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U-21 Health Sciences Annual Meeting

Tele-Assessment Project

Voice Risk Calculator: Reducing the Risk of Developing Voice Problems in Teachers

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Prevalence

• At least 50% of teachers reported having voice problems
  – (e.g., Roy, Merrill, Thibeault, Gray & Smith, 2004)

• In Hong Kong, a teachers’ occupational health survey was carried out in 2005
  – 1710 primary and secondary teachers responded
  – 72.8% of teachers responded that in the past 30 days they had some type of work related voice problems
  – The voice problem was reported to last for an average of 13.4 days
  – (Chung & Chan, 2007)
Impact of voice problems

• Sick leave
• Reduce teaching activity
• Financial loss in the education system
• Cost on the health system

Total cost estimate HK$75 (US$10) million annually
(including salary loss, replacement teachers salary, medical treatment)
Prevention of voice problems

• Universal agreement that preventive measures should be taken
  – (U.S.A., U.K., Netherlands, France, Finland, Iceland, Hong Kong)

• In U.K., National Health Service has launched a “Speaking up for teachers’ voice care” project

• In Spain, some universities offer voice care programmes for teachers
Prevention of voice problems

• In Singapore, offered in Postgraduate Diploma in Education

• In U.S., no compulsory voice training programs for student teachers
  - research studies are being carried out to investigate the effectiveness of voice workshops on preventing voice problems in teachers
Prevention - Hong Kong

• At University of Hong Kong
  – Optional module in voice training for teacher trainees

• Our previous study showed 89% of teachers expressed interested in attending voice workshops
Project Objectives

• Develop the internet version of Voice Risk Calculator to identify teachers who are at risk of voice problems

• Provide internet resource support for preventing and reducing voice problems in teachers
Risk Assessment Framework

for

Hyperfunctional Voice Disorders
Conceptual framework

Science (April, 2002) –

Most common diseases are ‘complex and multifactorial’
Why risk assessments?

1. Understanding of development of voice disorders
   - Nature,
   - Course of development
   - Causal determinants

2. Provide valuable information for *diagnosis*
   - Theoretical framework
   - Accurate prediction of disease onset and progress
Why risk assessments?

3. Provide directions for *prevention* and *intervention*

- **Individual patient level**
  - Individualized treatment program targeting specific risks
  - Accurate monitoring of disease progress with on-going risks assessment

- **Population level**
  - Accuracy prediction for population groups
  - Public health promotion strategies
  - Facilitate awareness and early identification

Content of questionnaire

Vocal Loading Indicator: Duration of voice use, voice care knowledge, voice habits, occupational demands, reaction to early symptoms, voice or singing training

Physiological Indicator: Gender, medical conditions, history in voice disorders, caffeine/tobacco/alcohol intake

Psycho-emotional Indicator: • Cross-Cultural Personality Assessment Inventory (CPAI-2; Cheung et al., 2001).
• Perceived Stress Scale (PSS – 14, Chu, 2005)
Phase 1
Teacher’s Voice Risk Calculator

• Upon completion, teachers will receive preliminary information on whether they are at risk of developing voice problems
• Expected around **12,400 teachers** will fill in the questionnaire
  – Kindergartens, primary, secondary and special schools
• The data will be analyzed to determine the final questionnaire items to be included in the Teacher’s Voice Risk calculator
Phase 1
Teacher’s Voice Risk Calculator

• Invite teachers to fill in a set of questionnaires online
  - Prototype Voice Risk Calculator
  - Voice Activity and Participation Profile
    • Quality of life measurement
  - Voice Symptom Scale
    • Identify voice symptoms and severity
  - Cross-cultural personality assessment inventory
    • Personality traits, anxiety and depression levels
Phase 2
Voice Training Workshops

• Voice training workshops
  – Voice care and voice exercises
• 2 groups of teachers (total 440 teachers):
  – Control and Experimental Group
• All teachers will be evaluated individually by a speech therapist 3 times throughout the year
• Experimental Group will receive training during the test period
• Control Group will receive training after the test period
Sustainability of the Project

• Internet Voice Resource Centre
  – Maintained by the Centre for Communication Disorders, HKU
  – Teacher’s Voice Risk Calculator and guidelines

• In the long run – prevalence of voice problems in teachers should be reduced
  – Early identification
  – Provision of voice training
  – School environment improvement