in relationships is important to this discussion since the majority of reported Noise Injuries are sustained by men. The impact of this hearing loss will have particular significance for the person's spouse.

Feminist literature such as the work by Chodorow (1978) and Segal (1987), highlight the difficulties men may cause and experience in relationships. The dominant image of men in society is one of coping, being emotionally stoic and achieving. Segal argues that men rely very heavily on their spouse for emotional support and stability. This reliance, argues Segal, was developed in childhood and extended into adult life:

"Boys, in contrast, while taught to repress all expressions of their own emotional dependency, are more likely to be taken care of by women. Men's dependency thus remains the best-kept secret, the terrifying taboo, of masculinity as boys experience and expect nurturing simply as a 'part of the fabric of life'"(1987:139).

For the hearing impaired male, the loss of hearing increases his dependency on his spouse,

who, in a nurturing role, takes up the duty of communication assistant and social negotiator. It is she who then ensures, more than ever before, that his emotional needs are met.

In this spouse relationship, the dyad may become stressed progressively as one becomes dependent for communication on the other. Indeed, "...it has been found that family members may in fact reinforce the psychological and social disadvantages experienced by the worker" (Lalande et.al.: 1988:250).

The acquisition of a noise-induced hearing loss often means that one can hear but the sound is distorted or harder to hear when the sound is weak or soft. Hearing impaired men who usually meet with their mates for drinks in a local pub or club are likely to experience particular difficulties¹⁴. It is difficult for the Noise Injured worker to participate in conversations in a noisy environment since he will have problems overcoming background noise and distinguishing conversation.

The hearing impaired worker is likely to withdraw from social occasions or adopt hobbies which do not require communication rather than to continue with this unsatisfactory situation. The individual becomes very isolated¹⁵. Isolation and exclusion affect one's sense of self esteem and are centrally related to relationships: "high self esteem arises from believing that

¹⁴ The importance of drinking to men's friendship patterns as described by Sargent (1979) is noted.

¹⁵ Such an experience was recently reported in the Sydney Morning Herald about a metal worker, Mr Mal Cook, who preferred to go fishing alone then to participate in other social activities. October 24, 1991.

one possesses the traits that should maximise one's chances for being included in social groups" (Baumiester & Tice: 1990:178). It is possible then that Australian hearing impaired male workers are likely to have lower self esteem than their hearing male co-workers. Research undertaken by Hetu et.al. (1988) would suggest that this is the case.

Recent Australian research suggests that whilst men have traditionally been the victims of exposure to workplace noise, the changing composition of the Australian workforce may result in more cases of female workers being reported in the future (See Hogan:1992; Westbrook et.al.:1992; Bridgett:1992). The family implications for women with hearing loss are therefore considered.¹⁶ By extending the implications of hearing impairment to the stereotyped notion of women in relationships, it can be concluded that as well as potentially experiencing all the interpersonal difficulties noted above for men, nurturing relationships may be affected particularly. Hearing and responding to their child's higher pitched voice may become more difficult as well as communicating with clarity over the daily din of activities such as play, music, television and so on. Attending to relationships may require greater effort and result in one being much more tired.

Since it is likely that both men and women are affected by NIHL, much more work needs to be done to properly investigate the impact NIHL has on family relationships.

¹⁶ Women in Australian society have traditionally been seen as primary care givers and nurturers, but this is changing. Men are also involving themselves in nurturing and caring. The argument presented here is stereotyped for the sake of clarity, however, the case for nurturing women applies equally well for nurturing men. Similarly, some women may have poor interpersonal and problem solving skills as described in the literature for men. The reverse case also applies here.

Whilst the individual and his/her immediate circle of companions may learn and develop more effective ways of communicating with each other, the individual hearing impaired person still has to deal with wider society on a daily basis. Since community awareness programmes may not necessarily change the attitudes of all community members, an individual remains aware that they may be rejected because of their impairment. The marginalisation process can result in a person being excluded from friends, family and social settings, including interactions in the workplace. An unseen effect of the marginalising process is the anxiety an individual may have of being rejected. The fact that stigma affects not only the individual but those s/he interacts with "confirms the need for comprehensive family-based approaches to rehabilitation" (Thomas:1987).

The social exclusion theory of anxiety as developed by Baumeister et.al. (1990) argue that "anxiety is seen as a pervasive and possibly an innately prepared form of distress that arises in response to actual or threatened exclusion from important social groups" (1990:165). They continue: "the central argument is that human beings are prone to experience strong doses of negative affect, akin to fear and panic, in connection with the prospect of being excluded from important social groups" (1990:166).

Being perceived as incompetent, deviant and immoral are the major reasons for exclusion from groups according to Baumeister et.al. (1990:165). As pointed out by Getty and Hetu, family members may share in the stigmatisation experience, thereby reinforcing the need for family-based programmes. Given that people who acquire a hearing loss sense the possibility that others will regard them as incompetent, impotent, rude or stupid (as previously noted), the perceived threat of exclusion is quite evident.

Strategies used to deal with difficult situations

Appropriately managing the effects of hearing loss in communication and therein minimising the possibility of being stigmatised is thus important for the person with a hearing loss.

Orlans (1988:33) reported on a study of the communication strategies used by some 1,500 hearing impaired people. He noted that individuals tend to use two specific strategies in situations where communication was difficult. These strategies are passing and bluffing.¹⁷

Passing refers to acting as though one's hearing is functioning correctly but that one's behaviour is perhaps "unfriendly, unco-operative, stupid, no personality". **Bluffing** refers to ad hoc or spontaneous strategies which people utilise on a daily basis to cope with breakdowns in communication and mostly consisted of pretending that one heard and understood. Being accepted is part of a continuum which also includes being rejected or excluded from a group. We can be motivated in our behaviour by the hope of being included in a group whilst we can also modify our behaviour if we think that a behaviour will result in exclusion. The use of various hearing tactics will vary depending on the person's feeling at the time. A person who effectively manages their hearing loss most of the time might not usually bluff or pass but rather assert themselves and ask the person to rephrase their statement. The same person may bluff, cover or pass on another day simply because they feel tired.

¹⁷Williams (1987) notes that Goffman uses the concepts of passing and covering. Passing refers to a strategy where one tries to 'pass' as normal where ever possible. Covering strategies when "(T)he individual's object is to reduce tension that is, to make it easier for himself and the others to withdraw covert attention from the stigma, and to sustain spontaneous involvement in the official content of the interaction..." (Goffman, 1968; Stigma: Notes on the Management of Spoiled Identity in Williams (op.cit.)). It would appear that Orlans has adopted similar terminology to Goffman's.

1.9 Conclusions

Noise Induced Hearing Loss is a substantial public health issue affecting at least 500,000 Australians and their families. Legislation exists for the prevention of NIHL as well as for the rehabilitation of workers who have sustained the injury, yet little action has been initiated on either front. It has been noted that NIHL has very specific handicapping effects on those who experience it and that rehabilitation for people who have an acquired hearing loss, is a process, a rite of passage, which enables people to renegotiate their relationships and their social position.

Within such a process, the service provider becomes the mechanism for negotiation, the facilitator or the catalyst for change. It is an interactive, potentially empowering relationship which Getty and Hetu (1991) suggest be used as the strategy to intervene in and prevent further noise injuries. Unlike a more medically oriented approach, the suggested programme of intervention is essentially a structured self-help programme which both accepts, addresses and confronts the complex series of relationships in which a person may be involved. A description and critique of the Getty and Hetu process for the rehabilitation of workers with NIHL is presented in the next chapter.

Chapter 2

**Getty and Hetu’s Process of Rehabilitation - A Community Health
Intervention**

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2.1 Introduction

In recently published papers, Canadian researchers Louise Getty and Raymond Hetu (1991) reported on an approach which they have developed in response to the needs of Canadian workers with noise induced hearing loss. This approach, based within a public health model, provides a framework for addressing the issues of prevention and rehabilitation with these workers. Using this public health framework, Getty and Hetu (1991:42) have identified a number of very specific issues which are experienced as obstacles to rehabilitation by workers with NIHL. Specifically:

- a) "the effects of hearing impairment are often misperceived by the affected workers and significant others".
- b) the "hearing impaired workers are reluctant to acknowledge hearing difficulties";

As a result of these barriers, Getty and Hetu argue that workers with NIHL do not "seek professional help in order to improve their condition".

Getty and Hetu (1991:41) report that since the effects of hearing impairment are

"attributed to causes other than hearing impairment...they are generally interpreted as changes in one's own lifestyle; and as a result of the reluctance to acknowledge the hearing difficulties, the communication problems raised by OHL are experienced as interpersonal frictions and conflicts".

Getty and Hetu (1991:41) point out that a barrier to seeking rehabilitation arises since the worker and his spouse do not realise or are unwilling to acknowledge that a hearing loss exists. It follows then that they will not be likely to seek assistance for the difficulty given the absence of awareness or a process which is acceptable given their own perceived needs. Since so many people were affected by NIHL and its consequent social and psychological

implications (such as those noted in Chapter 1) and given the need change behaviours and attitudes to overcome the identified obstacles to rehabilitation, Getty and Hetu (1991:42) chose a 'change-orientated' public health model as the most appropriate form of intervention since "in order to facilitate the interaction between victims of [NIHL] and others, change in attitudes and behaviours is required" by the workers and spouses involved. The spouse was involved in the process because:

"they themselves bear the effects of the reduced listening and communication abilities of their husbands...the spouses are likely to react positively to an offer of professional help...the spouses do not understand the nature of the impairments, their spontaneous reactions to communication difficulties are very often a source of handicap for the worker...(and since) the major effects of OHL appear to be experienced in the family" (Getty & Hetu:1991:45).

A public health model

The notion of a public or community health model means different things to different people. It can mean a basic difference in the way services are paid for, either via a fee-for-service model (or user pays as it is better known in New South Wales) or a service paid for by the government (and hence public). In this instance, the notion of being a public health service has little to do with the manner in which a service is offered; only who pays. Following this logic, Australian hearing rehabilitation services (which are discussed later in this chapter) are essentially public in that one can access services provided by both the state (for adults particularly via public hospital audiology centres) and federal government (via the National Acoustic Laboratories particularly for children and adults on social security benefits), free of charge. The type of service one will receive differs greatly from centre to centre even though all provide 'audiology'. Some offer cochlea implants, others offer hearing aids and some form of educational input, some only provide assessments and refer clients into the private (fee for service) sector for hearing aids.

When Getty and Hetu refer to a public health model they mean a lot more than simply referring to 'who pays'.

Getty & Hetu (1991:41) refer to their work as being based on "a public health model bringing about social change" as developed by Blum (1981). Blum's model is concerned with the way in which communities and governments can act to deliberately bring about social change:

"The planning that is described in this book is that which is undertaken by public desire and support with the intention of promoting the public well-being. Thus planning may be seen as the search for improvement built on the anticipation of its effecting desired social changes" (Blum:1981:39).

Public health services offered through community-health centres in New South Wales involve themselves in community consultations where the needs and changes desired by the community are discussed and formulated into some form of action plan and policy.

What needs changing?

Since "the very nature of the impairment" served as an obstacle to awareness and action, a difficulty for determining need via community consultation arises. Hetu and Getty (1991:67-74) developed a profile of the needs of workers with NIHL based on the results of consultations with a large sample of workers in a steel mill (N=965). In essence the presenting problem is defined as **"reduced listening and communication skills"**

A programme which was to address the identified problem needed to overcome the hidden nature of the handicap, the fact that the disability is slow in onset, that the difficulties it causes are easily confused with other factors such as domestic deafness' (he can hear when

he wants to) and that the disability presented few problems in the workplace (Hetu and Getty:1991:74-78). Hetu and Getty further point out that these same difficulties are also obstacles to prevention of noise problems in the workplace:

(a) injuries to limbs and similar industrial hazards are far more visible and perceivable to managers and employees than noise injuries;

(b) with the exception of traumatic injuries, most instances of NIHL are slow in onset;

(c) workers do not establish a relationship between their communication problems and their hearing impairment;

(d) most workers do not rely on verbal communication to do their jobs effectively.

Since outside the workplace communication is important with family and friends, handicaps are experienced (Hetu and Getty:1991:74-78).

This analysis resulted in the understanding that to reduce the effects of hearing loss workers needed to be able to understand their own hearing loss and the way their hearing loss can result in inter-personal difficulties. Knowing these things, workers would also require access to opportunities to develop skills to address their own difficulties. Furthermore, interacting with others with similar difficulties would reduce the stigma created by hearing loss whilst offering access to a broader range of problem-solving ideas.

2.2 An action based process centred on problem solving

What was proposed by Getty and Hetu then was not a course but a **process**¹ wherein a person and their spouse would set out with others with similar needs, to identify what difficulties hearing loss caused them and to investigate solutions which they found to satisfactorily address the needs which they identified.

In developing the process as they have, Getty and Hetu have stepped around one of the major traps in community development. An assumption central to the consultative approach in public health is that members of the community are aware of their needs and simply require access to a forum to express their concerns. Then, provided with such a forum, people will attend, participate, articulate and properly rate the health needs of the local community. The current emphasis on sector forums in New South Wales community health services is evidence of this trend. It is also evident that such an approach is inappropriate for workers with NIHL since they do not readily perceive that they have a health problem. The Getty and Hetu process firstly **provides opportunities for individuals to develop skills to define their own needs and to then seek out solutions to their own health problems.** This strategy is significantly different from the way many health promotion projects are initiated. Grace (1991:334) for example, expressed concern about the way health promoters determined needs through methods such as surveys and community needs analysis. In particular, concern was expressed about the conflicting roles of health promotion. One role was identified as "providing and serving" where the service provider was concerned with addressing client

¹ It will be noted later in the Chapter that the actual content of Getty and Hetu's programme does not differ greatly from other aural rehabilitation programmes which have been in existence for many years. What does differ is the way the programme is offered. It is for this reason that the programme is referred to as a **process** rather than a model.

defined problems whilst another role was identified as "planning, changing and controlling" which involved the community worker in addressing needs as defined by government or management alone. At issue is the whole process of 'who decides' who needs what and how such needs are to be met. Within this decision-making process, Grace argues that the process of needs determination is often shaped by the agendas of community workers or their employers (e.g. government) and that real community needs can be overlooked.

The Getty and Hetu process is not so much concerned with identifying a range of needs which require action. Rather, the intervention acts to facilitate individuals defining and addressing difficulties which are of concern to them. In this process of intervention, workers, spouses and service providers meet "on an equal footing" (Mergler:1987:152), sharing their differing knowledge and skills to mutually define the problems which are to be addressed and the manner in which they might be addressed. This is otherwise known as an action research model, which involves all participants in all aspects of the programme design including the

"selection and identification of the problem, choice of hypotheses and methods, analysis and interpretation of data- (each) contributing their knowledge of the situation and assuring that the research corresponds to their needs" (Mergler:1987:152).

There is no presumption that one person or one model or profession holds all the answers.

The power of the programme lies in its concern for workers to pursue a process of identifying options and solutions to their hearing difficulties, not its preoccupation with a body of knowledge which is somehow supposed to be all things to all people in all situations.

In the first instance, the Getty and Hetu process serves to enable individuals and their spouses to embark on a problem-solving process to identify difficulties surrounding hearing impairment. A logical extension of this process is to enable such individuals to embark on

a problem-solving process to identify ways of reducing the workplace noise which has caused their impairment in the first place.

The process developed by Getty and Hetu for working with people with NIHL needs to be more adequately placed within the developmental literature so that community health workers can more fully appreciate the methodology presented. A discussion of the developmental model immediately follows a description and critique of Getty and Hetu's process of intervention.

2.3 Hetu and Getty's Process Of Rehabilitation For NIHL

The interventions described by Getty and Hetu (1991:45) set out to:

- (a) initiate a problem-solving process among workers with NIHL and their spouses;
- (b) bring about behavioural/attitudinal change towards optimal adjustment to the hearing loss and
- (c) reinstate satisfactory listening and communication skills in order to prevent the various consequences of the problem.

In order to "reinstate listening and communication skills" Hetu and Getty have listed three basic programme objectives:

- a) the provision of psychosocial support;
- b) information;
- c) skill development (Getty and Hetu:1991:47).

Hetu and Getty aimed these interventions at bringing about social change given "the high prevalence of [NIHL] and considering the need to improve the quality of life of all those affected", an aim consistent with the Ottawa Charter for health promotion where:

"health promotion is the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well being an individual or group must be able to identify and realise aspirations, to satisfy needs and to change or cope with the environment" (WHO:1986).

To achieve the objectives of providing workers with NIHL with psychological support, information and skill development, Getty and Hetu identified three components to the process:

- a) recruiting workers into the programme,
- b) workshops based on a process of facilitated self-help,
- c) follow-up and acting as catalyst to the continuing process of empowerment.

A. Recruiting

Hetu et.al. (1990) argue that Noise Injured workers may go through a series of experiences of reluctance when beginning to or before seeking assistance for their hearing loss. Such experiences may include denial, minimising the problem, uneasiness in discussing their hearing impairment and attempting to normalise one's behaviour. These experiences of reluctance on the part of hearing impaired workers are seen as part of a process whereby the individual adjusts to both the way they relate to others and the way in which they may understand themselves. Reluctance is seen as a strategy motivated by a fear of marginalisation and stigmatisation.

A result of such experiences is that workers may be reluctant to participate in any rehabilitation process even though they may desire the benefits of such a programme. Hetu et.al. (1990) argue that professionals wishing to help hearing impaired people should take the impact of the fear of stigmatisation (as discussed in chapter 1) into account when offering services, particularly at the time of contacting the person with the service.

In the recruiting process, it is the aim of the service provider to assist the individual and his/her partner, to grapple with the differing phenomena of not being aware that one has a

hearing loss (due to misperceiving the effects of that loss), or being reluctant to acknowledge that one has a hearing loss. It was noted in Chapter 1 that hearing impairment carries negative connotations in society and that a person who realises that they have such a loss has to learn to manage the many stigmatising experiences which can arise from disruptions to the expected flows of interpersonal communication. Assisting a person to accurately identify their health status is a responsibility of health promoters and health educators. Enabling a person to deal with and/or to manage the impact such information has for their lives and their self identity is an extension of this same role and should be seen as an equal responsibility on the health worker.

When an individual learns or realises that their health status has seriously altered, they may feel shocked or numbed by the experience. Kubler-Ross (1970:35) argues that in such shock experiences (learning of one's pending death is a shock experience), one is not always ready for such news. Regrettably, Kubler-Ross's concept of denial has often been used out of its original context where it was defined as follows:

"(D)enial functions as a buffer after unexpected shocking news, allows the patient to collect himself and with time, mobilise other, less radical defences".

The more common usage of the concept of denial is that it forms part of a process that one quickly moves through on the way to managing one's grief or changed life experience. It allows little tolerance for the process of change or what the change process actually entails. Changes such as adjusting to seeing oneself differently, possibly seeing oneself as having an impairment or having a condition which one perhaps related to "old people or senility" - it is the process of seeing oneself differently, adjusting to a new sense of self. The common usage of the term suggests that denial is something people choose to do *instead* of taking

appropriate action and adapting to change. I do not concur with this definition of denial. Westbrook et.al. (1991:in prep) point out that the denial experience can result when the individual has no other options available to them.

Getty and Hetu's concept of reluctance forms an integral part of the change process in which denial is experienced. The concept of reluctance however, cannot simply be interchanged with the concept of denial. Denial is the concept that is used to describe one's grappling with the process of shock. Misperception occurs as workers are unable to make sense of their communication problems. Reluctance in acknowledging the problem evolves as a result of confusion surrounding the apparently inconsistent nature of communication difficulties. Reluctance needs to be understood as a process of giving oneself space to survey the psychological horizon, as it were, to identify the causes of and possible solutions to communication problems whilst maintaining oneself intact psychologically in the meantime. Reluctance is an adaptive strategy used by the hearing impaired person in the process of reducing the anxiety which is created by an internal conflict of self perception between the person one thought one is/was and the new, emerging, if not threatening identity and experience of life as a person with a hearing impairment. Horney (1959:313) points out that such inner conflict is the basis of anxiety. Hall (1954:85) when summarising Freud's work on defence mechanisms points out that a person may try to manage anxiety "by adopting realistic problem-solving methods or (they) may attempt to alleviate anxiety by using methods that deny, falsify or distort reality and that impede the development of personality".

Getty and Hetu's process of adjustment both identifies and attempts to fill the gap between the potentially anxious experience of realising one has a hearing impairment and the

resolution of such anxiety through problem-solving. It is logical then that their programme be called a problem-solving process since individuals need access to structured and supportive opportunities to investigate life choices which previously may have been the cause of some degree of psychological distress. Getty and Hetu's process of adjustment is intended to provide and maintain a supportive framework in which service users can initiate change with a minimised risk of anxiety about 'failure'.

Since workers who had NIHL are not likely to seek assistance for their hearing impairment (Hetu and Getty:1991), particular care needs to be taken to ensure that those who desire assistance do not drop out of the programme. The most likely cause of a person dropping out is the "fear of being discredited as a person" (Hetu et.al., 1990) due to their hearing loss. Hetu et.al. (1990) found this fear was very common among all workers who participated in their study.

To overcome this problem, "an invitation (to participate) must be made by a professional who is already known to and trusted by the workers (Getty and Hetu:1991:46). Getty and Hetu used occupational health nurses as link persons since they had some contact with the worker during the diagnostic process and had developed some rapport with the workers. This linking process begins about one month before the problem-solving programme itself was due to start. Initially the nurse telephoned the worker, visiting him/her in their home "explaining (to) them the aim of the program and inviting them to join" (1991:46). During the home visit, a handicap questionnaire was jointly filled in. As the starting date drew near, a brochure about the programme was sent to the potential participants, thereby maintaining the flow of contact. In the days immediately before the course began, a final telephone/reminder

call was made concerning the venue details. Getty and Hetu (1991) report that this process resulted in 89% of persons contacted attending the programme. Furthermore, Getty and Hetu argue that the home visit and the subsequent involvement of the worker's spouse is critical to the success of the overall programme.

B. Workshops based on a process of facilitated self help

The Montreal programme is based on a group process where the group leader facilitates a group problem-solving interaction centred on a series of objectives such as understanding technical devices, sharing common experiences of living with hearing loss and the development of specific communication skills:

"About 50% of the total meeting time is devoted to participants' expressions. For this reason, the program is not a course², but rather a group process" (Hetu and Getty:1991:47).

The problem solving process described by Getty & Hetu has three objectives:

- (a) to offer psychosocial support to help the affected workers and their spouses better deal with the effects of the hearing loss;
- (b) to allow the workers and their spouses to understand the nature and the consequences of the hearing problem;
- (c) to develop new skills that would help in coping with the effects of the hearing loss" (Getty & Hetu:1991:47).

In the programme these three objectives are addressed. Firstly participants are provided an opportunity to acknowledge and identify the difficulties caused by their hearing impairment. Participants are asked "what's the worst thing about having (or living with a person who has) a hearing loss"? Support is given to participants as they describe the difficulties they experience. Since not all workers or spouses can readily express the difficulties they experience, the group process provides a vehicle for the group leader to assist such

² Their emphasis

participants to compare and contrast their experiences with those of the more articulate group members. These themes of mutual support and problem identification are then continued throughout the rest of the programme as participants explore issues about the nature of hearing loss, its impact on their lives and options to manage the same.

The second objective of understanding the nature and consequences of a hearing problem is realised as participants and facilitator share their knowledge of hearing loss and some of its effects such as stress related problems and reduced pleasure from social occasions. Information is not presented in a lecturing style, rather, as new topics are introduced, the facilitator draws on the experience and knowledge of participants to draw out the issues and for problem identification. A party scene, for example, is presented, where participants are asked to suggest the types of difficulties a hearing impaired person might experience. Participants are then encouraged to identify particular difficulties they might have in such a situation. Participants are then encouraged to identify strategies as to how such difficulties might best be managed or overcome. If a participant gets stuck, other participants are encouraged to suggest ideas which might be of assistance.

The third objective of problem solving or skills development is then realised in quite practical ways. To reinforce the learning process, participants have opportunities to role play effective communication strategies.

C. Follow-up and acting as catalyst to the continuing process of empowerment.

During the recruitment process, the audiologist from the person's local hospital was invited to attend sessions to ensure that any desired follow-up treatment could be provided. The worker's occupational health nurse assisted with the pursuit of any compensation claims,

speech reading courses and relaxation courses were offered as was contact with the hospital social worker.

Three specific follow-up strategies were offered, each one month apart. The first consisted of a letter to participants which was intended to give participants a boost. The letter firstly recapitulated information covered during the programme such as hearing tactics, relaxation exercises and assistive listening devices. It concluded by asking the person if they had begun to use any of these means of assistance whilst offering more support if it was desired.

The second contact was from the occupational health nurse by telephone, reminding participants of the final meeting which was to be held in one month's time. During the call, participants were again reminded of what took place in the group and improvements or changes in condition were discussed. "The handicap questionnaire was then sent and the participants were asked to answer it before coming to the follow-up meeting" (Getty and Hetu:1991:50).

The final contact was a group meeting which served as a follow-up and evaluation. The follow-up provides participants with the opportunity to raise issues which have become a concern to them and to share changes in their lives with the group.

2.4 Critique of the process

The programme does not claim to be and is not an exhaustive coverage of issues pertaining to the rehabilitation of hearing impairment. The programme is designed on a public health

model concerned with facilitating change in an individual's behaviour and attitudes concerning their hearing loss. The principles of this approach are listed immediately below and are clearly evident in Hetu and Getty's programme design:

- "(1) being informed of the health problem, of its consequences and of its possible solutions;
- (2) being interested by the solutions offered;
- (3) feeling the need for the solutions to the problem
- (4) taking the decision to have recourse to the solutions
- (5) trying out the proposed solutions;
- (6) adopting the solutions" (1991).

Scott-Samuel (1989) argues that a programme in public health should be "participative; non-expert; subjective; and collective in its nature" (36). Citing the research work of Hall, Etherington and Jackson (1979), Scott-Samuel further argues that reducing the dependence of people on professionals, empowering individuals into collective action and linking health issues with the broader social struggle for justice are essential criteria for a public health programme.

The programme certainly addresses Scott-Samuels initial definition of a public health programme. The essence of the success of the process is that it is non-expert, being centred on the clients' experiences for both problem definition and resolution. The problem solving nature of the group process readily enables participants to reduce their dependence on professionals since they develop their own competencies in problem solving. Hawkins (1991) remarks that this type of action research process enables participants to develop their abilities to identify, recognise and analyse problems as well as developing the type of skills needed to initiate interventions to address the problems they have identified. The role of the facilitator at an individual level in the post-group phase is to enable the participant to pursue any

'solutions' he or she has identified as appropriate to their needs. A responsibility rests with the facilitator to ensure that participants are able to pursue the solutions which group members have identified whilst ensuring at the same time that they do not disempower group members by impairing the problem solving process. Hence the importance of the follow-up strategy in the process.

The question remains as to whether or not the programme achieves changes beyond that of individual behavioural change? Does it lead to collective action and the linking of health issues and the broader social struggle? Given Getty and Hetu's previous analysis that misperception and reluctance are dynamics that present as obstacles to both rehabilitation and prevention, it follows then that a change or a reduction in the effects of misperception and a greater willingness to acknowledge the effects of hearing loss in their lives following participation in the rehabilitation process, may dispose workers to become involved in prevention and social change activities.

The process for workers to become involved in change strategies has not been detailed in Getty and Hetu's writings. However, it follows that the facilitator would again be the catalyst to the process, bringing people together and initiating the problem-solving process focused on noise injury prevention. Ideally, group members themselves identify noise injury prevention as a goal which must be addressed during the first programme, thereby providing the facilitator with the opportunity to suggest that the group, or members within it, might wish to pursue further action and that the facilitator is available to assist with that process.

As the group develops in its strength and competency, the role of the facilitator gradually diminishes. It must be concluded then that at the end of the programme, the worker must

renegotiate his/her role with the group or individuals in keeping with the developmental process. The fact that Hetu and Getty do not make this extension of the worker's role more explicit is probably due to the fact that in a correct application of the programme, such an understanding of the process is implicit. An effective facilitator constantly renegotiates their role with their group. Getty and Hetu (1991:56-57) point out that pressure for change:

"...will not build up until a sufficient number of hearing impaired workers have received some help so as to be able to disclose their problems and openly struggle to improve their conditions".

The Community Development In Health Project (1988) argues that:

"...the control of information and communication is an expression of power. Professional groups generally seek to retain their power through controlling access to information and through their monopoly over certain techniques" (overview:12).

The process set in place by the Getty and Hetu model serves to move control out of the hands of professionals and into the hands of those who need the skills and information.

The reason why there is no specific conclusion to Hetu and Getty's programme can now be linked with their goal of wishing to establish a group process. By truly establishing a process wherein the group determines the agenda, one is actually enabling empowerment to occur, *provided that the community health worker involved is fully conversant with and committed to the developmental process*. To dictate outcomes would not be consistent with developmental principles. It will be necessary for the developmental worker to consult with workers as to whether or not they want to come together in larger groups in order to facilitate the type of social action suggested by Getty and Hetu.

Therefore, by making the connection between Getty and Hetu's programme with the community development in health approach clearer, it would appear to be a most appropriate

model for working with people with NIHL at a community level since their approach seeks to achieve "changes at a personal (and) social level" (McArdle: 1989:47) by enabling individuals to have access to and control over information about NIHL and its effects on one's life whilst enabling a process for social action to potentially develop. The outcomes for workers are also consistent with the Ottawa Charter for Health Promotion in that workers develop skills in listening and communication, supportive networks are developed and extensive opportunities for empowerment arise. McArdle (1989) argues that specific 'tools' used to achieve community development goals are information (give and take), raising awareness, networking, mobilising people and advocacy.

The mobilisation of individuals and groups can in turn lead to individuals encouraging each other to take steps to manage their hearing loss or to undertake advocacy to raise community awareness about the needs of hearing impaired people or other goals determined by the group such as gaining control over resources allocated for the delivery of services for hearing impaired people. This is self-help and it is empowerment:

"(T)he process whereby decisions are made by the people who have to wear the consequences of those decisions". (McArdle:1989:47)

The process as presented by Hetu and Getty addresses all three key questions which Liftman (1978) argues a programme of empowerment should address:

- i) what information do people need to have?
- ii) who needs the information?
- iii) how do these people get access to and control over this information?³

³ An examination of the process which Hetu and Getty followed to collect the information shows that they carefully consulted noise injured workers and their spouses about their experience of their disability and identified the type of information people require. They have also identified the group of people who need the information.

In summary then, the programme draws together hearing impaired people and their spouses, facilitates an empowerment process based on the attainment of information, support and skills development and initiates individual and social change based on an empowerment exchange process between the worker resourcing the process and the group and within the group itself. Outcomes of such an exchange process may include the development of a peer support programme whereby noise injured workers are trained in providing support to other hearing impaired people. Such a programme has been successfully developed by the Royal Blind Society of New South Wales (RBS) where visually impaired people are trained as peer support workers:

"The RBS recognised the distinct need of people with a visual disability to discuss issues with others with a visual disability" (Cohen:1990;3).

Alternately, the group process may act as a catalyst to social change whereby participants actually address the issues of prevention of injury in the workplace. Sayer (1986) argues that community development work should result in participants being able to question the status quo and challenge it if they so desire, for example, by utilising existing legislation to enforce work bans on noisy work processes.

McArdle (1989) argues that people are actually disempowered through a lack of choice. An obvious example here would be motivated participants who came to feel that no options were really open to them to do anything about noise in the workplace:

"whether lack of choice or isolation is behind an individual's disempowerment, community development must operate on two fronts. It must work towards personal growth and it must work towards social change" (1989:49).

It can be concluded that the process of intervention as presented by Getty and Hetu for the rehabilitation of workers with noise-induced hearing loss is consistent with the principles of

community development in health. With this in mind, the methodology a community worker may use to introduce such a programme and the difficulties that may be encountered, are discussed.

2.5 Principles and processes to be addressed by a community health project.

The first concern raised by Getty and Hetu was with the type of intervention a service provider would use to inform their work with a group of people who were either reluctant to address their hearing problems or were not aware that hearing loss affected their personal lives. Secondly, Hetu and Getty concerned themselves with placing NIHL in the context of the wider community and described it as part of a complex set of social relations. Central to both these concerns is the place of the medical model versus a developmental model in the provision of services for hearing impaired people. A traditional model of intervention was not deemed to be appropriate since such services do not acknowledge that workers may be unaware of the impact of hearing loss in their lives, (See Hogan, et.al.:1992:in prep). Nor do they overcome the dynamics of marginalisation and stigmatisation and offer service users the type of assistance they required.

The health problem arising from hearing loss has been defined as **reduced communication and listening skills** (Getty and Hetu:1991); functions which involve at least one other person. Intervention then, is concerned with increasing peoples' awareness of the impact of hearing loss on their lives whilst reducing the fear of marginalisation and stigmatisation by confidently engaging a person in a process of restoring listening and communication skills with significant others.

A model which sees the individual as the primary point of focus is thus insufficient since in the case of hearing loss, individual treatment does not restore hearing to its original state. Whilst Getty and Hetu do not attempt to place their programme in the context of the developmental literature, it is clearly steeped in such principles.

Principles of Community Development

Why would one use a community development in health process to address NIHL? Before answering such a question it is necessary to define what community development is:

"...(T)he word 'community' refers to a local or identifiable community of interest or a looser network; in particular, one which is disadvantaged by social inequalities and exclusion from the mainstream. Community development means the development of that community or network; internally, in terms of its coherence and consciousness of itself and externally, in terms of that group's power in relation to structures of the broader society." (Community Development in Health (CDIH), 1988:overview:10).

In Chapter 1, the numbers of workers who have sought assistance for NIHL was noted. Generally speaking, these people are not aware of each other and through legal and medical processes, have learnt about their deafness as individuals.

With regard to the above definition, workers with NIHL make-up an identifiable network - their commonality results from noise induced hearing loss in the workplace and they share in the inequalities which both predisposed them to and which arise from this disability. In Chapter 1 the processes of marginalisation and exclusion for workers with NIHL, from mainstream society were noted and discussed. McArdle (1989) points out that one of the

basic strategies of community work is integrating⁴ isolated people into networks. He points out that:

"...in the initial stages of community development it is often necessary to respond directly to individual needs, before tackling underlying social or life-style problems".

Directly responding to individual needs, particularly by taking extensive care to network the clients with others with similar needs and by offering a group-work process of intervention, provides the opportunity for people to obtain assistance and reduce isolation. Getty points out that:

"...if we start with the workers who are already deaf, its easier because they somewhere feel a need (or the people around them) to do something because they have difficulties...we know very clearly in public health that if there is no felt need a change of behaviour is very difficult to occur. So you see it's all a question of going step by step"⁵.

The Community Development in Health Project (1988:9) points out that a developmental project is "conducted in such a way that will also address the underlying issues of powerlessness and alienation." In the papers used to describe their interventions, Getty and Hetu argue that the programme is not a solution to people's problems, rather the worker acts as a catalyst to a "problem-solving process". This goal is consistent with developmental principles cited above since it does not attempt to prescribe the change process, only to ensure that the process does start. The process is in fact a catalyst for change and empowerment on two fronts; the programme users and the programme providers.

⁴ McArdle uses the phrase "to re-surround people".

⁵ Correspondence dated March 25th, 1991, Montreal, in response to my question of how did they perceive programme participants being empowered by their process.

It is not clients who are initially empowered by this process but the health workers. Grace (1991) pointed out that agencies, government departments and health promotions workers influence the developmental process. Critical to appropriate intervention was whether or not projects worked towards enabling communities to recognise their own needs or whether the organisation's perceptions of need were imposed on the community. The other flaw noted was that some community consultative processes simply assumed that everyone knows what they have been affected by and are just waiting for the opportunity to express the same.

The Getty and Hetu process enables these developmental workers to begin the developmental process with a highly fragmented group in the community on an issue which is not readily acknowledged either within or outside the group by providing a coherent framework for practise.

It is noted here that the actual experience of coping with a hearing impairment on a day-to-day basis may inhibit a person's effective participation in an action group process due to the demanding nature of communication in group settings. Hallberg and Carlsson (1991), in a recent study of coping strategies used by hearing impaired people noted that core communication strategies used by hearing impaired individuals in difficult listening situations were based on structuring the flow of communication or avoiding and minimising the need for communication. Careful consideration would need to be given to these factors by any worker facilitating such groups.

Should members of this target group become involved in problem solving, they may be empowered through the attainment of knowledge and skills. Israel et.al. (1989:139) point out

that this is a participatory, collaborative, co-learning approach which results in:

"systems development; that is, the action research process creates the competencies within a system (e.g. organisation) to engage in the cyclical process of diagnosing and analysing problems, and planning, implementing, and evaluating interventions aimed at meeting identified needs, such as reducing work stress".

The worker's role is to resource the group by enabling the process to occur, for people to form links with other group members and other resource people. In the longer term, developmental work involves resourcing networks so that they may become independent of the health worker whilst in the shorter term it involves the worker facilitating a process by which the people involved clarify their goals and/or options. It is at this point that extensive opportunities for empowerment can arise and social change occur. Up until this point, the developmental worker has been concerned with resourcing people so that they can participate. It is at this point that as action groups form, group members begin to empower themselves whilst drawing on the developmental worker who continues to resource the process. At this phase of the process the developmental worker needs to balance his/her accountability to their more broadly based reference group such as a management or supervisory committee with their emerging accountability to the group for actions taken or intended. As the group(s) begin to emerge and start to debate the issues and their implications, an empowerment exchange process occurs between the group, the worker and wider groups, where knowledge and information are the transforming resources.

Issues based community development in health

The major dilemma confronting the initiation of this project as a developmental project, was one of process. Since there are so many affected workers, spread right across Australia, it would be impossible to begin a problem-solving process and network them all without

resources. Given that the existing infra-structure did not view NIHL as a priority, there were virtually no financial resources available to begin any processes of change, especially at a local level. The third and possibly most significant problem arising was that of individual empowerment. Who empowers the developmental worker to act initially, particularly when taking up such a role entails venturing into territory dominated by professional groups? Who legitimates the worker to take action, especially at the seminal stage of project development, particularly when groups concerned with this constituency themselves are either unaware or unable to define or act in the interests of the group which is yet to be established?

The need for this project arose out of community consultations initiated by the writer (following discussions with key organisations in New South Wales such as the State Government, the New South Wales Deaf Society, the New South Wales Association of the Deaf and the Australian Deafness Council [New South Wales]) with deaf and hearing impaired people across New South Wales. The results of these consultations are documented in the report entitled Project Knock! Knock! (1989). Having developed a broad basis for action, it was then necessary to begin networking with individuals whilst maintaining input from the reference group noted above. This process is documented in the report entitled Industrial Deafness - issues concerning the rehabilitation of noise injured workers (1990).

This project demonstrated some aspects of the human experience of living with NIHL.

The difficulty in initiating the project was that rather than working locally and thinking globally, I was acting globally whilst trying to apply the work in specific localities. Trojan et.al. (1988:54) point out, that it is necessary to create "an infrastructure for strengthening health related action".

Building such an infra-structure is slow and tedious work, particularly when the ground-swell of support from affected workers was all but non-existent. Awareness raising and contacting people in the infra-structure, particularly in the initial stages of a project, may be systems based and needs to take place in several ways. Firstly bureaucrats in unions, employer groups and government need to become aware of the problem or have their perspective on the problem influenced. Self help groups concerned with part of the issue need to be informed. Thus awareness raising is preceded by the identification of members of the system. Identifying system members may also mean identifying the needs of group members. The needs of unions may differ from the needs of employer groups, government agendas may differ from those of self help groups, community health needs may differ from the needs of private health care providers. At times, the absence of needs-based data inhibited the very process of awareness raising.

Once within group awareness raising has begun, across group awareness raising, otherwise known as networking begins. Again, networking in its initial stages is systems based. Groups concerned with the workplace begin networking, groups concerned with the impact of the issue on the individual are networked and so on. The third phase following awareness raising and networking is the establishment of action groups made up of people representing a range of needs and interests, brought together by a commonality of interest.

The developmental worker's community in this context is not a geographic one, but issues based. For this project, an action group was formed in late 1991 which extended the pilot project's original advisory committee and consisted of representatives from various state and

federal departments, union and employer groups and a variety of consumer groups. The action group has formed a steering committee which will work towards developing a collaborative strategy for managing and reducing noise induced hearing loss in New South Wales.

However, the development of an infrastructure is only a part of an overall process, particularly for NIHL. The developmental worker, whilst developing the infrastructure at an intersectoral level, must, at the same time, begin networking at a local, industry-based or geographical level. At the end of the day, community development work is done at the grass-roots level with the individuals who are affected by the concern at hand. Thus, acting as a catalyst, the worker will mobilise existing link people such as community or occupational health nurses, who are already in contact with members of the target group. The community health worker will often need to precede such direct mobilising of link people by offering them training to develop their knowledge and skills of the issues involved. This may be undertaken in both formal and informal settings. The process involves the empowerment not just of a target group of service users but of service providers as well and is described in the Ottawa Charter as re-orienting health services. A discussion of strategies for the reorientation of existing health services can be found in Chapter 5.

A dilemma exists here. Without the ground swell of support from affected workers and spouses, it is extremely difficult to mobilise the infrastructure to recognise the issue, yet one cannot mobilise the workers to place pressure on the infrastructure without the resources to do so. In the initial stages of project development on an emerging issue, it would appear necessary to develop both groups at the same time.

Before concluding this chapter, Getty and Hetu's approach to the rehabilitation of workers with NIHL is briefly discussed in the light of other approaches to aural rehabilitation.

2.6 Aural Rehabilitation

Getty and Hetu's process of facilitating problem-solving for workers with NIHL and their spouses does not readily lend itself to comparison with other forms of aural rehabilitation since it is founded on different principles. However, summarising Getty and Hetu's process, three distinct phases were identified:

- a) a recruitment phase with specific emphasis being given to the dynamics of reluctance, marginalisation and stigmatisation;
- b) initiation of a problem-solving process wherein the service user is enabled to identify and understand problems caused by their hearing impairment and investigate solutions which they may consider relevant to their needs;
- c) follow-up/resourcing service users in further problem-solving.

During the problem solving process, participants are introduced to topics such as understanding the ear, stress management, hearing tactics, hearing aids and assistive listening devices.

The process is essentially an action research model wherein workers and professionals work on equal footing (see Mergler:1987:151-167) to identify and work through problems. As Mergler states:

"There is no a priori hypothesis; the hypothesis that provides the basis for (problem-solving⁶) arises from the worker/scientist interaction and exchanges".

Other approaches

Gaeth (1979) in a paper entitled A History of Aural Rehabilitation traces current models of aural rehabilitation to the second world war, where centres were established for soldiers with hearing loss from battle noise such as cannons and other explosions.

Soldiers were 'sent' for rehabilitation which consisted of learning to listen with and manage amplified sound, understanding hearing loss, and consideration of future problems. Throughout his paper Gaeth (1979:8) continually cites the emphasis programmes had on working with the whole person. For example:

" A man is more important than his ears. Specialists in hearing and speech proceed in the belief that they are under obligation to treat the total personality."

These client centred programmes focused on two key points:

"the development of new abilities and skills, new tools to achieve efficient and successful behaviour and adjustment" and

"the understanding and nullification of the adverse effects that are inevitable by-products of any serious interference with communicative habits".

Programmes were offered both on an individual basis and in groups. As military personnel, the participant's job was to be in the programme.

Kirby and Rogan (1981: 8-15) offered a four week training programme "designed to meet the communication needs of those individuals for whom the customary sequence of

⁶ The actual sentence read "...the basis for the ergonomic study". I have inserted the relevant study but not changed the essence of Mergler's thesis.

rehabilitative events - audiological assessment, hearing aid evaluation, hearing aid check - was not adequate". The programme was offered in groups and consisted of "communication strategies, auditory-visual integration, hearing aid orientation, understanding the capabilities of hearing aids, and helping family members and friends understand the implications of hearing aid impairment". The results of their evaluation of this programme suggested that such an approach was useful in rehabilitation of people who have a hearing loss.

Plant (1976:15-19) in a paper entitled Aural Rehabilitation Programmes for Deafened Adults remarks that the National Acoustic Laboratory has recognised "that the mere fitting of a hearing aid is not a satisfactory solution to the many problems confronting the adventitiously deaf". Plant argues that follow-up programmes in groups and for individuals which are concerned with hearing aid orientation, hearing tactics and speech-reading classes are necessary. He particularly notes the need of extra support for people with mild to moderate hearing losses. Plant points out that "the audiologist conducting the programme attempts to become a group leader rather than a lecturer". The programme aims to give people "a realistic attitude" to managing their difficulties. Plant notes the success of Scandinavian programmes which are offered along similar lines.

In another publication entitled Adult Aural Rehabilitation (1977), Plant provides an overview of Scandinavian aural rehabilitation programmes. In the introduction to this report, Plant points out that most people with an acquired mild to moderate hearing loss are not as highly motivated to seek assistance as are others with more severe hearing losses. Plant (1977:2) puts forward six areas of work relevant to aural rehabilitation:

- "i) auditory, visual and auditory visual testing.
- ii) hearing aid orientation programmes
- iii) specialised instruction programmes
- iv) long term and intensive instruction programmes
- v) the use of supplements to auditory and visual cues
- vi) accessories for the hearing impaired."

Summarising programmes offered in Denmark at the time, Plant reports that as well as hearing aid fitting, 'patients' "receive an adaptation course which explains the basic fundamentals of aid usage, explanation of the hearing loss and its effect on future communication and advises on the use of additional aids available to assist the hearing impaired person in his daily life." Plant further points out that in one Danish programme "over 80% of all patients are fitted with two hearing aids".

According to a report by Anderson (1991:51-57), Danish programmes continue much as Plant described them. In summary, clients are allocated "an hour for each test and fitting appointment" and are then 'slotted' directly into a group programme consisting of two hours one week followed by a one hour session the following week. Clients can then return any time should they require any further assistance. Those requiring further help may be offered two other courses of eight two hour small group sessions. The first course aims:

"(T)o give participants insight and knowledge of their handicap and acceptance of hearing loss"

and covers "basic anatomy, physiology and pathology of the ear, diagnosis, audiograms (including recruitment and tinnitus), hearing tactics, lip reading and relaxation techniques."

The second course aims:

"(T)o make the participants auditorily and visually aware" and covers "lipreading training and body language, auditory training (with emphasis on environmental sound recognition), natural signing and gestures, mimicry, acceptance of hearing disability and relaxation techniques".

Post-programme individual work is also available as are self help groups.

Pengilley (1975), founder of the Victorian Hear Service, pointed out that a Hearing Education Rehabilitative Programme should have three main aims:

- a) To alleviate anxiety in the individual who has the problem, and assist him to achieve better communication skills;
- b) To assist the individual's family and his human environment;
- c) To educate the public through a HEAR Promotion Programme.

Presently, the HEAR Service offers two courses, Coping Skills I and II. These courses are offered in small groups, essentially for older people who have a hearing loss. The programmes are offered over a series of weeks and consist of a range of communication tactics. The course can be taught or used interactively. At the time of writing, the HEAR Service had no mechanism for evaluating the success of this programme.

Della Valle (1988:48) defines aural rehabilitation as:

"Restoration of functions or the development of compensatory strategies aimed at coping adequately with communication in everyday living. With reference to Aural Rehabilitation, the definition relates to teaching or training the hearing impaired individual in his/her aural deficits and to obtain the assistance from other sources eg. assistive listening devices, hearing aids; other professionals in order to help this individual to return to his previous level of functioning."

Della Valle (1988:50) identifies sixteen potential steps in aural rehabilitation. These are:

"pre-fitting counselling, prescription of hearing aid, hearing aid orientation, counselling (group discussion), significant other in the programme, education, use of written materials as handouts, newer pragmatic techniques, hearing tactics, traditional methods (eg lip reading skills using speech materials), goal planning, individual or group training, assistive listening devices, hearing conservation and community services/referral".

Two specific points are noted here. Firstly, the centrality of hearing aid fitting and secondly, the centre of decision making revolves around the audiologist who evaluates the clients needs and prepares a tailor made programme for each client. Della Valle (1988:21 citing Lutman

et.al. 1987) considers that this style of client centred approach is essential given Lutman's findings which highlighted the need to relate programmes "to the individual and his own environment" (Della Valle:1988:21).

Contrasting approaches

There are distinct differences between Getty and Hetu's process and approaches adopted by other rehabilitators. Firstly, Getty and Hetu place considerable emphasis on enabling the client to participate and remain engaged in the problem-solving process. Secondly, that it is a problem-solving process that people engage in - not treatment as such. Consideration has already been given to the significance of the problem-solving approach and the significance of the reluctance phenomenon.

Getty and Hetu's approach to offering a service to hearing impaired people is quite distinct from the approach of other practitioners. The nearest approach to the Getty and Hetu model is that of Pengilley (1975) who identified anxiety as a key phenomenon in the process but who failed to address the impact that such anxiety could have upon a person seeking assistance. Furthermore, Getty and Hetu's methodology is concerned both with intervention for the individual and with deliberate social change to eliminate NIHL. The other approaches noted above are distinctly different in several key areas. Firstly, none of these approaches identifies or attempts to assist the client to manage anxiety or the reluctance phenomena. Secondly, the approaches are based on the medical model which is inappropriate to the client's problem solving needs particularly *at this point in the process*⁷.

⁷ If the client decides that they need or want medical intervention, such intervention would be offered by practitioners in a manner which supports the client as an active not a passive

The third point of variation is the locus of decision making. Getty and Hetu's process supports the client to develop their own health assessment and decision-making skills as is supported by the Ottawa Charter whereas the medical model relies on the professional to assess health and prescribe treatment. The fourth significant difference is that in the other models described, emphasis is given to hearing aid fitting as central to the rehabilitation process. In these approaches, hearing aid fitting is seen as the primary and focal point of rehabilitation.

The Getty and Hetu process does not undermine the benefit of hearing aids as a choice a client may utilise in the rehabilitation process, rather, they simply do not assume that hearing aids are the corner stone to successful rehabilitation.

In comparing the differing approaches, it is concluded that the Getty and Hetu process is holistic in its approach to rehabilitation since it is concerned with the whole life experience of the client, including the need for assistive devices where appropriate. Secondly, the process provides a mechanism of getting the services to the client. Whilst some of the approaches noted above include aspects of holistic rehabilitation models, Getty and Hetu have developed a process for the provision of such services on a broad level. As well, the other models presented offer 'broader' interventions as a sequel or as an extra to the hearing aid fitting. The Getty and Hetu process primarily focuses on the empowerment of the client by facilitating opportunities for the client to come to understand and gain control over decision making associated with their own hearing health.

participant in the decision-making process. In such a process, the clients right to be informed about choices and consequences in interventions is upheld.

2.7 Conclusion

This project is concerned with the feasibility of a community health worker offering a programme of rehabilitation for workers with NIHL, as developed by Getty and Hetu. The processes and strategies adopted for this evaluation are discussed in Chapter 3. However, before proceeding to the methodological chapter, the focus of this feasibility study requires clarification. The Macquarie Dictionary (1985:152) defines the word feasible as "capable of being done, effected or accomplished". Thus the question at issue is as follows:

"what aspect(s) of Getty and Hetu's model of rehabilitation for workers with NIHL are capable of being done, reproduced or effected by a community health worker in Australia?"

There are a number of aspects of the model which could be investigated. Firstly, is it feasible that a community health worker would find the model professionally acceptable and coherent? This question has been resolved above. Secondly, given that a community health worker finds the model coherent, is it possible to reproduce the programme as described by Getty and Hetu and achieve the same or similar results? If such a project proved feasible, the broader uses of the model would warrant investigation.

The question central to this study then is:

"Is it feasible for a community health worker in Australia to reproduce Getty and Hetu's process of rehabilitation for workers with NIHL and to achieve the same or similar results"?

The remainder of this study addresses this question.

Chapter 3

Methodology

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3.1 Introduction

It was concluded in Chapter 2 that the following question was the central concern of this study:

"To what extent is it feasible for a community health worker in Australia to reproduce Getty and Hetu's process of rehabilitation for workers with NIHL and to achieve the same or similar results"?

The process for rehabilitation as developed by Getty and Hetu (1991) aims to reduce the effects of hearing impairment experienced by workers through the enhancement of their hearing and listening skills. The programme outcomes are achieved through the systematic implementation of three distinct strategies.

These strategies are:

- i) a recruitment strategy concerned with overcoming the initial barrier of reluctance;
- ii) provision of a group based problem-solving process;
- iii) provision of support for individual problem-solving beyond the group process, specifically referred to as follow-up.

The successful implementation of these strategies should result in participants:

- a) being less reluctant to acknowledge their hearing loss, demonstrated through an increased awareness of the effects of hearing loss on their lives and
- b) having greater confidence in their capacity to manage their hearing loss on a day-to-day basis, demonstrated by participants initiating a problem-solving process concerned with reducing the effects of their hearing loss.

Evaluation of Getty and Hetu's rehabilitation process should assess participants' achievements in these areas. The procedures followed in this evaluation are discussed below.

3.2 Methodology for the feasibility study

Programme Evaluation

The first step in programme evaluation is an assessment of need for the programme and its *evaluability* (Hawe et al:1990:205).

The need to identify appropriate programmes for the rehabilitation of workers with NIHL as reported by Waugh (1991) and MacDougall (1988) was ratified by the advisory committee to the aforementioned pilot project on November 4th, 1990 at Worksafe Australia, Sydney. Having identified that Australian workers with NIHL did not have access to rehabilitation and that an overseas programme had achieved success in this area, the committee (which represented unions, employers, government officials, service providers and consumer groups) requested that the rehabilitation programme be investigated.

Given that the need for the project was established, an evaluability assessment was completed to ensure that:

- i) the programme was ready, available and adapted for local use;
- ii) the users of this information and their needs were identified;
- iii) the evaluation would provide the type of information required by decision-makers (see Hawe et al:1990:205);

Preparatory work was required to fulfil the first criterion as the programme was written in French. Since limited resources were available for translations, it was not feasible to have the entire book translated and formatted for use by English speakers. Translations of core segments identified from Getty and Hetu's papers and preliminary reading of the French text were undertaken by Tony Gwyne of the University of Wollongong. These translations formed the basis of a document for use in Australia. A copy of the adapted

programme is presented in Appendix I. The hearing handicap questionnaire entitled Hearing and Listening Skills was used by the Canadian feasibility study. A French version of the questionnaire was obtained from Montreal and translated into English by Monique Richer of Cumberland College of Health Sciences and myself. The English version of the programme and the questionnaire were subsequently sent to Canada for confirmation.

When examining the second criterion, it was evident that the information needs of the advisory group were not homogeneous. Whilst some members of the group were interested in the project from a purely academic perspective, other parties such as those concerned with the delivery of rehabilitation services and union representatives, were concerned to see the study produce practical results. Questions such as what would rehabilitation for NIHL entail given existing legislation and would the programme work within existing structures were raised by advisory group members. Members wanted to know how the service would be paid for and who would deliver the service? This research programme was, therefore, an applied research project and was approached as such.

Framework for the evaluation

Using the frameworks provided in Evaluating Health Promotion by Hawe, Degeling and Hall (1990) and Performance Indicators for Community Organisations by Toni Mayo (1990), three aspects of programme evaluation were identified:

- a) process
- b) impact and
- c) outcome.

Hawe et al define (1990:211) **process evaluation** as being concerned with measuring the use and applicability of programme materials and assuring the overall quality of the programme. Integral to the evaluation process is an assessment of participants' satisfaction with the programme. "**Impact evaluation** is concerned with the immediate effects of the programme, that is its effect on those factors which contribute to or cause the health problem in question" (Hawe et al:1990:209). **Outcome evaluation** "answers the question of whether a programme has achieved its goal; whether it has been able to reduce the health need or alleviate the problem isolated at the needs assessment stage, and at what cost" (Hawe et al:1990:210).

a) Indicators for the process evaluation were:

- i) the organisers' perceptions of the appropriateness of materials to the need of group members in terms of the relevancy of content, language level, quantity of work per session and the level of participants' involvement in discussions;
- ii) whether or not the programme exercises are appropriate for group members of culturally diverse backgrounds;
- iii) the structure of the programme;
- iv) user satisfaction measured by informal feedback sessions at the end of the each workshop and, at the final session of the group work programme, measurement of user satisfaction using the process as prescribed by Getty and Hetu (1991) which offers a qualitative form of evaluation.

b) Impact Evaluation

Hetu and Getty's programme aims to enable participants to initiate a problem-solving process with a view to improving their listening and communication skills. The impact evaluation is concerned with "the assessment of immediate effects of [a] programme and usually corresponds with the measurement of the programme objective" (Hawe et

al:1990:102). Therefore, in order to achieve the goal of the programme, participants needed to initiate some form of problem-solving activity. The programme provides a variety of indicators which can demonstrate whether or not the participants have initiated a problem solving process, thereby indicating whether or not the programme has had an impact on the participants. These are:

- i) rate of programme participation by those targeted during recruitment process;
- ii) workers obtaining an audiological assessment, hearing aid or related behaviour;
- iii) participation in additional speech reading or relaxation classes;
- iv) participation in a self help group;
- v) application for a telephone with volume control switch, fitted or portable coupler;
- vi) obtaining other assistive listening devices for the door-bell, television, radio or car;
- vii) utilising assistive listening devices offered at cinemas or churches;
- viii) seeking compensation or additional compensation;
- ix) use of hearing tactics.

Investigation of an option is considered as a programme impact on the participant since the overall goal of the project is to initiate a problem-solving process wherein participants take steps to improve their hearing and listening skills.

Assessment of behavioural change is also made by using the follow-up strategies outlined by Hetu and Getty.

Two months after the end session, (the link person) contacted the participants on the telephone, reminding them of what had been discussed in the group and asking about the steps taken to improve their condition. This telephone reminder also served to announce the follow-up meeting to be held a month later." (1991:8).

c) Outcome evaluation.

Hawe et al (1990:102) note that an outcome evaluation is primarily "concerned with the subsequent or longer term effects of the programme and this usually corresponds to the programme goal". The goal of this programme is to enable participants to improve their communication and listening skills through the initiation of a problem-solving process.

Following an analysis of the data collected for the impact evaluation, data is collected to evaluate whether or not the goal of the overall programme has been achieved. The outcome indicators for this study were:

i) Workers' Pre and Post-test

The handicap questionnaire as developed by Hetu and Getty was completed by participants four to six weeks before the programme, and three months after the programme to measure the longer-term effects of the programme. The results of pre and post questionnaires would then be compared with Hetu and Getty's where significant differences were found with regard to perception of the severity of the problem, the sound of the television satisfaction, the extent to which hearing loss changed leisure activities and the feeling of being set apart in groups (See Getty and Hetu:1991).

ii) Spouses' post-programme questionnaire

An additional measure developed for this study was a survey for participants' spouses. The purpose of this pen and paper questionnaire was to establish spouses' perceptions of the process and to more systematically document any changes which might have occurred in their relationship with partner since attending the programme.

It was noted above that Hawe et al (1990:210) include an evaluation of the cost of a programme within the outcome evaluation. Since the first segment of this study concerns itself with whether or not it is feasible to achieve the same or similar results to the Canadian programme in New South Wales, the cost of the programme (that is the efficient use of resources) is not the first concern of the evaluator. If the programme were already in operation the efficient use of resources would be an appropriate consideration

within the outcome evaluation. In this context, cost is considered within the question of whether or not it is feasible to more broadly apply the process within existing or modified service structures in New South Wales.

3.3 Specific methodological considerations

Before completing an evaluation of a programme such as Getty and Hetu's process of rehabilitation, it is necessary to clarify the methodological nature of the study and to examine the ramifications of the methodology.

The study is concerned to establish whether or not the combination of procedures and measures set down by Getty and Hetu can be used in an Australian setting to achieve the same or similar results. If such results are achieved it is necessary to ensure that they occurred as a result of the correct application of the combination of procedures laid down and not some other uncontrolled factor. This concern is usually referred to as the study's internal validity (see Issac and Michael:1987:52; Anastasi:1976:28 and Wiersma:1975:100-101).

Validity and reliability

The concept of reliability is used in this study to refer to the consistency of performance by the independent variable (the combination of strategies previously noted) in a new setting (see Anastasi (1976:28). Consistency in the application of these strategies is documented in the process evaluation. Internal validity is also reflected in the consistent application of prescribed recruitment and programme procedures. To this end, a process evaluation was undertaken, since, as Hawe et al (1990:84) point out, a "process

evaluation provides a clear documentation of what it is that works". Validity is also affected by test instruments used in a study (Anastasi 1976:28). Validity is enhanced or limited by the "degree to which a test actually measures what it purports to measure". To this end, a review of the questionnaire used to measure programme impact (Questionnaire on use of technical aids - as listed in Appendix I) for content validity was completed. Graham Weir (1987:57-75), former co-ordinator of Deafness Resources Australia, a major distributor of assistive devices for hearing impaired people, lists six types of technical aids available to people with hearing loss. These six groups are contrasted with Getty and Hetu's questionnaire in Table V below:

Table V - Content analysis of Getty and Hetu's (1991) impact questionnaire

<u>Weir's list</u>	<u>Cited in questionnaire</u>
Hearing aids	Yes
Telephone aids	Yes
Television/listening aids	Yes
Group listening aids	Yes
Church/meeting hall aids	Yes
Visual alert systems	Yes

The appropriateness of the content of the pre and post programme questionnaire was established by Hetu et al (1987) and Lalande (1988).

In addition to the questionnaires provided in the programme, a third questionnaire was developed during the course of this study. This questionnaire was developed to more systematically document an activity from the programme's follow-up which was designed to note whether or not spouses corroborated the behavioural changes indicated by their partners. The questionnaire, which also served as a more objective form of programme evaluation, consisted of nine fixed-alternative items and one open-ended question. The

fixed-alternative questionnaire design has the advantage of "increasing consistency of measurement and hence reliability (Wiersma 1975:185). The content of the questionnaire (which can also be found in Appendix I) was taken directly from the tabulation of handicaps experienced by spouses as documented by Hetu and Getty (1991).

Administration of questionnaires

Consistency in the administration of measurement tools is essential to the reliability of results. All pre-programme questionnaires were administered during the course of the initial interview either by myself or the audiologist assisting with the programme who had been trained to do so. The nature of his training is described in Chapter 4. The questionnaires administered by the audiologist were only administered to those clients whom he recruited directly via the Hearing Rehabilitation, Resource and Research Centre. All impact questionnaires were administered by myself. All post-programme questionnaires were completed by participants immediately prior to the commencement of the follow-up group and were again administered in the same room by the audiologist and myself. The questionnaire for spouses was administered by myself.

The methodological limitations of self report tests are noted here (see Anastasi:1976:493-526 and Wiersma:1975:184). However, as noted in earlier chapters, objective tests of hearing loss do not document the degree of handicap experienced by an individual (See Noble:1991b). Thus the methodological limitations of self report tests must be balanced against the clinical benefits of more accurately identifying participants' perceived rehabilitative concerns. As Hetu (1992: pers.com.) points out, the use of the questionnaires follows a powerful, interactive process wherein the participant and a

significant other, usually the spouse, are initially engaged in the problem solving process by the trusted person. The concept of test/retest reliability in this context focuses on consistency of process outcome. That is, through the proper administration of the process using the questionnaire, the worker and his/her spouse become less reluctant to acknowledge hearing difficulties as demonstrated in their preparedness to be involved in the rest of the process.

Since the change process centres on the interaction between couples and trusted individuals, the precise outcomes of each process may differ. However, changes will occur in the capacity of workers to acknowledge their hearing difficulties and the pre/post test questionnaires and the technological questionnaires are used to document such outcomes.

The implementation of the recruitment procedure is documented in Chapter 4 as is the implementation of the programme and its subsequent process evaluation. Participants' comments during the process evaluation were documented on butcher's paper by the programme leaders during each activity and are reported in Chapter 4. The procedure of recording comments as they were made by participants, limited to the best extent possible, the effects of observer bias. Due to limited resources it was not feasible to recruit, train and provide an independent observer to record group interactions.

External validity depends on whether the findings can be generalised to similar circumstances and subjects. This is usually achieved by carefully determined sampling procedures designed to ensure representativeness of participants.

"Control involve(s) ruling out threats to valid inference" such as a non-representative sample (Cook and Campbell (1979:8). Cook and Campbell also note (1979:342-343) that the random assignment of participants to treatment groups is "germane to the research goal of assessing whether the treatment may have *caused* any observed effects". The selection of participants for this study could not be controlled since the recruitment procedures laid down by the programme specified offering the programme to individuals via a third party. Secondly, the randomised assignment of recruited participants to treatment and non-treatment groups was not undertaken since the number of participants required for such an undertaking could not be managed given the human and financial resources available for this project. However, even if such resources had been available, it is arguably unethical to recruit participants affected by hearing loss for a programme of research and to deny them the potential benefits of an intervention which has been demonstrated to be successful elsewhere in the world. Such an approach would be particularly unethical in this study because the recruitment process itself is designed to assist the individual to overcome their reluctance to acknowledge their hearing loss and prepares the person to be open to the change process. To initiate such a process and then curtail it is simply an unacceptable practice in human services.

The capacity to generalise the findings of this study to the general population of workers with NIHL is therefore limited since an element of self-selection arises in the selection process. Cook and Campbell (1979:106) point out that "when self-selection occurs, treatments are more likely to become available to the specially meritorious or to persons with keen desires to 'improve themselves'. Since the 'meritorious' or the 'keen' will usually be intrinsically more able or more exposed to opportunities for change, the

'meritorious' or 'keen' will change faster over time". Notwithstanding the selection factor, this study can be used to consider the applicability of the Getty and Hetu process in the Australian environment.

3.4 Recruitment of subjects

The strategy for recruiting participants relies on a person in a trusted position, suggesting to individuals with a hearing impairment that they participate in this process.

The Canadian feasibility study was undertaken with the assistance of funds provided by the *Institut de recherche en sante et security du travail du Quebec* and involved the co-operation of staff at six community health centres. These staff had been involved in performing mass audiometry in heavy industry and had explained "the test results to the workers both individually and in group meetings" (1991:46). The Canadians remark that since "mass identification audiometry had been pursued primarily in heavy industry, only male workers could be contacted" (1991:46).

Since this project did not have access to such financial and human resources, the recruitment process was limited to those individuals in trusted positions who would agree to participate in the study. This study was further limited since audiometrists and audiologists employed by the New South Wales Government did not regularly perform mass audiometry, so this infrastructure could not be utilised.

The sample selected for this study then was to be males who had sustained NIHL who could be contacted by a link person.

Strategies used to recruit participants through a trusted person in this study were:

- i) an invitation being sent out to all current NIHL compensation claimants who were members of the Metal and Engineers Union (formerly the Amalgamated Metal Workers Union) accompanied by an information letter from the union's compensation officer which informed the individuals that the Union supported the project in principle.
- ii) recruitment via occupational health nurses.
- iii) invitations being extended to members of the Institute of Marine & Power Engineers who were participating in a study to establish levels of hearing loss within their Union at the Hearing Rehabilitation Centre, Cumberland College, University of Sydney.
- iv) invitations being printed in the Veteran's Quality of Life Programme's (VQLP) newsletter. The VQLP had developed a recruiting process for veterans and spouses within the Rockdale/Kogarah area in southern Sydney. In keeping with this recruitment process an invitation to participants of VQLP was offered following VQLPs usual recruitment process.
- v) clients identified as having a NIHL at the Cumberland Hearing, Rehabilitation, Resource and Research Centre were invited to participate in the programme.

As a control for the process of overcoming reluctance, a notice advertising the programme was twice placed in SHHH News, the newsletter of Self Help for Hard of Hearing (Australia) at the same time. The SHHH group did not have a recruitment programme in place.

Co-operation from trusted persons

People in positions of trust such as the compensation officer of Metal and Engineers Union (MEWU), the industrial officer of the Institute of Marine and Power Engineers (IMPE) and two occupational health nurses agreed to be utilised to extend invitations to

programme participants. The unions agreed to send out information but not to recruit people directly to participate in the programme.

Following the MEWU policy, I wrote to the compensation officer offering the programme to any members currently seeking a compensation claim for NIHL. Approximately 150 copies of the letter were sent out by the compensation officer.

Twenty-three members of the IMPE who were identified as having a NIHL from a group of sixty-two referrals were contacted by mail by their industrial officer to suggest that they participate in the programme. I was then allowed to access their telephone numbers to call them directly. However, since members were often at sea, the number of people who could actually be contacted was limited.

Two occupational health nurses, one a private consultant and the other, a nurse fully employed by a company also referred clients to the project. This strategy most closely reflects the Getty and Hetu model of recruitment where the person performing audiometry suggests the programme to each employee with a NIHL. The recruitment process as outlined by Getty and Hetu was followed for anyone who responded to the invitation to participate sent out by union officials or occupational health nurses:

- a) an initial contact by telephone is made with the person one month before the programme commences;
- b) a visit to the worker and his/spouse, either at their place of work or a home visit (see below) and completion of the handicap questionnaire four to six weeks prior to commencement;
- c) posting a brochure about the programme to participants over a week prior to commencement;
- d) a final telephone/reminder call several days just prior to programme commencement.

Individuals who did not wish to be interviewed in their home were interviewed at Cumberland College or at their place of work. Participants from the Veterans Quality of Life Programme were used to completing questionnaires at the commencement of programmes. Thus, telephone contact was made with Veterans to confirm their availability, the venue and meeting time.

When this study was initiated, the New South Wales Government's WorkCover Authority had not approved rehabilitation for workers with NIHL as a service under the rehabilitation section of the Workers Compensation Act (1987). Central to this inquiry as determined by the advisory committee was to establish the feasibility of providing the rehabilitation programme within the existing legislative framework. Discussions were held with the then Director, Rehabilitation Services, WorkCover Authority, Mr Peter Tuziak as to whether or not the model under evaluation could readily be used within the existing legislative framework. The Authority advised (pers. com.) that:

- a) the legislation provided for rehabilitation of individuals injured during the course of their work;
- b) programmes of rehabilitation be work-based and
- c) designed specifically for the individual.

The Authority advised that the 'systematic' use of the home visit was especially inconsistent with the intention of the legislation since the focus of rehabilitation was to be the individual within their place of employment.

To this end, four workers who were referred via a workplace were interviewed in their workplace and invited to attend the programme. Their spouses were also invited to attend. A home visit was not initiated. Whilst three of these workers had spouses, it is noted that none of the spouses attended the workplace interview or the programme, suggesting that the recruitment process as originally specified serves to address reluctance experienced by either partner.

3.5 Follow-up

The programme laid down a process for following-up participants. One month after the programme a letter of encouragement was sent to participants. The letter also served as a reminder of the follow-up meeting and listed the necessary details. Two months after the meeting each participant was telephoned and a questionnaire on the use of technical devices was completed. The follow-up telephone call was designed to provide continuing contact with the individual to assist them in the completion of their personal contract.

Letters were not sent to participants in the last group (who were the workers recruited directly from their workplaces) because the nature of the participants' personal contracts required that I was in regular contact with them, assisting them with legal and other difficulties. Given the degree of on-going personal contact, the letter seemed inappropriate.

The follow-up procedure is particularly important in ensuring that any short-term behavioural change demonstrated by participants is maintained. Issac and Michaels (1987:94) observed that a longer term research design is necessary when studying programmes concerned with behavioural and attitudinal change.

3.6 The feasibility of offering the programme on a broader basis within New South Wales.

In order for change to occur at a systems or state level, the necessary legal and administrative frameworks need to be in place (Blum:1981).

To assess the overall feasibility of offering rehabilitation programmes in New South Wales, an assessment and evaluation of the existing infrastructure was indicated. A discussion of the existing infrastructure was given in Chapter 1. Based upon this discussion, an assessment of the feasibility of offering rehabilitation services for NIHL within such structures was required. To this end, an analysis of income and expenditure related to the delivery of these services was completed and is listed in chapter 4. In Chapter 5, a proposal for the reorientation of health services is presented along with suggested procedures for the systematic delivery of rehabilitation services for workers with NIHL.

3.7 Programme Implementation.

Who participated in the study?

A total of thirty-three male workers participated in the study. The study comprised one group for a pilot study and eight other groups. The size of the groups consisted of four to five individuals with NIHL. Twenty-four of the workers who participated in the study were accompanied by their spouses. An additional male worker with a high-frequency hearing loss also attended the programme with his spouse. However, since his hearing loss was not caused by noise, his before and after questionnaire response was not included in the evaluation process.

The groups in this study were smaller than the groups in the Canadian study which consisted of six to eight couples. The size of the group was determined by several factors. The first group to be run was the pilot group. This group was run in conjunction with Getty, Hetu and Noble during their Worksafe lecture tour in 1990. Participants for this group were selected from members of the pilot study who were available on the day we wished to run the programme. Four couples were available. The group process with eight people worked very well, allowing participants the opportunity to have their say. As the number of groups increased, it also proved more practical to have smaller groups since the range of tasks to be completed by one person in recruiting, running the programme and providing follow-up support to individuals was quite time consuming. Larger groups would have been unmanageable for one person to effectively service. An exception was made with one of the Veterans' groups where their usual practice was to have larger groups. In this group we continually ran out of time, thereby limiting the opportunity for people to express themselves or to discuss issues concerning them. Due to the nature of the advertisement printed in the programme's newsletter, three women with acquired hearing loss also wished to attend the programme and were allowed to do so. Several spouses also had a hearing loss. Pre and post tests of the female participants are not reported as the nature of their hearing loss was not noise induced.

Five participants were born in non-English speaking countries whilst three others were born overseas in English speaking countries.

All participants had high frequency, hearing losses which they attributed to their exposure to workplace noise. Audiograms for participants were entered into the data base entitled

Audiomatiks. The average bin-aural loss of hearing of participants in this study was greater than 30 db at 2k (s.d. 23.24), 3k (s.d. 18.49), 4k (s.d. 19.16), 6k (s.d. 23.57) and 8k (s.d. 26.01). Four participants had mixed hearing losses. That is, some degree of their hearing loss was caused by factors other than noise.

Recruitment of participants

As initially planned, the recruitment strategy as outlined by Getty and Hetu was to be followed closely. However, it soon became apparent that the implementation of the principle of the recruitment strategy would vary depending upon the source of referrals, their preparedness to be involved in the programme and other preferred processes the referring person had in place. To this end, the principle of the recruitment strategy (that a trusted person suggest the programme to participants and spouses) emerged as the critical factor in the recruitment process, rather than the exact procedure itself. Similarly, the programme was to be offered to workers and their spouses. However, it soon became apparent that workers without partners or whose partners did not wish to participate, wanted to be included in the programme. Since Getty and Hetu (1991) had indicated that workers without partners could successfully participate in the process, I saw no impediment to accepting them into the programme.

The co-operation of trusted persons in this study was less than perfect when compared to the Canadian study. This matter is discussed in more detail in the final chapter of this thesis.

Groups were organised and conducted over a period of eighteen months. As individuals responded to invitations to participate, home visits (or client preferred venue) were arranged and the recruitment process was implemented. The home visit involved an average of three hours' work, including travel time. As soon as enough participants were available for a group to be established, a programme was run. Programmes were run at the Hearing Rehabilitation Resource and Research Centre, Lidcombe and at the Riverwood Legion Club. For each group, programme preparation entailed three hours travel time for borrowing necessary assistive listening devices, half an hour in letter preparation and mail out as well as an additional hour's work in preparing the room, handouts and refreshments. Including the follow-up meeting, each programme ran for approximately fourteen hours each. Groups were offered at times convenient to participants and included evening, weekend and week-day sessions. Follow-up contacts were initiated by telephone and were usually undertaken at night. Each call lasted approximately thirty minutes and involved the completion of the survey on technical devices, discussion on the progress of personal contracts and the making of arrangements to assist with the completion of contracts as required. A full description of the implementation of the programme can be found in Chapter 4.

The times for the follow-up meetings were determined by each group. During the three months between particular programmes and the follow-up meeting, specific individuals travelled overseas or had other commitments which prevented groups from meeting exactly three months later.

Ethics approval

Whilst the programme was being developed, ethics approval was obtained from the University of Wollongong and from the University of Sydney, on whose property the programme was undertaken. The University of Wollongong ethics approval number was HE 91/17 and the University of Sydney's ethics approval number was 91/3/7.

The results of this study are presented in the following chapter.

Table VI Overview of groups

<u>Group No</u>	<u>No of people</u>	<u>No. of workers</u>	<u>No of Spouses</u>
Pilot	8	4	4
1	7	4	3
2	8	4	4
3	7	4	3
4	7	4	3
5	6	4	2
6/7 ¹	13 ²	7	6
8	3 ³	3	Nil
<u>Totals</u>	<u>59</u>	<u>34</u>	<u>25</u>

Groups six and seven consisted of participants who were recruited from the Veteran's Quality of life Programme. As previously noted, six women with acquired hearing loss, also wished to participate in the programme. Four of these women were spouses of workers with NIHL. It is noted that they successfully participated in the process although their results are not reported in this study.

² These groups also had an additional three women with acquired hearing loss.

³ An additional worker, a union organiser was to be involved in this group but had to withdraw at the last minute due to an industrial dispute. Since he elected to participate in a later group, he was not included in the recruitment statistics.

Table VII Timetable of activities

<u>Group No.</u>	<u>Recruitment</u>	<u>Programme</u>	<u>Follow-up</u>
Pilot	August 1990	November 1990	March 1991
1	April 1991	May 1991	August 1991
2	April/May 1990	June 1991	October 1991
3	June 1991	July 1991	October 1991
4	June 1991	July 1991	November 1991
5	July 1991	August 1991	December 1991
6	July 1991	August 1991	November 1991
7	July 1991	September 1991	December 1991
8	September 1991	October 1991	February 1992

Chapter 4

Description of Application and Evaluation of Getty and Hetu’s Process of Rehabilitation.

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4.1 Preamble

In this chapter, the application of the Getty and Hetu process of rehabilitation for workers with NIHL is described and evaluated. In Chapter 3 it was reported that thirty-four (34) male workers and twenty-five (25) spouses participated in the study, totalling fifty-nine participants in all. The project was initiated in August 1990 and concluded in February 1992. The description and evaluation of the project is structured sequentially, following the directions detailed in the programme handbook (as listed in the appendix). The average time involved in each activity is noted at the beginning of each description to assist the reader to more readily follow the assessment of the feasibility of the programme. The process followed for each exercise is also discussed.

For the sake of clarity, brevity and continuity, a discussion of issues arising in each section of the programme is given as the activity is presented. The impact and outcome evaluations follow the process evaluation.

At the completion of the evaluation, a discussion of the feasibility of utilising this process in New South Wales is presented.

4.2 Process evaluation

Hawe et. al. (1990:59-85) note that a process evaluation assesses the degree to which a programme has been implemented, the quality of programme materials used, the competency of the staff involved in running the programme and participant satisfaction. As noted in Chapter 3, it is the process evaluation which "provides a clear documentation of what it is that works" (Hawe et. al.:1990:84).

The Recruiting Phase

Contacting people to involve them in services is a familiar process to workers involved in community development. Twelvetrees in his seminal work on community development discusses contacting as a community worker's "bread and butter":

"The key to good practice is contact making...to get anything done you need to build an alliance with other people. You need their support and active help"(1982:22).

Contacting in this chapter will be discussed in terms of contacting individuals with NIHL and developing networks of trusted contact people.

Twelvetrees' emphasis on contacting goes right to the heart of the rehabilitation model presented by Getty and Hetu. Indeed, as it was noted in the discussion on models of aural rehabilitation, it is Getty and Hetu's concern with contacting and process that sets it apart from other models of hearing health intervention.

The first group to be contacted in this project were members of the metal workers union via their compensation officer. Liaison with the compensation officer was over a period of six months before the invitation letter to members actually went out. Before clients could be contacted via a person of trust, I had to establish my credibility with the trusted person. Information sharing¹ or interpersonal resourcing is often a part of initial contacting and trust building work. Twelvetrees refers to this type of trust building as rule number five:

"In order to get you must give...you have to show that you are interested in them...(O)nly when I could help him (the other person visited) was he prepared to help me" (1982:26-27).

¹ Information sharing is one of the tools of community development cited by McArdle 1989.

I found this to be true. Before my letters of invitation were sent out I had to spend time with various union officials discussing my project, its aims and outcomes, the benefits and potential risks to their membership. Time was spent talking with one of the union's divisional chapters about noise in the workplace, the compensation officer was visited twice and telephoned a number of times. Time was also spent with the union's safety officer. Since the safety officer was not aware of the Noise Management at Work resources, I was able to arrange that he receive a copy of this resource from Worksafe's Information and Prevention Unit. As a result of these initial contacts and liaison work, access to the union became easier as the project progressed. When the union officials were satisfied that my project was in the interest of their membership, I was allowed to address the Union's state council and seek their endorsement for the project. Once this endorsement was given, letters were sent out to members with NIHL and initial contacts were made.

Home visits

Time: Two to four hours per visit

Process: Telephone contact followed by travelling to person's home for interview and completion of questionnaire.

Participants lived in various parts of Sydney, one in the eastern suburbs, one in the south and the remainder in central and outer western suburbs. A home visit entailed up to four hours' work with at least two hours spent travelling to and from visits. Whilst some interviews were conducted during business hours, most home visits occurred at night or on the weekend. Each visit was preceded by a telephone call to the person concerned, to arrange a convenient time. Where possible, people living in the same area were visited on the same day.

During the home visit, questionnaires were completed and participants were given an information brochure about the programme. On this brochure was the time, date and venue for the programme. This was a variation from the recruitment process which specified that the brochure be posted to participants as a form of reminder. Participants were also requested to sign a consent form acknowledging that they had been informed that this was a research project, that they had been advised of any risks of participating in the project and that they knew they had the right to withdraw from the project at anytime.

An integral part of the rehabilitation process as described by Getty and Hetu (1991:46) was the invitation to the affected worker in his home, with his spouse. The presence of the spouse was seen as important since "they often emerge as the ones who motivate their husbands and have a strong influence on the decision to participate in the program" (1991:46). With a few exceptions, home visits, once agreed to, were quite straightforward and the wives, where present, actively encouraged their spouses to participate. On one occasion I rang a worker to arrange the home visit and he was unsure as to whether he really needed to participate in the programme at all. In the background I heard his wife ask who was on the telephone and what did they want? The worker relayed what was going on and his thought that he did not need to participate. His wife utterly disagreed with him, berated the worker for the same and ordered him to arrange the home visit.

There were practical problems which hinder the personal recruitment process. On one night I made a visit to a person who lived in a flat above a very dark alley behind a shopping centre in Bondi, an eastern Sydney suburb. The person being visited in their home was

unable to hear their doorbell, so after various attempts to gain entry (such as looking for the power box to turn their lights off, banging different parts of the door to elicit different sounds) I found a telephone booth and rang him to let him know I was trying to get in. The first time I called there was no answer which suggested to me that he may not have been at home. I called again some fifteen to twenty minutes later and he answered the call. Had this person not heard the telephone ring the second time I called, I may have had to abandon the visit. A strategy to overcome such difficulties may be to ask the person what is the best way to gain their attention upon arrival but that strategy runs the risk that the person may take exception to the request or that they do not perceive that they have a problem with doorbells or telephones. Overall, the act of going to unknown peoples' houses in unknown areas, alone, at night, is not a safe behaviour for a health worker. Whilst I encountered no specific problems, I think it would have been wiser, in retrospect and if feasible, to have had someone accompany me on such visits.

Interviews ranged from thirty minutes to ninety minutes. Upon arriving, I introduced myself and was welcomed in. Most people offered me a cup a coffee which served to break the ice. After introducing the programme, I usually asked the person about their hearing loss. They related to me the story of their working life and many asked questions about their compensation claim. Access to information and choices is part of the empowerment process. People were changed by the interview process since options and ideas were presented to them in response to questions which they had asked. This encounter begins the problem-solving process and can change the person's perceptions about their hearing loss, work or the compensation system. One individual, for example, who participated both in the pilot project on workers' needs and in the actual programme itself explained to me that following the

interview for the pilot project he had acquired a new Touchfone 200. This small, yet tangible example demonstrates that opportunities for empowerment do arise from interactions.

Some of the participants had difficulty using the telephone. One participant informed me that he had expected me a week before whilst another person could not hear me at all on the telephone - his wife had to relay the information to him.

The last component of the recruitment strategy was to telephone participants a few days prior to the date set for the programme. In most cases, people had remembered the day and thanked me for the call. For others however, this call was pivotal to their attendance since they had forgotten about the programme or had misplaced the brochure and were not sure where to go. Other participants asked me whether or not I thought they really needed to come. I have no doubt that had I failed to make these telephone calls, reluctance would have won over and many more participants would not have attended the programme.

Participation rates

My initial contact with the metal workers union was for the pilot project. Here, fifteen workers participated. Of those fifteen, four people were invited to participate in a pilot of the rehabilitation programme and another three joined groups in the programme itself. One person was not interested in the programme, another was going in and out of hospital and did not feel well enough to attend; two others had retired and were away throughout the programme and two people were not offered the programme as they lived outside Sydney. Two other workers were not offered the programme as they were single and therefore were not eligible for the programme using its original selection criteria.

Thus, of the nine people approached, eight accepted (with one withdrawal through ill health).

Once the pilot project had been completed, a second mail out to the members occurred. A further six people contacted me by telephone. With the exception of one person who also wanted a hearing test arranged, all people received a home visit as per the set out procedure. This latter person came to the centre for a hearing test and was interviewed concerning the programme at the Centre. Whilst preparing for the project the need to provide for child care did not arise and I incorrectly assumed that given the average age of workers with NIHL being 45 - 59 years, the group participants would not need child care. The absence of child care presented a barrier for this participant who was unable to attend a programme initially due to no child care being provided. Of these six people, five participated in programmes.

In all 12/15 metal workers agreed to participate in the project.

Twenty-three marine engineers were sent letters inviting them to participate in the programme. Of these twenty-three, I was able to contact ten by telephone. Of these ten engineers, one was not interested in being visited about the programme, whilst another requested information be sent to them first prior to any commitment being made. Material was sent to this person about the programme and then a follow-up telephone call was made. As it happened, the person lived several hours drive from Sydney and could not see the benefit in participating at that distance. A home visit was not made. Of the remaining eight people contacted, one person scored less than 25 points on the hearing and listening skills questionnaire when scored by both he and his spouse. He had a very mild high frequency hearing loss and whilst expressing interest in the project from a curiosity point of view, did

not take up an invitation to join the programme. Since he did not meet the 25 point barrier set out by the questionnaire, he was not included as a person offered the programme. Thus from the nine eligible subjects **6 accepted the programme (6/9).**

Five participants who were approached by either myself or the audiologist at the Cumberland Hearing Rehabilitation, Resource and Research Centre joined groups. Three were interviewed about the programme at the Centre whilst two others were seen with their families at home. Of the three interviewed on site, two did not bring their spouses to the programme **(5/5).**

Another two referrals came via occupational health nurses; these workers also agreed to join in the programme. In keeping with the adapted methodology for this part of the project, these workers were interviewed at their place of work, without their spouses present **2/2.**

Following the one article in the VQLP newsletter, eight veterans contacted me, expressing the desire to participate in the programme. Seven of these participants had spouses, some of whom also had a hearing loss. An additional three participants with hearing loss (but not noise induced) also contacted me and were allowed to complete the programme. However, only the eight people with NIHL were counted as valid subjects for the study **(8/8).** No one responded to the advertisement placed in SHHH news.

Table VIII Programme participants by referral source

=====		
Metal workers	12/15	
Engineers	6/ 9	
VQLP	8/ 8	
Centre	5/ 5	
<u>Occ health</u>	<u>2/ 2</u>	
Total	33/39	or <u>85%</u>
=====		

A senior public servant who had a high frequency sensori-neural loss caused by an ototoxic drug, overheard me talking about the programme at a meeting and expressed interest in participating in the programme as well. **Getty and Hetu (1991) had an acceptance rate of 89% (or 48/54).**

Deafness awareness week 1991 coincided with the running of this project. With the assistance of Worksafe Australia, I put out a press release on the need for prevention of NIHL and the need for rehabilitation for workers with NIHL. As a result of this press release I gave two television interviews (one regional and one national) and seven radio interviews, one of which was played twice. The television items lasted between two and four minutes. Radio interviews varied between thirty seconds on a news programme to a twenty minute interview on a regional radio programme. A series of newspaper articles was also published following an interview with Australian Associated Press (AAP) including a story in one of New South Wales' major daily papers. Following all this media exposure, I received one telephone call. The caller wanted to know where their nearest audiologist could be found. Advertisements for the programme, including one full page story on the project, were placed in SHHH News, the newsletter of this self help group. No inquiries for the programme were received from these advertisements.

From this data it is concluded that it is feasible to utilise the recruitment strategy as developed by Getty and Hetu and to achieve quite similar results. Media based recruitment appears to be an ineffective strategy.

The programme in action

Before initiating the study, I had the opportunity to organise a preparatory programme. The use of a preparatory programme allowed me to see what was actually involved in running such a programme and therefore enable me to properly plan for this study. The writers of the programme were brought to Australia in November 1990 by Worksafe Australia. Before coming to Australia, they expressed the desire to run the programme whilst here. The preparatory programme was held at the Fairfield Community Resource Centre in South Western Sydney and was attended by four metal workers from the pilot project and their spouses. The programme was co-led by Raymond Hetu and Louise Getty from the University of Montreal, Quebec, Canada. I presented the section on using assistive listening devices. Also present were William Noble from the University of New England, Armidale and Richard Waugh, from Worksafe Australia. Since the writers of the programme ran the programme, before and after data was not collected from participants. The participants met two more times in 1991 for follow-up work. Since impact arose from the workshops and the follow-up work which I did with these workers, this data has been included in the study.

For the evaluation study, six groups were run at the Cumberland Hearing Centre, Lidcombe (Western Sydney) and two groups were run at the Riverwood Legion Club in southern Sydney.

Since the group process requires two people to present the programme effectively, particularly when the programme is being offered as a whole day seminar, a co-leader was recruited and trained. The Hearing Rehabilitation, Resource and Research Centre employed an audiologist who was very interested in this project and who wished to assist in any way

he could. Whilst the programme is designed to be successfully operated without an audiologist, I considered it unethical to deny participants the benefit of the audiologist's experience just for the sake of an academic exercise. This is an action research project undertaken in the real world. A community health worker offering a programme such as this within their local area would identify any available resource people that they could use and would approach such people with a view to involving them in the programme.

In the weeks leading up to the workshop, time was spent with the audiologist discussing the programme and the conceptual framework on which it was based. Presentation styles were discussed, role played and refined as necessary. The latter exercises proved to be most useful since it allowed us to present the materials in a clear, concise, non-patronising manner. It also gave us the opportunity to think more deeply about some of the questions participants might raise. As described by the programme guide, each room was set up for participants to use with tables and chairs in the shape of a square. Each participant was provided with handouts as well as a sheet outlining the day's programme. The outline served as a useful guide to the day and a source of information after the programme. As well, participants generally relaxed when they were informed that they did not have to concentrate on what was being said *and* remember it all. They could relax and read about it later on if they wished to. The programme notes were developed with the various groups and are attached in Appendix I in their final form. Changes were made to the programme notes in terms of the clarity of the writing (by printing items bigger and in bold type) and the content of one handout was changed (the effects of noise on the body was revised since it was found to be too difficult for participants to take in all at once). This factor will be discussed in more detail below.

On the night (or the afternoon) prior to the workshop the room was prepared with tables, chairs, audiovisuals, butcher's paper (with headings) and handouts. The batteries for the Frequency Modulator (FM) system were put on charge and the urn was filled. For all day workshops, it was necessary to arrive at least thirty minutes prior to the group to turn the urn on, prepare the FMs and ensure that the handouts and butcher's paper were in their proper places.

In the weeks leading up to the course, time was spent preparing the part time programme and copying necessary handouts. In the days immediately preceding one programme, Sydney experienced very heavy rainfall, recording over 170mm (six inches) in one day. The result of this rainfall was that many of Sydney's roads were cut by flooding. It took me two and a half hours to drive the usual thirty minute trip from home to the Centre. When planning this workshop, I set the dates using a yearly planner which did not indicate public holidays. As it turned out, the first night for this programme was the Tuesday of the Queen's Birthday long weekend. Given these two incidents I was not confident that participants would attend even though the recruitment procedure had been rigorously followed. Everyone attended on the night, reflecting well on the recruitment procedure, even in arduous conditions.

Most group members tended to arrive for group just on time or late - the older person's group was different. We arrived at the Legion Club 'just' in time to set up the room to find almost all participants ready and waiting for us to start. FM radio microphones and receivers were borrowed from the New South Wales Deaf Society for each programme. Once everyone was introduced to each other, the handouts were distributed, the toilets identified and the FMs were explained and given out. This was a very significant moment for many

participants. It was the first time many had identified themselves in public as having a hearing loss. Some participants appeared quite uncomfortable upon being presented with the FMs whilst others had no difficulties with it.

Use of the FMs varied from group to group. Participants who had greater difficulty with background noise tended to use the FMs more readily than did those with milder losses. The participants with more severe losses presented as being pleased to be able to know what was going on and the satisfaction of hearing out weighed any awkwardness they may have initially experienced.

Several difficulties arose with the use of FMs during the groups. Firstly, since the Centre where the programme was being run does not own enough receivers, I had to drive three hours every time I wanted to borrow the FMs. When programmes were being run every week, this became very time consuming. Secondly, radios can malfunction. Static or other distortions in the receiver can cause discomfort or annoyance for users. Batteries always seem to go flat at the wrong time! Some of the older group members had difficulties physically managing the FMs, especially with a hearing aid. Nonetheless, when the systems worked well, participants regularly made use of the devices and presented as being quite comfortable in that role.

Programme Outline

Session 1

1. What's the worst thing about living with a hearing loss.
2. Introduction to the ear and hearing.

Morning tea

3. Understanding your audiogram.
4. The effects of hearing loss on the body and relaxation.

Lunch

5. Using technology.
6. Communication Tactics.
7. Homework

Session 2

1. Follow-up homework.
2. Revision of communication tactics.
3. Using public services more effectively.
4. Personal contracts.

Introductory exercise: *In the first session each hearing impaired person is asked:*

What's the Worst thing about living with hearing loss? -

Responses (multiple responses = 142)

Time: 30 to 60 minutes.

Process: The question is put to each hearing impaired member of the group in turn. Responses are written on butcher's paper by co-leader. Responses are compared, contrasted and discussed. The same process is then followed for the spouses.

tv/radio	9
phone	9
managing difficult communication settings	60
misunderstandings	4
putting up with noise	4
loss of confidence/isolation	18
background noise	16
managing stigmatising situations	14
tinnitus	4
anger	4

Spouses responses (multiple responses = 67)

Managing communication	29
misunderstandings	2
changes	1
loss of intimacy	3
guilt/frustration	11
Phone/radio/tv	4
having to repeat	6
receiving anger	3
spouse not listening	4
noise	4

This activity took about an hour and many of the participants related to what others had to say. Some participants found it difficult to express their thoughts or feelings. As can be seen by the range and number of responses, this exercise worked well with all groups and served both as an introductory activity whilst functioning as the building block in the problem solving process.

Since it was easier for some participants to identify and express their difficulties than it was for others, the group process provided a non-confrontational framework for the group facilitator to assist group members to identify their own issues by comparing and contrasting one person's responses with another's. Less articulate group members might say, for example, my problem's the same as 'his'. In a non group situation, this type of response is very closed. That is, it leaves no opportunity for the group leader to draw the participant out to more clearly state what difficulties s/he might experience. The group experience allowed the participant not just to say 'my experience is the same as his'. The participant was provided with the opportunity to say how or to what extent s/he thought it was like the other's experience. The fact that a similar experience could be identified in another individual reduced the feeling of being 'like Robinson Crusoe'.

As the programme progressed, the quieter members participated more and more.

Regularly, during the men's responses, the spouses would nod knowingly or nudge their partner with a smile or a knowing look as the other men relayed their experiences. For others, it was not humorous, this was a serious matter causing them serious concerns; their empathising was often in frustration and partial hope that their partner might be taking in what was being said. As group leaders, balancing the humour with the stress was not always easy. Some comments made by group members were extremely funny and were presented as such. Whilst one was laughing with the person and the group, one also sensed that the humour was used to mask the pain and that the fact needed recognition, yet this was not an encounter group as such. The group leader was not there to 'confront' the participant with the belief that the participant was somehow denying the intensity of the experience! However,

the more serious side of what was being said needed to be recognised in this phase of problem identification and so the group leader would use a reflective listening style of questioning to give the participant a further opportunity to discuss the difficulties hearing loss caused him.

Introduction to the ear and hearing

Time: 30 minutes

Process: Encourage participants to describe the function and structure of the ear, drawing the ear on butcher's paper as described. The leader adds in relevant detail as the interaction progresses, then uses model/poster of the ear to give more information as required.

This section and the session on the audiogram are the two sessions which address the anatomy of the ear and the manner in which hearing loss is represented on pieces of graph paper called audiograms.

It is potentially the weakest part of the programme. Its structure, as presented in the programme, readily lent itself to a didactic style of presentation. The style of the programme needed to be changed to reduce the likelihood of moving away from the problem solving process. To this end, models and posters of the ear are not initially used. Rather, a piece of butcher's paper is made ready and the group's leader asks participants what they know about the anatomy of the ear. The parts of the ear are then described by the participants in their terms and the group leaders clarify items as the talk progresses. Questions flow back and forth at each part as participants relate stories and questions about life experiences. How hearing loss occurs emerges from participants' stories as the group leader moves the group onward from the outer to the inner ear.

By maintaining the focus of the session on the participants and by not assuming ignorance on their part, the session is made much more interesting and is educationally more beneficial as it builds on participant experience.

Audiograms and the effects of noise on the body

Time: 30 - 60 minutes

Process: Group problem-solving and facilitator input

The explanation of the audiogram followed that of the anatomy of the ear. Then participants were invited to have their audiograms drawn up and 'explored' in the group process. As one of the group leaders drew up audiograms, the other group leader co-ordinated discussion about the audiograms, what the person's experiences of the hearing loss might be like, hearing tactics and so on. Participants responded very well to this presentation and their partners were also involved. People also related their own hearing loss to the experience of other group members. Participants asked many questions and it was a very lively and informative activity.

Participants noted a number of barriers to clear communication which included:

"people don't look at me, they turn away or look down, call from another room, distance, more than one person talking, mumbling, moustaches covering the mouth, people talk too fast and rubber lips".

This section of the programme, as with the previous section, proved to be both interesting and possibly confusing for participants. To facilitate explaining the function of an audiogram, a poster sized audiogram was drawn up on cardboard and laminated. Participants presented little or no difficulty understanding soft sounds versus loud sounds. Some participants, especially the older ones, had difficulty grasping the meaning of low pitch versus high pitch

sound. It was necessary to develop very specific examples of low and high pitch. For example, when explaining a low pitch sound, the thought of the noises made by a group of aeroplanes in the distance was used. To contrast low and high pitch sound, the example of the bottom and top notes of a piano were used and marked on the audiogram. It is noted that throughout the programme concrete examples of discussion points are required and that the programme as provided lacks such illustration.

Similarly, the description of the effects of noise on the body was not well enough defined for our groups' needs and so the group's co-leader, Glenn Munnerley, developed a revised form of the handout with concrete examples of sensitivity, selectivity, discrimination, tinnitus and recruitment. This revised handout can be found in the appendix of the programme.

This section also has the weakness of the previous section in that it lends itself to a lecturing style of input. To reduce the possibility of this occurring and in turn, moving away from the problem-solving process, participants were encouraged to explain to the group, the features of an audiogram. The leaders simply filled in the gaps and kept the process moving.

All participants wished to have their audiograms drawn up. Given the information which had just been shared about audiograms, participants were able to describe the types of difficulties other group members might experience. This exercise provided participants with the opportunity of comparing their experience of hearing loss with others in a very tangible way. The inclusion of a handout from Jenny Rosen's (1989) training programme which depicts an audiogram with consonant sounds at various frequencies, assisted in illustrating the types of discrimination difficulties the men might have.

When I initially read this part of the programme I was concerned that individuals who had more severe hearing losses would react negatively because they may feel under the spotlight in the group process. This was not the case. In fact, in one group, the reverse occurred.

This group consisted of engineers and a public servant who had a mild high frequency hearing loss. The engineers worked all day with noise levels in excess of 100 dBs whilst the public servant spent most of his working day in meetings. The public servant concluded that given the serious nature of the hearing loss of some of the engineers and the few problems they appeared to be having, that he must be over reacting, given that he found workplace communication extremely stressful. The problem was handed over to the group to resolve. Was the public servant's conclusion right? No, responded the group, who described to the public servant why he had difficulties hearing in background noise and that he, unlike themselves had to communicate all the time whereas in their work environment, flashing lights and sign language were regularly used to facilitate communication.

The unfair hearing test was used to sensitise spouses to the experience of hearing impairment in some groups. This test is a tape recording which plays a series of spoken sentences. Each time the sentences are presented, more and more of the higher frequencies are removed, thereby simulating what the experience of a high frequency loss might sound like. As one would expect, most of the men could not tell any difference between the first and the last examples whilst the spouses gain a clear insight into their partners' difficulties. The tape was not used in all groups for several reasons. In some groups the spouses seemed to have a very good idea of their husbands' difficulties and presented as being very sensitised to the problems their spouses had to manage. In other groups, the previous activities and

discussions had been quite extensive, meaning that we were behind time and an activity needed to be dropped. There is an enormous amount of information which can be covered in this programme and the needs of each group are not the same. It is the responsibility of the group leader to be sensitive to the group's needs and structure the programme accordingly.

Included in this session were two additional posters developed by the audiologist which seemed to work well. First of all was a poster of words in which all the words were jumbled across each other. Participants liked this poster as it seemed to sum up for them the difficulties they have in hearing in background noise. The second poster is a sentence presented in two ways, firstly with all consonants absent and secondly with all vowels absent:

o _a_ a __a__ o_ _i_.

B_b h_d _ gl_ss _f m_lk.

The purpose of the exercise was to highlight the implications of not being able to hear consonant sounds and was not intended to be an accurate reflection of what specific individuals actually heard. These additional activities are also useful to maintain the momentum of the group whilst new audiograms are drawn up.

The various strategies (e.g. unfair hearing test or consonant exercise) in this section provided spouses with the opportunity to more closely empathise with their partner's experiences. One spouse, who thought she had a hearing loss, had her healthy looking audiogram placed on the poster in stark contrast to her husband's NIHL. Nonetheless, the spouse had experienced difficulties hearing and said that seeing her husband's audiogram against her own, really helped her to appreciate the difficulties he must have been having.

Stress

Time: 45 minutes

Process: Group problem solving followed by a relaxation exercise.

Having to work in noise, or to cope with ears that are now more sensitive to certain sounds and the very day-to-day difficulties of living with hearing loss result in people being stressed. The segment on stress was introduced by the question "How would you know if you were feeling stressed?"

Responses were (multiple responses = 68):

cardio-vascular problems	10
digestive	3
tension/headaches/worry	15
fatigue	8
less agreeable	8
nervousness/twitches	15
other	9

Following the identification of indicators of stress, group members discussed situations in which they noticed themselves being stressed as a result of having a hearing loss. The relaxation segment was then followed as a logical resolution to managing stress.

Following consultations with a group of community health workers, a second format for the stress exercise was developed by community health worker, Margaret Merlin from the Blacktown Community Health Centre, in Western Sydney. The health workers felt that a section on stress management was important to the programme but the section, as presented, was too abstract for most participants. The session design assumes that a person is able to identify the effects of stress readily. In fact, whilst a variety of stressors were identified, it was quite difficult for group members to get started in some sort of brainstorming exercise. As well, the exercise left some people feeling quite uptight as they dwelt on their own situation. Furthermore, since a brainstorming technique was used, problems could be perceived by individuals as unique to themselves and not necessarily common to the experience of stress.

In the alternate approach, the analogy of high pot and low pot as developed by Virginia Satir in her book People Making (1972), was used. The idea of feeling good (and not so good)

about yourself is introduced. Here, a picture of a pot of gold is given to each participant. It is suggested that feeling at high pot is like one would feel if they won a million dollars. Participants are asked to describe how that might feel. Since they are likely to be feeling good, they are encouraged to colour in part of their pot with a yellow or gold highlighter pen, to represent feeling good or high pot.

The various physical indicators of stress as described in the programme are written on pieces of different coloured cardboard. Each type of stress problem, for example, cardio-vascular, is written on the same coloured cardboard. The pieces of 'symptoms' cardboard are then spread around the room. Participants are informed that at times, when we are feeling down or low pot, our body has ways of telling us that all is not as it ought be. It is then suggested to participants to wander around the room and have a look at the cards and decide which one most represents our experience of low pot.

Once this is done, the group leader gathers up the cards and goes through each one, encouraging participants to identify which symptom, if any is theirs. As they do so, they are given the card they identify with. If there is more than one person identifying with the symptom, they are encouraged to sit together. Once all the cards are given out, the leader goes through the longer term consequences of the symptoms which have been written on pieces of cardboard of the same colour as the symptoms. The use of colour coding assists participants to make the connection between long term and short term experiences of stress. By grouping people with similar difficulties together, the experience of stress is demystified as stress is seen as something common to group members.

It is then suggested that a way of overcoming low pot is learning how to relax. A relaxation exercise is then completed. Since we are all feeling good at the end of the exercise, we usually decide to colour in some more of our pot.

The exercise of linking short term experience to longer term effect is somewhat redundant, particularly with groups of older participants since within the group, many of the longer term effects are already experienced. At the same time, younger participants may be in stressful situations which they can do nothing about. A most common stressor in Australia facing many blue *and* white collar workers presently is the possibility or reality of retrenchment due to poor economic conditions.

Thus, the section needs to be altered to allow for such changes and to ensure that participants are not left feeling guilty or blamed for not managing their stressful lives. Such a change may be presented as the short and longer term effects of stress on cards which are displayed all together. Then stress reduction or symptom management strategies can be discussed also using the colour coding method. For example, constipation or bladder problems can be both a function of stress as well as a function of an aging body. Solutions such as dietary supplements (for example metamucil²) and bladder management strategies (for example A Wee Problem) can be shared with the group.

An additional concern with this exercise is its focus on personal lifestyle as the cause of ill health or stress. Whilst I acknowledge the communication and health difficulties stress can

² Metamucil contains psyllium hydrophilic muciloid powder and sucrose. It is manufactured by Serale Australia and sold as dietary fibre.

cause for people with NIHL, it is also noted that these workers are employed in environments where they are often exposed to dusts, fumes, heat, vibration and chemical substances which may result in them sustaining a range of injuries and cancers. Depending on the combination of these hazards, workers in noisy environments may be many hundreds of times more at risk of being stressed, injured or killed by work related hazards than they may be from lifestyle factors. A further amendment to the stress exercise would be to include segments on acknowledging, identifying and protecting oneself from workplace hazards and how to utilise advocacy services when one identifies a hazardous work environment.

Relaxation exercise

A number of different approaches were used in this section of the programme. Initially the Jacobsen method as described in the guide was used and participants responded well to it. However, following the previously mentioned consultations with Blacktown health workers, it was concluded that the Jacobsen method was not something one could readily use in stressful situations, for example, if one became stressed by communication difficulties at a bank. Secondly, the Jacobsen method requires participants to listen to the leader's voice whilst learning the relaxation exercise. Health workers considered that listening is not an easy form of relaxation, especially for hearing impaired people.

Margaret Merlin again suggested an alternative approach. Firstly participants were introduced to deep breathing exercises. Secondly, the leader then would raise his/her arm upwards to indicate that people should breathe in. Then the leader would lower his/her arm to breathe out. This would be repeated whilst participants got the rhythm of deeper breathing. Participants were then left to set their own pace.

This type of exercise could more easily be used when out shopping, standing in a bank queue or on the bus.

In some groups participants will have already attended some form of relaxation course. In one group, a participant's wife was an instructor in stress management. The skills and experiences of participants should be utilised (if people are happy to do so) in the group process by inviting, in this example, the instructor to give the group input on relaxing for a few minutes at each session. Alternately, participants are given the opportunity to share with the group stress management strategies which they have found to be useful.

Finally, since everyone feels so good after this exercise, it should be followed by a break or be used to finish up a part-time session.

Technology

Time: 60 minutes

Process: Demonstration, use and discussion of technology.

A comprehensive range of assistive listening devices (ALDs) were available for participants including hearing aids, telephones with and without couplers, various ringers, loop systems, adaptations for radios, telephones and the car. Whilst a range of doorbells was unavailable for demonstration, participants were informed as to where they could trial a comprehensive range of doorbells.

In the full day programme this session immediately follows the lunch break. Since the programme is designed to give participants a 'hands-on' exposure to technology which they might find useful, it is a good exercise to use in this traditionally sleepy phase of any whole day programme.

To introduce participants more realistically to a self help group for hearing impaired people, I originally invited a spokesperson from the local group to present assistive listening. It was a dreadfully boring session. The presenter talked for far too long, using a didactic style, before actually allowing people to try out the devices. The presenter was not used again.

Participants showed enormous interest in the devices, especially the volume control telephone and the infra-red system for the television. Many participants filled-out an application form for the new telephone whilst attending the programme and utilised the opportunity of having access to an audiologist to have their forms authorised straight away.

The devices segment was immediately followed with an introduction to hearing aids and related communication devices such as using an audio loop.

The session proved to be very popular with participants asking many questions and discussing their thoughts and ideas with spouses and the group as a whole. As such, it was very easy to go over time. As well, particularly with older participants, new technology was found to be confusing and somewhat awesome, so it was important to go at the group's pace, giving participants time to ask questions and take in what was happening.

Lip reading

Time: 20 minutes

Process: Exercise followed by discussion

The purpose of this exercise is to emphasise to participants the importance of watching peoples' faces when communicating and to utilise the full context of what is being said to assist with understanding a conversation. The exercise consisted of the group leader mouthing phrases which participants were asked to guess. However, these phrases lacked any

contextual clues and so were quite difficult to pick up easily. Furthermore, the exercise did not readily enable participants to understand the dynamics involved in lip reading nor did it necessarily build participants' confidence in their own abilities to pursue lip reading as a communication option. This exercise was replaced by the lip reading exercise as designed by Chris Lind of the Victorian Hear Service. It is more concrete than the programme's exercises since participants have a list of words to choose from and I considered it to be a safer option. That is, participants have a greater likelihood of achieving the aim of this *introductory* exercise. Since this programme is designed to inform participants as to what options are available to them with the intention of initiating a problem solving process, it is essential that exercises encourage participants to pursue options. The point of this exercise is to introduce lip reading to participants as a real option that they might pursue. Lind's (1991) exercise offers a concrete exercise with an outcome which participants can easily relate to. The exercise is listed as an attachment to the programme.

During this later presentation participants expressed a lot of interest in lip reading and particularly questioned the suggestion that they could lip read. The exercise took about twenty minutes and everyone scored at least half the correct answers. One hearing impaired participant scored 18/20. The group actively participated in the exercise and when it came time to check answers, they discussed answers with each other. They observed that speed of speech, accents and context were also issues to consider when trying to lip read as was the need for people to speak clearly and move their lips, have one's attention and be able to see clearly by avoiding background light. Beards, distance, position and background noise were also identified as barriers to communication. Difficulties people experienced were also related back to using speech as a cue whilst highlighting when speech would not help them.

speech as a cue whilst highlighting when speech would not help them. Participants were asked to reflect on their audiograms and to suggest what speech difficulties they might encounter and to suggest times when lip reading might be helpful.

Making requests

Time: 60 minutes

Process: Group problem-solving and discussion

In this next section, the group was broken into men's and women's groups and moved into different rooms. They were then given a scenario to read which is as follows:

" Ann, your sister-in-law, has organised for your brother's birthday, her husband, a big barbecue party. She has invited you, your wife and also some friends.

When you arrive at their home you realise that there are many people, about twenty and that you do not know many of them. To create a real party atmosphere, because it is evening, Ann had installed big outdoor candles all around the backyard and some loud speakers so that people can dance to the music.

The food is excellent and the beer very good, people seem to really be enjoying themselves. It is becoming a little loud, it seems that everyone is talking at the same time and because a few people drink a little too much, their speech is more slurred. On top of that, in all the commotion you seem to have lost your wife. You realise that alone it is difficult to follow a conversation and you really did not understand the last joke someone just told. It looked very funny because everybody was laughing."

Due to the fact that groups were split into two smaller groups, it became almost impossible to record all the responses participants had to the exercise. Listed below are those responses which were recorded, for example, with the benefit of an extra observer being present during the group process.

Reaction to social activity - (*multiple responses = 47*)

avoid going	4
leave early	4
withdraw	10
expect c'tion probs	15
not enjoy self	3
rely on wife	4
nervous/cautious	3
other	4

What would you try and do?

Withdraw/isolate	3
find better position	8
get frustrated/not enjoy	7
leave	2

Men felt they would do nothing because they:

" didn't want to rock the boat. Its easier to walk away! My wife would ensure that I found a good place to sit for the night. Wife would repeat parts of the conversation for me so things would be OK. I'd have to give extra attention."

The fact that they would tend to leave responsibility to their partners was noted.

Did they talk openly about these difficulties? If so to whom? What would people say of them if they state positively that their deafness is a problem to them?

The notion of discussing such difficulties with a partner seemed quite foreign to most participants. An added difficulty was that peoples' outings seemed to involve near relatives and existing yet strained relationships.

Women's responses: What would the men find difficult:

" noise, lighting, people all talking at once, people drinking, not knowing other people, a night out, joke telling, wouldn't enjoy it, stay at home, have a good time, make new friends, problems with background noise - people need to be close to hear."

What would he do?

"Would go off somewhere to find a quiet corner; attach themselves to someone, if he knows it wouldn't be too bad, get away from the worst noise, maybe ask to leave if it's too much, talk a lot, say he can't hear, individually say he's having trouble, change his position but wouldn't try to change the situation, split up music -louder then softer, make sure there were well lit places. We'd ask questions, embarrassment, may miss out on conversations, we'd ask people to repeat things, leave early, I'd say "I'm sorry I missed that, could you repeat it for me", may have to be family oriented to attend outings, drunkenness may affect whether people attend or not. He just wouldn't go because he wouldn't enjoy himself, he wouldn't hear anything. He doesn't think he has a problem. Its not a problem for him. He would tell them that he has a problem."

Difficulties for attempting change?

Fact that it's family can be easy/difficult; less control away from home, embarrassment and not wanting to offend people. One family had a diabetic daughter and were well used to ringing up in advance to discuss food with the hosts. The wife in this family took responsibility to ring up and say that her husband had a hearing loss and discuss his communication needs with the host family. Nonetheless, the hearing impaired person still experienced difficulties.

A second spouse also took a lot of responsibility for her husband's communication needs and would act as an interpreter as required. Secondly, they pointed out that in their family, everyone knew that the partner had a hearing loss and that they all took steps to communicate accordingly so that such a situation would never arise. The hearing impaired person pointed out a number of times that even though his family were very supportive, they would forget his communication needs from time to time.

This exercise on its own was problematic even though the example of a BBQ was quite relevant to peoples' lives. For example one couple said that they had just been to a party exactly as it was described in the handout. The exercise served as a *problem identification* session but fell flat in that it led nowhere with the exception that people realised that talking to each other about expected difficulties may be useful. Groups tended to become quiet, as though weighed down by the thought of attending such an event or overwhelmed by the difficulty of finding an acceptable solution to the problems presented. The session did not flow smoothly into encouraging the participants to make requests.

Similarly the role play exercise (exercise 3.15) was just too abstract and too awkward for group members to deal with easily. For many participants it was difficult to speak about themselves or their hearing loss in front of the group. Getting up and acting in front of peers was asking them to move too far too fast. Role playing would be a more useful strategy in a later programme. The aim of this session was to both recognise difficult communication environments whilst facilitating opportunities for participants to develop confidence in making requests of people in more concrete and safer situations. To this end, several exercises from the HEAR service's programme were interchanged. In these exercises (The Restaurant Exercise, Telephone Tactics and the Lounge Room Exercise) participants' abilities to assess potential communication problems and problem solving strategies can be highlighted, thereby increasing self confidence whilst providing safer situations for making "I" statements³. Thus the role play and request exercises are combined into one at this point in the programme.

³ I statements are assertive statements where the person makes a statement or request concerning their hearing needs. For example, I have a hearing loss, could you please face me when you are speaking to me?

Example of making "I" statements exercise when using the telephone.

- 1) You have a poor connection, with a lot of background noise:

"I have a hearing problem - can you please call back on another line."

- 2) You find that the woman's voice you are listening to is too soft for you to hear easily:

"I'd ask her to ring back when my wife is home - 'I'm sorry I can't hear you. Could you please call back when my wife comes home...?'"

- 3) You cannot understand the caller's surname despite asking him/her to repeat it twice:

"ask them to spell the name."

- 4) You can hear a lot of background music playing over the 'phone, and drowning out the speaker's voice:

"Would you please lower the music - I can't hear you". or "can you please call again from a quieter place?"

- 5) The man you are speaking to is conscious of your hearing loss and thus is speaking very loudly, which is distorting his voice:

"Could you speak quieter and slower" or hold phone away from ear.

- 6) You cannot hear anything of what is being said to you at all:

"I'd do nothing - I can't hear them" "I'd tell them I can't hear anything".

- 7) The phone number you have been given is still not clear to you after several repetitions:

"Spell it, repeat it back to them, get someone else to ring back/use exchange".

An alternative exercise for practising "I" statements was the restaurant exercise. Participants are presented with a restaurant floor plan, depicting tables placed near or away from communication hazards. Participants were required to identify where they would sit and why they preferred such a seat. Examples of the discussion were as follows:

"A and B choose the preferred table, number 6 since it was away from background noise and had good lighting. C choose the noisiest and worst lit table with the most traffic and B decided to sit next to him on table 11. D choose table 7, a good table.

By manipulating the dynamics of the exercise, participants were given opportunities to make requests:

" I'm sorry sir (D), but table 7 is reserved for other guests, why don't you try table 9, next to the piano?"

D: "I'm sorry, but I have a hearing loss and table 9 would be too noisy for me, I wouldn't be able to hear a thing. Could you please move tables 3 & 2 (two couples tables together for me)? "

Everyone had a go at this type of requesting. When someone had a difficulty, another group member helped them out. The use of more concrete examples in the group situation provided participants with mutual problem solving opportunities. If one group member could not think of a solution, another group member would suggest an idea. Very quickly all group members were assessing difficult situations and practising "I" statements. The exact exercise used varied with the group's particular areas of difficulty and/or interest.

Homework

Time: 30 minutes

Process: Participants report back on an activity they undertook concerning their hearing loss.

Unlike the Canadian study where the intensive programme was offered over a consecutive day and a half, this study offered the second part of the programme ten days later, thereby giving the participants the opportunity to practise some of what they had learnt and then to come back and discuss the same. Examples of activities participants initiated are:

C discussed the programme with a neighbour over the back fence, who, he reported, was deafer than C himself. C also spoke to his physiotherapist and reminded her that he couldn't hear her when he was face down on the mat.

B took the course materials to work and discussed them with some workmates. He said he had no problems with the exercise.

D walked across the road and talked to a neighbour about the programme as he thought that they would benefit from it as well.

E spoke to the mechanic in his workplace about the programme. E said that he really thought the programme was very good and had no problems discussing it with anyone.

C had spoken to his neighbour, a boilermaker about the programme.

F had spoken with family members.

G had spoken with his daughter. G had been able to see his daughter's strategy of getting his attention for communication as positive and he had told her so. Previously, being called out to "oooi!" had been seen as rude - now its seen as helpful.

H had spoken to a workmate and gotten the mate to contact the centre for a programme.

How did it go?

Participants readily related the activities which they had undertaken. The comments below reflect the groups' attitude to the exercise:

" At first a bit strange but then O.K."

" Habits die hard (referring to conversational errors)." " Acknowledging that you have a problem is the hard part."

What were the reactions of the other people?

" One wanted to do the programme but 'held back'."

" Another thought the programme sounded like a good idea but also thought that it was "too late for him."

" Another person listened but persisted with poor communication habits."

The public sector

Time: 45 minutes

Process: Presentation of video and discussion of issues arising

The programme introduced participants to the types of training offered to public servants and shop assistants using the Access 2000 video.

This is a good exercise from the point of view of informing participants as to what they can expect from a public service. Furthermore, participants raised questions about profoundly deaf people, being interested in the nature of their deafness and how they coped. This was

very useful for participants as they were able to realise that if shop keepers and service providers can cope with profoundly deaf people, then shop keepers can easily cope with their hearing loss.

Hearing help cards were introduced to participants during the video and were of great interest to some participants. Cards were distributed to participants for their information and people were told where they could be purchased. They were also given a brochure on Better Hearing, who sells these cards. Some participants felt that since they had cards in their possession that they wanted to purchase them there and then. One person liked the idea so much he brought two cards.

Contracts

Time: 15 minutes

Process: Participants commit themselves to taking action to improve their hearing health.

In the final exercise, participants had to decide what they were going to do to improve their hearing and listening skills between now and the three month follow-up session. In their folders was a form entitled **Personal Contract**. Participants were encouraged to fill it in and sign it. Types of commitments made by participants were:

- * to try out a hearing aid.
- * to investigate the new telephone.
- * look more at people when they were speaking to him.
- * have a look at a 'T' switch for hearing aid.
- * talk to his union about who would pay for his improved aids.
- * concentrate more on understanding people.
- * would talk to family and friends about his hearing loss.
- * would get a hearing help card.
- * would look at people when they spoke to him.
- * explain to others about his hearing loss.
- * get Access PALS .
- * investigate car devices.
- * increase listening skills.
- * look more at people and pay closer attention.

- * adjust better in difficult situations.
- * look into TV device and look more at people.
- * investigate whether or not staff in my department are aware of the hearing help card and its function.
- * make requests, look at people more.

Evaluation and Where to go from here.

Time: 15 minutes

Process: Participants were asked to express their views on the programme and to make suggestions for improving the same.

Hawe et. al. (1990:62) list client satisfaction with the programme as a significant marker in the evaluation process. In this programme, participants generally found the experience to be very useful. Hawe et. al. (1990:63) list three categories for assessing participant satisfaction:

- a) Interpersonal issues
- b) Service issues
- c) Content issues.

Interpersonal issues addresses such factors as feeling comfortable in the programme, feeling listened to and understood, level of friendliness and interested approachable staff. **Service issues** relate to the convenience of the venue, its accessibility, time, facilities and cost. **Content issues** relate to the topics covered (including depth) and programme pace. In this programme interpersonal issues were given verbally and, where possible, written down by the co-leader (See Hawe et. al.:1990:63-64). Listed below are examples of comments made by participants on interpersonal issues.

Interpersonal issues

realised things about our relationship
 I enjoyed the whole program
 given me a lot of things to think about
 informality of the day was very good- I was a bit apprehensive about coming
 most important for me - I was comforted to know others had similar difficulties
 solve each others problems because we all have been through different things
 we each find different solutions

a most pleasant Sunday
 we are all in the same boat
 tend to individualise problem
 we're not Robinson Crusoe
 very good having professionals, doing and thinking about these problems
 they "understand" us better now
 getting rid of stigma
 don't be frightened to tell people
 nice to speak out
 discuss feelings; discuss effects of hearing loss (eg nervousness and tension)
 possibility of a reunion
 participants were interested in meeting people participating in others groups

Other interpersonal issues were noted by the programme presenters. Firstly, the FM system both solved and created problems. It made it much easier for the group members to hear what was going on and what others were saying, especially when women spoke. In other groups, the FM system was found to be a waste of time for participants. When the day started, people are introduced almost immediately to using an assistive listening device when this meeting is probably the first time that they have discussed their hearing loss in public. Some of the men obviously felt very uncomfortable about using such a visible aid and put them down at the first opportunity. There were other group members who already had a hearing aid, who seemed to quite enjoy the FM system. There were others still who had never used a hearing aid and found that through the use of the FM system they could hear and understand. The use of the FM system then played an educative role both for the individuals who used the system and for those who were not sure whether it would benefit them or not. Health educators using this programme in the future need to take care when offering ALDs to programme participants to avoid stressing people, to maximise opportunities for communication and to ensure that users are able to properly use the device.

A problem also arises when following the full day format. The full day is very physically demanding on the leaders of the programme and by the last session, we often felt quite tired.

Being tired reduces a presenter's capacity to facilitate the programme as well as one could. Participants also appeared tired towards the end of the day. Tiredness would reduce their capacity to participate effectively.

A further difficulty with the full day format is that one must move relatively quickly through the issues. Covering the material is not the problem, rather it is that people have so much that they want to say and that there is just not enough time for everyone to say everything that they might want to. At times we had two or three people waiting for their turn to have an input.

Balancing a full day workshop with the second, possibly longer meeting in a few week's time, would allow participants time to think things through issues, discuss them with their partner or friends or to raise issues at the next meeting if they wish to. Such an amendment to the programme would reduce the tiredness aspect for all parties as well.

Service issues

A number of service related issues emerged during this study. Firstly, the need for child care or related activities. One couple brought their teenage grand-daughter with them to most of the workshops whilst another participant could not attend the programme because of an absence of child care. People intending to use the programme in the future need to assess participants' need for child care, especially when the programme is extended to female workers.

The venues used were both close to bus and train services, thereby enabling easy access to the building. The Cumberland Centre was also wheel-chair accessible. One participant had had a metal pin inserted in his left leg just before the programme. During the home visit and on the telephone they indicated that accessing the venue would be no problem. However, they attended the programme on the night of the floods, and the spouse parked in an unauthorised area. At the end of the evening, they left the building to find an abrasive note from University security on their windscreen. Whilst persons more used to the behaviour of university security staff may have been unmoved by such a note, the spouse was extremely upset by it. This stress, I was informed, added to the greater stress which arose from having to help her husband, unaided, in and out of the car, in the rain, to attend the programme, and made attendance at the programme just too much to bear. Specific parking arrangements were made for this person and spouse when attending the remainder of the programme.

Given the possibility that other participants may have additional disabilities (in the pilot study, one in three participants had sustained additional injuries and diseases from occupational injuries), organisation of parking arrangements, where possible, should be discreetly made for participants with a history of mobility difficulties irrespective of an expressed request.

Content issues

Hawe et. al. (1990:63) point out that the content aspect of a process evaluation is concerned with the relevance, interest, pace, difficulty and topic depth from the participants' perspective. During this study, informal comments were sought at the conclusion of the first part of the programme and at the follow-up meeting three months later. Information was

gathered by asking each member in turn how they found the programme, what they liked about it, could it be improved? Was there something they particularly did not like or would prefer changed? It is noted that within the programme design this point of evaluation serves as a check point rather than as a detailed content evaluation.

Was the programme useful? If so what was the most useful aspect of the programme?

What's different?

(Multiple responses n = 69)

Communication tactics useful	18
Don't feel alone now	4
Technology/other information useable	9
Coping better (more at ease/confident)	18
Now recognise a problem exists	17
Other	3

The comments quoted below summarise the benefits individuals perceived they gained from the programme:

- " left you to go at your own pace to do what you want to do, when you want to do it. You were given options and the responsibility - the pressure was on yourself to do something."
- " I withdrew in a shell, but I changed all that, I can live in this world like everyone else..."
- " I know what the problem is now and I can handle it better. I feel more confident that I have a hearing loss because I know what to tell them."
- "Now I know what it is I'm more aware of hearing loss and I know its not just me the "silly old bastard".

Spouse's perceptions.

Twenty spouses completed a questionnaire concerning their perspective of the programme's impact. Whilst most questions are discussed in the outcome evaluation, question 10 provided spouses with an opportunity to make an open comment. The comments are summarised along with spouses' comments given in the open group forum (*Multiple responses n = 41*):

Useful/informative	14
Communication better	10
More aware of hearing loss	12
No change perceived	2
Technology useful	3
Other	2

The comments quoted below reflect the range of comments made by individuals:

- "before it didn't matter that he couldn't hear - now it does - he says 'forget about it' less now".
- "(He) listens more carefully, doesn't 'twist' words around".
- "they feel more at ease (with hearing loss)".
- "You gave (husband) back to us and the human race".
- "nothing has changed because of attending the programme. We are getting on as before".

What was the least useful aspect?

Participants did not report negative aspects of the programme. It is possible that participants did not wish to offend the programme organisers and so chose not to make negative comments. The following question proved more useful in identifying areas which could be improved from the participants' perspective.

Could the programme be improved?

Two areas of concern were identified. Firstly, the segment on hearing aids raised comments. Participants expressed that hearing aids designed to properly address their individual hearing loss would have given them a more realistic idea of how a hearing aid could perform. Participants wanted more time or a refresher course and commented that there was a lot to take in during the programme, especially during the intensive sessions.

Difficulties

Whilst participants did not express particular problems with the programme, several noted that at the end of the programme their difficulty still remained:

" I still find groups and making requests a problem".

" Tinnitus never lets up".

" At times I withdraw and just drink".

4.3 Specific issues in process evaluation

Hawe et. al. (1990:66) remark that as well as assessing client satisfaction with the programme, steps need to be taken in a process evaluation to check to what extent the programme was followed as outlined. An important component of such an assessment in a study such as this, is the definition of what is a variation from the original programme. As noted above, many variations were made to the programme for cultural reasons, so that the programme would be more suitable for use in Australia. The implementation of the programme then is assessed in terms of cultural adaptations made to the programme as distinct from actually varying the programme's content. Listed immediately below are programme activities and to what extent they were implemented when compared to the original programme.

Table IX - Implementation of activities compared to original programme

<u>Type of exercise</u>	<u>Per programme</u>	<u>Cultural</u>	<u>Change</u>
Recruitment	*		
Introductory	*		
Physiology		*	
Audiogram		*	
Effects of noise	*		
Stress		*	
Relaxation		*	
Lip reading			*
Technology	*		
Social setting	*		
"I" statements/requests			*
Role play			*
Homework	*		
Public service	*		
Personal Contracts	*		
Follow-up	*		

One of the criteria for internal validity of an evaluation study (noted in Chapter 3) is that the implementation of the procedures be consistent with the original programme. Otherwise a true comparison is not possible. Of the sixteen exercises listed, 50% (8/16) were followed as per the original programme. Thirty-one percent of activities (5/16) were varied for cultural reasons, resulting in a programme implementation rate of 81%. As can be seen from the table above, three exercises (19%) were varied. These exercises were the introduction to lipreading, the role play and making requests. The variations were made because the listed exercises were found to be too abstract or too difficult for the programme participants to achieve the desired outcomes. However, it is noted that the aims of the varied activities were appropriate to the overall aims of the programme, were correctly positioned in the structure of the programme and were necessary to achieve programme outcomes.

In conclusion, this process evaluation demonstrates that it is feasible to reproduce Getty and Hetu's process of rehabilitation for workers with NIHL providing that a number of minor changes are made to specific exercises. These changes are made either for cultural reasons or to further enhance learning opportunities for participants.

4.4 Follow-up and Impact Evaluation

The programme provides for the assessment of programme impact to be undertaken as part of a strategy for following up participants' progress in addressing their hearing needs.

Hawe et. al. (1990:102) remark that impact evaluation "is concerned with the assessment of the immediate effects of the programme and usually corresponds with the measurement of programme objectives". Whilst specific programme objectives in this study were concerned with informing and supporting participants, other objectives were concerned with enabling participants to begin using assistive listening devices and hearing tactics. To assess the impact of these objectives, a follow-up telephone questionnaire was suggested two months after participants had been through the programme. The results of this questionnaire are listed below in Table X.

The completion of the questionnaire often served as a prompt for the individuals to take further action, particularly when supported by the programme organiser. On specific occasions, had the follow-up call not been completed, some participants would have taken no action to address their hearing loss. Thus it is noted that this strategy is vital to the process of overcoming reluctance and therefore to the success of the programme. Similarly, the reminder of the forthcoming meeting was also useful to some participants who had

forgotten about the follow-up meeting. Other participants were well aware of the meeting and expressed their keenness to attend.

Table X - Responses to Questionnaire on use of technical devices following programme (N=29)

=====	
Touchfone 200 with coupler and volume control	22
Assistive listening device for TV/Radio	6
Doorbell	3
Investigated device/ did not acquire same	9
Using communication tactics	27
Now using old aids or had evaluation of need for aids	12
Got one hearing aid	7
Got two hearing aids	3
For those who received aids or began using aids again:	
Used aid at home	9
Used aid when out	7
Used aid at work	1
Other	1
Got hearing help card	7
Applied for compensation ⁴	7
Tried to improve workplace safety	5
Other	1
=====	

The average number of actions initiated by participants was three (average 3.6).

When questioned as to whether or not they had acquired or investigated hearing aids, many participants replied that " I'm not that deaf ". It is not possible from the data reported above to conclude whether participants were still reluctant, to some extent, to acknowledge their hearing loss, that they perceive that the effects of a hearing loss must be more pronounced before such a step was taken or that following the programme they have been able to accurately assess whether or not a hearing aid will be of benefit to them.

⁴ A number of these participants expressed interest in getting hearing aids or other assistive listening devices but at the time of writing were still awaiting the outcome of their compensation claim. The cost of devices presented a barrier to individuals taking further actions to improve their hearing environments.

Follow-up

The follow-up procedure consisted of a letter of encouragement one month after the programme (as listed in Appendix I) coupled with a telephone call two months later. It was not possible to evaluate the significance of the letter in the change process except to say that participants appeared pleased to have received it.

The follow-up telephone call proved to be very important to many participants in overcoming aspects of reluctance. The telephone call provided many participants with encouragement to complete their personal contracts. The call also provided the programme provider with an opportunity to offer further assistance to those who required it. Some participants, for example, had changed their minds about what they wanted but were not sure about what they should do. The telephone call was also used to complete the questionnaire on use of technical devices. For those who had changed their plans, details were again checked when they attended the follow-up meetings.

Each group at its last meeting had determined the date and time for the follow-up meeting. Listed below is a table of attendance at the follow-up meeting compared to the Canadian study. The activities listed for this segment of the programme provided participants with an opportunity to reflect on the process they had engaged in and to review how far they had come. The opportunity was taken to complete follow-up questionnaires as described in Chapter 3. It is noted that whilst all follow-up activities went well, the degree of interaction appeared greater for members of groups which had the less intense programme. Whilst the follow-up meeting provided the last formal opportunity for participants to meet together, particular individuals either required further assistance with the implementation of their plans

or had decided to initiate other activities. A number of participants expressed interest in participating in a safety group whilst others were interested in forming a self help group. Support for the formation of both groups was provided following the conclusion of this study.

Table XI Participation in follow-up study compared with the Canadian project.

<u>Australian study</u>	
Participated in follow-up	30 (91 %)
Did not participate in follow-up	3 (9%)
<u>Canadian study</u>	<u>85 %</u>

Of the three workers who did not participate in the follow-up, one forgot, one arrived two hours late and a third had retired and gone interstate on holidays. These workers were followed up individually.

The following table is taken from the Canadian study and lists the actions taken by those workers to address their hearing loss following the programme.

Table XII. Number of workers who have taken different steps following their participation in rehabilitation sessions (Montreal Project).

=====

Please see print copy for image

Comparing the results of these two studies it can be seen that workers in the New South Wales study took steps to address their hearing problems in a similar fashion to that of the Canadian study. **It is therefore concluded that it is feasible to achieve similar short-term rehabilitation results in New South Wales as it is in Canada.**

4.5 Outcome Evaluation

Hawe et. al. (1990:102) note that an outcome evaluation "is concerned with the subsequent and longer term effects of the programme and this usually corresponds to the programme goal".

The programme goal for this study was to initiate a problem solving process with the participants concerned (Getty & Hetu:1991:45) with a view to improving participants' hearing and listening skills.

The indicators of the outcome evaluation are closely linked with those of the impact evaluation. Noting the results of the impact evaluation, it is evident that participants did engage themselves in problem-solving activities related to their hearing. The outcome evaluation is concerned to identify what longer term effect or benefit, if any, arose from shorter term activities. This study is particularly concerned to assess the feasibility of participants achieving the same or similar results to those who participated in the Canadian feasibility study using a pre and post programme questionnaire. In the Canadian study, only participants who participated with spouses completed the questionnaire. Significant differences were reported on four items:

"(T)he perceived severity of the problem showed a clear decrease ($t = -3.5$; $n = 31$; $p < 0.01$). The sound of the television, set according to the hearing impaired workers'

satisfaction, was also judged as less annoying after compared with the before intervention ($t = -2.54$; $n = 28$; $p > 0.05$). However, there was an increase in perceived handicap on two other items: the extent to which the hearing loss had changed leisure activities ($t = + 1.83$; $n = 31$; $p < 0.05$) and the feeling of being set apart in groups ($t = +2.11$; $n = 31$; $p < 0.05$)" (1991:52).

In this study, all participants completed before and after questionnaires. Significant differences were found in eight areas. Participants reported:

- i) that their self confidence was less affected by their hearing loss ($t = -4.12$; $n = 29$; $p < 0.000$); [Question 6].
- ii) less family conflict concerning their capacity to respond to environmental stimuli such as the doorbell or telephone ($t = -1.94$; $n = 29$; $p < 0.063$); [Question 13].
- iii) the sound of the television, set according to the workers' satisfaction, was judged less annoying ($t = -3.49$; $n = 29$; $p < 0.002$); [Question 17].
- iv) the person living with them understood their hearing loss better ($t = -2.76$; $n = 29$; $p < 0.010$); [Question 18].
- v) hearing loss interfered less in their relationship with their partner ($t = -3.02$; $n = 14$; $p < 0.010$); [Question 20].

- vi) being more confident that hearing loss would not be a barrier to promotion at work ($t = -2.15$; $n = 14$; $p < 0.051$); [Question 22].
- vii) wishing to have time alone after work more frequently ($t = 2.11$; $n = 14$; $p < 0.055$); [Question 25].
- viii) workers rated their hearing loss as more severe than before the programme ($t = 1.80$; $n = 29$; $p < 0.083$)[Question 1].

The post-test scores of the sub-group participants with partners were compared with the scores of sub-group participants without partners. One significant difference was found between the two groups in Question 18:

"Does the person you live with understand what having or living with a hearing loss means?"

Those workers whose partners participated in the programme scored a mean of 1.3 (very well to well) whilst those who participated without partners scored 3.44 (sort of well to a little) - ($t = -4.23$; $n = 20$ with spouses; $n = 9$ without spouses; $p < 0.002$).

Given the small numbers in the sub-group (participants without partners), it is difficult to comment on these differences except that one could envisage that it would be more difficult to avoid using the telephone if one lived alone. Secondly, one might expect that spouses who did attend the programme would understand their partner's hearing loss more accurately than

those who did not attend. It is noted that the spouses of those participants who were recruited via the workplace did not participate in the programme. However, it is also noted overall, that as with the Canadian study, "unaccompanied workers have also successfully participated in the experimental programme" (1991:46).

It would appear that to recruit workers without their spouses disadvantages the worker in the overall process and that greater gains from the rehabilitative process may be achieved if their spouses were to participate. As well, it would appear that recruiting workers without spouses present disadvantages the spouse since they are not offered the opportunity to overcome the barriers of reluctance and misperception or to process their experience of living with a hearing handicap.

Workers who were recruited via the workplace did not receive a home visit since the then Director of Rehabilitation Services, WorkCover Authority of New South Wales, Mr Peter Tuziak⁵ had advised that such a strategy was inconsistent with the purpose of rehabilitation legislation which required that rehabilitation be workplace based. This advice was given since the Getty and Hetu process of rehabilitation was not deemed to be workplace based or individually focused (as it was considered to be a group centred programme). This assessment of the programme by was made by Mr Tuziak following his attendance at Getty and Hetu's Worksafe sponsored seminar at the National Acoustic Laboratory, Chatswood, in November 1990. Mr Tuziak advised that every programme of rehabilitation must be

⁵ Shortly after the commencement of this project, I wrote to Mr Tuziak requesting recognition for the Getty and Hetu process of rehabilitation. The information discussed in this section was collected during a series of personal interviews with Mr Tuziak which arose as a result of my letter. I never received an official reply to my letter.

designed to address the specific rehabilitative needs of each individual and be workplace focused. Mr Tuziak's advise in itself is correct. However, the introduction to the legislation points out that the purpose of rehabilitation is to provide the worker with medical, psychological, social and vocational rehabilitation where social rehabilitation is defined as:

" That part of rehabilitation aimed at the integration or re-integration of injured people into society by helping them to adjust to the demands of family, community and occupation while reducing any economic and social burdens that may impede the total rehabilitation process " (CCH:1990:10).

It is evident from this study and from the Canadian project that the participation of the spouse contributes to and enhances the worker's progress in a rehabilitation programme. The spouse's absence from the recruitment or group process impedes the worker's progress in the rehabilitation process. Given this information, it is argued that the goals of workplace focused rehabilitation and home visits as per the Getty and Hetu process are integral components of the overall rehabilitative intervention. Some components of the intervention such as initially meeting the worker via the trusted person, assessing the workplace, workplace modifications and injury prevention training are appropriately provided in the workplace. Services which may more generically be referred to clinical and treatment services under the Act, are provided in an environment designed to enhance the effective delivery of the rehabilitation service. Services for NIHL which may be appropriately offered off-site thus include the home visit (which in terms of the legislation⁶ is seen to form part of a rehabilitation assessment), the group based programme and individual hearing aid fittings.

⁶ The legislation requires the service provider to meet with the worker and to assess his/her need for rehabilitation. Upon completion of this assessment, the service provider is required to submit a rehabilitation plan for approval by the employer or their insurer before proceeding with the delivery of the service.

Spouses

Hetu and Getty (1991:73) reported that the effects of hearing loss resulted in spouses of workers experiencing specific handicaps and disadvantages. At follow-up meetings spouses had the opportunity to express what they thought had changed since the programme. However, their views were not systematically recorded. The effect of the programme from the spouses' perspective was sought during this study using a short questionnaire. The items in the questionnaire were directly taken from the list of handicaps reported by Hetu and Getty (1991:73). The spouses responses are noted below.

Forty-seven percent (9/19) of spouses said that since attending the programme, their partners seemed more confident in themselves compared with 53% (10/19) who said that their partner's confidence had not changed. Sixty-three percent of spouses (12/19) said that their husbands took more responsibility for their communication needs whilst only 15% of spouses (3/20) indicated that they felt less responsible for their partner's communication needs. Forty percent of spouses (8/20) felt no change in responsibility for their partner's communication needs. Spouses indicated that in 68% of cases (13/19) they helped their partners understand what people were saying just the same as before attending the programme. However, spouses reported that hearing loss caused less problems than before (63%) and that family communication had improved (55%). Half of the spouses felt less stressed by their partner's hearing loss since attending the programme whilst as many again felt the situation had not changed. Eighty percent of spouses (16/20) indicated that no change had occurred in social activities since attending the programme.

It is concluded that it is feasible to reproduce the Canadian process of rehabilitation with workers in New South Wales and to achieve the same or similar results in the medium term.

4.6 Programme Costing

In New South Wales rehabilitation services for work related injuries are provided on a user pays basis. As noted in Chapter 2, such expenses are usually met by the employer. Employers of the two participants who were recruited via occupational health referrals were informed that services would be charged for and a price was agreed upon. One employer paid \$480.00 for their employee to attend whilst the second paid \$550.00. Given that four to six hours of service provider time would be taken up on a one to one basis with the client and the majority of client contact hours are offered on a group-work basis, a cost of approximately \$500 would allow the provider to recover direct costs and indirect hours for preparatory work plus overheads. Moneys raised were banked into the account of the Cumberland Hearing Centre. The costs of running a programme include salary, office space, transport, printing and photocopying, provision of assistive listening devices, refreshments and telephone expenses. Assuming staff are paid an hourly rate of \$22.00/hr (annual salary of \$40,150 [equal to \$22 @ 35 hours/week by 52.143 weeks]), a cost recovery rate of forty to fifty dollars per hour would be required to allow for indirect hours and the various overheads noted above. Given an average of four direct contact hours yielding say \$200 (4hrs @ \$50) at a cost of \$88 (4hrs @ \$22) and that ten hours of group work yields \$2,500 (assuming five participants attending for ten hours [5 people for 10 hours @ \$50.hr) at a cost of \$440 (two presenters at \$22/hr for 10 hrs), the overall net yield for a programme would be as follows:

Individual work 5 @ \$200	= \$1,000	
Group work	= 2,500	
Sub-total		= \$3,500
Less		
Staff time (40Hrs)	= \$ 880	
Printing	= 50	
Travel (300kms @\$0.32/km)	= 96	
Telephone	= 5	
Postage	= 5	
Sub-total		= \$1,036
Balance		= \$2,464

It is noted that the current market rate as given by Occupational Health Professionals of Wetherill Park in south west Sydney is \$85.00 per hour.

Following this procedure for workplace rehabilitation, the payment for services received presented no real problem. During the implementation of this study, I approached the New South Wales WorkCover Authority for recognition of rehabilitation for workers with NIHL, as an eligible rehabilitation service under the 1987 act. Recognition was granted on November 21st, 1990 and my co-leader and I are now accredited by the government to provide rehabilitation for NIHL and are able to charge employers for the cost of such rehabilitation where liability has been accepted.

At the beginning of this study, it was not known whether or not the government would provide recognition for this type of service and so the question of the individual user paying for the service had to be addressed. Following discussions with the Institute of Marine and Power Engineers, a letter was sent out to their members as previously noted, inviting their participation in the programme and informing the engineers that the programme would cost \$80.00. During the recruitment process, the cost presented as no obvious barrier to participation for those who contacted. When the engineers presented for the workshop, only one had remembered that a charge was to be levied for the programme. There was embarrassment, distress and anger expressed by workers about the charge. I was also very upset by the fact that the participants were so upset by the experience.

Even though letters had informed workers of the charge and that the charge was discussed at the time of the home visit, I told people not to worry about the charge. Their participation in the study was my primary concern, not the money. At the conclusion of the programme, most people felt it was a worthwhile experience and offered to pay for the service. The money was accepted and again banked into the Centre's bank account. One person did not pay.

My observations from this experience lead me to conclude that if workers do not perceive that they have a problem, then they certainly are not going to pay for a solution that they 'obviously' do not need. I do not consider it feasible to offer the service on a fee-for service basis when the individual has to pay since it is likely to serve as a barrier to participation and to underscore the reluctance phenomenon.

Extensive facilities are required to successfully offer this programme. A venue with access to office space, telephone and photocopying is required for preparing the programme. A word processor and suitable software is also required for the preparation of course handouts and letters. For offering the programme itself, a quiet room suitable for group activities with desks and chairs is required. Approximately five to seven thousand dollars worth of assistive listening devices is also required either to assist participants hear what is being said during the programme or for demonstration during the technology session. Whilst it was possible to borrow all these items for this study, a Centre considering the on-going provision of such a programme would need to purchase such items. Given the aforementioned potential for cost recovery with this programme and given the government's preparedness to recognise the service type, the costs of room rental and devices should be recovered over time.

It is concluded that is feasible to operate the Canadian process of rehabilitation for workers with NIHL on either a fee-for-service or cost recovery basis *provided* that such costs are met by the worker's employer (or their insurer) or some party other than the affected worker.

4.7 Summary of results

This study sought to ascertain whether or not it was feasible for a community health worker in New South Wales to reproduce Getty and Hetu's process of rehabilitation for workers with NIHL and to achieve the same or similar results. To address this question, Getty and Hetu's strategies for recruiting workers into the programme, the programme itself including follow-

up and overall outcomes of the programme were evaluated. Whilst the programme required cultural and practical adjustments to enable local implementation, the programme's overall goal of enabling participants to improve their listening and communication skills by overcoming the experience of reluctance through being more able to identify, acknowledge and address the effects of hearing loss was achieved. It was further established that an infrastructure and resources exist for the implementation of rehabilitation for NIHL on a broader scale. Procedures for the provision of workplace based rehabilitation require adjustment so that workers and their spouses may have equitable access to the rehabilitative process.

It is concluded that it is feasible for a community health worker in Australia to reproduce Getty and Hetu's process of rehabilitation for workers with NIHL and to achieve the same or similar results. It is further concluded that the necessary resources and infra-structure exist in New South Wales for the systematic implementation of such rehabilitation across the State.

Chapter 5

Implications for Future Work and Research Arising From This Study

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5.1 Preamble

In Chapter 1 the nature of NIHL and its impact on individuals in wider society was discussed. In Chapter 2, Getty and Hetu's process for rehabilitation of workers with NIHL within the context of public health was discussed and found to be appropriate. In Chapter 4 the feasibility of applying the Getty and Hetu process in the Australian context was described. It was concluded that it is feasible to reproduce Getty and Hetu's process for the rehabilitation of workers with NIHL in New South Wales. This chapter is concerned with the significance this outcome has for workers with NIHL and service providers responsible for hearing health. The discussion then focuses on how services might be improved so as to more effectively address the needs of workers with NIHL who might benefit from improved services including those with specific needs.

5.2 Discussion of results

Getty and Hetu (1991) have observed that the effects of NIHL among Canadian workers are hidden. They have pointed out that Canadian workers misperceived the effects of NIHL, attributing hearing difficulties to other causes such as inter-personal conflicts. The workers were strongly reluctant to acknowledge hearing difficulties, interpreting the effects of hearing loss as changes in lifestyle. Getty and Hetu further concluded that since the workers did not perceive the effects of NIHL, the need for rehabilitative help was not felt.

A recent Australian study of workers with NIHL undertaken by Westbrook et al (1992) supported the Getty and Hetu thesis.

It was considered that significant numbers of Canadian workers could potentially benefit from assistance if the barriers to rehabilitation noted above could be overcome. With this goal in mind, Getty and Hetu developed a process for enabling workers with NIHL to overcome such barriers. The programme is entitled The University of Montreal Acoustics Group Rehabilitation Programme (or the Hearing Adjustment Programme). The aim of this programme was to enable participants to reduce the individuals' experience of hearing handicap by overcoming the barriers to rehabilitation and thereby enabling the workers to improve their listening and communication skills through the initiation of a problem-solving process. In this process the worker (and his spouse) identified the areas of listening and communication they wished to address. The programme was successfully piloted in Canada. The purpose of this study was to assess the feasibility of offering such a programme in Australia.

The discussion of the existing public health infrastructure in Chapter 2 highlighted the fact that the Australian community is not yet in a position to systematically address the rehabilitative needs of workers with NIHL. This lack of preparedness was in itself a barrier to the proper study of the Getty and Hetu process. The process relied on the co-operation of professional helpers in trusted positions to assist workers overcome their experience of reluctance and participate in a problem solving process. Since the concept of rehabilitation for NIHL was new to the trusted persons themselves, their support for the project was not as strong as it might have been. The support of nurses at the community health and occupational health levels was not available nor forthcoming at the initiation of this project. As this project neared its completion, such support has become available with both groups actively seeking to be trained in the Getty and Hetu process. This interest has been evidenced

through the extension of invitations to the writer to present workshops on the process at their respective national conferences in 1992.

This study found that it is feasible to reproduce the strategies outlined in the Montreal programme and to achieve the same or similar results as the original pilot study with the workers who participated. The programme's recruitment strategy yielded a high attendance rate and workers initiated an average of three short-term actions to improve their hearing and listening skills. Following the programme, workers reported their hearing loss as being more severe. The workers also reported that their self confidence was less affected by their hearing loss, that they experienced less inter-personal conflict, and that various aspects of personal and social relations were perceived to be better. The spouses of approximately half of the workers attending the programme reported that their husband's confidence had improved since attending the programme. Almost two-thirds (63%) said that their husbands took more responsibility for their own communication needs. There was a general consensus among participants that the programme was most useful and people were pleased that they had participated. It is concluded that as a result of the programme workers were able to acknowledge the effects of their hearing loss whilst learning how to more effectively manage these effects. **Changes such as those noted above indicate that the process of problem-solving between the participants and the programme was initiated.** Giddens (1984:5) points out that individuals are involved in the continuing process of monitoring their interaction with their environment (though not necessarily consciously) and that changes in mutual knowledge, that is a change in one's understanding of how social life is formed, can influence the way a behaviour, such as using the telephone can be reproduced. The action by one person, in this case the programme provider, serves to clarify for the service user,

behavioural choices before them and that armed firstly with information and secondly with knowledge as to how to use the information or choice, change occurs. People maintain their behaviour in a particular way because they are constrained or disempowered, either through the way they understand the world (reified constructs or interpersonal sanctions as described by Giddens:1984: 176-180) or because of material constraints such as a lack of access to information or resources.

As Getty and Hetu observed in the Montreal project:

"....for a majority of participants, it can be said that the attitudes of both the hearing impaired person and the spouse changed towards better understanding of the nature of the problem, more confidence and more satisfactory adjustments" (1991:55).

It is evident from these outcomes that in this study, as with the Montreal project "the effect that was aimed for by the intervention, namely a reduction of handicap, was achieved on the whole" (Getty & Hetu:1991:52). Broader application of the process is indicated.

It is also evident from this study that whilst the barriers to rehabilitation have been reduced and that individuals have begun to take the necessary steps to improve their listening and communication skills, it is only a beginning and such workers may require ongoing services and support in the rehabilitative process. In Chapter 1 it was observed that the problem solving process as designed by Getty and Hetu provided individuals and their families access to the change process. Thus the contribution of Getty and Hetu's work both to the literature and to service providers, is the development of a programme which fills the long-standing gap in successfully initiating aural rehabilitation with workers with NIHL.

This study validates the procedures developed by Getty and Hetu for overcoming the reluctance phenomenon. This study has also initiated a process of change within public health for the management of NIHL, therein validating the Getty and Hetu process as a public health programme concerned with social change. Since the infrastructure is also now less reluctant to be involved in addressing NIHL, a further study involving community health and occupational health nurses is indicated.

Limitations to this study

As pointed out in the previous two chapters the recruitment process for this study differed in several aspects from the Montreal project. The most crucial difference to be noted is that unlike the Montreal project which had access to whole groups of workers, this project only had access to portions of groups. Many of the participants in this study responded to a letter of invitation to participate in the project and could possibly have been less reluctant to acknowledge their hearing difficulties than the general population of workers with NIHL. Alternately, this group may have been experiencing greater difficulties or stressors due to their hearing loss and therefore have been more ready to respond to an invitation to participate. This latter factor may be especially relevant as participants in this study were on average nine years older than the average age of compensation claimants (61 years compared to 52 years).

Targeting services

In Chapter 1 it was noted that NIHL primarily affected workers in heavy metal, construction, manufacturing, transport and mining industries. Consideration is now given to which workers are most likely to sustain NIHL and who may benefit by having access to the programme.

Whilst male workers from Anglo-saxon backgrounds have traditionally been seen as those most likely to sustain NIHL, women may also be affected by NIHL. Hogan (1992)¹, in an article entitled Workers with Noise Induced Hearing Loss, points out that women and in particular migrant women, "may only just be reaching the middle age where they are most likely to claim for compensation for NIHL and therefore become eligible for rehabilitation". Hogan observed that women were disproportionately under represented in claims data for NIHL. Hogan's contention that women may be affected by noise was confirmed in a further study by Westbrook et al (1992). Hogan also reviewed the ethnicity of workers employed in noisy industries and concluded that workers from non-English speaking backgrounds, particularly those from Italian, Turkish and Vietnamese backgrounds were especially at risk of sustaining NIHL. It is noted that state government departments responsible for monitoring workplace injuries are unable to produce reliable data on the ethnicity of injured workers. Finally, it would appear that the official reports of NIHL seriously understate what is occurring in Australia. Waugh (1991) observed that whilst the official level of NIHL was approximately 10,000 new compensation cases a year, he cited research which demonstrated that for each new compensation claim lodged, there were at least three workers eligible for compensation who did not lodge a claim. Given that such large numbers and groups of workers are absent from official reports of NIHL, further and more extensive research is required to more accurately identify who has sustained NIHL so that appropriate services may be made available to those who need them.

¹ This paper resulted from a literature review undertaken in preparation for the writing of this thesis.

Programmes which are designed to address the rehabilitation of workers with noise injuries will need to give specific attention to the needs of workers who are women and/or from non-English speaking backgrounds; especially those from Italian, Turkish and Vietnamese backgrounds who are especially at risk. As well, given the differing cultural expectations of women from non-western cultures, a specific study into the recruitment process for female migrant workers is indicated.

5.3 The need for prevention

The primary focus of this study has been on rehabilitation. Before discussing the development and provision of more broadly based rehabilitation services, the need for the prevention of NIHL is discussed. Getty and Hetu have observed that for the individual, the need for rehabilitative help is not felt (1991:42). It follows then that since the individual neither feels the need for nor seeks rehabilitative help for NIHL, from his/her employer, the employer may also misperceive the effects of noise. Even when an employee lodges a compensation claim, it can be observed that NIHL is misperceived as an injury without a consequence (other than monetary) if rehabilitation is not offered. It is also noted that the serious nature of NIHL is misperceived by employers who, when realising that an employee has sustained a hearing loss, do nothing to eliminate the cause of the injury.

Getty and Hetu (1991) point out that support for preventive action will only begin to emerge as the cycle of misperception is reversed. Action arises as groups of workers begin to seek help and employers begin to take action to reduce noise, either because their perception of the problem is revised or through pressure from organised groups of workers. Whilst this study did not set out to document changes to workplace noise which resulted from the

rehabilitative intervention, it is noted that such changes did occur. In one instance, following the participation of the worker in the rehabilitative process, the employer initiated an audit of existing noise hazards. Following the audit, existing noise hazards were eliminated using engineering controls. Further research into the relationship between the provision of rehabilitation services and injury prevention programmes is indicated.

Government departments responsible for the enforcement of noise regulations also need to revise their perceptions of NIHL and more actively and consistently enforce the legislation at their disposal. In the first instance, government action may only occur as a result of pressure arising through the interaction of government ministers (and their representatives) with action groups such the No Noise Day Committee which arose through this project.

Governments could enhance opportunities for the prevention of injuries by using the proceeds from law enforcement fines for non-compliance with safety legislation to provide industry with access to interest free loans which would be used for approved hazard reduction programmes. Alternately such moneys could be used to fund industry-based safety advisory and resource units within employer or union peak groups. The role of such units would be to provide expert advice to industry on hazard elimination.

5.4 Reorienting health services

Before discussing the reorientation of existing health services the dichotomy between occupational and community health is discussed.

The person who goes to work also goes home.

The individual-environment dualism surrounds noise as a public health problem. One person's environmental noise e.g. traffic noise, is another person's industrial noise e.g. a police officer on point duty; industrial noise for an employee at the grand prix is a neighbour's environmental noise. Noise is a part of the environment in which we all act. Workplace noise does not just impact on isolated individuals, but on people who are members of the community even if some people are more likely to be exposed to extended periods of harmful noise levels depending on their social position and their marketable skills.

Whilst it is necessary for the sake of clarity and justice to break issues down into component parts such as where areas of concern or responsibility lie, a danger arises in that services and remedies tend to be based around such artificial divisions. The separation of work-based health services, for example, from mainstream rehabilitation programmes results in a devaluing of the impact of injuries which do not affect a person's capacity to be productive. The reification of such a division can result in rehabilitation providers, insurers, governments, unions and employers falsely concluding that work-based rehabilitation is only concerned with ensuring that the worker is able to return to work with little or no responsibility being accepted for the social ramifications of a worker's injury. The individual is in a relationship with his/her environment. Noise, be it in the work environment or the broader community environment, affects individuals, their families, their communities and their places of work. It is thus a public health problem. Unfortunately, to date, it has only been seen as an individual's issue. The person who has to struggle with personal relationships made stressful or ineffectual by a work injury is the same individual who has to present for work each day. Such a person can no more leave their sense of stress, isolation

and frustration at home than they can pretend to be uninjured in the work place. The worker is a whole person who belongs to a whole community which is made up of personal and social networks and work, even if the individual does not have a conscious sense of that community.

The recent development of occupational injury prevention programmes at the area health board level (for example Auburn Community Health Centre) is a recognition that workplace injuries represent significant health, staffing and financial concerns for health service infra-structures at the local level.

By acknowledging that the dichotomy between occupational and community health is a false one, services may be in a position to take a more co-ordinated and resource effective approach to the health of the community. Resource effective in this instance does not mean that the same staff simply do a lot more work. Rather, the opportunity exists for the public sector, particularly in the area of hearing health services, to combine the resources made available through the workers' compensation system with its existing infra-structure to provide a competitive and much needed rehabilitation and injury prevention service.

Enhancing the existing infra-structure

In the public sector the New South Wales Department of Community Services already employs the necessary staff required to provide rehabilitation for workers with NIHL. In New South Wales, such staff are attached to regional groups known as area health boards. Each area health board has community nurses and nurse audiometrists, health promotion and injury prevention staff and twenty public hospitals in New South Wales have audiologists

(See Service Directory for Hearing Impaired People: Reed et.al.:1992). Injury prevention and health promotion teams are already involved in providing services for industry such as health checks, safety audits and consultation on preventing injury and promoting employee health. Extending such services to include NIHL would basically require health services to consult local unions, industry and community groups as to ascertain whether or not NIHL is an issue in their area. Given the dynamics of reluctance already noted in this study, area health staff would need to approach such consultations with extra sensitivity and care. Staff employed by such services would also need to undergo in-service training on using materials such as the Worksafe Noise Management at Work Guide, The Workers Compensation Act (1987) and Getty and Hetu's process of rehabilitation.

At a national level, the National Acoustic Laboratory (NAL) and the Commonwealth Rehabilitation Service (CRS) both have extensive service provision networks and both have a legitimate reason to be involved in providing services for workers with NIHL. NAL already offers industry a consultancy on noise management and it also provides audiology services to specific target groups. CRS provides rehabilitation for people wishing to rejoin the work force and has extensive links with industry. CRS has provided services for individuals with profound and severe hearing loss. In recent times the service has been undertaking a review of its services for people with various types of hearing loss. Included in this review has been a consideration of extending its services to workers with NIHL.

In recent years, the concept of public services either recovering their costs or selling their services for profit has become quite common. In Chapter 1, it was noted that employees covered by New South Wales industrial awards and legislation are eligible for rehabilitation

which is paid for by workers' compensation insurance. In Chapter 4, a costing for the provision of such services was detailed, presenting a prima facie case that such a service can pay its own way (providing that fee-for-service does not create additional barriers for workers trying to access services). The opportunity exists for public health services to offer rehabilitation for workers with NIHL on a cost-recovery or for profit basis.

Alternately, in New South Wales alone, the WorkCover Authority has accredited some one hundred and thirty-five (135) private rehabilitation providers so it is possible that these providers may wish to provide services to address this need.

Looking to the future

As rehabilitation for workers with NIHL becomes more available, workers, employers and rehabilitation providers may, as suggested by Getty and Hetu, begin to make the link between rehabilitation and the need for injury prevention. Presented below is a strategy for noise injury prevention and intervention. This strategy² combines the principles of community development in health, Worksafe's preventive approach (based on Australian Standard AS 1269), relevant legislation and Getty and Hetu's process of rehabilitation and should serve as a useful guide as communities systemically address this serious health problem.

² I am grateful to Glenn Munnerley of the Cumberland Hearing Rehabilitation, Research and Resource Centre, Andrew Hawkins of the NSW WorkCover Authority and Dr. Bill Noble of the University of New England for participating in discussions surrounding the issues within this framework and for comments on various drafts of this framework during its development. A revised version of this framework focusing specifically industry based health workers was developed with Glenn Munnerley and subsequently appeared in Occupational Health Magazine; No. 48, March 1992.

5.5 Framework for Addressing Noise Induced Hearing Loss

Community health workers, concerned to address NIHL in their local areas, may find themselves working with health workers from a variety of professional backgrounds as well as employers, workers and their respective peak groups at any one time. Success in addressing NIHL as a community health problem will depend upon the capacity of those involved to develop and implement a collaborative strategy. As well as addressing the question of how such a team would work together, consideration would need to be given to preparing the infrastructure for the intervention and the provision of service(s) as agreed.

Prior to development of a strategy for addressing NIHL, staff from health promotion, injury prevention, community nursing and audiology services and the WorkCover Authority of New South Wales, need to be identified and trained in the provision of:

- i) the rehabilitation programme as developed by University of Montreal
- ii) the injury prevention programme as developed by Worksafe Australia.
- iii) the dynamics of managing collaborative injury prevention strategies.

At the completion of training programmes, teams would return to their respective sectors to implement the programme. The programme³ would consist of:

- i) Identification of target areas (for example, local industrial estate).

³ Specific service delivery strategies for women and workers from non-English speaking backgrounds need to be developed and offered in conjunction with this process.

- ii) Identification of and consultation with trusted people in unions and industry in target areas.
- iii) Identification of workers with NIHL (as described below).
- iv) Implementation and evaluation of rehabilitation programme as per Getty and Hetu process.
- v) Development of base line data for injury prevention programme.
- vi) Development and implementation of strategy for preventing noise injuries.
- v) Evaluation of injury prevention programme.

Identification of workers with NIHL

There are basically three ways to identify workers with NIHL. The first two methods of identifying workers focus on existing workplace systems of health and hazard monitoring.

The third method is worker initiated.

The first method of identifying workers arises when a workplace conducts hearing testing and screenings as part of the traditional method of hearing conservation. Before beginning on site testing, the procedures for ensuring confidentiality of records, obtaining workers' informed

consent for the release of information to the employer and for initiating rehabilitation for workers with NIHL are established with the employer or their rehabilitation co-ordinator. The procedures for managing a workplace injury are clearly described in the Workplace Rehabilitation Manual (CCH:1990:56). In keeping with these procedures each employee is informed concerning the result of their hearing test and an injury report form is completed for any employee who has a hearing loss. Employees who have a hearing loss should be informed as to the availability of rehabilitation and encouraged to participate by a trusted person as outlined by Getty and Hetu (1991). If the worker agrees, the rehabilitation recruitment process is commenced. The home visit forms part of the assessment of a worker's need for rehabilitation. Once the worker's assessment is completed, an individual rehabilitation plan as per New South Wales WorkCover regulations is completed. The individual plan includes the provision of the Getty and Hetu programme for rehabilitation. At the conclusion of the group process, the individual's rehabilitation plan is revised in keeping with each worker's own rehabilitation goals. The service provider monitors and assists with the implementation of each person's rehabilitation plan through individual contact and group follow-up as per the Getty and Hetu process.

Many employers seek to comply with Section 15 of the New South Wales Occupational Health and Safety Act by having a noise survey of the site completed. If a noise hazard exists, audiometric testing of employees exposed to hazard should be carried out. Employees identified as having a hearing loss would be offered rehabilitation as described above.

Workers often contact their union for assistance with industrial deafness compensation

claims. The union's compensation officer will advise the worker where they can go to obtain a hearing test and refer them to the union's solicitor who will assist the worker in the compensation process. The union compensation officer is a trusted person who is able, if willing, to refer workers to a service provider for rehabilitation. Service providers should consult with union officials in their local areas with a view to developing a mechanism for establishing contact between workers and service providers. Once such a mechanism is established, the procedures for recruiting workers as per the Getty and Hetu process can be followed.

Injury Prevention

An integral part of any rehabilitation intervention is the elimination of the hazard which caused the initial injury. To this end, the service provider works in consultation with the site safety committee to develop of a noise management programme. As with any developmental intervention, the involvement of affected individuals is critical to the success of such an intervention. Thus the establishment of a noise action group consisting of affected workers and safety committee members is required.

It is the service providers role to resource the noise action group to identify and reduce workplace noise hazards.

5.6 Conclusion

This study sought to assess the feasibility of reproducing in Sydney, Australia, a programme for the rehabilitation of workers with NIHL, as developed in Montreal, Canada. It has been

established that, with minor cultural and procedural adaptations such an undertaking is feasible. It has further been established that the necessary legislative, financial and health service infra-structures exist for the broader implementation of such programmes within Australia. It is envisaged that if such infra-structures are mobilised to address NIHL utilising the Getty and Hetu process, significant advances may be made in Australia to both assist those workers affected by noise and also to eliminate the causes of this health problem.

Appendix I

Hearing Adjustment Programme

**Written by Louise Getty and Raymond Hetu of the Acoustics Group
University of Montreal - Quebec, Canada.**

Adapted for use in Australia by Anthony Hogan

Introduction

This guide has been developed to facilitate your work as you prepare and conduct readjustment sessions for workers who have a noise induced hearing loss. The programme is generally used in two formats. The first is an intensive programme consisting of a full day session followed by a half day session. The second format consists of four sessions of about two and a half hours each, held over a series of weeks. Both programmes have a follow-up workshop which is held three months after the last session.

The programme has ten main sections.

1. Recruitment. In this section, you will find all the procedures for recruiting/finding workers who have sustained a hearing loss due to workplace noise. An important part of this section is the involvement of the worker's spouse in the programme.

2. Preparation. Under this heading, we have put together a series of check lists which will ensure that nothing is forgotten at the time of your lectures/sessions/classes.

Furthermore, you will find advice on ways to skilfully conduct a group and to appropriately arrange the room.

3. Intensive Class. This section contains all the necessary information to conduct an intensive day and a half session and includes procedures to be followed, materials to be distributed, necessary equipment and so forth.

4. Weekly session. In this section you will find the same information as in the intensive course, but arranged differently for each of the four sessions (i.e. four weeks with a two hour session each week).

5. Follow-up. This section contains all the procedures to follow for contacting the participants and inviting them to come to back for a last meeting (three months after the intensive or weekly sessions).

6. Follow-up meeting. In this section, you will find the necessary information for conducting the last meeting with the participants.

7. Personal Files. In this section you will find some questionnaires which you will be able to use during the interviews with participants (either face to face or over the telephone). These questionnaires will allow you to clearly define the participants' characteristics and provide information about the problems they are experiencing. The questionnaires are also for the evaluation of the effectiveness of the programme for the individual participant.

8. Session Files and questionnaires. This section contains pre and post programme questionnaires, the questionnaire on use of technology and several information sheets which you will need to give to the participants throughout the course of the programme.

9. Posters. In this section, you will find all the necessary posters which are used to clarify information given to participants.

10. Appendices. This section contains a series of documents developed to facilitate your task during recruitment (e.g. promotional leaflets). Such documents are designed to encourage people to register or enrol for the sessions.

=====

Section 1. Recruitment

The recruitment process is central to the success of your overall programme. Due to the dynamics of stigma attached to hearing impairment, you cannot simply expect to advertise the programme and hope that people will turn up. Participants are most likely to participate in the programme if someone credible (e.g. a health professional already known to the individual) suggests the programme to them and gets their agreement for you to contact them about the programme. If they agree then each person receives:

- a) an initial contact by telephone is made with the person well before the programme commences;
- b) a home visit to the person and his/her spouse is made and a handicap questionnaire is completed at least four weeks prior to commencement of the programme;
- c) a brochure about the programme is posted to participants over a week prior to commencement - this serves to remind people that the programme is coming up;
- d) a final telephone/reminder call several days prior to programme commencement.

Section 2. Preparation

2.1 Equipment

You will need the following materials:

a) Handouts as per Section eight	Yes / No
b) Butchers paper prepared with headings as Section 9	Yes / No
c) Poster of the ear	Yes / No
d) Poster of hair cells	Yes / No
e) Poster size audiogram and copies of audiograms	Yes / No
f) Whiteboard	Yes / No
g) Whiteboard markers	Yes / No
h) Sticky/masking tape	Yes / No
i) Tape recorder	Yes / No
j) Tape of "Unfair Hearing Test"	Yes / No
k) TV and Video	Yes / No
l) Video - "Access 2000"	Yes / No
m) Spare Butcher's paper	Yes / No
n) Markers	Yes / No
o) Over head project and pens	Yes / No
p) Stethoclips	Yes / No
q) Hearing aids and batteries	Yes / No
r) FM or infra-red system	Yes / No
s) Touchfone 200	Yes / No
t) Coupler	Yes / No
u) Assistive devices for the television, radio, doorbell, car	Yes / No
v) Tea/coffee/urn/milk,sugar,cups	Yes / No
w) Name tags	Yes / No

(Photocopy this page and use is as a check list when preparing facilities and materials for the programme)

2.2 Organising the room and the surrounding environment

The room should be arranged to facilitate good communication between all group members and the group leaders. Tables and chairs which are set up in a rectangle or square seem to work well. It is important that glare is removed from the room, especially in the late afternoons, so curtains may be important.

2.3 Before the session.

If using an infra-red system or a hearing loop, this should be set up before the group arrives, as would be the refreshments.

At the front of the room have the whiteboard, an overhead projector and screen (if using overheads), prepared posters, butcher's paper, spare paper, sticking tape and pens ready.

Section 3 Intensive Session

Day 1 Morning

- 3.1 Introduction - "What's the worst thing about living with a hearing loss".
- 3.2 Justification and objectives of the session
- 3.3 Understanding how the ear works
- 3.4 Recognising the consequences of a damaged ear with regard to receiving sounds
- 3.5 Understanding your audiogram
- 3.6 Identifying/recognising the effects of noise on the body
- 3.7 Recognising and identifying the different ways of reducing the stress caused by noise
- 3.8 Identifying the different ways of improving communication
- 3.9 Conclusion

Day 1 Afternoon

Identifying various ways that will help solve:

- 3.10 Difficulties with the telephone
- 3.11 Difficulties with the television
- 3.12 Difficulties in the car.
- 3.13 Recognising/identifying the advantages and limitations of hearing aids.
- 3.14 Knowing what speech reading is and its advantages??
- 3.15 Identifying different strategies for improving communication during difficult situations.
- 3.16 Homework
- 3.17 Close of day.

Day 2 Morning

- 3.18 Introduction to day 2
- 3.19 Revision of homework
- 3.20 Showing an example of a public service adapted for deaf people
- 3.21 Showing a way of helping to communicate with public service operators
- 3.22 Learning how to make requests in keeping with one's deafness
- 3.23 Make a request during a simulation
- 3.24 Identifying various local resources available to deaf people
- 3.25 Closing of session
- 3.26 Close.

Section 4 Sessional programme

Week 1

- 3.1 Introduction: "What's the worst thing about having a hearing loss?"
- 3.2/3 Understanding how the ear works and the consequences of extended noise exposures
- 3.4 Recognising the effects of noise on the body
- 3.8 A relaxation exercise

Week 2

- 3.5 Understanding your audiogram
- 3.6/8 Strategies for improving communication I
- 3.7 Recognising stress and identifying ways of reducing stress

Week 3

- 3.10-13 Identifying more effective ways of listening to the telephone, radio, door bell and other technology.
Introduction to Hearing Aids
- 3.14/15 Strategies for improving communication II
- 3.16 Homework exercise

Week 4

- 3.19 Review of homework exercise
- 3.20-24 Strategies for improving communication III
- 3.8 Relaxation exercises
- 3.25 Programme evaluation

Personal Contracts

Section 5. Follow up

One month after the final session, participants are sent a letter designed to encourage them to pursue changes suggested to them during the programme. A sample letter can be found in Section 8.

Two months after the final session, the participants are contacted by telephone, reminding them again of what had been discussed in the group and asking about the steps taken to improve their condition. This telephone call also serves as a reminder that the follow-up meeting is to be held a month later. During this telephone call, a brief questionnaire concerning use of technology and other changes is also completed. See Section 8 for this questionnaire.

Section 6 Follow-up meeting

This section contains the programme for the follow-up meeting.

Section 7 Personal Files

Useful background information concerning participants in the readjustment programme.

Section 8: The Session File

Participants should be provided with handouts covering the following topics:

- The ear and noise
- The ear damaged by noise
- Noise - a source of stress
- List of local resources
- Aids for using the telephone
- Visual warning devices
- Aids for listening to the television
- Aids for communicating in a car
- Hearing Aids
- Costs of hearing aids
- Speech reading
- What to do to help in difficult communication situations
- Homework
- Attitudes which help in making requests
- Personal Contract.

Section 9 Posters (Butcher's paper headed up with the following headings are required to facilitate the group programme).

Main difficulties for men
 Main difficulties for women
 The ear
 The ear and noise
 The ear damaged by noise
 Personal audiogram
 Audiogram - loss caused by noise
 Noise, the source of stress
 Response of men
 Response of women
 Aids for using the telephone
 Visual warnings devices
 Aids for listening to T.V.
 Aids for communicating in the car
 Hearing Aids
 Costs of hearing aids
 What to do to help in difficult communication situations
 Homework
 Attitudes which help in making requests
 Personal Contract

Section 10

Appendices

1. Hand-out presenting what will be covered in each session
2. List of participants
3. Relaxation exercise
4. List of local resources
5. A Birthday Party - for men
6. A Birthday Party - questionnaire for men
7. A Birthday Party - for women
8. A Birthday Party - questionnaire for women
9. Exercises from the Hear Service's programme
10. Pro forma letter for writing to participants following programme
11. Pre and Post questionnaire for programme participants
12. Return questionnaires for spouses
13. Hearing aids
14. Technological aids

Section 3 Intensive Session

Timetable for the session

Equipment: Distribute assistive listening devices (e.g. FMs)

Development.

Give the basic outline of the sessions to participants.

Explain the timetable for the session including breaks, time for lunch, finish and so on).

Give information on cost of lunch if appropriate.

Locate the toilets.

Equipment for the sessions Files

A session file consists of the various handouts and programmes notes listed in Section 8. The purpose of the file is to provide participants with a set of programme notes and activity sheets.

Give each couple a file for the session. **Explain that during the session they will see each of the documents therein and that if they wish they can follow the programme using the notes provided.**

Emphasise that after the session, the file will help them as a reference when needed.

Compensation problems

To avoid loss of time and unnecessary frustration, emphasise that you will deal with all questions relating to compensation all at the end of the session.

3.2 Justification and Objective. Activity

The activity which follows is aimed at making the participants aware of the difficulties caused by deafness. At the same time, it will help to justify the usefulness of the session.

"What's the worst thing about having industrial deafness?"

MATERIALS REQUIRED: Tables and chairs set up in a rectangular fashion. Butchers paper and markers. Masking tape or other sticking material.

Group size: 5-6 couples Time: 1 hour

PROCESS: The facilitator asks each member of the group, starting with the men, to tell the group what they find most difficult about their deafness. The co-leader writes people's replies on the appropriate space on the poster. If the replies are incomplete, reform the question to better define their difficulties.

For the spouses, do the same process as for the men, but this time whilst asking each what they find most difficult about the deafness of their spouse, also ask them how they cope with the problem. Support the women as they express their own difficulties in such a way that they feel that their problems are legitimate.

Summarise and compare the comments given by the men and women.

Without entering into drawn out discussions, show that a real problem exists and that often deaf people tend not to talk about their difficulties.

Say that the session is going to:

- * help them understand the reason for these difficulties**
- * propose ways with which they can function better with these difficulties.**

3.3 Understanding the functioning of the ear.

MATERIALS: Butcher's paper and pens, a large poster of "the ear" which pictures the outer ear, the auditory canal, the middle and inner ear. A laminated blank audiogram of A3 size or larger (or have an audiogram produced on an overhead transparency) and a whiteboard marker. Place the audiogram on a board so it can be seen on an overhead projector. Use (with permission) the audiograms of the participants or an example of an audiogram relevant to the group's interest e.g. industrial deafness.

In non-academic terms, announce the objective of the session: **Emphasise that the session offers a good chance for people to reflect on the problem of deafness. In the course of the session, it is hoped to provide:**

- * understanding of what deafness is and how it shows itself
- * find technological means and some strategies in order to be able to better live with deafness.

Highlight the fact that from their own experiences, they may already know something about how the ear works.

Invite and encourage participants to tell the group what they know about the structure and functioning of the ear, beginning with the outer ear. As the ear is described, draw it up roughly on the butcher's paper, adding in and discussing parts that are missed as you go. Ensure that the following topics are covered.

Parts of the ear

Transmission of sounds

Loss of hearing (temporary or permanent).

Also remind participants that a handout with several key concepts about the ear can be found in their folders.

The following explanation of the functioning of the ear is included for the facilitator's information.

By analogy, show that the outer hairs cells in the cochlea are like lawn, if it is walked on for a day there are no serious consequences. If it is walked on frequently, the lawn is permanently affected, just as repeated loud noise can cause permanent deafness.

Function of the ear (again: refer to key concepts handouts)

The ear is made up of three parts, of which only the external ear (called the pinna) is visible. Sound penetrates the external ear (point to poster of canal passage), makes the ear drum vibrate (a very thin piece of skin at the end of the canal) which makes the small bones vibrate; these in turn vibrate the liquid in the internal ear.

The internal ear contains sensory cells armed with small hairs on top. When a wave produced by a sound penetrates the inner ear the hair of the sensory cells is stimulated. This releases an electrical signal which is received/caught by the auditory nerve and transmitted to the brain.

The inner ear is the most important part of the hearing organ. When sensory cells are destroyed, there is permanent loss of hearing. No medical or surgical treatment can restore damaged sensory cells.

Exposure to intense noise during the course of the days work causes fatigue in the sensory cells of the inner. This shows itself as a temporary hearing loss. After a sufficient period of rest, the sensory cells recover their normal state and the temporary hearing loss disappears.

If there is repeated daily exposure to excessive noise, hairs cells will be destroyed, resulting in a permanent hearing loss.

3.4 Identifying the consequences of a damaged ear as the result of repeated sounds.

This activity is aimed at giving an understanding of the main manifestations and difficulties experienced as a result of deafness.

Explanations

Explain how hearing loss caused by noise becomes apparent

(by using the key concepts below and the more concise handout provided in the attachments).

Loss of selectivity
 Loss of discrimination
 Loss of sensitivity
 Tinnitus
 Recruitment

The damaged ear and the reception of sounds.

1. **Loss of selectivity:** When there is loss of hearing caused by noise, there is a loss of capacity to select one sound from annoying other sounds, e.g. the sound of conversation among several people in a group meeting. All the sounds mingle, in such a way that it is hard to understand what is said.

Consequently:

- a) when there is noise around, the person suffering from hearing loss has great difficulty following conversations
- b) when its quiet you may notice that someone with a hearing loss can hear even softly spoken conversation. You may conclude that they can understand when they want to. In fact, they understand when they can.

2. Loss of discrimination. Loss of hearing is accompanied by a lowered capacity to distinguish between tones which sound similar. This can result in the person confusing some sounds in similar words. This leads to mistakes and sometimes unfortunate misunderstandings.

3. Loss of sensitivity. Loss of hearing caused by noise leads to a lowered capacity to hear weak or soft sounds when the sounds involved are high pitched (e.g. telephone ringing, whistle of a kettle etc).

As a result of a hearing loss, there can be certain sounds which are hard to understand. Female voices for example are generally higher pitched. People with a hearing loss in the higher frequencies may experience difficulty understanding some of the things said to them as parts of words are not heard (as if there were letters missing from a text or as though someone had "rubbed out" the top or bottom of the letters in each word). People react in three ways to this difficulty:

- a) by trying to guess what is said by using the context of the conversation. This demands an effort of concentration and can become tiring over a period of time.
- b) In certain cases, they cannot guess or they are mistaken and people feel embarrassed;
- c) By asking that you talk louder or more clearly. Often this can be enough to aid understanding. Sometimes, others begin to talk too loud and that is unpleasant.

Tinnitus. Loss of hearing caused by noise is accompanied, in about 30% of cases, by ringing, buzzing or echoing sounds in the ear. These are caused by the inner ear itself. These ringing or buzzing sounds can be very uncomfortable/embarrassing, especially in quiet surroundings.

Recruitment

When the inner part of the ear is damaged (from any cause), it often becomes very sensitive to loud sounds. This means that a person may not hear some things unless they are made louder but if they are too loud they become painful! Loud music, loud voices, or too much noise may be very uncomfortable. This is called RECRUITMENT.

3.4 Demonstration

Ask all participants, especially spouses to complete the Unfair Hearing Test.

This test simulates hearing loss.

Ask the wives what they have just heard (difference between the three recordings in terms of the quality of sound). Explain that the first recording most closely resembles what a person with a mild hearing loss for high pitched sound would hear.

3.5 Understanding your audiogram

Display the blank poster-sized audiogram. Encourage participants to tell the group what they know about an audiogram. Supplement the group’s knowledge of the audiogram as you proceed. Ensure that the basics of an audiogram are covered and address any questions which people raise - clarify any points not already made clear.

The following is an example of the type of information which should be addressed by such a talk.

"An audiogram is a chart or a map which represents in a graph like form, a person’s hearing levels. It has two sides. Down the left hand side are numbers starting at a very low score such as minus 5 or zero and progressing up to about 100. Does anyone know what these numbers refers to? That’s right - decibels or how strong the sound is. Most people remember decibels as how loud a sound has to be before you can hear it. Across the top of the audiogram is another set of numbers. Does anyone know what these refer to? The one that runs along the top is a list of the different types of sounds we can hear - such as very deep sounds and very high sounds. For example, the bottom note of a piano is a very deep sound whilst the top note of a piano, like a bird cheeping, is a high sound. We call these low and high pitched sounds. Does anyone know what term we use to measure the different types of sound? A hertz scale. That’s correct. So we can see then that an audiogram tells us how loud each sound has to be before we can hear it.

Table I Decibels produced by common sound sources.
Please see print copy for image



(Serra, Bailey & Jackson: 1986:102)

Ask a each member of the group in turn if they would like to have their audiogram put on the demonstration board for explanation. Hopefully, everyone will have their audiogram drawn up for an explanation of what they presently can hear.

Discussion: As the audiograms are put up, the opportunity is taken to clarify with spouses if they think that what is said about their partners hearing stands true to their experience.

As well, other posters can be used here to more clearly illustrate the difficulties of discrimination and selectivity.

3.6 Identify the effects of noise on the body.

Recall. Before going on to this subject, briefly go over what had been seen/covered in the first part:

- * difficulties caused by noise
- * function of the ear
- * consequences of a damaged ear on the reception of sounds
- * activities to better grasp what a deaf person hears and the level of deafness of each participant.

To Come: Announce what will be seen in this second part:

- * effects of noise on the body
- * means to reduce stress caused by noise
- * means to improve communication

3.6 Recognising the effects of noise on the body

This section of the programme focuses on effects such as stress and introduces participants to basic stress management skills.

Observe:In this exercise the idea of feeling good (and not so good) about yourself is introduced¹. A picture of a pot of gold is given to each participant. It is suggested that feeling at high pot is like one would feel if they won a million dollars. Participants are asked to describe how that might feel. Since they are likely to be feeling good, they are encouraged to colour in part of their pot with a yellow or gold highlighter pen, to represent feeling good or high pot.

Prepare the various physical indicators of stress as described below on differing coloured cardboard before commencing the group. Each type of stress problem, for example, cardiovascular, is written on the same coloured cardboard. The pieces of 'symptoms' cardboard are then spread around the room.

Participants are informed that at times, when we are feeling down or low pot, our body has ways of telling us that all is not as it ought to be. Suggest to participants that they are to wander around the room and have a look at the cards and decide which one most represents their experience of low pot.

Once this is done, the group leader gathers up the cards and goes through each one, encouraging participants to identify which symptom, if any is theirs. As they do so, they are given the card they identify with. If more than one person identifies with the symptom, encourage them to sit together. Once all the cards are given out, the leader goes through the longer term consequences of the symptoms which have been written on pieces of cardboard of the same colour as the symptoms. The use of colour coding assists participants to make the connection between long term and short term experiences of stress. By grouping people with similar difficulties together, the experience of stress is demystified as stress is seen as something common to group members.

It is then suggested that a way of overcoming low pot is learning how to relax.

¹ If you are not already familiar with Virginia Satir's analogy of high pot and low pot, refer to her book where the idea is developed: People making (1972).

A relaxation exercise, such as slow breathing or the Jacobsen method is then undertaken. Since we are all feeling good at the end of the exercise, we usually decide to colour in some more of our pot.

Signs and Symptoms of Stress - Key Concepts.

Immediate Signs

Feeling really agitated
more nervous
jumping at nothing
Get angry more quickly
become less tolerant
high pulse rate
high blood pressure

Greater muscular tension

Lessening of digestive
functions

Long term

unstable,
depressive,
less agreeable life

cardiac problems
vascular problems
(hypertension)

Fatigue
Various ills (eg back)
Digestive
troubles
(e.g. ulcers)

Ask participants to identify the ways symptoms of stress show up in our daily lives. Note that each experience of stress may be different for each person (some examples are listed below).

Encourage people to share their solutions for their stress problems.

Some indicators of feeling stressed:

Breathing changes
sweating hands
dry throat
head aches
moving about quickly
difficulty sleeping

sweating
dizzy
stomach ache
urge to urinate
avoiding things
bad digestion

3.7 Present solutions for reducing the effects of noise

1. Understanding what is happening (from the session)

So far we have seen that hearing loss creates difficulties for us in our day to day communications. In some of these situation, we may feel or experience stress in one of its many forms.

2. Warn and explain to participants about stressful situations caused by deafness (e.g. in a group). Note that ideas to ease communication will be covered later. [See: What to do in difficult communication situations].

3. Give reinforcement to participants about the usefulness of good lifestyle and habits (e.g. physical activities) for reducing stress. Emphasise that when living with the problem of deafness, it is important to know how to relax.

Ask the group if any of them know of ways for relaxing.

Explain that there are different ways to relax e.g. Jacobsen, yoga.

3.8 Identifying various ways to improve communication.

This activity is aimed at provoking a discussion on:

- * the difficulty in recognising a hearing problem
- * the difficulty of making requests because of deafness

For this activity, the men stay in the room (because of using amplification system while the wives are grouped in the another room).

For the men: read the text "The Birthday Party -Men" and explain the situation/performance.

From the questions following the scenario "A Birthday Party - Men", pose the questions to the group and write the answers on a piece of paper.

Make sure everybody participates.

For the women/wives: read the text "A Birthday Party - Wives" and explain the situation.

Using the provided questions for "The Birthday Party- Women", pose the questions to the group and write down the answers on a piece of paper.

Again, make sure everyone participates.

3.8 Once the exercise has been completed by both groups, bring the two groups back together and explain that we are going to go through everyone's responses together.

Firstly, write on the butcher's paper the men's replies:

- * the situations they find difficult
- * what they would do in each situation
- * why they would do nothing.

Then write down the wives responses:

- * the situation where they believe their husband would have difficulties;
- * what they would do and what they think their husbands would do;
- * why, according to them, they (the men) would not do anything.

Ask participants what they think of the results - especially of the wives responses differing from the men. The most important aspect of the activity depends on the discussion which is going to follow. Encourage people to discuss the difficulties hearing impaired deaf people suffer and where, appropriate, encourage individuals to admit their difficulties.

Pose the following questions:

- * Do they talk openly of these difficulties? If yes, to whom?
- * Can one manage without talking about them? What would be the consequences of talking about them?
- * What would people say about them if they state positively that their deafness is a problem?

Take up the key elements of the discussion and emphasise the positive aspects of informing others (such as family, work, public services/shops etc) of their hearing difficulties.

Emphasise that the subject "how to make a request" will be taken up later in the course of the session.

Introduce participants to a Lind problem solving exercise for making requests (either the Lounge Room exercise or the Restaurant Exercise found in Section 8).

3.9 Conclusion

RECALL

Briefly go over what has been covered during the morning:

- * what hearing loss is
- * the problems arising from a hearing loss
- * the ways of reducing the effects of noise on the body.

To Come:

Introduce what will be coming in the afternoon including several technological means and ideas to improve their way of life and communication skills.

3.10 - 3.12 Identify various types of devices that will help to solve difficulties with the telephone, television, car and door bell.

These assistive listening devices are firstly explained in terms of how they work and possible uses. Participants then spend time trying out the devices by:

- * using a telephone with volume control
- * using a telephone with a coupler (if they have an aid)
- * trying out different telephone "ringing" systems
- * testing out different styles of door bells from various places in the building
- * testing out infra red, FM , cord free and traditional headsets with the T.V.
- * testing out an assistive device for use in the car

3.13 Recognising/identifying the function and advantages/limitations of a hearing aid.

The group leader briefly demonstrates the components of a hearing aid. Participants then receive hearing aids to look at and to try on with stethoclips. It is stressed that aids are must be tailored to an individual's hearing loss and the aids provided are not designed for their hearing loss. Participants are encouraged to wear an aid for remainder of the day.

3.14 Knowing what "Speech Reading" is and its advantages.

RECALL.

Briefly go over what you covered in the first part of the afternoon:

- * ways of facilitating communication such as hearing aids, FM systems and other assistive devices.

To come:

Announce what will be covered in the second part:

- * reading of expression
- * ideas to facilitate communication in different situations

Explain that speech reading is an approach which helps to better decode what people are saying to us. It consists of being attentive and interpreting the facial expression of the person talking to us and picking up clues from their mouth shape as they speak.

Describe certain obstacles which make reading expression difficult:

- * glasses badly adjusted
- * insufficient light
- * too great a distance between us and the person with whom we are speaking
- * the person with whom we are speaking moves a lot
- * the person puts their hand or object in front of their mouth.

Introduce participants to the lip reading test as developed by Chris Lind and take the group through the exercise. At the completion of the exercise, see how people went. Write up on the board the types of mistakes people made.

Highlight issues such as some sounds are made inside the mouth and look the same on the lips (for example sick and kick), some letters look the same on the lips (for example p and b) and some sounds look quite distinct on the lips (for example - fat and mat). Ask the group to suggest ways we could use to overcome these difficulties. Refer participants to the list of local resources found in their handouts and highlight the places where lip reading courses are taught. Conclude by noting the advantages to be gained from speech reading.

3.15 Identifying different ideas to improve communication when in difficult situations.

Questions.

Ask the participants to suggest ideas they might use which could facilitate communication in four types of communication settings:

- * in groups;
- * in a restaurant;
- * at the theatre, cinema or in church;
- * on the 'phone.

Take each situation separately and pose the following question:

"What could one do in this situation to make it easier?"

Write the replies on a poster.

If the group does not spontaneously come up with some of the ways, explain to the group

that you have some lists of difficult communication situations. Hand out the Lind room exercise not previously used in exercise 3.8 and work the problem through as a group.

3.16 Explanation

Men: Give the men homework to do this evening. It is to be presented at the next meeting (their wives may help them).

They must:

1. Choose a close acquaintance (child, parent, friend, neighbour or other) and tell them that they are attending a readjustment meeting for their hearing problem.

2. They must try to explain to this person either:

how noise has damaged their ears

or

how hearing loss means that they can only hear certain sounds but not others and that this means they can understand when they can; not when they want to.

Emphasise that they do not have to write anything.

In turn, ask each person who they think they will talk to.

Write on the poster the name of each participant and the name of the person to whom they will talk. They may make use of the documents they have received during the day: "The ear and noise" and "Ear damaged by noise".

Women: The homework for the spouse of the hearing impaired person is as follows:

The spouse is to try to be aware of the times she 'rescues' her husband in difficult communication situations. If possible, discuss these situations with your partner. Was he aware of what happened? How did he react when you pointed out to him that you 'helped' out? Was there another way the situation could have been managed?

3.17 Closure of the day!

RECALL. Go over what has been covered during the day:

- * what hearing loss is and its consequences
- * ways and ideas to improve communication and live better with hearing loss.

To come: Present clearly and quickly what will be covered during the next meeting:

- * homework
- * assertiveness
- * services offered to hearing impaired people
- * services available to hearing impaired people.

Verification.

See if people have any questions.

Reinforcement.

Emphasise a positive aspect in front of the participants (e.g. their participation, public acknowledgment of their problem).

Compensation matters.

Reply, in private, to the individuals questions about their compensations claims.

Batteries. When the people have left, put the batteries of the assistive listening devices on charge.

Day's evaluation

Discuss the first part of the day with other organisers:

- * overall impression of the day
- * what worked well
- * the situations which were most difficult
- * what you could do to prepare yourself to face up to these situations if they are repeated.

3.18 Introduction Second Session

Settling in the listeners.

Distribute the headphones and infra red/FM receivers.

Word of Welcome: Welcome everyone

Break the ice via some form of activity to develop a good atmosphere in the group.

Announce the objective of this session:

- * go back over the homework
- * how to assert oneself
- * example of a public service adapted for deaf people
- * available resources

Outline the session timetable.

3.19 Return to the homework

RECALL: Describe what they had to do for homework.

Revise homework and pose the questions:

- * What did they do?
- * How did it go?
- * Difficulties encountered?
- * Equipment used?
- * Questions posed by the other person?
- * The reaction of the other person?
- * What did they get out of it?

Congratulate them on the effort they put into the activity.

Draw conclusions about the difficulty of talking openly about hearing loss and some advantages of doing it:

- * greater comprehension of the problem from others
- * improvement in communication
- * satisfaction gained from it. etc

Emphasise that the homework was a start in talking openly about their hearing problem and that this morning there will be various exercises on assertiveness.

3.20 Show the Access 2000 video and discuss the ways public service officers are trained to assist communication for people who have a hearing loss.

3.21 Identifying a means to help communication with the public service operators.

Explanation.

Present the Hearing Help Cards and **explain that they can be used to give precise information about their hearing loss so that they can use the services best adapted for deaf and hearing impaired people.**

Present the self adhesive stickers with the deafness symbol and **explain that they can be put in appropriate places to ensure a better service.** Example, if in hospital, they can be stuck on your file and daily charts.

Hand out a Hearing Help Card and stickers to each person.

Draw a conclusion on the numerous aids available to deaf people (training of staff, cards, telephones with couplers etc) and that if they want an adequate service it is important that they inform the service provider of their hearing problem.

Note: You can buy stickers and hearing help cards from Better Hearing Australia at Sydenham and Parramatta (See Services Directory).

3.22 Learning to make requests in keeping with one's hearing loss.

This activity is aimed at recognising and experimenting with ways which enable participants to make requests in keeping with their hearing loss.

Explanation. Explain that with the aids that they have seen, several require that when making a request, you have to say that you have a hearing problem. Emphasise that the exercises to follow are aimed at improving their ability to make the requests. Note that the group has already successfully completed a number of these tasks.

This time use Lind's exercise for asserting oneself during difficult telephone situations. A copy of the exercise can be found in Section 8.

Underline the fact that it is important to make requests.

Alternatively the following role play exercise could be used with a more confident group.

Explain what it means to assert oneself.

"This means expressing clearly what one expects from the other person". Make clear the distinction that asserting oneself is expressing one's needs and not imposing oneself aggressively.

By questioning, explain what could impede the making of a request (see below).

"What makes you hesitate to make a request?"

The main replies will include:

- * Because you are too embarrassed
- * Because you are afraid of the response from others
- * Because you don't know how to make a request.

Explain the attitude and behaviour to use when you don't know how to make a request:

- * maintain visual contact
- * an upright posture
- * begin each sentence with "I"
- * use short sentences
- * be relaxed

3.25 Closure of session

RECALL:Recapitulate what has been covered during the session:

- * understanding what hearing loss is and its consequences
- * ways and ideas/strategies to improve communication and life-style
- * exercises in self assertion
- * available resources.

Personal Contract

Present and explain the "Personal Contract": it represents a personal commitment undertaken to improve one's situation in connection with their hearing problem. **RECALL** that since the start of the session, they have become familiar with several ways of doing this. Ask the participants to take three minutes with their spouse to discuss which of these means they wish to adopt.

Write on the poster "Personal Contract", the choice(s) made by each participant and their name (make a note of these choices on a piece of paper so they can be verified during the return meeting, three months later).

After having gone round the table, invite them to take the "Personal Contract" paper and to put a cross next to the means they intend to use. They will keep this piece of paper to remind themselves of the contract.

Coming Reunion

Announce that they will be invited to return in three months in order to share with the rest of the group what they have done after this session. Fix an appropriate date for the coming meeting (three months). Inform them that you will tell them of the next meeting by mail or by 'phone.

Evaluation of the session.

Evaluate the session verbally by asking participants:

- * What is the most important thing you have learnt from this session?
- * What did you find the least useful?
- * Do you believe that what you have learnt will help you in your everyday life?
- * In what way has the presence of the wives changed anything in the development of the session?
- * What made you decide to come to this meeting?
- * Did your wife have something to do with your decision to come to this meeting?

Reinforce: Emphasise in a positive way, the participation of the people and thank them for their attendance.

3.26 Close

After having finished the session: Replace the equipment and the furniture in the room as required. In discussion with co-workers, revise the sessions:

What are your first impressions on:

- * attaining the objectives of the sessions
- * the development of the session
- * your roles as organiser
- * what were your strong points
- * what were the points needing improvements
- * what resources can you draw on for these improvements
- * in reorganising this session, what would you do differently.

Establish ways of making improvements before next session.

Section 5 The Follow up

One month after the session, give them a written boost.

Send a letter recapitulating the ways covered for helping oneself and ask what approaches they have used (See Section 10: "Letter for a written boost").

Two months after the session, give participants a telephone reminder. This telephone reminder will allow you to give support for the approach people have used and also helps to refresh their memories.

This telephone call will also allow you to see how far they have progressed with their approach, and allow you to see if they have any questions or if they need support for their particular plan. Tell them the date of the return meeting, in one month's time.

Three months after the session, contact participants by telephone again and invite the people to the reunion meeting. You should telephone roughly ten days before the actual meeting. During the call, question the people using the "Questionnaire on use of technological aids" (see personal dossier).

You can remind them of the objectives of the last meeting:

1. Support them with their chosen plan of action
2. Repeat information if necessary
3. Evaluate the impact and the effects of the session.

Section 6 Return Meeting.

Set up the FM system and make sure it is working well.

Welcome the participants back again. Break the ice quickly and establish a good atmosphere in the group.

RECALL

Make a brief resume of the last session (say 5 minutes) .

Objectives:

Specify the objectives of the return meeting:

- * to see what has changed and what has happened since then.
- * to see if there are any other questions.

Inform the participants of the approximate duration of the meeting.

Technological aids.

Using the replies from the "Questionnaire on the use of technological aids", ask the participants on their use of these technological aids:

What motivated them to buy/acquire a technological aid?

Are they satisfied with their choice?

Where do they wear/carry them (the hearing aids)?

What information did they receive for wearing the aid? Its limits and its maintenance?

How do people around them react?

Have they had to explain their hearing loss to people?

Did they use the handouts?

Is there anything they would like explained more precisely?

Activity: Discussion. This activity will take place separately between the men and the women.

For the men.

The men will remain in the meeting place with one organiser.

Pose the following questions:

In the family:

What are you doing differently?

Do you see yourself differently?

Do you feel different?

In social activities:

What are you doing differently?

Do you see yourself differently?

Do you feel different?

At work:

What are you doing differently?

Do you see yourself differently?

Do you feel different?

For the women:

In another room, the other organiser questions the wives (Return meeting questionnaire - for the women - Section 10).

In the family:

What are they doing differently?

Do they see themselves differently?

Do they feel different?

At social activities:

What are they doing differently?

Do they see themselves differently?

Do they feel different?

As a group:

Reunite all the participants and bring out the comments that men and women made.

Relaxation.

Question the participants to find out if they followed up on the relaxation exercises.

If yes - did the exercises help them to live with less stress?

If no, why not?

Hearing Help Cards.

Did they use the hearing help cards?

If yes, where? When? How did people react?

Relevance of meetings.

Verify with them whether the fact of organising meetings as a group is a good way of doing it?

What gave them the most benefit from these meetings?

What was the least important, the least helpful for them, from all that they have seen?

Other actions

Ask them if they intend to approach any of the organisations listed below concerning their hearing loss:

the union

the parish

the Compensation Board

Social Security/NAL

their local bank or credit union

hearing aid manufacturer/dealer

others.

Closing the meeting.

Thank participants for their attendance and participation.

Tell them that they can get in touch with you if they need information or help.

Section 8

Hearing Adjustment Programme Handout No. 1

If you are feeling stressed, take time out to do the relaxation exercise.

Four indicators that show a loss of hearing caused by noise:

- 1. When there is noise around it is difficult to hear
- 2. There are also word sounds one doesn't hear
- 3. Even if there is no noise, there are sounds which one mixes with the other sounds of the word.
- 4. Finally, some people understand whispering when it is quiet.

Noise: Signs of stress

Problems

Solutions

- | | |
|--|--|
| 1.You feel more nervous | Practice relaxation |
| 2. After work, you don't hear as well | Understand what is happening to us |
| 3. Your heart beat/blood pressure increases | Anticipate stressful situations caused by deafness |
| 4. Your digestion is not as good
Your muscles are tense | Develop good life habits |

Hearing Adjustment Programme Handout No. 2 List of local resources

Relaxation classes are normally available at the community health centre in your area.

Audiologists are located at major hospitals such as Royal North Shore and Westmead. This centre also has one. Others can be found in the yellow pages.

Hearing aids suppliers. If you are a pensioner, you can go to the National Acoustic Laboratory in your area for a free service (e.g. Hurstville, Parramatta, Penrith or the City). The Laboratory has a four to six month waiting list. If you are not a pensioner and you want an aid, then you will need to buy one. If you have not yet finalised your compensation claim and you want a hearing aid, you can request payment for an aid as part of your overall claim. We can fit you with a hearing aid here in the Hearing Rehabilitation, Research and Resource Centre or you can go to a private dealer. There are lots of them and they are listed in the yellow pages. It is important to remember to "try before you buy". If the dealer won't let you trial the aids for a few weeks, go somewhere else. You are spending a lot of money so you deserve value for your outlay.

Deafness Resources Australia, 123 Cambridge Street, Stanmore has a good range of helpful devices on display, as do the SHHH Centres. There are a number of self help groups in Sydney such as SHHH as well as Better Hearing Australia. The nearest SHHH group is located at Canterbury Hospital. There are Centres at Turrumurra in the Hill View Community Health Centre and a new group is just forming at Campbelltown Hospital. SHHH has a regular newsletter which it sends out to members.

Better Hearing Australia is based at 128 Unwins Bridge Road Sydenham and at Parramatta Hospital. Both Better Hearing groups offer lip-reading courses as well as a range of social activities. Further assistance from a social worker or marriage counsellor can be obtained from: Centacare by telephoning 264 7211.

Alternately, counselling is available from your local community health centre.

Hearing Adjustment Programme Handout No.3

EFFECTS OF A HEARING LOSS

"I CAN'T HEAR SOFT SOUNDS"

Weak or soft sounds, quiet or distant voices become difficult to hear. This is called a loss of SENSITIVITY.

"VOICES OFTEN BLUR TOGETHER"

Voices can seem to blur together especially when in group situations or when there is a lot of background noise. "I hear but I don't understand!" is a common complaint. This is called a loss of SELECTIVITY.

"SOME WORDS SOUND THE SAME"

Many words which sound the same (for example chip and ship, feet and seat, stamp and damp) become difficult to tell apart. This often leads to mistakes, misunderstandings, and embarrassment when the wrong word is heard or guessed. This is a loss of DISCRIMINATION.

"DON'T SHOUT! - I'M NOT DEAF"

When the inner part of your ear is damaged (from any cause), it often becomes very sensitive to loud sounds. This means that a person may not hear some things unless they are made louder but if they are too loud they become painful! Loud music, loud voices, or too much noise may be very uncomfortable. This is called RECRUITMENT.

"THERE'S A NOISE IN MY EARS"

A common problem associated with hearing loss are "head noises" or "ringing in the ears". These noises can occur sometimes or be present all the time, and can be very soft or very loud. They can be annoying especially at night or when the person is trying to listen to other things. This is called TINNITUS.

Hearing Adjustment Programme Handout No. 4**Speech Reading**

Just by reading lips and facial expression, one can understand, in part, what someone is telling us.

What is important is to:

- * Make a habit of looking at peoples' faces**
- * Knowing the context - the subject of the conversation**

It can be difficult to speech read if:

- * your glasses are badly adjusted**
- * lighting is insufficient**
- * the distance from the person to whom we are talking is too great**
- * the person with whom we are talking moves about a lot**
- * the person puts their hand or other object in front of their mouth.**

Hearing Adjustment Programme Handout No. 5
Homework

1. Choose a person from around you such as a child, parent, neighbour, friend or other person and tell them that you are attending a readjustment meeting for your hearing problem

and

2. Try to explain to this person something of what you learnt e.g How noise damages the ear or

How that leads you to understanding when you can hear and not when you want to!

To help you with the explanations, you can use the handouts.

Attitudes which help make requests.

Maintain visual contact

Hold an upright posture

Begin your sentences with "I".

Use short sentences and only say important things

Try to remain relaxed.

Hearing Adjustment Programme Handout No. 6

Personal Contract

From now until the next meeting I intend to:

- * explain to people that I have a hearing problem
- * make several requests in keeping with my hearing problem
- * Investigate and/or get myself a new Telecom 'phone with volume control and coupler
- * Investigate and/or get myself a T.V. aid
- * Investigate and/or get myself an aid for the car
- * Investigate and/or get myself a hearing aid/s
- * Look more at people when I'm listening to them
- * Other (please say what).....

Signed.....

Date.....

Hearing Adjustment Programme Handout No.7For use in conjunction with Exercise 3.8

" Ann, your sister-in-law, has organised a big barbecue party for your brother's birthday. She has invited you, your wife and also some friends.

When you arrive at their home you realise that there are about twenty people present and you do not know many of them. To create a real party atmosphere, for the evening, Ann has installed big outdoor candles all around the backyard and some loud speakers so that people can dance to the music.

The food is excellent and the beer very good, people seem to really be enjoying themselves. It is becoming a little loud, it seems that everyone is talking at the same time and because a few people drink a little too much, their speech is more slurred. On top of that, in all the commotion you seem to have lost your wife. You realise that alone it is difficult to follow a conversation, you really did not understand the last joke someone just told. It looked very funny because everybody was laughing."

OR

See alternate story below

Anniversary Dinner (for the men)

Marion, your wife's cousin, likes entertaining a lot. It will soon be her husband's birthday and she wants to make the most of this and organise a big celebratory dinner. And of course she invites you and your wife. You arrive at Marion's, she introduces you to the people you don't know and soon afterwards invites you to go to the dinner. As she had decided to mix everyone up, she assigns a place for you away from your wife. You find yourself three places from her, between Marion and someone you don't know. Marion wanted to create a good atmosphere, so she has subdued lights and has background music playing on their new compact disc player. To decorate the table she has candles and a large bouquet of flowers, which just happens to be in front of your place.

The meal is good, the beer is cold and the wine is excellent. Everyone is having a good time, things are warming up and everyone seems to be talking at once. There are some who have had a fair bit to drink and they talk more quickly and less distinctively than at the start of the evening.

Marion, who knows you have difficulty hearing tries to say something to you, speaking very slowly and exaggerating her pronunciation; the person next to you looks at her and seems to wonder what is going on. You hasten to change the subject.....

Questions

What are difficult situations? Usually, what happens in these situations? What can you do in such situations?

What don't you do? What are the consequences of doing nothing?

Anniversary Dinner (for the women)

Marion, your cousin, likes entertaining a lot. It will soon be her husband's birthday and she wants to make the most of this and organise a big celebratory dinner. And of course she invites you and your husband. You arrive at Marion's, she introduces you to the people you don't know and soon afterwards invites you to go to the dinner. As she had decided to mix everyone up, she assigns a place to your husband. He finds himself three places from you, between Marion and someone you don't know. Marion wanted to create a good atmosphere, so she has subdued lights and background music on their new compact disc player. To decorate the table she has candles and a large bouquet of flowers, which just happens to be in front of your husband.

The meal is good, the beer is cold and the wine is excellent. Everyone is having a good time, things are warming up and everyone seems to be talking at once. There are some who have had a fair bit to drink and they talk more quickly and less distinctively than at the start of the evening.

Marion, who knows your husband has difficulty hearing, tries to say something to him, speaking very slowly and exaggerating her pronunciation; the person next to him looks at her and seems to wonder what is going on. Your husband hastens to change the subject.....

Questions

What are difficult situations for your husband? What does he usually do in these situations? According to you, what could he or should he do? Do you think your husband will do this?

If not, why do you think he won't do this?

Hearing Adjustment Programme Handout No. 8

Example of letter to participants to give them a boost.

Hello everyone,

You will of course remember our meeting on the.....at the..... At the time of this meeting, as well as helping to understand what noise has done to our hearing, we saw several ways to make life easier with our hearing problems.

For example, we saw that:

- * For the telephone there is a coupler system and a volume control, offered free from Telecom.
- * There is a portable amplifier which we can buy at Tandy or the Deafness Resources Centre.
- * For the T.V., there is an infra red system which we saw at the SHHH centre as well as a variety of doorbells which are easier to hear.
- * There we also some visual alerts for when the telephone rings.

And what about hearing aids? One could have realised by trying them that the hearing aids could replace all these means and help us in several other communication situations like at home, in a restaurant, at church or at the theatre.

You will also have realised that there are non-technical means to help oneself, in particular, in group meetings or in outings. Its a matter of:

Telling the people that you have a hearing problem

Asking that they adapt to you by;

- talking more slowly
- repeating
- talking face to face
- by moving away from noisy surroundings

We have seen that we can make the job easier by reading lips and that we can lessen stress by using relaxation.

And you?

Have you undertaken plans to begin to use one or several of these means?

Have you encountered any difficulties?

Do you need more information?

Don't hesitate to get in contact with.....by telephoning.....,.....

Looking forward to seeing you again

Section 10 Appendices

questionnaires

Questionnaire on hearing and communication.

Acoustics group

University of Montreal

Quebec, Canada. Version 3, 1988

This is a confidential form.

Pages 240-250 please see print copy for images

Pages 240-250 please see print copy for images

Questionnaire for spouses in hearing adjustment programme.

Please circle the number of the most appropriate answer.

1. Since attending the programme, do you feel that you have to repeat what you say to your partner:

- a) more than before the course
- b) less than before the course
- c) the same as before the course.

2. Since attending the programme, does your partner's hearing loss cause you:

- a) more stress and irritation
- b) less stress and irritation
- c) I am no more or less irritated since the programme.

3. Since attending the programme, do you feel your partner is:

- a) more confident in himself
- b) less confident in himself
- c) his confidence has not changed since the programme.

4. Since attending the programme, has your partner been:

- a) more prepared to go out
- b) less prepared to go out
- c) we go out just the same as before.

5. Since attending the programme, do you feel family communication has:

- a) improved
- b) gotten worse
- c) has not changed.

6. Since attending the programme, do you feel:

- a) less responsible for your partner's communication needs
- b) more responsible for your partner's communication needs
- c) feel no change in responsibility for your partner's communication needs.

7. Since attending the programme, do you think your partner:

- a) takes more responsibility for his communication needs
- b) less responsibility for his communication needs
- c) has not altered his expectations in communication.

8. Since attending the programme, do you feel you need to help your partner with understanding what people say:

- a) more often than before
- b) less often than before
- c) just the same as before.

9. Since attending the programme, do hearing problems cause:

- a) more problems than before
- b) less problems than before
- c) just as many problems as before.

10. Do you have any comments that you would like to make about
t h e p r o g r a m m e ?

Thank you for your time.

Information on the participants in the readjustment program.

Personal information.

Name of the person who has a hearing loss
.....

Age:.....

Name of spouse.....Age:.....

Address.....

.....

.....

Telephone number.....

Name of last employer.....

Total number of years of work with noise?.....

Liability accepted?.....

Compensated Yes / No

(If yes insert date).....

Study file completed.....

Assistive listening devices:

Hearing aid

Adapted Telecom 'Phone.....

Amplification for T.V.....

Visual alert for doorbell.....

Visual alert for telephone.....

Other information

.....

.....

Questionnaire on the use of Technological Aids.

Name of person.....

Telephone number:.....

Name of interviewer.....

Telephone aids acquire or applied for since commencing programme?

Coupler (Integral) Yes/No

Portable coupler Yes/No

Gliding tone ringer Yes/No

Touchfone 200 (or applied for same) Yes/No

Aids for listening to T.V.

Listen with wire plugged
into T.V. Yes/No

Radio with T.V. frequency receiver Yes/No

Infra red System Yes/No

Portable loop Yes/No

Minicon system Yes/No

If applicable, peoples' comments on use.
.....
.....
.....

Other amplification systems

Personal amplifier Pocket talker Yes/No

Amplifier for door-bell Yes/No

Other (please specify).....

Hearing Aid (purchased, applied for or began reusing since programme - indicate which of the above actions was initiated)

In 1 ear Yes/No

In 2 ears Yes/No

If yes, in what situations do you use the hearing aid:

- 1) at home
- 2) on outings
- 3) at work
- 4) during spare time
- 5) other (Please specify).....

Hearing Help Card Yes/No

Use of hearing tactics? If yes, note which tactics are used.

.....

.....

.....

.....

Do they appear satisfied: (Comments)

.....

.....

.....

After having completed the questionnaire by phone:

Have you any other comments or impressions following on from the 'phone questionnaire which you have just filled in that you would like discussed with the participants of the readjustment group?

.....

.....

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