

SPAF Göteborg 18 april 2016

Hörselhjälp på nätet – vad säger aktuell forskning?



Elisabet S Thorén, PhD

Vad är nätet?



Begrepp



Tele



E(lektronisk)

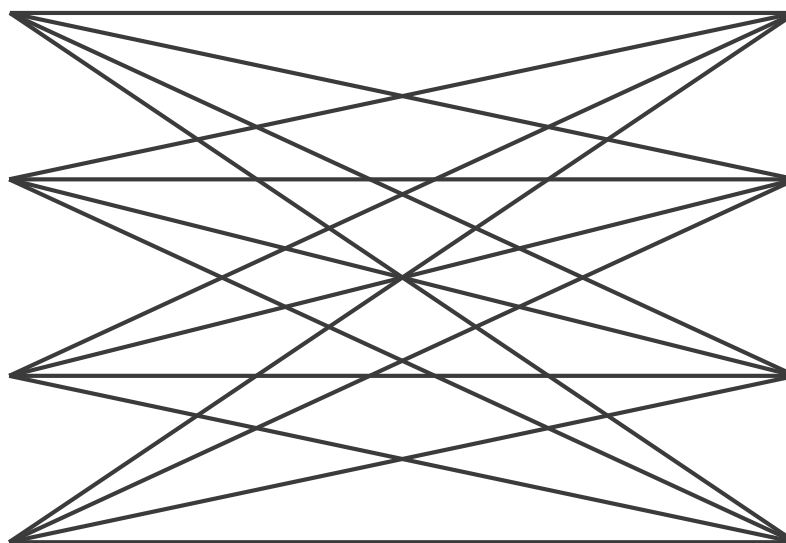


M(obil)



Internet

...



hälsa

medicin

praktik

audiologi

...

Definitioner

- E-hälsa utvecklar välfärden. Genom att ta till vara på digitaliseringens möjligheter kan vi öka kvaliteten, få en mer jämlik vård och använda resurserna mer effektivt. (SKL)
- **E-hälsa** är en relativt ny term för vårdutövande som tar hjälp av elektroniska processer och kommunikation. (Wiki)
- **Nationell eHälsa handlar om hur framtidens vård och omsorg som helhet ska fungera och förbättras med hjälp av e-tjänster (...)** Arbetet har under senaste åren fokuserat på att leverera nyttoeffekterna av olika e-tjänster, leverera fler personliga e-tjänster för alla invånare, en kraftsamling för samordning och utveckling av e-hälsa i kommunal hälso- och sjukvård och socialtjänst samt ökat samspel med närliggande nationella och internationella reformprocesser och initiativ. (Nationell eHälsa)

Från litteraturen

A Systematic Review of Telehealth Applications in Audiology

De Wet Swanepoel, Ph.D.,^{1,2} and James W. Hall, III, Ph.D.^{3,1}

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reliability and effectiveness of telehealth applications compared to conventional methods. The limited information on patient perceptions reveal mixed findings and require more specific investigations, especially post facto surveys of patient experiences. Tele-audiology

informa
healthcare

Original Article

International Journal of Audiology 2010; 49: 195–202

Telehealth in audiology: The need and potential to reach underserved communities

Abstract

Permanent hearing loss is a leading global health care burden, with 1 in 10 people affected to a mild or greater degree. A shortage of trained healthcare professionals and associated infrastructure and resource limitations mean that hearing health services are unavailable to the majority of the world population. Utilizing information and communication technology in hearing health care, or tele-audiology, combined with automation offer unique opportunities for improved clinical care, widespread access to services, and more cost-effective and sustainable hearing health care. Tele-audiology demonstrates significant potential in areas such as education and training of hearing health care professionals, paraprofessionals, parents, and adults with hearing disorders; screening for auditory disorders; diagnosis of hearing loss; and intervention services. Global connectivity is rapidly growing with increasingly widespread distribution into underserved communities where audiological services may be facilitated through telehealth models. Although many questions related to aspects such as quality control, licensure, jurisdictional responsibility, certification and reimbursement still need to be addressed; no alternative strategy can currently offer the same potential reach for impacting the global burden of hearing loss in the near and foreseeable future.

Sumario

La pérdida auditiva permanente es una importante carga para los cuidados de la salud a nivel mundial, con 1 de cada 10 personas afectadas en grado ligero o mayor. La escasez de profesionales entrenados en cuidados de la salud y de infraestructura asociada y la limitación de recursos determina que los servicios de salud auditiva no estén disponibles para la mayoría de la población mundial. La utilización de información y tecnología de la comunicación para los cuidados de la salud auditiva o teleaudiología, combinada con la automatización, ofrece oportunidades únicas para mejorar los cuidados clínicos, ampliar el acceso a los servicios y tener cuidados de salud auditiva costosefectivos y sustentables. La Teleaudiología ha demostrado un potencial significativo en áreas como las de educación y adiestramiento de profesionales de la salud auditiva, profesionales afines, padres y adultos con problemas auditivos; tamiz de problemas auditivos; diagnóstico de pérdidas auditivas y servicios de intervención. La conectividad global está creciendo rápidamente y ha aumentado de manera generalizada su distribución en comunidades con pocos servicios, en donde los servicios audiológicos pueden facilitarse a través de modelos de tele salud. No obstante, existen muchas dudas que deben resolverse y que están relacionadas con aspectos como control de calidad, regulación del ejercicio profesional, responsabilidad jurisdiccional, certificación y reembolso de servicios, pero no existe como alternativa ninguna otra estrategia que pueda ofrecer actualmente el mismo potencial, para impactar el peso global de las pérdidas auditivas en el futuro cercano o previsible.

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Feasibility and reliability

- Audiometry
- Video-otoscopy
- Oto-acoustic emissions
- Auditory Brainstem Response

Intervention studies shows reliability and effectiveness

- Hearing aid verification
- Counseling
- Internet-based treatment for tinnitus

(Swanepoel et al., 2010; Swanepoel & Hall, 2010)



CHECK IN

Screening &
Web resources



ASSESSMENT

Decision tools
& Motivational
Interviewing



TREATMENT

Support
systems



OUTCOME

Education &
empowerment tools



CHECK IN

Screening &
Web resources

Internet use

- Elderly hearing impaired used Internet more compared with age-matched general population of Sweden (Thorén et al, 2013).
- The findings suggest that PC and internet delivery of hearing screening, information and intervention is feasible for 50-74 year olds who have a hearing loss, but who do not typically present at hearing services (Henshaw et al, 2012).



Screening

- The Dutch National Hearing Test is a reliable and successful hearing screening test via telephone or Internet. More than 50% of the participants who failed the test went to a hearing clinic. The tests increase the identification and treatment of hearing-impaired adults (Smits et al, 2006).
- Hearing screening via telephone has proven to change the lives of 5% of individuals who decided to seek professional help for hearing impairment at little cost to the other 95% of individuals (Meyer et al, 2011).
- Internet-based hearing screening can be a useful and cost saving adjunct for early screening of hearing impairment (Molander et al, 2013).





CHECK IN

Screening &
Web resources



ASSESSMENT

Decision tools
& Motivational
Interviewing



TREATMENT

Support
systems

After hearing screening; Motivational Interviewing?

- Stages of change/motivation in audiology: Comparison of three measures. The correlations between the measures supports the hypotheses of using a one item way to measure a client's Stage of change. (Ingo et al, in press).
- Very few were in the action stage (3%). This indicate that screening alone is unlikely to be enough to improve help-seeking and rehabilitation rates (Laplante-Lévesque et al, 2015).
- Motivational interviewing via the internet. The study shows that it is possible to conduct Motivational Interviewing for persons that have failed an online hearing screening (Wieneland et al, in press).



Online Text-based Support

Goal planning, information transfer, rehabilitation overview and task assignments often difficult in practice due to limited time in the clinic

- Using e-mail contact during time of HA fitting is useful in the audiological rehabilitation process to share experiences and to provide audiological counseling



(Laplante-Lévesque et al, 2006)

Online Text-based Support

Goal planning, information transfer, rehabilitation overview and task assignments often difficult in practice due to limited time in the clinic



- An internet-based support system for audiologists and their first-time hearing aid clients. Both audiologists and clients' recognized the system's potential value to offer an online support to the provision of audiological services

(Brännström et al, 2015)

Digital video based support

First-time hearing-aid users

- Specific learning outcomes for reinforcement of good behaviors. There is clearly a gap in adult rehabilitation for an effective intervention that enhances knowledge and educates hearing aid users



(Ferguson et al, 2016)

Digital video based support

First-time hearing-aid users



- A home-based program with focus on educating HA users and SO: the results showed improvements in quality-of-life, HA satisfaction & interaction with SO

(Kramer et al, 2005)



CHECK IN

Screening &
Web resources



ASSESSMENT

Decision tools
& Motivational
Interviewing



TREATMENT

Support
systems



OUTCOME

Education &
empowerment tools

Education & empowerment tools

Clients with remaining problems after clinical phase; Is deepened rehabilitation/counseling via internet beneficial?

- Internet interventions for residual hearing problems where the preliminary evidence shows that residual hearing problems can be reduced by the intervention



HörNet

En studie om hörsel, hörapparater och kommunikationsstrategier

Projektet | Utbildning | Etik och ansvar | Registrera dig | Samtycke | Om oss | Cookies

Hörnet2

Anmälan till studien har stängt. Intresseanmälan till kommande studier kan göras på studie.nu.

Introduktion och målsättning

Syftet med forskning om behandling och utbildning via Internet är bland annat att ta fram effektiva metoder i samband med hörapparatrehabilitering. Tidigare har studier genomförts där effekten av Internetbaserade behandlingsprogram för personer med hörselnedsättning, tinnitus eller depression har utvärderats. Resultaten har varit övervägande positiva - även på så lång sikt som 5 år. Nu vill vi undersöka om utbildning via Internet för personer med hörselnedsättning går att göra mer interaktiv och mer individanpassad.

Studien består av en utbildning via en hemsida, kontakt med andra personer som har hörselnedsättning via ett diskussionsforum och kontakt med leg audionom genom krypterade webbsidor (ungefär som e-post). En förutsättning för deltagande är att du har tillgång till en egen dator med Internetuppkoppling (minst 1 Mbit per sekund) samt möjlighet att skicka och ta emot e-post.

Tillvägagångssätt

För att delta i studien följer du instruktionerna under fliken "registrera dig". Du kommer att få besvara frågor

(Thorén et al, 2011; 2014; 2015)

Education & empowerment tools

Clients with remaining problems after clinical phase; Is deepened rehabilitation/counseling via internet beneficial?



- A RCT of the short-term effects of complementing an educational program for HA users with Internet support. First investigation to implement online tools in a clinical setting

(Malmberg et al, 2015)

Education & empowerment tools

Clients with remaining problems after clinical phase; Is deepened rehabilitation/counseling via internet beneficial?

- Use of Internet-delivered Acceptance and Commitment Therapy to improve psychological health in people with hearing loss



(Molander et al, 2015)

Hörnet

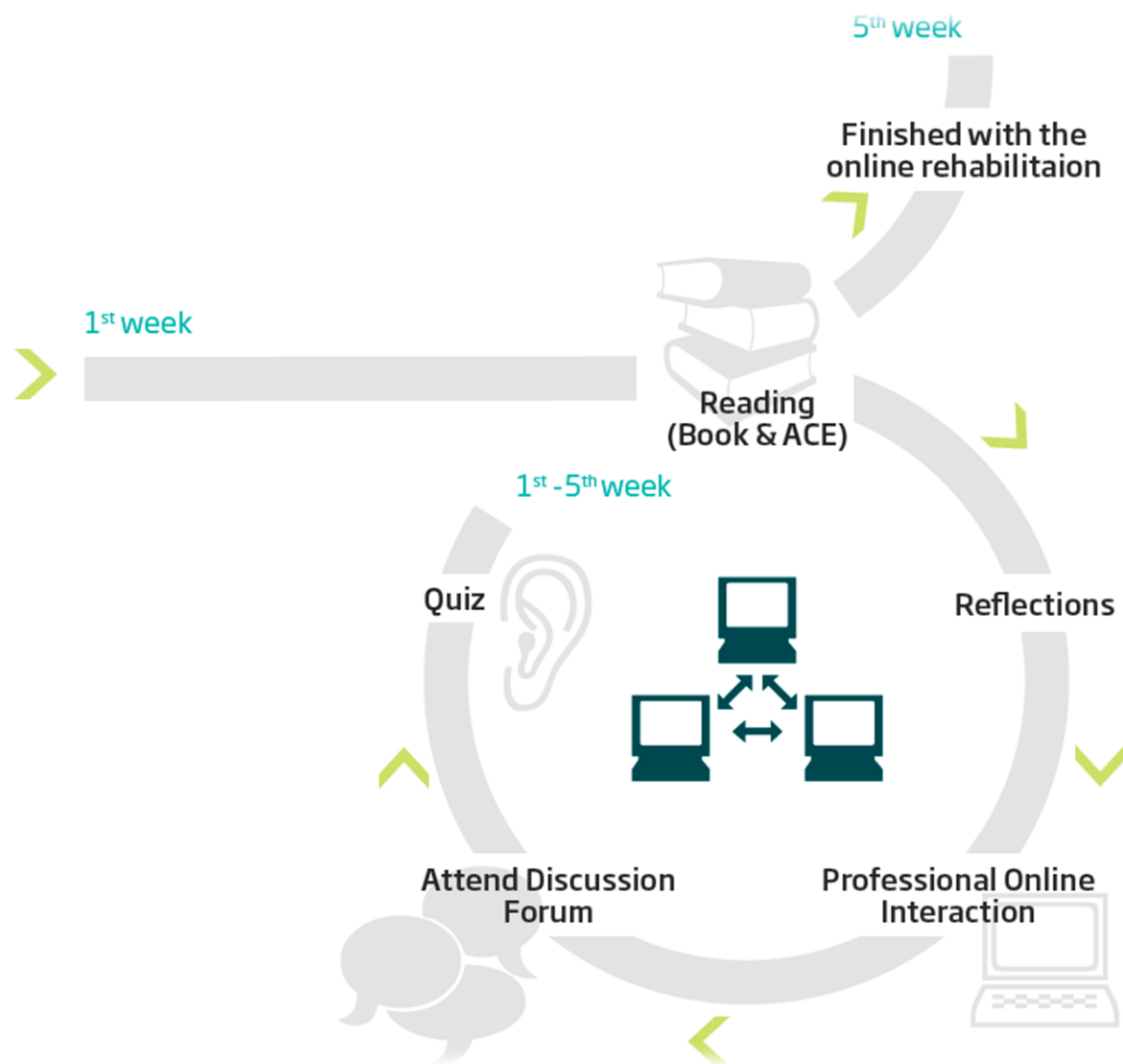
More users can be more satisfied with their hearing

Empower the user beyond hearing aids

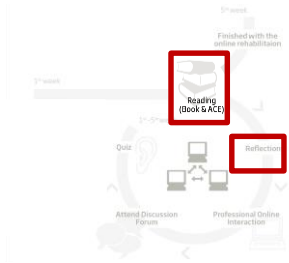
...without increasing time & money



Weekly procedure

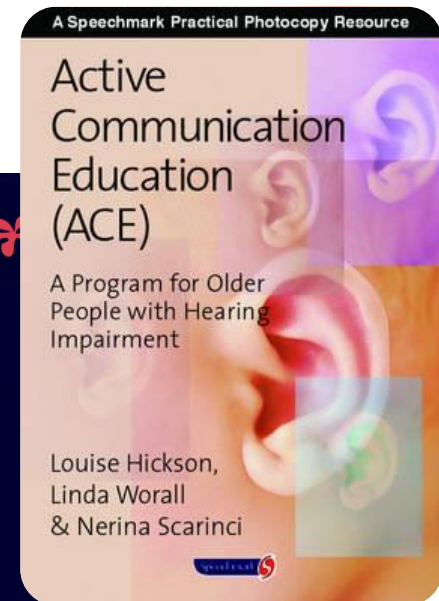
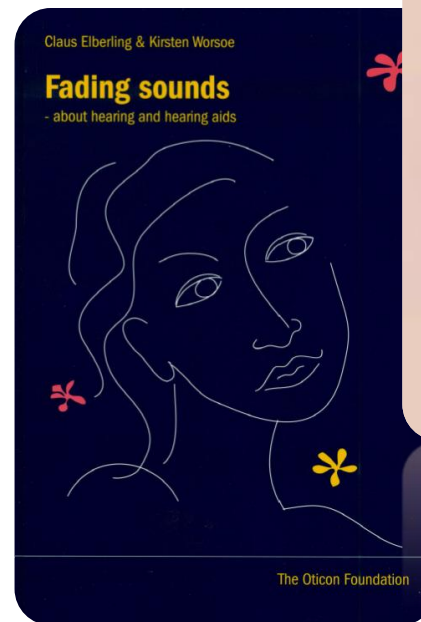


Weekly assignments - Information

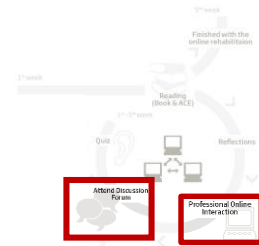


- Get to know & Try out

- The hearing sense
- Your audiogram
- Your hearing aids
- Communication strategies
- Problem solving
- Assistive listening devices
- Information & advices to spouses
- Applied relaxation



Weekly assignments - Interaction



- Professional interaction
 - Personal counseling from audiologist
 - Hints and tips related to the weekly reflections
- Peers interaction
 - Weekly topics at the Discussion Forum
 - Your hearing loss
 - Reactions about your hearing loss
 - Coping with the hearing loss
 - Describe un/useful strategies
 - Sharing advice

En studie om hörsel, hörapparater och kommunikationsstrategier

Hörnet2 - krypterat kontakthanteringssystem

[Startsidan](#) | [Till forumet](#) | [Meddelanden](#) | [Filer](#) | [Moduler \(veckouppgifter\)](#) | [Min profil](#) | [Vanliga frågor \(FAQ\)](#) | [Administration](#) | Inloggad som [Terapeut](#) [Logga ut](#)

[Meddelanden](#) | [Skriv ett meddelande](#) | [Skickade meddelanden](#) | [Mina konversationer](#) | [Terapeuters konversationer](#) | [Papperskorgen](#)

Mina konversationer

Visa konversation

Mottagare: inom parentes visas (antal olästa meddelanden / antal meddelanden)

Visar din konversation med 8176swsd

Från [Deltagare 8176swsd](#) till [Dig](#) mån 21 november 2011 11:32:09

Här kommer svar på ditt meddelande (2011-11-07 11:00:55)

Hej!

[Projektet](#) | [Utbildning](#) | [Etik och ansvar](#) | [Registrering](#)

Hörnet2

Anmälan till studien har stängts. Intresseanmälan till kommande studie öppnas igen senare.

Introduktion och målsättning

Syftet med forskning om behandling och utbildning via samband med hörapparatrehabilitering. Tidigare har studien varit övervägande positiva – även på så lång sikt som 5 år. Tidigare har studien varit övervägande positiva – även på så lång sikt som 5 år.

Studien
diskussion
för deltagare
möjligheter

Tillvägagångsätt
För att

[Forumindex](#)

[Kontrollpanel](#) (Inga nya meddelanden)

[FAQ](#) | [Medlemmar](#) | [Logga ut](#) [[Elisabet](#)]

Aktuellt datum och tid: 7 juni 2011, 22:10
[[Moderationspanel](#)]

Senaste besöket: Idag, 15:57

Markera alla kategorier som lästa

KATEGORI	TRÅDAR	INLÄGG	SENASTE INLÄGGET
Vecka 1 När lade du först märke till din hörselnedsättning och vilken inverkan har den haft på dig under åren som gått?	18	27	av 8219ykrb 15 maj 2011, 21:39
Vecka 2 Vad säger din familj om din hörselnedsättning och vad känner du själv om din hörselnedsättning?	12	18	av 8308rhzm 17 maj 2011, 14:44
Vecka 3 Hur tycker du att du har klarat av de förändringar som hörselnedsättningen för med sig?	12	23	av 8213sndf 30 maj 2011, 12:05
Vecka 4 Beskriv en situation när du har använt en strategi som har fungerat, och beskriv en situation där du har använt en strategi som inte har fungerat.	6	9	av 8139nfgg 2 juni 2011, 20:35
Vecka 5 Om du har några råd att dela med dig till en annan person med hörselnedsättning, vad skulle det vara?	8	10	av 8060nckj Igår, 20:51

Online Rehabilitation Program of Hearing, Hearing Aids and Communication strategies

1st edition

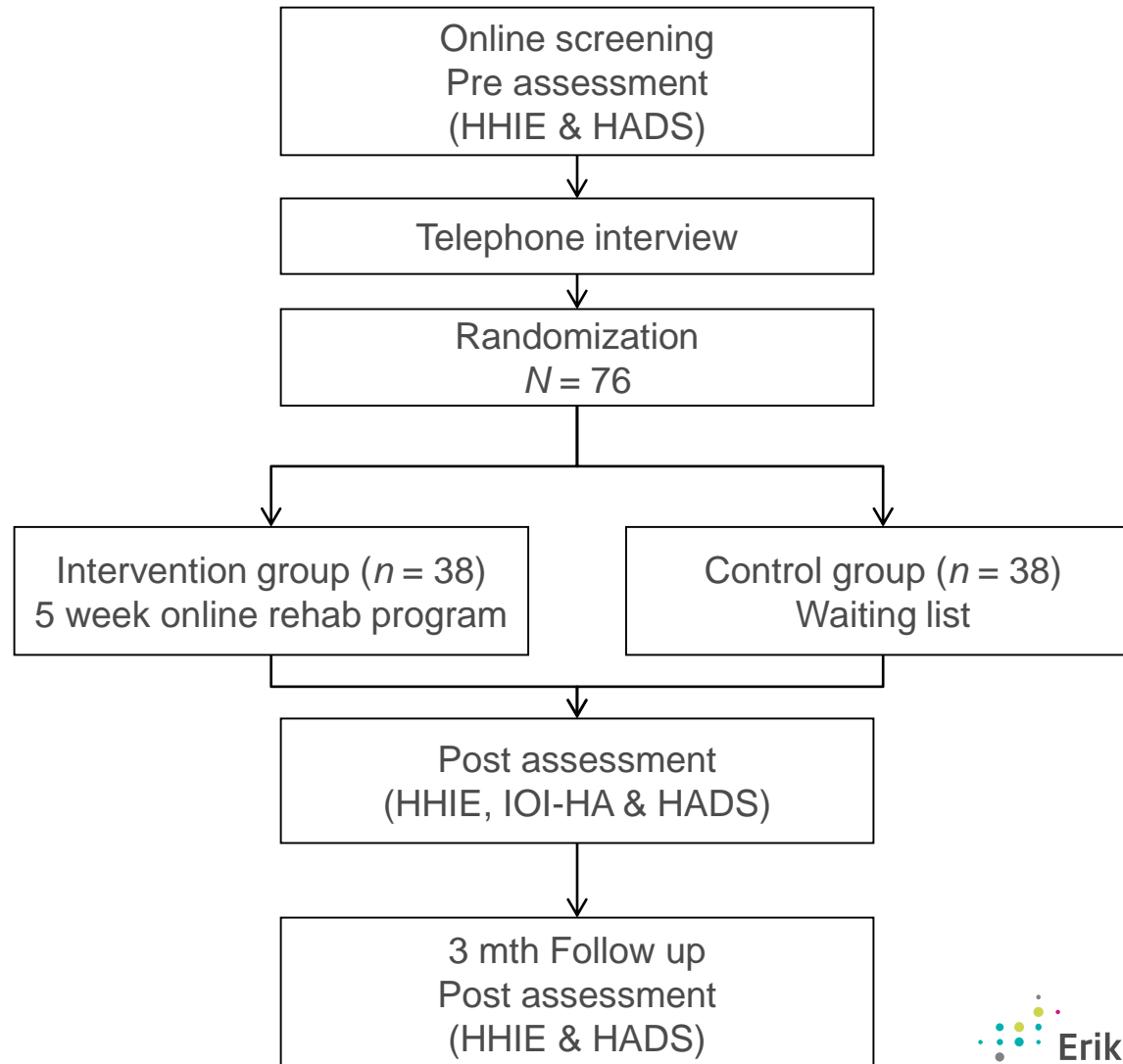
Randomised
Controlled Trial
N = 59
M = 64 yrs

2nd edition

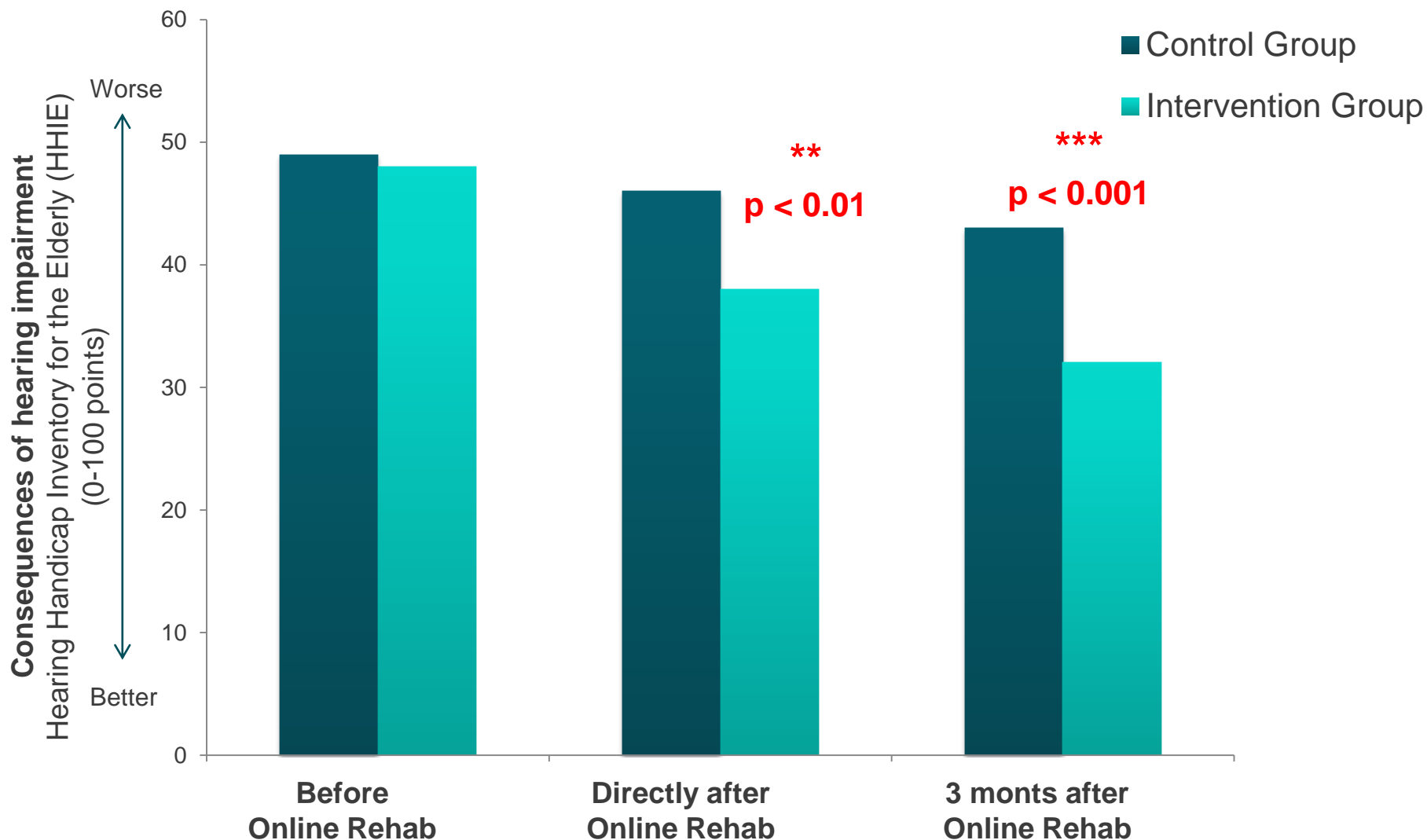
Randomised
Controlled Trial
N = 78
M = 69 yrs

Interviews

RCT of Online Rehabilitation Program

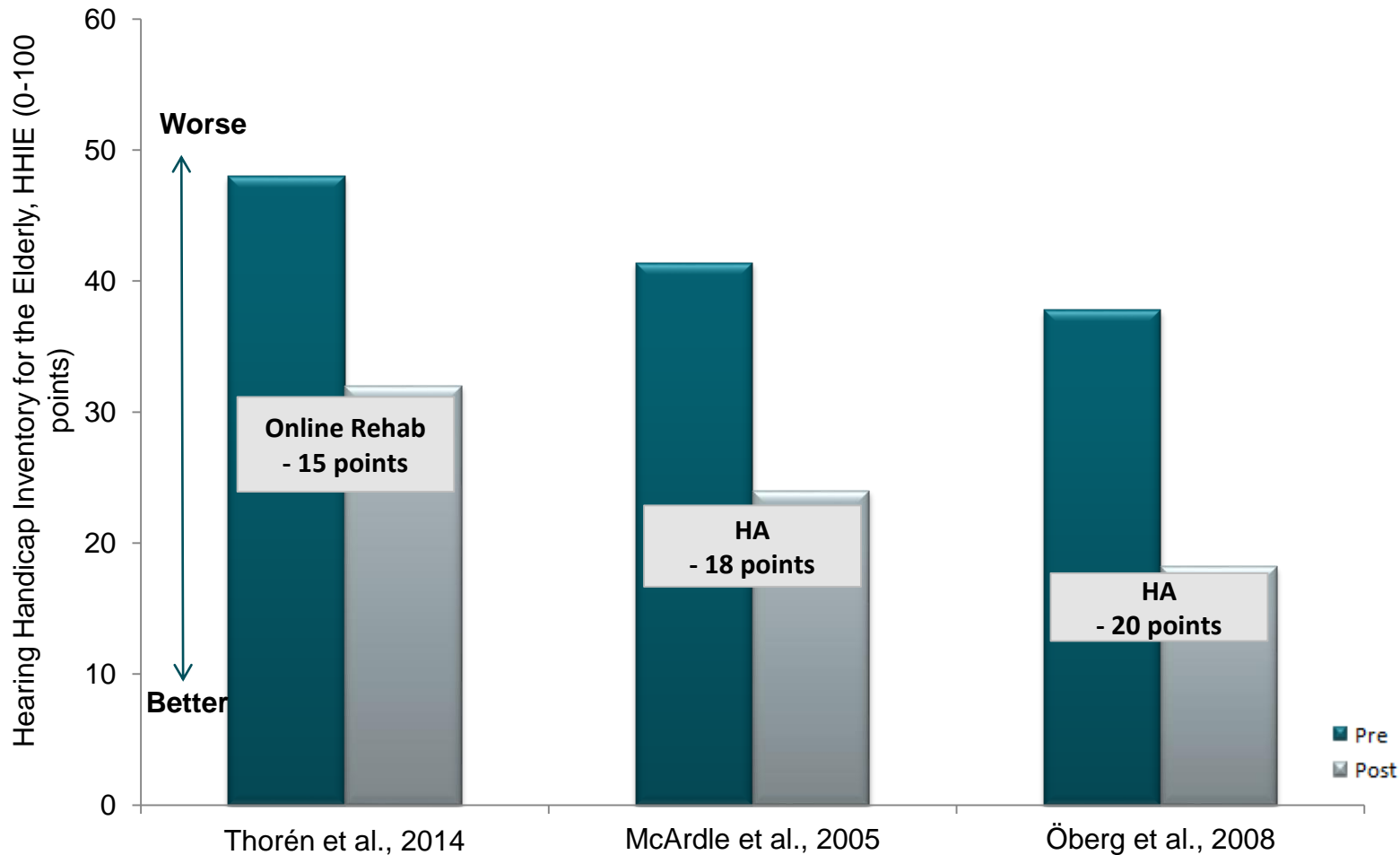


Results of Online Audiological Rehabilitation

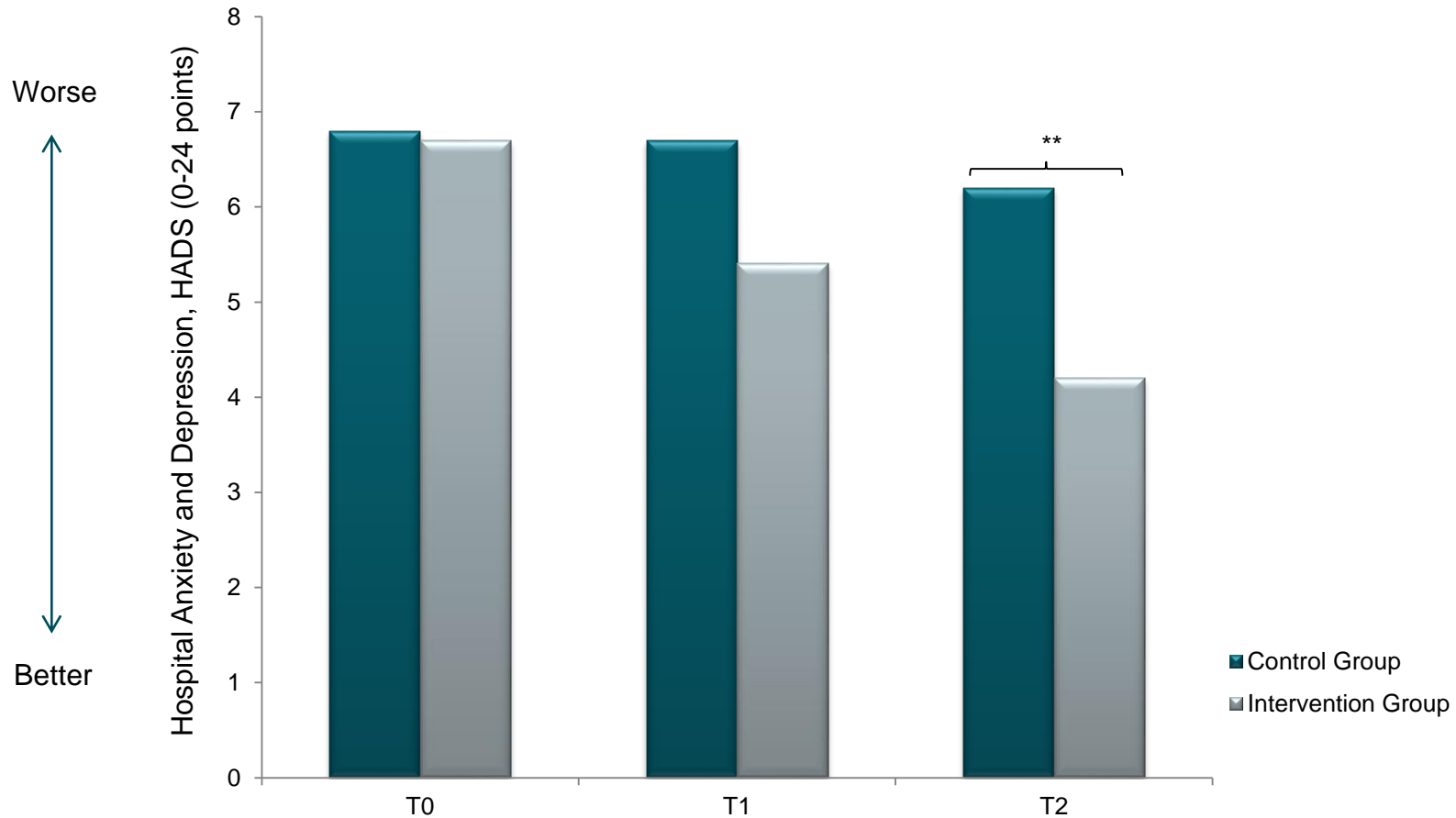


Intervention effects – comparing across studies

Online rehab compared to HA fitting



Hospital Anxiety and Depression scale, HADS



Qualitative perspectives of Online Rehabilitation

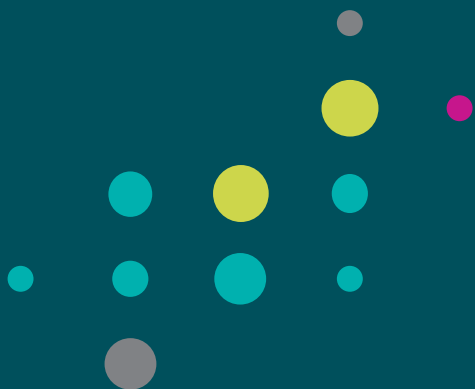
- Participants still positive about the course 1 year post study
- Safeness in Communication (Content Analysis)
 - Developed self-confidence
 - Start to use communication strategies → increased communication

“The more I learn about this [hearing], the tougher I become. So, I thought it was good. Then I knew that there were many who took part, such a thing, many participants in the course, then I did not feel alone”

Summary

- It is possible to use **online tools** in the rehabilitation process of adults with hearing loss
 - Information of Hearing, Hearing Aids and Communication Strategies
 - Time to try out
 - Importance of integrating with Professional Audiologists and Peers
- Results from outcome measures
 - Less participation restriction (**HHIE**)
 - Less feeling of depression and anxiety (**HADS**)
- Long term effects
 - The findings are maintained 3 months post participation of online rehab
- Reports from the participants
 - Constructive **dialogue** in the discussion forum
 - Still positive about the course 1 year post study
 - Developed self-confidence

Aktuell forskning





Handle Activity

In crowded places sound comes from everywhere and can be extremely challenging if you are trying to make a good deal

[more ...](#)

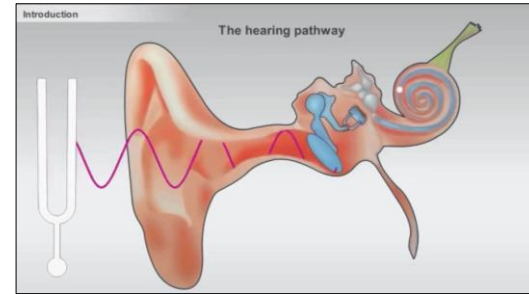
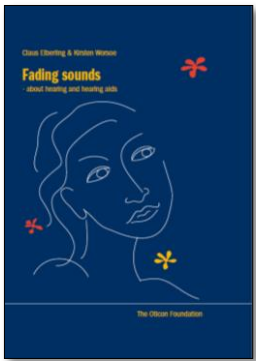
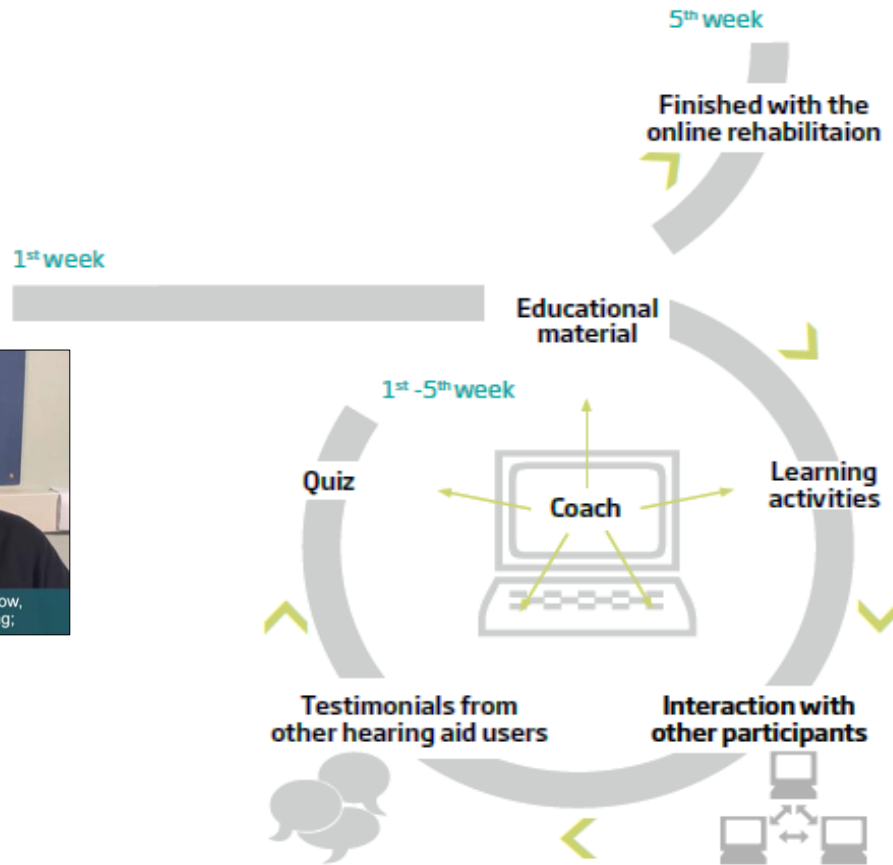
Eriksholm' Guide to Better Hearing

Welcome to the Guide to Better Hearing!

If you are a participant in the OAR Program, then please log in to the site using the login at the top right of this page.

If you are not a participant, but are interested in hearing about Eriksholm's OAR project, then please [click here](#) for how to request more information.

Outline of Eriksholm Guide to Better Hearing



Listening Activity 1 - Bird Song

In a moment you will be listening to a sound clip of bird song.

At this time, please remove your hearing aids. The video is paused, but when you are ready, please click or tap anywhere in the video to start the bird song clip.

When it stops, please write down your perception of the listening experience. What was clear? What was not? What in particular did you notice?

Click/Tap anywhere in the video to proceed

Teamwork



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MSc, Audiologist



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Audiologist



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Faculty of Medicine

Elisabet S Thorén
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EriksholmResearchCentre
PART OF OTICON

Publications

JOURNAL OF MEDICAL INTERNET RESEARCH

Original Paper

Internet Access a

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Abstract

Background: The future rehabilit
Online tools could also be useful fo
is a disability that increases with ag
the research on online audiological
extent adults with hearing loss use

Objective: To evaluate the use of
Internet and email differed between
Sweden.

Methods: Questionnaires contain
mailed to individuals with hearing l
158 returned a completed question

Results: The results showed that 6
of hearing loss in the group of part
did ($P < .001$). More men than w
the youngest age group (25–64 year
observed in the participants with he
1.74, 95% CI 1.23–3.17, $P = .04$).

Conclusions: We conclude that lo
loss as for the general age-matches
are important for the future work in

(*J Med Internet Res* 2013;15(5):e

KEYWORDS
hearing loss; hearing rehabilitation

<http://www.jmir.org/2013/15/5/>

XSL-FO
RenderX

Thorén et al. BMC Ear, Nose and Throat Disorders 2013,
<http://www.biomedcentral.com/1472-6815/13/12>

RESEARCH ARTICLE

The use of research impaired adults: or administration

Elisabet Sundewall Thorén^{1,2}, Gerhard And

Abstract

Background: When evaluating hearing re
measure. Questionnaires used in audiology
As computer and Internet use is increasing
evaluated to determine the viability of the
The aim of this study was to compare ad
standardised questionnaires used in hearin
the Elderly (EHIE), the International Outco
Daily Life (GADL), and the Hospital Anxiety

Methods: A cross-over design was used by
online or on paper. After 3 weeks the parti
A total of 65 hearing-aid users were recruit
53 completed both versions of the questio

Results: A significant main effect of format
scores on the online format than in the pa
were no significant main or interaction effe
presenting the measures was found for all
Cronbach's α above .70 for all four questio
were negligible.

Conclusions: For three of the four include
administrations and formats. For the fourth
small effect size was found. The relevance i
context the questionnaire is used in. On ba
across assessment points.

Background

When evaluating hearing rehabilitation, it
use self-report questionnaires as outcome
elicit the patient's opinion of specific hear
tion efforts and hearing aid use in daily re
[1]. However, as pointed out by Saunders [2

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J Am Acad Audiol 22:274–285 (2011)

Rehabilitative Online Discussion Group A Randomized Control

DOI: 10.3766/jaaa.22.5.4

Elisabet Thorén[†]
Monica Svensson[‡]
Anna Törnqvist[†]
Gerhard Andersson^{§*††}
Per Carbring^{§§}
Thomas Lunner^{¶†§}

Abstract

Background: By using the Int
cost-effective way to include ad
users about such topics as con

Purpose: To evaluate the effect
users including professional gu
an online discussion forum wit

Research Design: A randomi
at prestudy, immediate follow-

Study Sample: Fifty-nine expe
to 84 yr (mean 63.5 yr).

Intervention: The intervention
which activities for each week
sonal audiologist was include
discussion forum without any a

Data Collection and Analysis
measures: (1) Hearing Handicap
ing Aids, (2) Satisfaction with A

Results: Significant improvem
found in both groups of partici
the Hospital Anxiety and Depres
reduced symptoms of depress
patients in the control group req
started.

Conclusions: This study prov
to experienced hearing aid use
reduced by the intervention. TI
rehabilitation. A combination of
could be a promising rehabilita

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informa
healthcare

International Journal of Audiology 2014; Early Online: 1–10

International
Journal of
Audiology

Original Article

A randomized controlled trial evaluating the effects of online rehabilitative intervention for adult hearing-aid users

Elisabet Sundewall Thorén^{*†}, Marie Öberg^{*†}, Gunilla Wänström[†], Gerhard Andersson^{§*†} & Thomas Lunner^{¶§*}

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The most common and accepted form of assistance given to individuals who have received a diagnosis of hearing loss is audiological/aural rehabilitation that often includes the use of hearing aids (Kochkin, 2009). Discussion of the features of audiological rehabilitation is ongoing (Laplante-Lévesque et al, 2010). However, many hearing-aid users are not completely satisfied after rehabilitation; they might have residual hearing difficulties and may be unaware of what action they should take (Popelka et al, 1998; Southall et al, 2006), and this can lead patients to either cease using their hearing aids (McCormack & Fortnum, 2013) or continue searching for additional help (Hickson et al, 2007). Audiological rehabilitation can be viewed as a prolonged process of hearing loss acceptance, adapting to living with a hearing loss as well as adapting to the hearing aids (Jerram & Purdy, 2001; Meyer & Hickson, 2010). This process can also be viewed as an active process where the goal is audiological enablement, as described by Stephens & Kramer (2010). In a study by Kramer and colleagues, a home-based

training program was evaluated, and the effects in the training group were evident, i.e. improved interaction with significant others as well as improvements in other domains, such as quality of life and satisfaction (Kramer et al, 2005). The study highlighted the importance of including interventions in addition to hearing-aid fitting. Preminger & Yoo (2010) investigated the effects of group-based aural rehabilitation and argued that it is important that the rehabilitation program includes a mixture of information, training, and psychosocial interventions to significantly affect the participants' activity limitations and participation restrictions.

The internet might be useful for reaching out to people in need of audiological services in a cost-effective manner (Swainpool et al, 2010). In a study by Laplante-Lévesque et al (2006), where contact via e-mail between first-time users of hearing aids and the audiologist was used in the rehabilitation process, it could be concluded that it was useful in the audiological rehabilitation process to share experiences and to provide audiological counselling. We

Abstract

Objective: Previous research shows that the internet can be used in the rehabilitation of hearing-aid users. By further developing the online program, it might be possible to foster behavioral changes that will positively affect hearing-aid users. **Design:** A randomized controlled study with two groups of participants. The intervention group underwent a five-week online intervention while the control group was referred to a waiting list. Questionnaires were used as outcome measures. **Study Sample:** Seventy-six experienced hearing-aid users participated in the study, ranging in age from 26 to 81 years (mean 69.3 years). **Results:** The findings showed significant improvements in the intervention group after the intervention, measured by the hearing handicap inventory for the elderly. The effects were maintained and improved at the follow-up. Furthermore, the results indicated that the participants in the intervention group improved at two items of the international outcome inventory for hearing aids, and the effects were partly maintained at the follow-up. Finally, significant improvements in the domain of psychosocial wellbeing were found at the follow-up. **Conclusions:** This study provides further evidence that the internet can be used to deliver intervention of rehabilitation to hearing-aid users.

Key Words: Counseling; hearing loss; internet; outcome assessment; rehabilitation of hearing impaired

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Hörselhjälp på nätet – vad säger aktuell forskning?



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