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Ear Care and Audiology: Winter 2014.

This bulletin covers the key research, news reports and journal articles to appear in the months November 2014 - February 2015 in the field of Ear Care and Audiology.

In the News

Funding from charity for new treatments to silence tinnitus

To mark Tinnitus Awareness Week (2 – 8 February), UK charity Action on Hearing Loss announced a major investment to fund a new study at Newcastle University, which aims to accelerate the development of future tinnitus treatments.

Six million people in the UK are affected by tinnitus every day – ranging from a light buzzing to a constant roar in the ears and head – with 600,000 seriously affected by the condition, which can have a detrimental effect on quality of life including bouts of anxiety, difficulties socialising and problems sleeping or being able to concentrate at work.

The three year, £300,000 project will be led by Dr Mark Cunningham at Newcastle University and will involve researchers at Leicester University and the biotechnology company Autifony Therapeutics Ltd, who are currently conducting a clinical trial of a drug for tinnitus.

The pioneering research aims to bridge the gap between promising laboratory research discoveries and testing new medicines in tinnitus patients.

View the full press release here

Leaflet: Understanding tinnitus

Action on Hearing Loss have produced a newly updated leaflet providing details of support, therapies and products to help manage tinnitus.

View the leaflet here

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Tinnitus Service Provision across the UK: a research briefing

Only two-fifths (41 per cent) of NHS audiology departments give tinnitus sufferers access to four key services needed to help manage their condition, according to a new report from charity Action on Hearing Loss launched to mark Tinnitus Awareness Week.

Freedom of Information requests, issued by the charity to every NHS adult audiology provider across the UK, reveals a postcode lottery of care for tinnitus patients with six audiology units not providing any tinnitus services at all and a further nine units having had to reduce services over the past two years.

View the research briefing here

Improved hearing could delay mild dementia

Audiology World News

Preliminary findings of a new study on dementia have found that correction of hearing loss with hearing aids may delay the onset of mild dementia.

Earlier studies have shown that people with hearing impairment are significantly more likely to develop dementia in old age compared to those with normal hearing. There is however no evidence to date that correcting hearing can effectively improve dementia. Previous research has also demonstrated a reduction in cognitive decline among study participants who use hearing aids.

This was what motivated researchers from the University of North Texas (USA) to partner with audiologists from Unitron to conduct the study aimed at assessing the possible relationship between improved hearing and cognitive function in patients with Alzheimer's disease or other forms of dementia. The study called 'Hearing Aids and Dementia' enrolled adults aged 50 to 90 years with mild dementia who were inexperienced with hearing amplification devices. It measures speech-recognition performance in noise, cognition, and self-reported improvement in quality of life.

If the preliminary positive findings are confirmed, they could have significant implications for aging individuals as they begin experiencing hearing loss. Study completion is expected in late 2015

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Report reveals audiology departments under pressure with increased demand yet reduced budgets

Two in five NHS audiology departments (41%) are being forced to cut core services due to shrinking budgets or increased demand, affecting hundreds of thousands of people across the UK, according to our new report released in January.

Research was gathered by Action on Hearing Loss between September and December 2014; the charity issued Freedom of Information requests to every NHS adult audiology provider across the UK, receiving 140 responses out of 155. Findings reveal that the NHS is already struggling to cope with reduced staff numbers, restricted access to hearing aids and patients facing longer waiting times for shorter appointments - yet a fifth (19%) of NHS hearing loss services are aware of further budget cuts in the next 12 months.

For a copy of the full press release click here

A full copy of the report *Under Pressure: NHS Audiology Across the UK* is available here

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£4 million boost for hearing research

In January, Action on Hearing Loss and Biotechnology and Biological Sciences Research Council (BBSRC) announced that they will invest £4 million into hearing research.

This new funding will support 13 projects in total, investigating how the inner ear develops, and how it and our hearing changes as we get older. These investments will also go towards supporting research into treatments for tinnitus, identifying genetic causes of hearing loss and developing more accurate hearing tests.

Professor Melanie Welham, BBSRC's Science Director, said: 'Supporting research to address the challenges of an ageing population is a key priority for BBSRC and working with Action on Hearing Loss has given us the opportunity to encourage research that could in the future contribute to reducing the ever increasing burden hearing loss places on society and the economy.'

Select Committee report on Access to Work

The Work and Pensions Select Committee has released its report into Access to Work which highlights the problems deaf people have experienced in getting adequate support through the

scheme. The report specifically mentions how reductions to BSL support have had a detrimental impact on deaf people.

The report makes a number of recommendations for how the scheme could be strengthened in the future, including the need to ensure that there is more engagement and consultation with scheme users, improvements to training so that staff are better informed about the needs of scheme users and changes to make the scheme more accessible, such as the introduction of an online application system.

View the full report, *Improving Access to Work for disabled people* here

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Launch of guidance booklet

The Health and Social Care Board have launched a new guidance booklet for GPs and their staff, 'Best Practice Guidance: Creating accessible primary care services for people with sensory loss' on how to put in place practical solutions to ensure people using the surgery, who have a hearing loss or a sight loss, can receive equal access to care.

Copies of the GP guidance are available here

Research

Increased risk of injury in tinnitus patients

Results of a new study provide further evidence that tinnitus combined with high-frequency hearing loss may represent an important safety hazard to workers, especially in noisy environments.

Researchers from Yale's Occupational and Environmental Medicine Program (Yale University School of Medicine, New Haven, USA) recently published the results of their study in the *International Journal of Audiology*. The study included more than 8800 workers employed at six aluminum manufacturing plants between 2003 to 2008.

The aim was to carry out a retrospective analysis of the relative contributions of tinnitus, asymmetrical hearing loss, low-frequency hearing loss, and high-frequency hearing loss to acute injury risk. The study adjusted for ambient noise exposure and for other known predictors of injury risk.

Results showed that there is a 25% increased risk of acute injury and a subset of serious acute injuries among workers with a history of tinnitus in conjunction with high-frequency hearing loss. Low-frequency hearing loss was found to be potentially associated with minor, less serious injury risk. No evidence was found that asymmetry contributes to this risk. The authors mention already established links between tinnitus and sleep disturbance, fatigue, and distraction.

In their conclusion, the researchers point to the importance of carefully examining the communication needs of hearing-impaired workers and workers with tinnitus who are exposed to workplace noise. They also recommend that more studies be conducted to assess relationships between tinnitus, hearing loss, and injury risk.

Cantley LF, et al. Does tinnitus, hearing asymmetry, or hearing loss predispose to occupational injury risk? International Journal of Audiology 2014 Dec 30:1-7;

Assisting Older Persons with Adjusting to Hearing Aids.

This intervention study tested the feasibility and initial effect of Hearing Aid Reintroduction (HEAR) to assist persons aged 70 to 85 years adjust to hearing aids. Following this 30-day intervention, hearing aid use increased between 1 and 8 hr per day with 50% of participants able to wear them for at least 4 hr. Hearing aid satisfaction improved from not satisfied to satisfied overall. The study demonstrated that HEAR is feasible and could improve hearing aid use of a substantial number of older persons who had previously failed to adjust to their hearing aids and had given up. However, further testing among a larger and more diverse population is needed to better understand the effectiveness and sustainability of the intervention.

Lane KR, et al. Assisting Older Persons With Adjusting to Hearing Aids. Clinical Nursing Research 2014 Dec 17

New study: long-term benefit of newborn hearing screening

Results of a new study carried out in the UK show that detecting hearing impairment (HI), and intervening at a critical early stage, can make a lifelong difference in literacy outcomes and development. The researchers from the University of Southampton and King's College London carried out a prospective cohort study of a population sample of children with permanent childhood hearing impairment (PCHI) followed up for 17 years since birth. The study included 114 teenagers: 76 with PCHI and 38 with normal hearing.

Results showed that the early and late confirmed HI groups had mean reading comprehension z-scores that were 0.63 and 1.74 SDs below the mean reading z-score in the normal hearing comparison group. Teenagers who had their hearing impairment confirmed early (by nine months) had significantly higher adjusted mean z-scores than the later confirmed teenagers for reading comprehension and reading summarization.

Long-term follow-up in this study showed that the benefits of confirming hearing loss early, in terms of reading comprehension, increase during the teenage years. According to the authors, the results of the study strengthen the case for universal newborn hearing screening programs that lead to early confirmation of permanent hearing loss.

Pimperton H, et al. The impact of universal newborn hearing screening on long-term literacy outcomes: a prospective cohort study. Archives of disease in childhood. 2014 Nov 25

Parent-to-Parent Support for Parents With Children Who Are Deaf or Hard of Hearing: A Conceptual Framework

American Journal of Audiology, December 2014, Vol. 23, 437-448.

Background: Parent-to-parent support for parents with children who are deaf or hard of hearing (D/HH) is identified as an important component of Early Hearing Detection and Intervention (EHDI) programs for children with hearing loss.

Purpose: The specific aim of this review was to identify the constructs and components of parent-to-parent support for parents of children who are D/HH.

Research Design: An extensive scoping literature review identified 39 peer-reviewed articles published from 2000 to 2014. Studies were selected and reviewed based on standardized procedures.

Results: Data were identified, extracted, and organized into libraries of thematic and descriptive content. A conceptual framework of parent-to-parent support for parents of children who are D/HH was developed and presented in a comprehensive, bidirectional informational graphic. The constructs and components of the conceptual framework are (a) well-being: parent, family, and child; (b) knowledge: advocacy, system navigation, and education; and (c) empowerment: confidence and competence.

Conclusion: The findings from this scoping review led to the development of a structured conceptual framework of parent-to-parent support for parents of children who are D/HH. The

conceptual framework provides an important opportunity to explore and clearly define the vital contribution of parents in EHDI programs.

Dying to Be Heard: Hearing Healthcare at the End of Life

Shaw, G. Hearing Journal: January 2015 - Volume 68 - Issue 1 - p 18,19,22

Good hearing healthcare is essential for people facing the end of life, and yet it often goes overlooked by care providers and families focused on the many other medical, financial, social, legal, and additional concerns that come up when someone is dying.

Positive experiences associated with acquired hearing loss, Ménière's disease, and tinnitus: A review

International Journal of Audiology January 2015, Vol. 54, No. 1 , Pages 1-10

Objective: It is common to study and understand how various illness and disorders result in negative consequences. However, positive experiences have been reported in a range of disabling conditions including multiple sclerosis, heart disease, physical and sensory disabilities. This paper presents a literature review of studies that have explored positive experiences associated with acquired hearing loss, Ménière's disease, and tinnitus.

Design: A review of the peer reviewed scientific literature.

Study sample: A comprehensive search strategy identified 15 articles after applying inclusion criteria.

Results: A range of positive experiences have been reported by patients with hearing and balance disorders and by their significant others. Associations between demographic variables (e.g. age, gender), audiological variables (e.g. severity of the condition, duration) and the reported positive experiences are low. In Ménière's disease, self-reported positive experiences can predict the impact of the condition. However, this phenomenon has not yet been demonstrated in relation to hearing loss and tinnitus.

Conclusions: Positive experiences associated with audio-vestibular disorders have been demonstrated. Further research is needed on the long-term benefits of the encouragement of such experiences and positive attitudes in persons with hearing loss, tinnitus, and imbalance

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How to Build, and Keep, the Right Hearing Healthcare Team

Hearing Journal February 2015 p 26-30

The process of recruiting, training, and retaining hearing healthcare staff members—whether they are audiologists, audiology assistants, or other office team members—seems to be equal parts science and art. It's also one of the most important elements of running an audiology practice, especially in an age where private practices must compete with big-box stores and online hearing aid sales.

Dietary habits and hearing

International Journal of Audiology February 2015, Vol. 54, No. S1 , Pages S53-S56

Objective: Study groups from three age cohorts of 70–75 year-olds were investigated to search for possible correlations between dietary habits and auditory function. *Design:* A cross-sectional, epidemiological study.

Study sample: A total number of 524 people (275 women, 249 men) were recruited from three age cohorts. The study sample was representative of the general population. All participants answered a diet history and were tested with pure-tone audiometry. Eleven categories of food consumption were related to pure-tone averages of low-mid frequency hearing, and high frequency hearing.

Results: Two consistent correlations between diet and hearing were observed. One was a correlation between good hearing and a high consumption of fish in the male group. The other was a correlation between poor high frequency hearing and a high consumption of food rich in low molecular carbohydrates in both genders; a larger effect size was seen in females.

Conclusions: The study indicates that diet is important for aural health in aging. According to this study fish is beneficial to hearing, whereas consumption of “junk food”, rich in low molecular carbohydrates, is detrimental. Other correlations, e.g. between high consumption of antioxidants, were not demonstrated here, but cannot be excluded.

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