



## **INDIGENOUS HEARING LOSS AND THE CRIMINAL JUSTICE SYSTEM**

### **A BACKGROUND PAPER**

Indigenous Australians are disadvantaged in many ways compared to other Australians. The origin of some disadvantage stems from the chronic ill health experienced by many Indigenous children. Indigenous adults die on average 20 years earlier than other Australians because of diseases such as diabetes, heart disease kidney disease that are exacerbated by childhood malnutrition and deprivation. Childhood ill health is also likely to contribute to a variety of non-health outcomes for Indigenous adults. In particular, the endemic middle ear disease experienced by Indigenous children is likely to contribute to the over representation in the criminal justice system. For Indigenous children, middle ear disease starts earlier and is a problem for longer during childhood than for other children in Australia. It usually results in a mild fluctuating conductive hearing loss. Indigenous children spend, on average, 2.6 years during childhood with middle ear disease. This compares with an average of three months for other Australian children. Endemic middle ear disease can eventually result in permanent hearing loss and/or auditory processing problems. Research shows that Indigenous adults have a high prevalence of both of these. Up to 70 percent of Indigenous adults have some degree of hearing loss and at least 40 percent have auditory processing problems. Studies which have found even greater levels of hearing loss among Indigenous inmates suggest a clear association between hearing loss and involvement in the criminal justice system.

Research on Indigenous hearing loss has shown that middle ear disease (otitis media) starts earlier and is experienced for more time during childhood than for non-Indigenous children. In a prospective study of otitis media and conductive hearing loss in Indigenous children, otitis media was observed in Indigenous infants as young as eight days; by four months of age almost all had experienced

episodes of otitis media OM. In comparison, only half of a small comparative group of non-Indigenous infants had experienced episodes of otitis media during their first six months (Boswell et al., 1994). In a longitudinal study conducted over nine years in a Queensland community (McCafferty et al 1985) found that only 37 percent of children had predominantly normal middle ear function in both ears and had never had any perforations. The other 73 percent of the population had consistent or frequent perforations or abnormal middle ear function. This highlights the greater predisposition to and persistency of otitis media among Indigenous children. A long experience of hearing loss during childhood is important when considering the later impact of early conductive hearing loss. While middle ear disease is less frequent later in life, it leaves its legacy behind, as some level of permanent hearing loss.

There are differing degrees of ear disease and hearing loss in different Indigenous communities. Sunderman and Dyer (1984) reported that in the Kimberly region 81 percent of the ears examined were clinically abnormal. The prevalence of mild hearing loss for the urban community was 16.5 percent. If unilateral hearing loss is taken into account, as many as 70 percent of the people may be affected (Preston, 1992). One study was conducted at Batchelor College (NT), where most of the students come from regional and remote areas, where levels of hearing loss are higher than in the urban Indigenous populations. In this study 53 percent of the Indigenous tertiary students had a hearing loss (Lay 1990). This study used a stringent definition of hearing loss (15dB) recommended for use with Indigenous people because cultural and linguistic factors can compound the effects of hearing loss on speech perception.

### ***WHY IS THERE A HIGH PREVALENCE OF INDIGENOUS MIDDLE-EAR DISEASE***

Certain factors contribute to the likelihood of children experiencing middle ear disease. These include overcrowded housing, poor nutrition, and limited medical attention (Kamien, 1975, Zubrick 2004). Around the world there is a high incidence of middle ear disease in populations that are poor and socially disadvantaged. High levels of middle ear disease have been recorded among Indigenous minorities around the world; with Inuit in Canada and Indigenous Australians having the highest recorded levels. Other individual risk factors include age, sibling history of otitis media, seasonal influences, type of day-care, early feeding practices, parental smoking, the general social and physical

environment, allergies and possibly also anatomical predispositions (Haggard & Hughes 1991, Zubrick 2004).

For many non-Indigenous children, especially those with good access to medical treatment, middle ear problems and associated hearing loss have been resolved by the time children arrive at school, but for most Indigenous children, fluctuating conductive hearing loss continues during their school years and leaves a legacy of permanent hearing loss and auditory processing problems for many adults.

## **AUDITORY PROCESSING PROBLEMS**

Auditory processing has been described as ‘what we do with what we hear’ (Kelly, 1991, p. 6). To derive meaning from words, sound that is heard is processed by our neurological system. As with hearing loss, auditory processing problems can contribute to problems in speech perception. Auditory processing problems, however, are not detected by standard hearing tests. There are specific assessments to identify auditory processing problems (Bellis, 2002). These tests involve listening to words in the presence of background noise or listening to different words presented in each ear. Knowledge of auditory processing has developed since the 1960s. In the last ten years schools have identified and supported children whose learning was affected by auditory processing problems but knowledge is still limited in other sectors; for example, what are the effects of auditory processing problems on adults in the workplace?

There are a number of ways that auditory processing problems may impact on speech perception (Kelly, 1991; Bellis, 2002). People with auditory processing problems may have a diminished ability to discriminate differences between sounds- auditory discrimination. This difficulty has implications for understanding what is said and following directions as well as affecting people’s ability to learn to read and spell. People may have difficulties with auditory memory and find it difficult to remember verbally presented information. One common problem for people with auditory processing difficulties is that they find it difficult to listen in the presence of background noise- auditory figure ground. While people may cope with communication one-to-one in a quiet environment, they have difficulties when there is background noise and more than one speaker.

Some of the signs of auditory processing problems are as follows (Patton, 2004). People may:

- interpret words too literally;
- often need remarks repeated;
- ask many extra informational questions;
- have difficulty following directions in a series;
- have difficulty remembering information presented verbally;
- hear better when watching the speaker; or
- have problems with rapid speech or those who speak with an accent.

Another indicator, especially for Indigenous people with listening problems, can be that people seek to avoid social contact or are very shy with people they don't know (Howard, 2004d). Adults who have auditory processing problems often have a history of school failure and poor literacy skills (Howard, 2004c). While initially it was thought that auditory processing problems were either genetically determined or the result of head injury, research is increasingly showing that early mild hearing loss from middle ear disease leads to auditory processing problems that can be persistent or permanent (Hall et al., 2000; Moore et al., 1991; Hall and Grose, 1993; Yonovitz et al., 1995; Mody et al., 1999; Roberts, 1997). Hogan and Moore 2003 suggests it is the cumulative total of hearing loss experienced by children that is the critical factor that leads to auditory processing problems<sup>1</sup>. Since Indigenous children experience middle ear disease and associated hearing loss both earlier and longer than other groups, they have a high risk of developing auditory processing problems.

Some 7-10 percent of the general population are thought to be affected by auditory processing problems (Hogan & Moore, 2003; Rowe, 2001). However, in a DEST funded program in six Northern Territory independent schools involving 1050 Indigenous secondary students, 38 percent showed signs of auditory processing problems (Yonovitz 2000). As this study was based on secondary school students who attended school, students who had left school because of problems related to listening (Howard, 2004b) or who were not attending because of hearing related problems (NAACHO, 2001) were not

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<sup>1</sup> There are a range of auditory processing skills but researchers interested in the consequences of middle ear disease have focussed mainly on binaural hearing, which is important in being able to perceive speech in the presence of background noise

included. It is likely, therefore, that the findings from this study underestimate the proportion of Indigenous adolescents with auditory processing problems.

### **HEARING LOSS AND SOCIAL FUNCTIONING**

The impact of hearing loss on social processes was highlighted by McPherson (1995) who found that the best behavioural identifier of hearing loss among urban Indigenous students was social problems with their peers. He also noted that children with hearing loss tend to be more socially isolated than their peers. It is clear that current hearing loss is associated with behavioural problems in school. The Dunedin study (McGee, Silva, & Stewart, 1982) found that at age five years, children with a history of ear disease had significantly more teacher-reported behaviour problems than those with normal hearing. It was also found that by ages eleven and thirteen, lower verbal IQ, and parent and teacher reports of inattentive behaviour, were associated significantly with an early history of middle ear disease. These findings are very similar to the findings of Howard (2004) among Indigenous students with a current hearing loss. Social problems associated with childhood conductive hearing loss are also likely to contribute to social and adjustment issues in adulthood. It is suggested that the single best childhood predictor of adult adaptation is the way the child gets along with other children. Children who are generally disliked, who are aggressive and disruptive, who are unable to sustain close relationships with other children, or who cannot establish a place for themselves in the peer culture are seriously at risk of problems in adulthood; dropping out of high school, juvenile delinquency, mental health problems (Hartup, 1994; Parker & Asher, 1987).

There also may be more direct effects of hearing loss on the massive over representation of Indigenous people within the criminal justice system.

One study at Darwin prison found 90 % of Indigenous prisoners had some degree of hearing loss. A system wide study in NSW showed that hearing loss was pervasive among Indigenous prisoners. Understanding the relationship between Indigenous hearing loss and involvement in the criminal justice system is important in the design of crime prevention programs as well as in the management and rehabilitation of Indigenous inmates. Over ten years ago Howard, Quinn, Blockland and Flynn (1993) discussed how hearing loss may contribute to the over representation of Indigenous people within the criminal justice system. Greater understanding of these issues may contribute to better

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management and rehabilitation of Indigenous inmates as well as more effective crime prevention strategies.

### **SUMMARY AND CONCLUSION**

The contribution of hearing problems to the overrepresentation of Indigenous people within the criminal justice system has been long neglected. It has been estimated that Indigenous people experience 50 times as much hearing loss as other Australians. This hearing loss mostly results from the endemic persistent middle ear disease experienced by Indigenous children. Indigenous children spend on average 2.6 years with conductive hearing loss in childhood compared with an average of 3 months for non Indigenous children. Extensive childhood hearing loss results in Indigenous people also having a higher incidence of auditory processing problems- a secondary condition that may result from long periods of conductive hearing loss in childhood. These listening problems affect up to 70% or more of Indigenous people, however, even more Indigenous prisoners are known to have hearing loss.

There is an urgent need to:

- conduct audiological assessments with all new inmates as part of initial health screenings,
- provide training to criminal justice staff on this issue,
- undertake a listening audit of court and criminal justice facilities and processes with a view to minimising acoustic conditions compounding listening problems,
- evaluate the use of amplification in criminal justice processes,
- develop processes that help accused and witnesses 'hear better' when participating in criminal justice processes by becoming familiar with what to expect, and
- undertake action/research in a number of areas around this important issue,

by Damien Howard

There is some general information on conductive hearing loss and auditory processing problems available on my website at [www.eartroubles.com](http://www.eartroubles.com)

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