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AUDIOLOGICAL REHABILITATION

A randomised controlled trial evaluating hearing aid knowledge and the effects of information leaflets with and without illustrations

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Abstract

Much information is given verbally by the audiologist in a short time in aural rehabilitation, which may result in forgotten information. Explaining strategies to improve speech recognition in noise with hearing aids dependent on technical functions can be difficult. This study aims to enhance such information by developing and testing leaflets that could be distributed by audiologists in aural rehabilitation.

Objectives

The aim of this study was to investigate whether an information leaflet with illustrations and accompanying text about hearing aid functions have additional effects on participants' knowledge compared to an information leaflet without illustrations. An additional aim was to evaluate hearing aid users' knowledge about placement in a noisy environment, directional microphone and telecoil function at baseline and postintervention and to assess the benefits of an information leaflet.

Method

A randomised controlled trial (RCT) was conducted at the Hearing Clinic of the University Hospital in Linköping, Sweden. Participants were randomised to an intervention group (n= 32) that received leaflets with text and illustrations and to a control group (n=29) that received leaflets with text only. Beside is an example of the text and illustration "To hear a particular conversation". Three open-ended questions were used to assess knowledge at baseline and after three weeks. Three items:

a) placement, where participants usually positioned themselves in a room with a lot of background noise

b) directional microphone, the purpose of directional microphones

c) telecoil function, how to use a telecoil in public facilities

To quantify the participants knowledge, the answers were coded by two authors. Partly if it was some knowledge at baseline and postintervention, partly if it was a knowledge improvement within each individual. Postintervention benefits were evaluated by assessing statements about the leaflet.

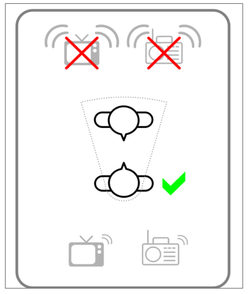
Assessed statement 0-10 (higher is greater benefit)

1) "The written information has increased my understanding of hearing aid functions"

2) "The written information I received has made me better understand how to position myself in different sound environments"

And if the participant did use the leaflet with a communication partner (CP);

3) "The written information I received made it easier for me to explain the functions of my hearing aid to a communication partner"



Try to reduce background sounds by, for example, reducing and/or switching off the radio/TV sound

Position yourself away from disturbing sounds so that they are located behind you. The directional microphones of the hearing aids will then focus on sounds coming from the front and attenuating sound from the back

Results

No statistically significant difference was found in knowledge improvement between groups in any of the three items (Table 1).

In the full sample, statistically significant change was found in the proportion with some knowledge on all three items with p <.001 (Table 2), with no difference between groups at baseline or postintervention.

Assessments of postintervention perceived benefit in full sample had a mean value of 7.97 (statement 1), 7.65 (statement 2) and 7.65 (statement 3). No statistically significant differences were found in any statement between groups using Mann-Whitney U test. However, in statement 1, about increased understanding, a statistically significant greater benefit (p <.01) was found for participants who used the leaflet to explain information to a CP (n=21) compared to participants who did not use the leaflet with a CP (n=40).

Table 1. Proportion of participants with knowledge improvement

Knowledge Items	Intervention group illustrations	Control group text	*p*-value between-groups	Full sample	Missing
Placement	62.5% (n=20)	48.3% (n=14)	.264	55.7% (n=34)	
Dir. microphone	50.0% (n=16)	53.6% (n=15)	.782	51.7% (n=31)	1
Telecoil function	54.8% (n=17)	33.3% (n=9)	.100	44.8% (n=26)	2

Note. Chi-Square test for independence

Missing is participants with complete knowledge before information

Table 2. Proportion of participants with some knowledge at baseline and post-intervention

Knowledge items	Intervention group illustrations	Control group text	*p*-value between-groups[a]	Full sample[b]
Placement				
Baseline	40,6% (n=13)	55,2% (n=16)	.256	47,5 % (n=29)
Post-intervention	78,1% (n=25)	86,2% (n=25)	.412	82% (n=50) *p*<.001
Dir. microphone				
Baseline	12,5% (n=4)	13,8% (n=4)	.881	13,1% (n=8)
Post-intervention	50% (n=16)	65,5% (n=19)	.221	57,4% (n=35) *p*<.001
Telecoil function				
Baseline	43,8% (n=14)	51,7% (n=15)	.533	47,5% (n=29)
Post-intervention	71,9% (n=23)	72,4% (n=21)	.963	72,1% (n=44) *p*<.001

[a]Chi-Square test for independence between-groups.

[b]McNemar 's Test for change in proportion in full sample

Conclusion

An information leaflet about hearing aid functions increased participants' knowledge regardless of the presence of illustrations. Further research must be conducted to investigate how to design and use information leaflets in aural rehabilitation.

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