Acquisition of amplification by individuals with moderate hearing loss in Singapore

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Aims and hypotheses

• Aims:
  (1) To determine the percentage of patients with moderate hearing loss seen in a clinical setting who decide to proceed with hearing aid fitting.
  (2) To establish the reasons why patients decide to acquire hearing aids or not in the presence of moderate hearing loss in one or both ears.
  (3) To find out the percentage of patients with moderate hearing loss in both ears who acquire hearing aids in both ears.
• Information obtained can be used to improve patient care & facilitate hearing rehabilitation through amplification.
Aims and hypotheses

• Hypothesis:
  1) Not all patients with moderate hearing loss would proceed with hearing aid fitting.
  2) It is anticipated that the reasons for not acquiring hearing aids include social, economical and logistical issues.
  3) Not all patients with bilateral hearing loss would proceed with binaural fitting.
Previous studies

• No local data on hearing aids acquisition rate available currently.

• Previous research studies were done in other countries:
  1) USA (Kochkin, 2009; Fisher et al, 2011; Bainbridge & Ramachandran, 2013)
  2) European countries (UK, France, Norway, Germany, Switzerland, Italy) & Japan (Houggard et al, 2013)
  3) Australia (Gopinath et al, 2011)
  4) Sweden (Öberg et al, 2012)
  5) UK (Dawes et al, 2014)
Methodology

• Participants:
  - Adult patients visiting CHSB for Hearing Aid Evaluation session, Hearing Aid Fitting appointments or Hearing Aid Follow-up appointments.
  - Patients had >40 dB loss (PTA of 0.5, 1, 2 & 4 kHz) in at least 1 ear (moderate hearing loss).
  - Patients had been counselled on hearing aids & made informed decisions.
Methodology

• Procedure:
  1) Patients invited to participate in the study by audiologists attending to them.
  2) Interested patients approached by member of study team to answer any queries.
  3) Informed consent obtained, patients assigned a participant number & thresholds for each ear at 0.5, 1, 2 & 4 KHz recorded.
  4) Patients to complete questionnaire during the face-to-face interview. Questions asked: if they are acquiring hearing aids (or already acquired), how many & why; if they are not (or have not), why & do they intend to acquire in future.
Key Results

- Data was obtained from 44 participants who were successfully recruited for the study.

Almost all participants (93%) with bilateral hearing loss acquired 2 hearing aids.
Key Results

Reasons for hearing aids acquisition

- Patient’s own initiative: 41%
- Recommendation by ENT & Audiologist: 37%
- Advice from others (family members, colleagues): 22%

Reasons for hearing aids non-acquisition

- Money-related (high cost of HA, no subsidy): 53%
- Sound quality not satisfactory: 29%
- Needed more time to consider: 12%
- Other medical concerns: 6%
Key Results

Hearing loss categories (% Hearing aids acquisition group and % Hearing aids non-acquisition group)

- Normal (less than 20) % Hearing aids non-acquisition group
- Mild (25-40) % Hearing aids non-acquisition group
- Moderate (45-65) % Hearing aids non-acquisition group
- Severe (70-90) % Hearing aids non-acquisition group
- Profound (more than 90) % Hearing aids non-acquisition group

Gender distribution

- Total sample % Participants
- Hearing aids acquisition group % Participants
- Hearing aids non-acquisition group % Participants

Different groups of participants

- Female
- Male
Key Results

Age groups distribution (Hearing aids acquisition group and Hearing aids non-acquisition group)
Discussion

• This study helped to provide a better understanding of the hearing aids acquisition rates in Singapore.
  1) Relatively high hearing aids acquisition rate.
     ➢ Different from previous studies: Marke Trak VIII study (24.6%), EuroTrak+Japan Trak 2012 study (Highest: 42.5%, Norway; Lowest: 14.1%, Japan).
     ➢ Possible reasons: different patient care approaches (patients had been counselled), small sample, cultural differences, different population.
  2) Almost all participants (93%) with bilateral hearing loss had acquired 2 hearing aids.
     ➢ Similar to: Marke Trak VIII study (89.9%).
Discussion

3) Reasons for hearing aids acquisition: All related to social relationships.

Reasons for non-acquisition: social, economic & technical aspects.

- Similar to EuroTrak+Japan Trak 2012 study (Top obstacle: affordability- economic aspect).

4) More males than females.

- Similar to: Marke Trak VIII study (60% male, 40% female. Steady gender mix for last 25 years).
5) Participants seemed willing to acquire hearing aids only if their degree of hearing loss was more severe than mild.

- Similar to: 3 earlier studies (Kochkin, 2009; Helvik et al., 2008; Gussekloo et al., 2003).

6) Age looked like an influencing factor in the non-hearing aids acquisition group.

- Older participants (81-90 yr olds) were more affected by the high cost of the hearing aids & they had all cited money issues as their reasons for non-acquisition.
Limitations

• A **limitation** of this study is the **inability to generalise the findings beyond this sample** due to:

1) **small sample size** (N= 44)
   A larger sample would reduce the chance of Type I errors, add statistical power, and provide greater confidence in the findings.

2) the **non-randomised method of data collection**.
   The findings probably only represent the participants of this study and not the entire hearing impaired population in Singapore.
Future work

• Useful to conduct the study concurrently in multiple hospitals/clinics in Singapore to collect data in a more randomised manner.
• Questionnaire can be revised to document more information eg. type of household, family income, educational level & whether patient had obtained subsidies.
• Longitudinal studies of similar topic may also be undertaken to look at long term benefits and satisfaction with hearing aids in addition to acquisition.
References

Thank You!