



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.



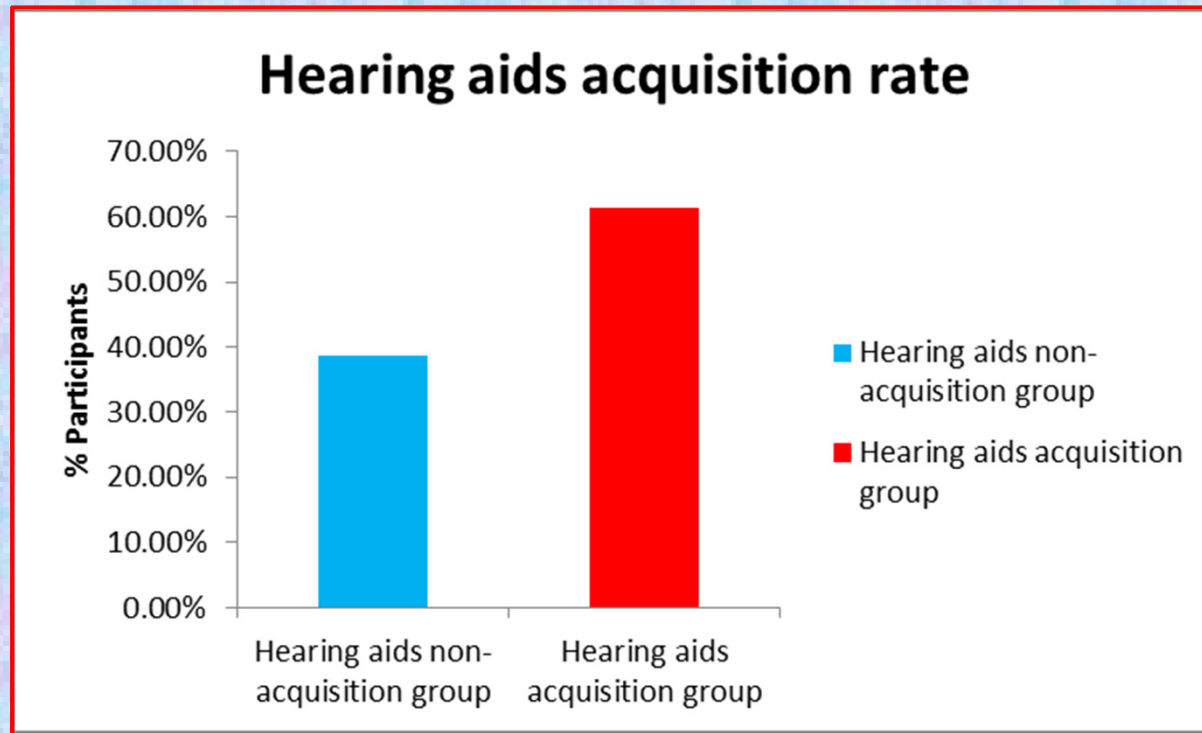
Methodology



- 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

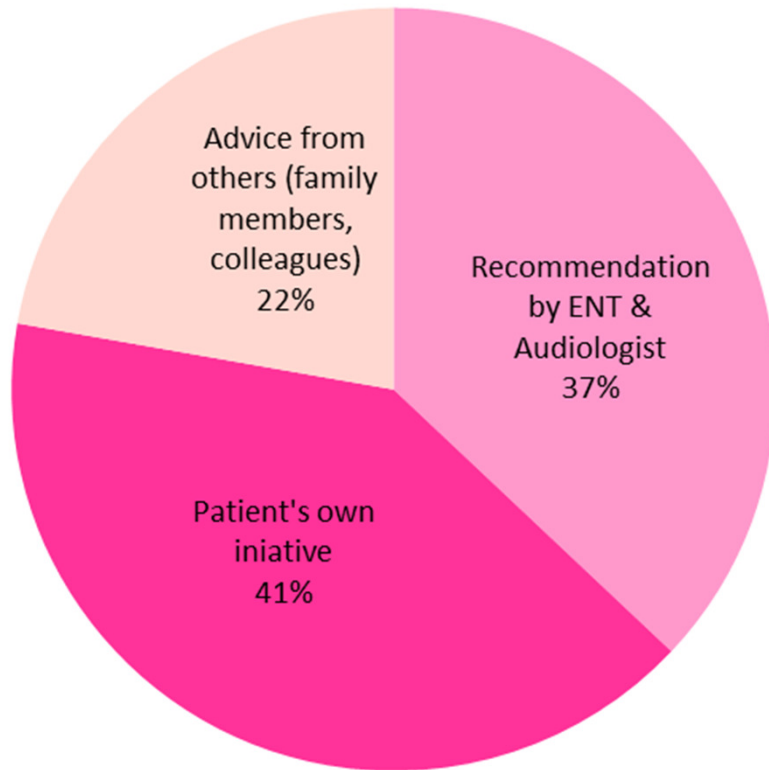
- Data was obtained from 44 participants who were successfully recruited for the study.



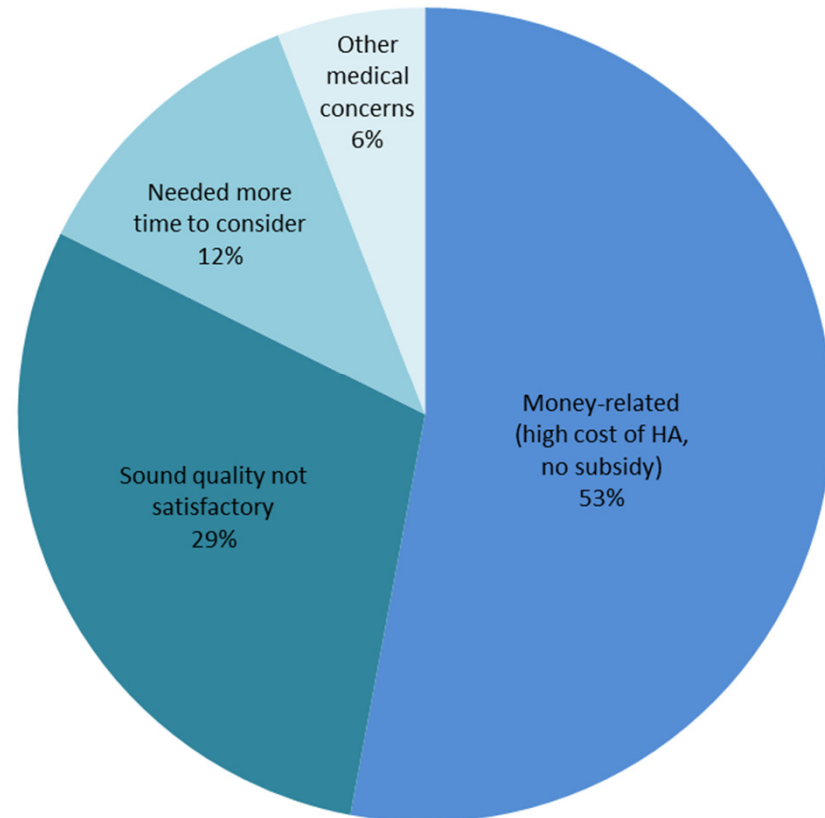
Almost all participants (93%) with bilateral hearing loss acquired 2 hearing aids.

Key Results

Reasons for hearing aids acquisition

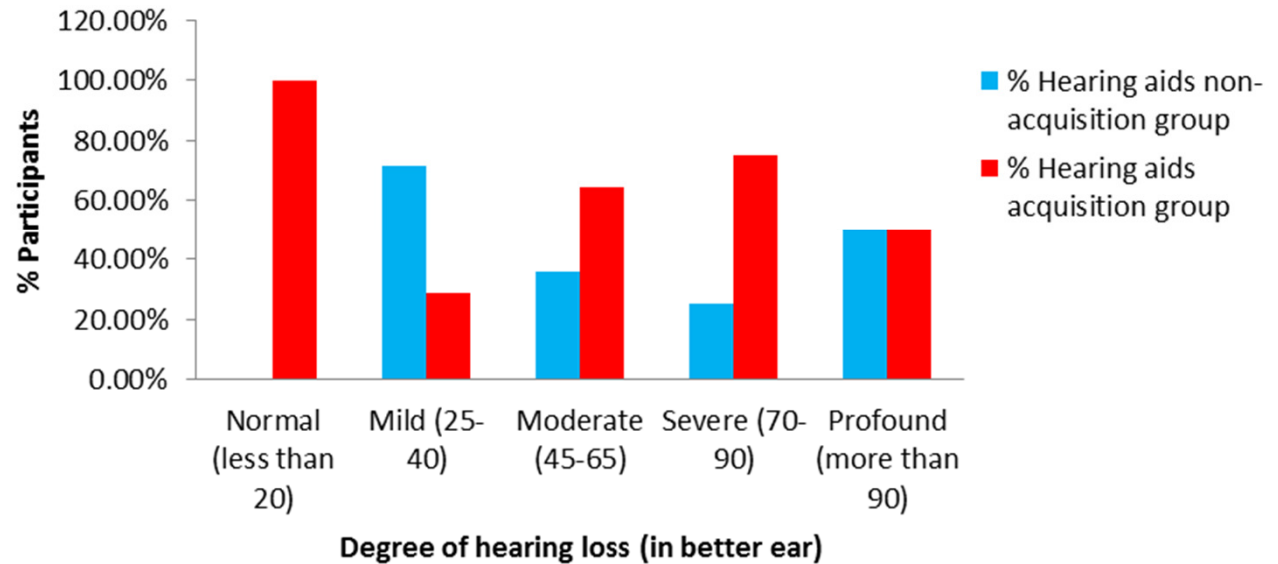


Reasons for hearing aids non-acquisition

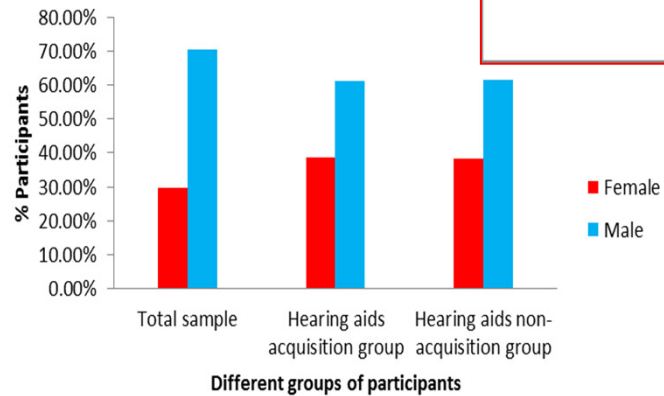


Key Results

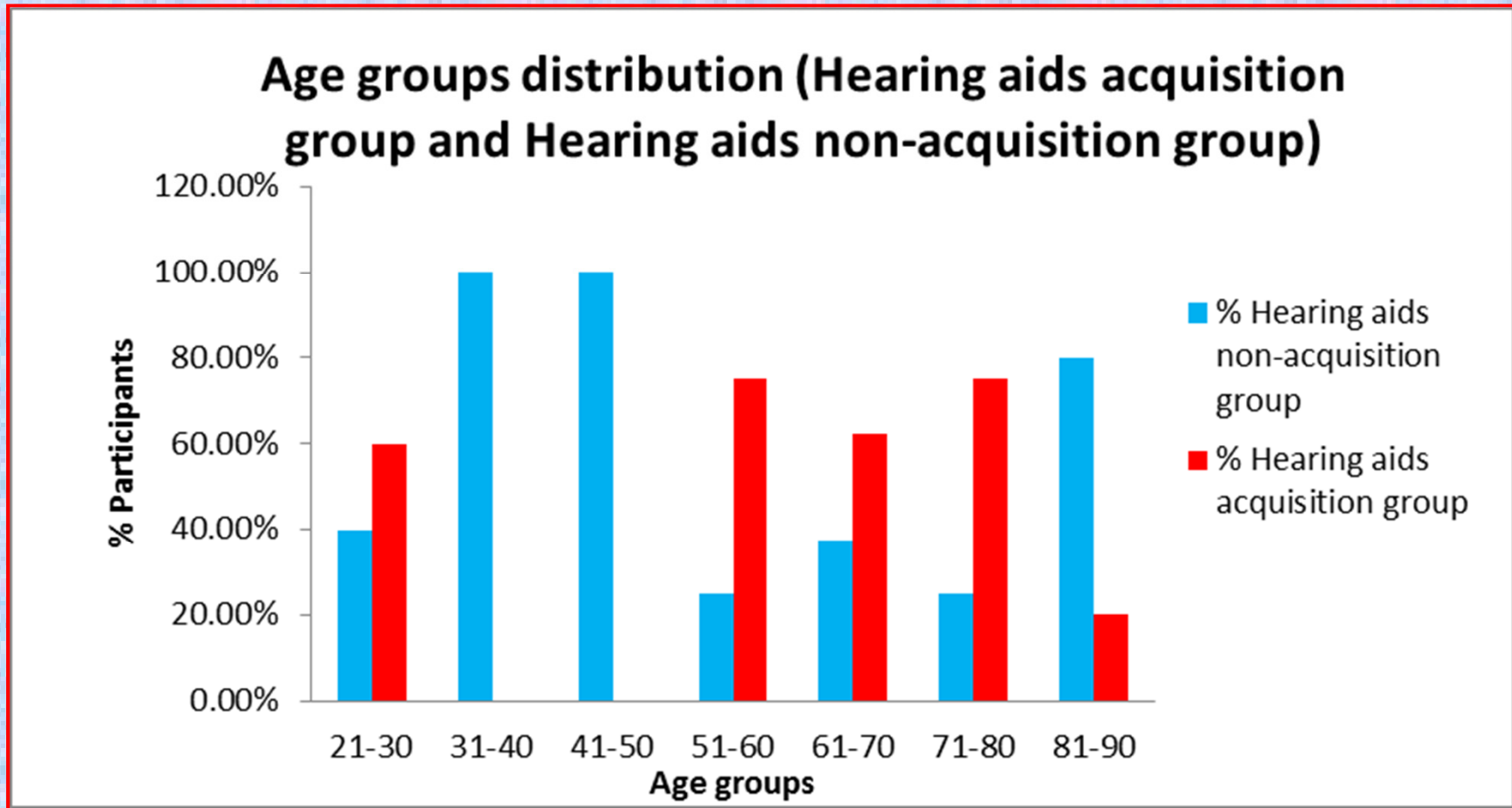
Hearing loss categories (% Hearing aids acquisition group and % Hearing aids non-acquisition group)



Gender distribution

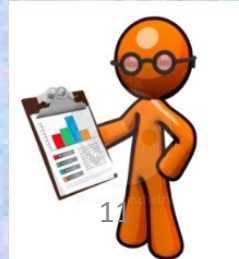


Key Results



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).



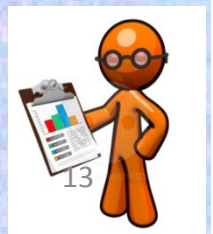
Discussion

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

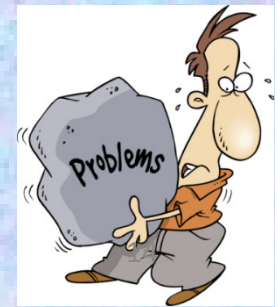
- A **limitation** of this study is **the inability to generalise the findings beyond this sample** due to:

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

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Thank You!

