

Workshop on Unilateral/Bilateral mild hearing loss



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Historically ...

- Ø UHL and BMHL- not identified early
 - Ø In spite of studies- higher risk for educational, speech and language, social emotional difficulties.(Bess&Tharpe,1984,1986;English&Church,1999)
 - Ø Hearing health care professionals in the management of children with unilateral hearing loss has been limited
 - Ø The conventional approach- assure the parents that there would be no handicap (Oyler et al 1988)
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Better opportunities with introduction of UNHSEIP !

Ø To intervene earlier

Ø Capable of Alleviate/reduce the impact on speech and hearing development, learning and psychosocial development in UHL and BMHL

Presumption that unilateral hearing loss will not become a handicap is changing...

- Ø The more severe the hearing loss (UHL/BMHL) the greater the likelihood of academic failure**
 - Ø Right ear UHL appears to be more problematic than left-ear UHL**
 - Ø UNL can be progressive and result in a bilateral loss. Cole and Flexer (2007)**
 - Ø We continue to learn as well**
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Problem statement...

- Ø Not a serious problem, since the unaffected ear is “just fine”
 - Ø Intervention of AODC is not available
 - Ø Speech and language developmental assessment/intervention is not accessible
 - Ø Multidisciplinary/team approach is not available
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Incidence of UHL/BMHL hearing loss

0.36 to 1.30/1000-bilateral mild hearing loss

0.8 to 2.7/1000- Unilateral hearing loss

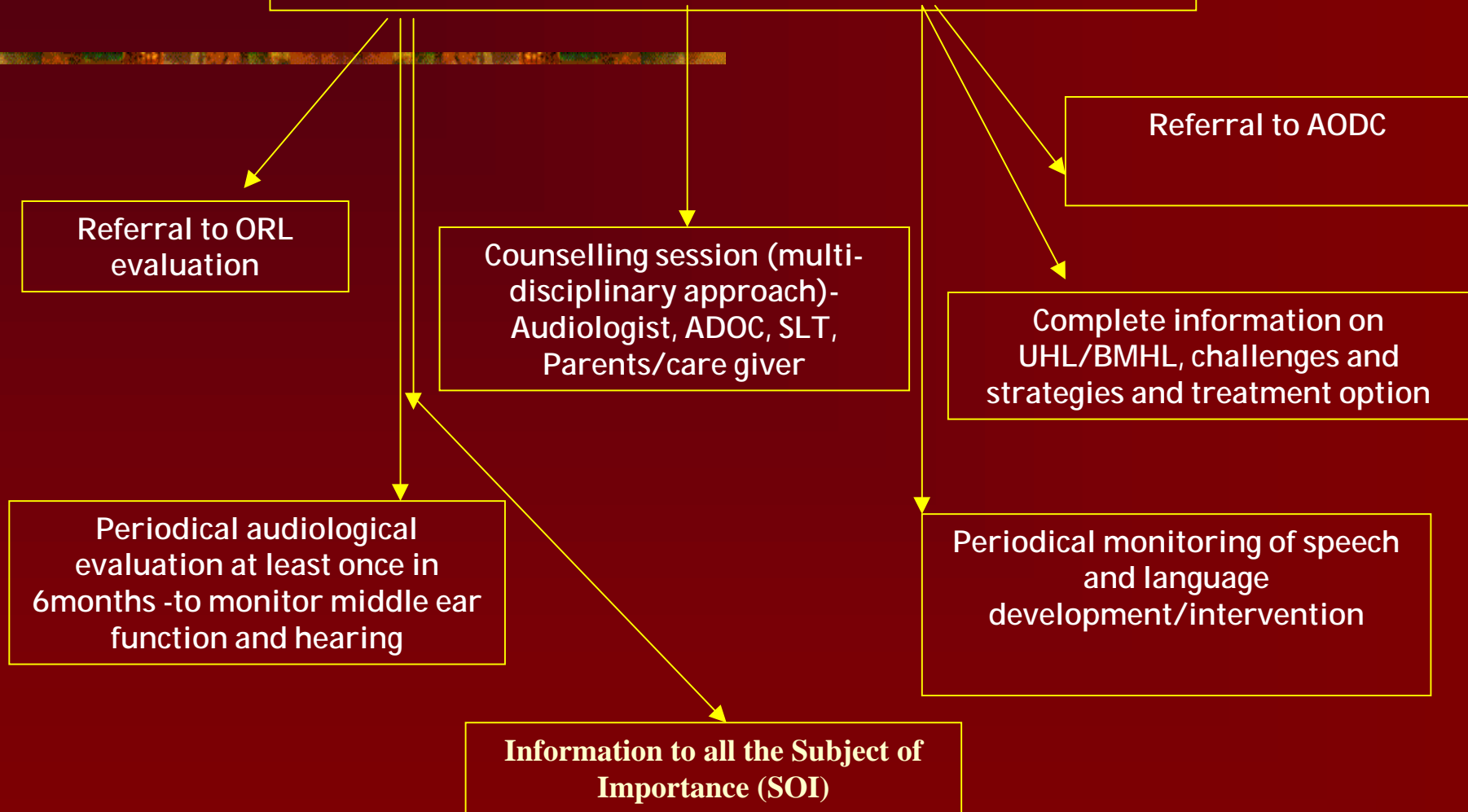
Dalzell, et al 2000; Johnson et al(2005); Watkin and Baldwin(1999);White et al(1994)

School age children-30-56/1000 (Ear and hearing 1998, JAMA 1998)

because of progressive and late onset hearing loss



Confirmed UHL/BMHL



Unilateral/bilateral mild hearing loss- Some of the Challenges to face?

- Ø **Safety**, because of localisation difficulty
- Ø **Hearing in a background noisy** situations
- Ø **Wider Hearing Range: hearing** from a distance
- Ø **Restful hearing**: Physically Tiring and stressful
- Ø **Cushions loud sounds**: Sudden loud noise loses its jarring effect when heard with two ears.
- Ø **Better sound identification**: Especially similar sounding sounds
- Ø **Smooth sound quality**: Requires more volume and less smooth quality to sound
- Ø **Hearing with less power**: Hear more quietly with two ears
- Ø **Unable to respond** when the **speech is directed to poorer hearing ear**

Risk of speech-Language Delay...



Ø UHL children showed more difficulty understanding nonsense syllables than controls under all difficult-to-hear conditions. The more adverse the listening condition, the greater the difference between UHL and controls (Bess F, Tharpe A(1986))

Ø Children with UHL performed poorer than controls even when primary signal presented to good ear. (Bovo R, Martin A, Agnoletto M; Beghi A, Carmignoto D, Milani M et al.(1988) and Bess F, Tharpe A(1986))

Ø 50% of the children reported difficulty in speech discrimination in noise and 83% reported in localization of sound

Ø UHL subjects had more difficulty in word recognition and spelling. UHL had more difficulty in language measures. (Culbertson JL (1986))

Ø Implication: Problems UHL children experience in background noisy situation highlights the need to consider acoustic environment in a typically noisy classroom

Risk of speech-Language Delay...



Ø Approximately 1/3 of young children with unilateral /bilateral mild hearing loss can be expected to exhibit language delays by the age of 15-18 months

Ø No delay in using 1st word but delayed 2 word utterances (on average 5 months. Kiese-Himmel C (2002)

Ø 33% of the children with unilateral hearing loss scored below the expected range on comprehension of word meaning, attention, story telling, taking responsibility, completing assignment, adaptation to new situation (Pupils Rating scale used by teacher)

Risk of Behavioural/Social Issues



Ø Teachers rated children with UHL as having more behavioural problems and distractibility (Bess & Tharpe, 1984; Culbertson & Gilbert, 1986; Stein, 1983)

Ø On the Behavioural Rating Scale-

dependence/independence, attention to task, emotional liability, and peer relations/social confidence

Ø Social/emotional domains such as stress, self-esteem, behaviour, energy and social support (Bess, Dodd-Murphy, & Parker 1998)

Studies on Educational issues...



	Language development	Mathematics	Social skills	Average age (sample size)
Keller and Bundy (1980)	-0.44	-0.26		12 yrs(13)
Peterson (1981)	-0.50	-0.53		7.5 yrs(24)
Bess and Thorpe(1984)			-0.47	10 yrs(25)
Blair, Peterson and Viehweg(1985)	-1.17	-1.28		7.5yrs(8)
Culbertson and Gilbert(1996)	-0.63	-0.19	-0.47	10 yrs(25)

Educational Risk...



Ø Of those children, about 37% had failed a grade in school and an additional 8% were judged not to be performing at grade level (Bess et al 1998).

Ø Risk of failure rate of approximately 10 times that of the general school population.

Educational Risk...



- Ø Students with UHL scored significantly lower than controls on 13 of the 15 SIFTER questions.
- Ø Classroom teachers consistently rated students with UHL lower in academics, attention and communication, classroom participation and behavior than their average peers. (Dancer J, Burl NT, Water S(1995))
- Ø School aged children with UHL demonstrated significant problems affecting academic performance (Bovo R, Martin A, Agnoletto M; Beghi A, Carmignoto D, Milani M et al.(1988))

Educational Risk



Ø Approximately 50% of children showed difficulty in educational progress.

Ø 35% failed at least one grade (most failed first grade, half failed higher grade)

Ø Children with UHL performed poorly on auditory skills than control groups

Ø 13.3% needed special resource assistance Bess F, Tharpe A(1986).

Ø 50% of the children did not have preferential seating in the classroom;
32% reported difficulty understanding teacher's speech Bovo R, Martin A, Agnoletto M; Beghi A, Carmignoto D, Milani M et al.(1988)

Social Impact...



- Ø Accused of selective hearing
- Ø Social problems- difficulty understanding in noisy situations.
- Ø May misunderstand peer conversations and feel rejected or ridiculed.
- Ø 27% of the children had feeling of embarrassment and sense of inferiority. Bovo R, Martin A, Agnoletto M; Beghi A, Carmignoto D, Milani M et al.(1988)
- Ø Child may be more fatigued in classroom due to greater effort needed to listen, if class is noisy or has poor acoustics.
- Ø May appear inattentive, distractible or frustrated, with behavior or social problems sometimes evident- May give an impression of being hyperactive and immature.

Some more Research findings...



- Ø 1/3 of children slower to develop how they express themselves with words.
 - Ø 1/5 of children problems getting along with others
 - Ø 1/4 children are at risk of developing hearing loss in their "good ear", usually by the time they start school.
 - Ø Temporary long term fluctuating loss- if they have ear infections - this makes it harder to listen.
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Ear Infection/Glue ear

- Ø About 1/6 has- serious problems with recurring ear infections before they start school.
- Ø Because they are relying so heavily on their one better hearing ear for listening and learning, inconsistent hearing will affect them more than other children- will have effect on their listening and eventual learning.
- Ø need to continue to monitor child's middle ear function and hearing on a regular basis.



Noise/music-induced hearing loss

- ∅ Keeping the child away from loud sounds, reducing the child's exposure to loud noises and Ear protection for children
- ∅ Hearing does not always stay the same. Hearing can be damaged by loud noises, even when they occur only once
- ∅ A child with UHL must rely on that ear to hear from their whole lives –they can't afford to damage this hearing!



Preserving further deterioration in hearing ?

Ø It is important to monitor the ear with normal hearing and the residual hearing in the poorer hearing ear .

Ø Periodical assessment appointment is necessary at least once in 6 months.

Ø Any further hearing loss in the better hearing ear/in the poorer hearing ear will increase the child's chance of developing greater listening, language, behaviour and learning issues.

Workshop for the parents of children with Unilateral and Bilateral mild hearing loss

11.30 am	Mr. Bill Day Chair, Wellington Hospital Foundation	Introduction
11.35 am	Dr. Sargunam Sivaraj, CCDHB	Overview on Unilateral/bilateral Mild hearing loss
11.50 am	Mrs. Lynella Upton, Advisor on Deaf Children, Ministry of Education (MOE)	Strategies of monitoring hearing loss at home
12.05 pm	Mrs. Claire Winward, Speech and Language Therapist, Ministry of Education (MOE)	Speech and Language development
12.20 pm	Dr. Stuart McLaren, Massey University	Good Acoustic Environments

Attendees of the workshop

- Ø We invited 10 parents and 7 of the parents attended the workshop
 - Ø AODC of other region
 - Ø Hearing screeners –highlighting their role in identification of hearing loss and facilitating better outcome.
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Aims of the workshop...



- Ø Difficulties experienced by the children with unilateral/bilateral mild hearing loss
- Ø Effects of child's hearing loss on speech-language development
- Ø Bilingualism/unilateral hearing loss
- Ø Potential learning and psychosocial issues
- Ø Facilitation better learning at home, preschool
- Ø Strategies to enable more "listening friendly environment"
- Ø The available treatment options-conventional hearing aids, FM system, bone conduction hearing aid/CROS aid.

Outcome of the workshop...

- The parents expressed interest in having a support group for children with unilateral and bilateral mild hearing loss in this region
 - One of the parent did not know- which ear is the “affected e ear”
 - “Now that I know the risks-I shall attend the periodical follow-up”
 - “I shall go home and talk with the family- because “TV is on 24hours in our house”
 - “we shall organise a hearing aid for my child”
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Making home/classrooms more "listening friendly"?

- Ø Carpeting-if there is not wall-to-wall, place some area rugs.
- Ø Request acoustically treated hanging ceiling tiles
- Ø Avoid situations where the class is split and half of the students are listening to teacher instruction and the other half are watching TV or listening to a tape recorder
- Ø Place window treatments (thick material)
- Ø Replace buzzing lights.
- Ø Hang long pieces of felt on the wall on which children can pin artwork.
- Ø Use corkboards whenever possible.
- Ø Place flat surfaces (movable boards) at an angle.
- Ø Place tennis balls or rubber tips on chair feet (keep in mind latex allergies).
- Ø Have soft chairs (small beanbag chairs) in leisure/reading areas.
- Ø Do not have noisy equipment (e.g., computers, projectors) on if you are not using them.
- Ø Try to keep doors and windows closed.
- Ø Teach your child to advocate for himself or herself by learning to ask for clarification when messages are not understood: "Can you repeat that?"
- Ø Giving an age-appropriate lesson about sound. Show them how it is difficult to hear when many children are talking at once.

Information pack...

- Ø **Speech and Hearing checklist**
 - Ø **Glue ear and prevention**
 - Ø **Speech and hearing stimulation at home**
 - Ø **Prevention of noise and music induced hearing loss in children**
 - Ø **List of public/private speech and language therapy services.**
 - Ø **Methods of making home a “listening friendly” environment**
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Right thing ... Right Now...



Right now is to nurture and enjoy the baby.

A hearing loss in one ear/mild hearing loss in both ears should not stop the child reaching his/her full potential.



Thank you for lending me your ears

