



Voice Research Laboratory
Discipline of Speech Pathology
Faculty of Health Sciences

ABN 15 211 513 464

Cate Madill, PhD

Lecturer / Speech Pathologist

Director Voice Research Laboratory

Honorary Associate Children's Hospital at Westmead

Room S176

Speech Pathology C43

The University of Sydney

PO Box 176,

Lidcombe NSW 1825

Telephone: +61 2 9351 9692

Facsimile: +61 2 9351 9173

Email: cate.madill@sydney.edu.au

Web: <http://www.fhs.usyd.edu.au>

Submission to the Community Affairs References Committee of the Senate

"An inquiry into the prevalence of different types of speech, language and communication disorders and speech pathology services in Australia".

Contributed by Dr Cate Madill, Speech Pathology, Faculty of Health Sciences, The University of Sydney

Please find enclosed my submission regarding the prevalence, current state of services and my specific recommendations regarding the management of voice disorders. I am a speech pathologist with over 15 years' experience treating voice disorders in children and adults. I currently manage 2 clinical practices that specialise in the assessment and treatment of voice disorders. These clinics see a combined number of approximately 30 clients per week for assessment and therapy. I and my colleagues also participate in 3 multidisciplinary assessment clinics. I am also a researcher who aims to find the best ways of assessing and treating these individuals, so the impact of the disorder can be minimised for both the individual and those around them. I work with a number of national and international research teams, and we are making considerable progress with advances in assessment, treatment and measuring the outcomes of our work.

A voice disorder can be devastating for the person, their families, friends, employers, colleagues and those in their social networks. Whilst voice disorders can occur at any stage during one's life, the people we see clinically are most commonly adults classified as professional voice users (PVUs). Professional voice users are individuals who use their voice as their primary tool of trade, that is, they cannot carry out their required employment activities without using their voice. In modern societies approximately 30% of occupations in modern societies are voice dependent. This includes teachers, salespeople, politicians,

lawyers and performers. Voice disorders cause severe negative effects on quality of life and communication ability and cost the community millions of dollars each year in health care and lost productivity.

Vocal function is often taken for granted until a problem arises or an increase in vocal demand occurs. People sustain voice disorders every day through excessive use required in occupational activities, misadventure, post-surgical complication and through consequence of common illness such as colds and flu, just to name a few. Provision of evidence based speech pathology prevention, assessment and intervention to those with a voice disorder is essential to reducing the occurrence of voice disorder and maximising recovery for those who suffer with voice disorder. The following submission provides an overview of the prevalence of voice disorder, the impact and ramifications of inadequate service provision, current speech pathology services for people with voice disorders and specific recommendations. Thank you for the opportunity to inform key decision makers regarding the economic and social impact of voice disorders.

Yours sincerely,

Cate Madill
Lecturer
Speech Pathology
Faculty of Health Sciences
The University of Sydney
Office phone: (02) 9351 9692
Email: cate.madill@sydney.edu.au

Communication disorders following voice disorder: Prevalence, economic and social impact and recommendations for prevention, assessment and treatment

Prevalence of voice disorders

The prevalence of voice disorders in the population is under-represented in all of the available research data, as voice disorders are under-reported in the community. The prevalence of voice disorders in the general adult population is 29.9% over a lifetime and 6.6% with current disorders (US data). It is estimated that 4% of the general population experience voice disorder in any one year in Australia.

Voice disorders are the most common communication disorder across the life span, affecting more than five million school-aged children annually in the United States alone. The prevalence of voice disorders in children has been estimated at between 6% and as high as 36%. The most commonly occurring and most successfully treated voice disorder in children, vocal nodules have been documented as being the most common voice disorder occurring in children (estimated to be between 38% and 78%) with school-aged children, demonstrating a prevalence of 21.6% in males and 11.7% in females. The economic and social impact of voice disorder and ramifications of inadequate speech pathology intervention.

Verbal communication is at the core of the majority of face-to-face interactions we experience daily. The sound of the voice is anatomically and neurological structured to convey mood, emotion and important cues as to our physical arousal and well-being. Voice disorder prevents communication of this complex information and leads to a range of negative impacts on quality of life and emotional wellbeing. The impact of voice disorders on the Australian community is significant. Financially, the cost of voice disorders to the Australian community in school teachers alone has been estimated at \$71 million per annum and growing.

The negative impact of voice disorders on adults and children has been well-documented. For example, children with voice problems are judged negatively by both their peers and their teachers. Children with voice disorder have been documented as having a range of negative social/emotional and physical effects. Children with nodules are more likely to act out than age-matched vocally healthy children placing greater demand on family and social interactions. Whilst there is some evidence that boys grow out of vocal nodules, by the time they reach puberty, vocal nodules are less likely to resolve in girls with vocal

problems persisting post-puberty in 15-21% of cases. All of these effects place children at risk of reduced opportunities and quality of life, inevitably impacting on the wider family experience. Therefore, there is a clearly identified need for greater assessment and intervention in this caseload, necessitating competent speech pathologists to perform assessment and deliver therapy to children with voice disorders.

Current levels of speech pathology service provision

Outcome studies into the outcomes of treatment of common voice disorders indicate that treatments are effective in the short term, that is 3 months post treatment. There are no studies to indicate the efficacy or outcomes in the long term. Similarly, given the hidden nature of many voice disorders, it is unknown what percentages of people with voice disorders do not seek treatment. Anecdotally, we see many individuals who, due to lack of access to services, are forced to change their occupation or reduce their workload to accommodate their vocal disability, thereby compromising their financial resources and quality of life.

Importantly, many voice disorders are preventable and treatable. There is mounting evidence that voice care education and voice training can have a positive impact on preventing voice problems in one of the largest occupational groups impacted by voice disorders, teachers.

Current levels of preventative and therapeutic speech pathology services to this population are inadequate. Voice therapy is provided by both generalist and a small percentage of specialist speech pathologists, but due to the range of types of voice disorder and the complicity of causes, adequate and successful treatment can be good luck rather than an expectation of the medical system. This is due primarily to the lack of specialist training and facilities for assessment and treatment of voice disorder.

Best practice for assessment and treatment of voice disorder is a multi-disciplinary approach where Ear, Nose and Throat specialists and speech pathologists work closely together. This type of service delivery occurs only in major public teaching hospitals which tend to underfund voice service delivery to voice caseloads due to funding pressures, or very rarely, in private clinics, which require greater financial resources to access.

There is thus a paucity of sufficient speech pathology assessment and treatment for these individuals, with limited or negligible ongoing outpatient services in public health setting. Those people living in rural and remote regions, or who reside on the outskirts of large cities often do not receive speech pathology

services that are sufficient to accurately diagnose and treat what can be a complex disorder.

Specific recommendations

Current best practice for the assessment and treatment of voice disorders is primarily focussed on accurate diagnosis resulting from multidisciplinary assessment practices. Best practice for treatment is not described definitively in the research literature due to lack of research. Prevention research suggests that in PVU populations, education and training can be effective to prevent voice disorder. Similarly, early diagnosis of voice disorder leads to improved outcomes. Clinical evidence suggests that people with voice disorder are inadequately serviced to recover from voice disorder to return to pre-morbid vocal function and participation in daily life.

It is therefore recommended that:

1. Voice disorder be recognised as an occupational work, health and safety issue that can be prevented with education, training and employer acknowledgement of voice use as an essential occupational requirement.
2. A person with a voice disorder should be offered an appropriate treatment program by an appropriately trained speech language pathologist in a multi-disciplinary setting.
3. A voice therapy rehabilitation program should take into account the person's:
 - occupational vocal demands
 - Native language
 - Literacy and language proficiency and
 - Cognitive abilities
 - Gender identity
4. A voice therapy rehabilitation program should provide the opportunity to generalise their voice skills in situations appropriate to the context in which the patient will live, work, study, and socialize after discharge.
5. Prevention, early intervention and increased public awareness of voice disorder be incorporated in public health and industry productivity agendas.

It is also recommended that :

1. Investment occur in providing speech pathology services to people with voice disorder and their families via telehealth and e-health,

2. People with voice disorders should receive appropriate and accurate diagnosis of voice disorder to enable most efficacious treatment.
3. People with voice disorders should receive speech pathology treatment which is of sufficient intensity of promote neuroplastic brain changes,
4. Research funding and health promotion resources be allocated to reduce the impact of voice disorder on the community.

Bibliography

- Akif Kilic, M., Okur, E., Yildirim, I. & Gu'zelsoy, S. (2004) The prevalence of vocal fold nodules in school age children. *Int J Pediatr Otorhinolaryngol* 68:409–412
- Behlau, M. et al (2009) *J Voice*, 23(6), 726-732
- Chan R (1994) Does the voice improve with vocal hygiene education? A study of some instrumental voice measures in a group of kindergarten teachers. *J of Voice* 8 279-291
- Carding P.N., Roulstone S. & Northstone K.; ALSPAC Study Team (2006). The prevalence of childhood dysphonia: a cross-sectional study. *Journal of Voice*; 20:623–630
- Cohen, S.M. et al (2012) *Laryngoscope*. 122(2):343-8
- De Bodt, M.S., Ketelslagers, K., Peeters, T., et al. (2007) Evolution of vocal fold nodules from childhood to adolescence. *Journal of Voice*;21:151–156
- Duffy O & Hazlett D (2004) The impact of preventive voice care programs for training teachers: A longitudinal study *Journal of Voice* 18(1) 63 – 70
- Haben, C.M. (2012) *Med Prob of Perf artists*. Volume 27, Issue 3, p. 165
- Hartnick CJ. (2002) Validation of a pediatric voice quality-of-life instrument: the pediatric voice outcome survey. *Arch Otolaryngol Head Neck Surg*;128:919–922
- Lass, N.J., Ruscello, D.M. & Podbesek, J.(1988) Listeners perceptions of normal and voice-disordered children. *Folia Phoniatica* 40 Issue: 6 Pages: 290-296
- Lass, N.J., Ruscello, D.M. Stout, L.L., et al.(1991) Peer perceptions of normal and voice-disordered children. *Folia Phoniatica* (43), 1, Pp 29-35
- Latukefu, L. (2007) *Aus Voice*, 13 8-15.
- Maddern B.R., Campbell T.F. & Stool S. (1991) Pediatric voice disorders. *Otolaryngol Clin North Am*; 24:1125–1140
- McNamara, A.P. & Perry, C.K. Vocal abuse prevention practices. *Lang Speech Hear Serv Sch* 1994; 25:105–111
- Merati AL, Keppel K, Braun NM, Blumin JH, Kerschner JE.(2008) Pediatric Voice-Related Quality of Life: findings in healthy children and in common laryngeal disorders. *Ann Otol Rhinol Laryngol*;117:259–262

- Pasa, G., Oates, J., Dacakis, G (2007). The relative effectiveness of vocal hygiene training and vocal function exercises in preventing voice disorders in primary school teachers. *Logopedics Phoniatrics Vocology* 32(3) 128-140.
- Pemberton, C. (2012) Can we afford teacher's voice problems? Paper presented at the Australian Voice Association Satellite Conference, Melbourne, October.
- Prater, R.J, Swift, R.W., Deem, J.F., Miller, L. (2008) *Manual of Voice Therapy*, 2nd Edition.. Pro-Ed, NY.
- Roy, N. et al (2005) *Laryngoscope*, 115(11), 1988-199
- Roy, N. et al (2005) Voice Disorders in the General Population: Prevalence, Risk Factors, and Occupational Impact. *Laryngoscope*, 115(11), 1988-199
- Ruotsalainen, J.H. et al.(2007) *Cochrane Database of Systematic Reviews* 2007, (4)
- Russell, A. et al (1998) *J Voice*,12, 467-479.
- Russell, A. Oates, J. & Greenwood, KM (1998) Prevalence of voice problems in teachers. *Journal of Voice*,12, 467-479
- Sampaio, M. C. et al (2012) *J Voice*, 26(6), 820 e815-828
- Scherer, K. R. (1995) *J Voice*, 9(3), 235-248
- Smitheran, J. R. et al (1981) *J Speech Hear Disord*, 46(2), 138-146.
- Titze, I. R. et al (1997) *J Voice*, 11(3), 254-259.
- Verdolini Abbott, K. (2013). Some guiding principles in emerging models of voice therapy for children. *Semin Speech Lang* 2013;34:80-93.
- Zraick, R. I., et al (2011) *Am J of Sp-Lang Path*, 20(1), 14-22.

Dr Cate Madill

Faculty of Health Sciences, The University of Sydney

21 February 2014

Kind regards,

Cate Madill