A randomized controlled trial of professional online rehabilitation for adult hearing-aid users

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The Internet is known to be an effective tool for rehabilitation in diverse health fields. We studied the potential of online professional interaction as a vehicle for parts of audiological rehabilitation which are often under-resourced in face-to-face sessions.

Background

Studies in adjacent fields (tinnitus, anxiety and panic disorders) have shown promising results when using the Internet as a way of supervising and treating patients [1, 2]. By using the Internet in the audiological rehabilitation process, it may be possible in a cost-effective way to include additional rehabilitation components by informing and guiding hearing aid users about such topics as communication strategies, hearing tactics, and how to handle hearing aids [3-8].

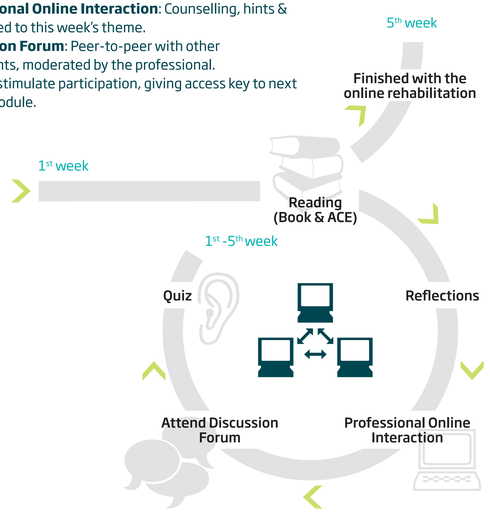
Hypothesis

Participants taking part in an online rehabilitation program will perceive a significant reduction of their activity limitations and participation restrictions when compared to the participants in a control group, when measured by the primary outcome measure The Hearing Handicap Inventory for the Elderly (HHIE) [9].

Intervention

Designed as a self-contained sequence, irrespective of participants' prior hearing-aid (HA) fitting process. All interactions took place via a custom-designed website. 5 weeks, 5 modules. Same structure each week. Each week the participants were introduced to a new module. Module themes emphasized hearing, hearing aids and communication strategies (5,10).

Each module included:
Reading: Excerpts from [5, 10, 14] – hearing / loss, the audiogram, hearing aids, communication strategies, problem-solving, ALDs, info for spouses, relaxation techniques.
Reflections: Assignments to try out the knowledge or skills acquired.
Professional Online Interaction: Counselling, hints & tips related to this week's theme.
Discussion Forum: Peer-to-peer with other participants, moderated by the professional.
Quiz: To stimulate participation, giving access key to next week's module.



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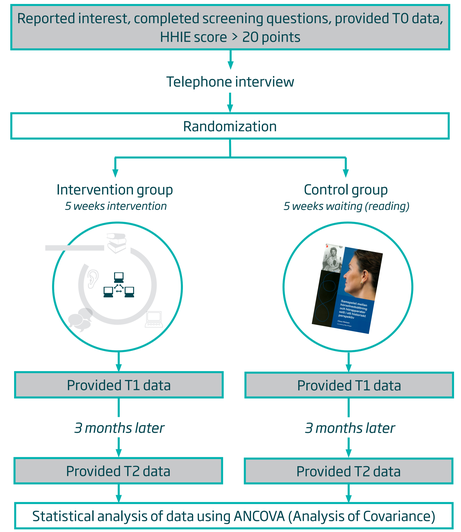
Randomized Controlled Trial

Design



Data provided

Outcome data were HHIE, Hospital Anxiety and Depression Scale (HADS) [11], IOI-HA (not reported here).

Participants

Inclusion criteria were; used hearing aids for at least one year, hearing impairment and significant communication difficulties (defined as HHIE > 20), over 18 years old, fluent in Swedish, access to a computer and the Internet.

Recruitment

Adverts in Swedish national daily newspapers directed potential subjects to the study website for inclusion questions. If OK and interested, further telephone interview screened for severe tinnitus, Menières disease, too severe hearing loss, and lack of interest.

Quotes from participants

"The audiologists give me very little information normally, but [here] I learned how to have a more intelligent discussion with the audiologist than I could before."

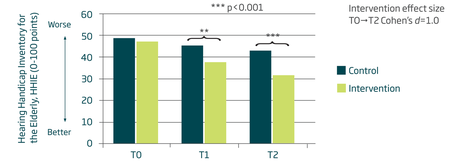
"If I had had the possibility to take such a course during my first year [as a HA user], it would have helped me very much …"

"… some things I experienced as positive in this [course] … hearing is not only to recognise sounds, there might also be underlying causes involving the brain."

Results

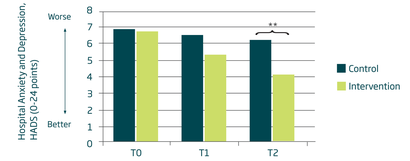
Primary outcome: HHIE

Significant reduction for Intervention group relative to Control group, both at T1 and T2.



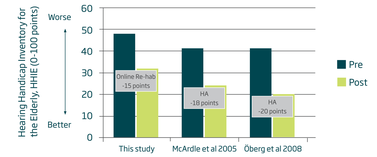
Secondary outcome: HADS

Significant reduction for Intervention group relative to Control group at T2 (non-significant at T1).



Comparing with other interventions: HA fitting

HHIE reduction seen here is comparable with HA fitting for first-time users [12, 13] (!)
Caveat: for HA users with HHIE > 20.



Discussion & implications

THE RESULTS SUPPORT THE HYPOTHESIS
Taking part in an online rehabilitation program, including professional guidance by an audiologist, significantly decreases participation restriction and activity limitation (measured by HHIE).

POSITIVE EFFECTS ARE MAINTAINED
The HHIE outcomes indicate that the intervention has an effect at least into the medium term (3 months).

SIZEABLE IMPROVEMENT ON HHIE
The magnitude of HHIE improvement for the target group was comparable with (though probably less than) that seen with first-time HA fitting.

LET'S DO IT !
Our results support the idea of creating online rehabilitative programs for hearing-aid users with residual problems.

LIMITATIONS & FURTHER WORK
We don't know which part(s) of the program provided the effect.
We don't know whether a program lasting 5 weeks is necessary.
Maybe we attracted an unrepresentative sample of HA users.

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