

Subjective Measures of Hearing Aid Benefit and Satisfaction in CSP#418-A

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**CSP#418-A: Long-Term Follow-Up of Patients in the
NIDCD/VA Hearing Aid Clinical Trial**

Subjective Measures

- *PHAP*: Profile of Hearing Aid Performance (Cox and Gilmore, 1990)
- *PHAB*: Profile of Hearing Aid Benefit (Cox and Rivera, 1992)
- *Glasgow*: Glasgow Hearing Aid Benefit Profile (Gatehouse, 1999)
- *SADL*: Satisfaction with Amplification in Daily Life (Cox and Alexander, 1999)

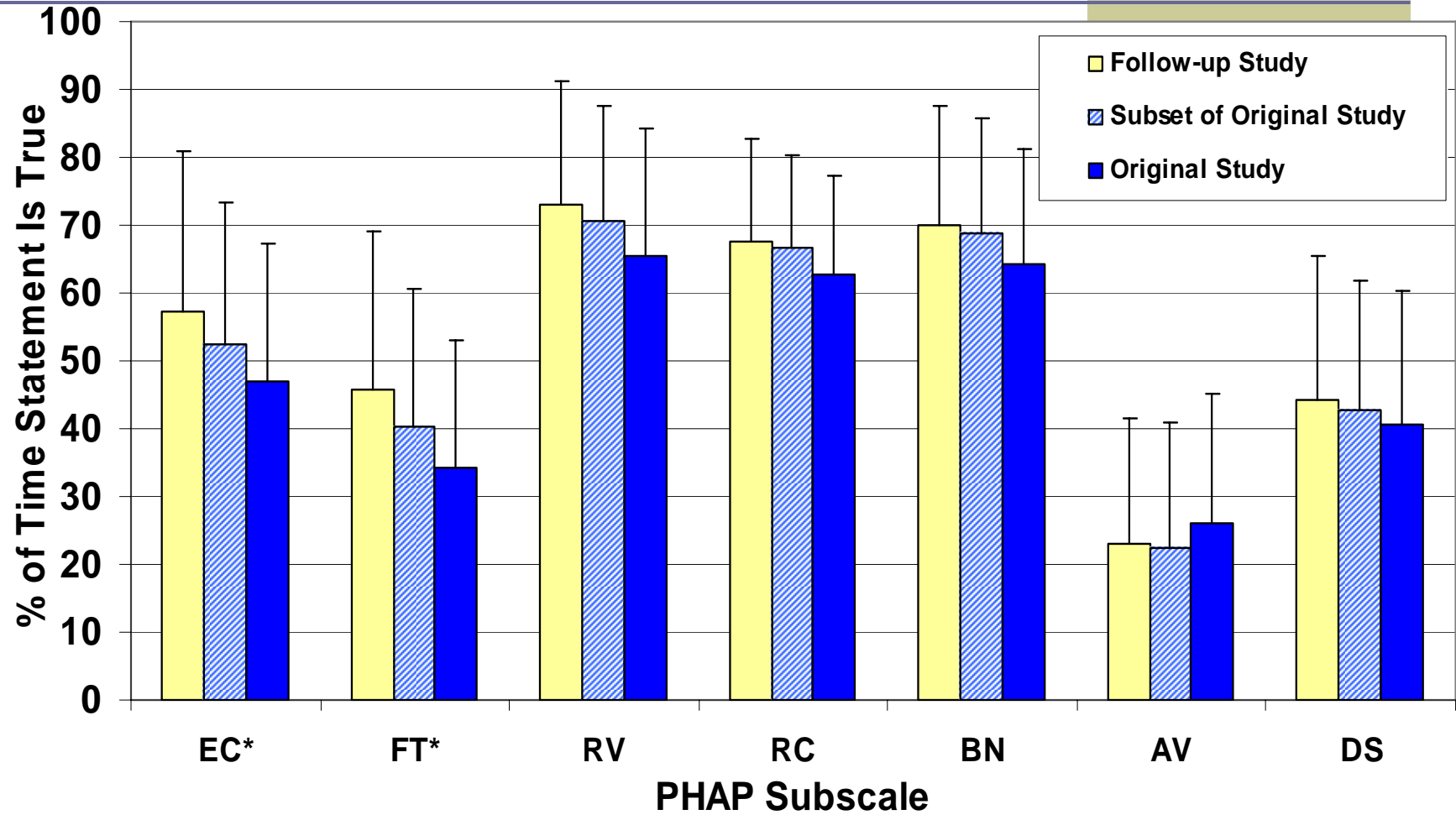
Subjective Measures

- *IOI-HA*: International Outcome Inventory for Hearing Aids (Cox, et al., 2000)

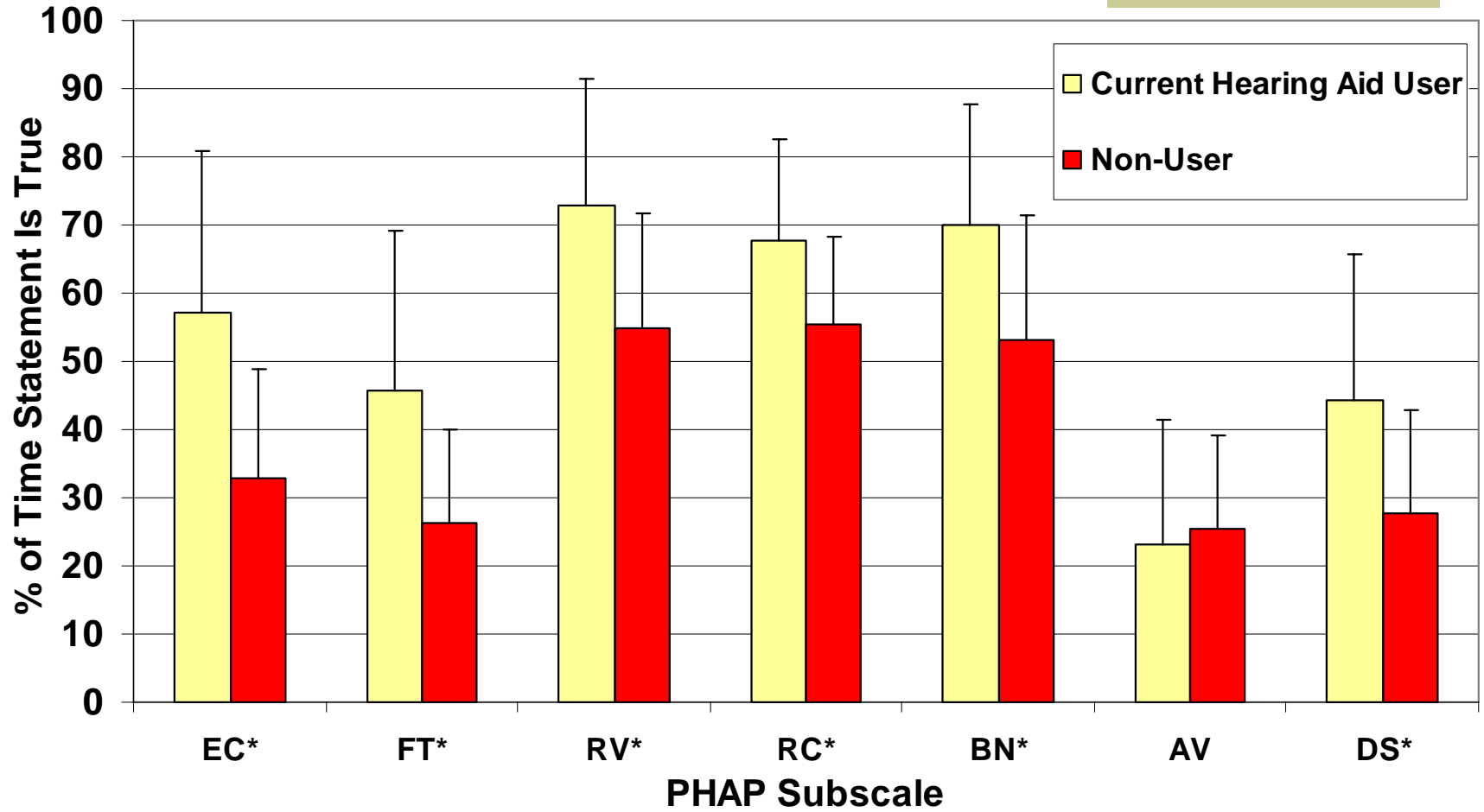
PHAP/PHAB

- **66-item inventory**
- **7 subscales:**
 - **EC** **Ease of Communication**
 - **FT** **Familiar Talkers**
 - **RV** **Reverberation**
 - **RC** **Reduced Cues**
 - **BN** **Background Noise**
 - **AV** **Aversiveness of Sounds**
 - **DS** **Distortion of Sounds**

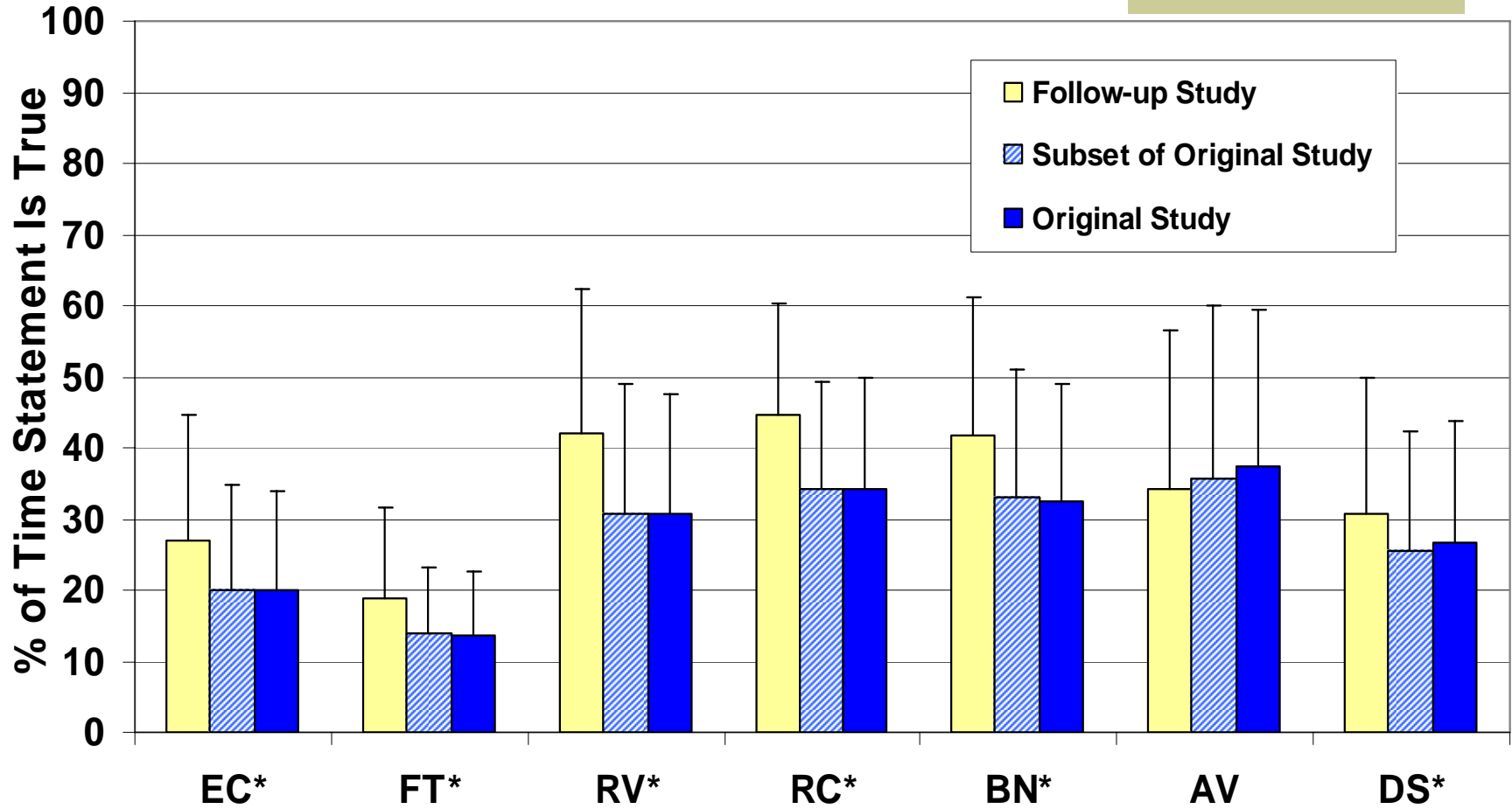
Unaided PHAP



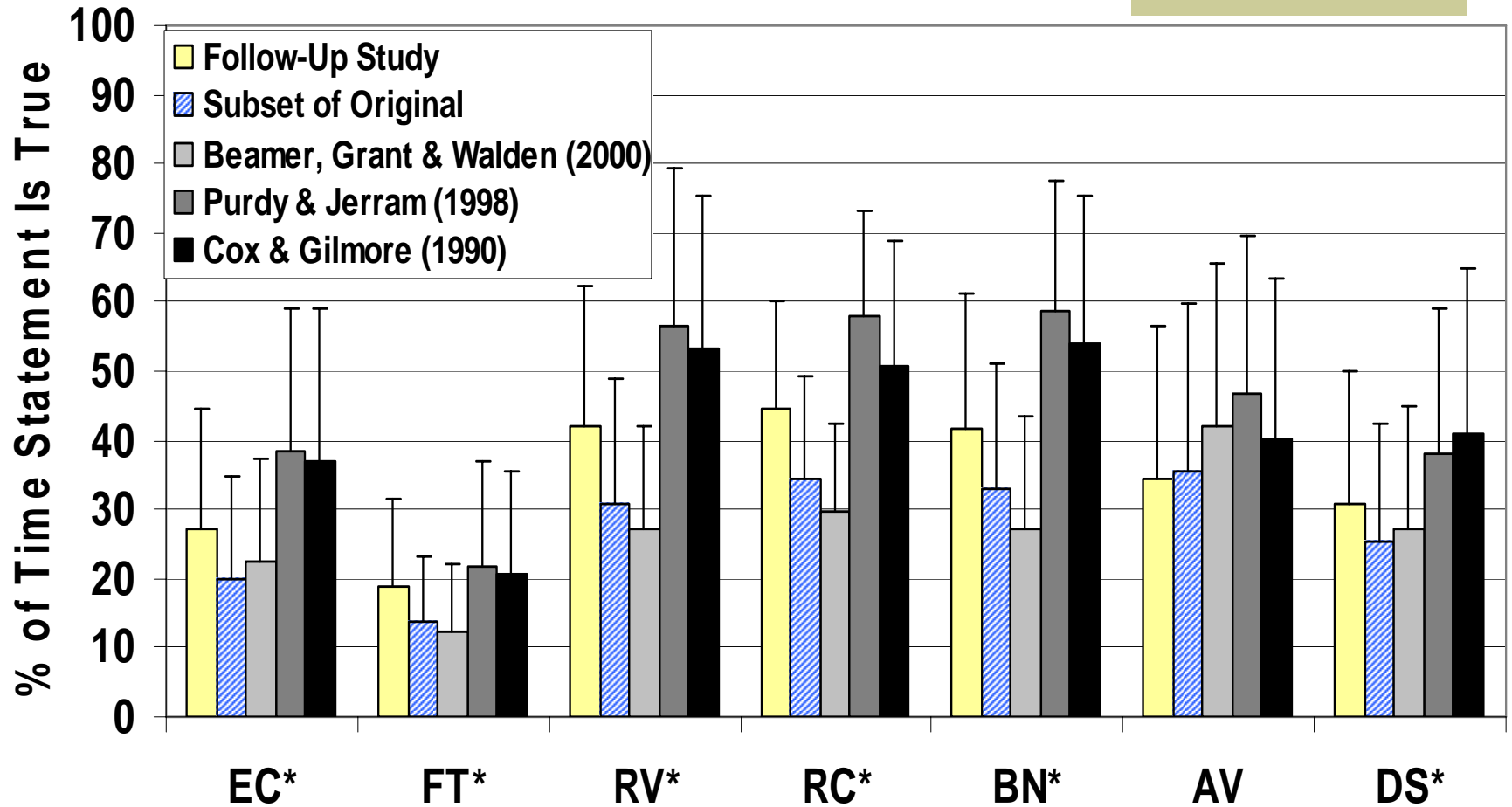
Unaided PHAP



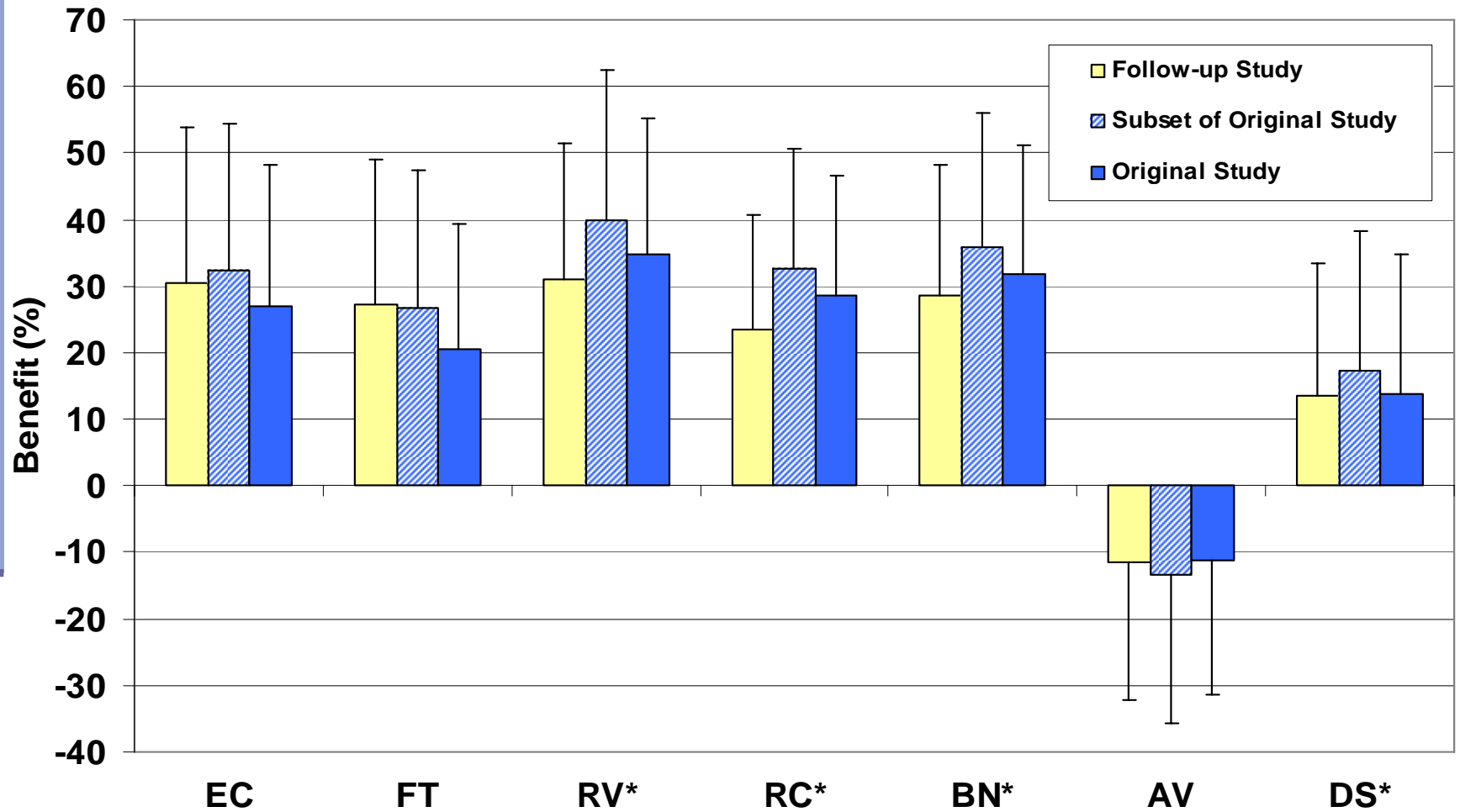
Aided PHAP



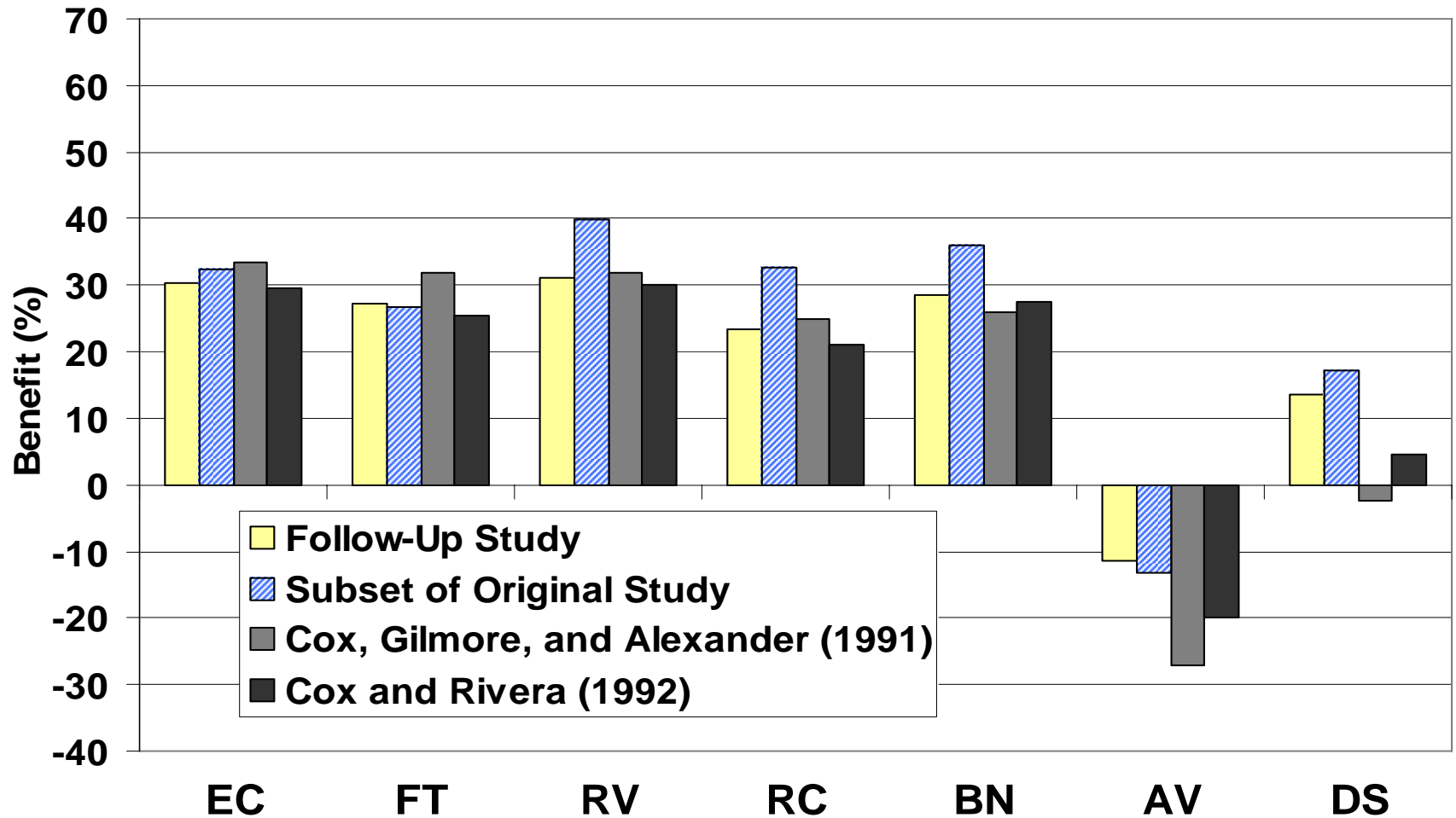
Aided PHAP Scores



PHAB (Unaided PHAP - Aided PHAP)



PHAB Comparisons



PHAP/PHAB

- **CSP 418-A vs. CSP 418 (subset):**
 - **More unaided problems (EC and FT only)**
 - **More aided problems (except AV)**
 - **Less benefit (RV, RC, BN, DS) – *more demanding conditions***



Glasgow Hearing Aid Benefit Profile (Glasgow)

Glasgow

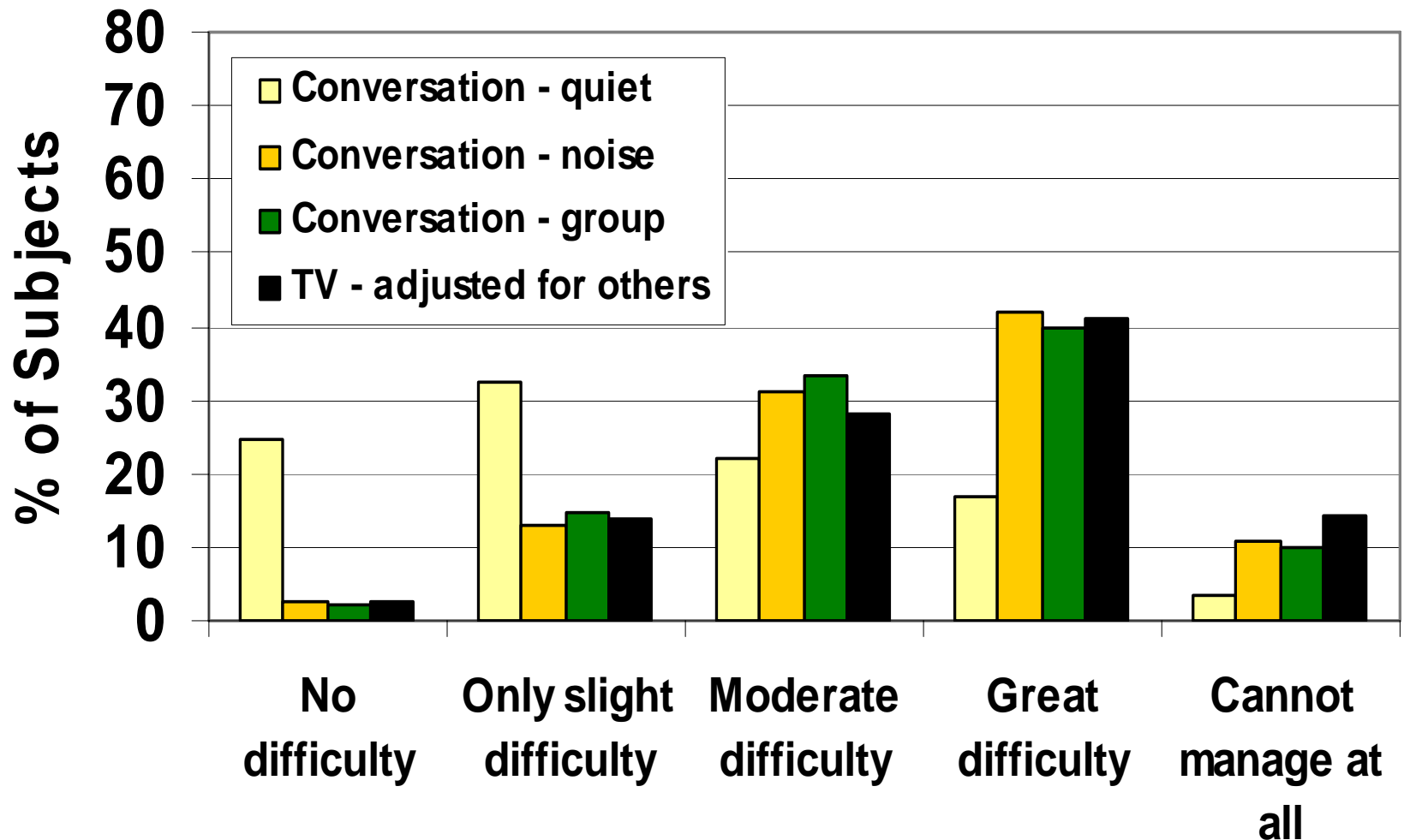
- Four pre-specified listening situations
- Up to four client-specified listening situations
- Administered “interview” style

- *CSP-418A:*
 - *Only pre-specified listening situations*

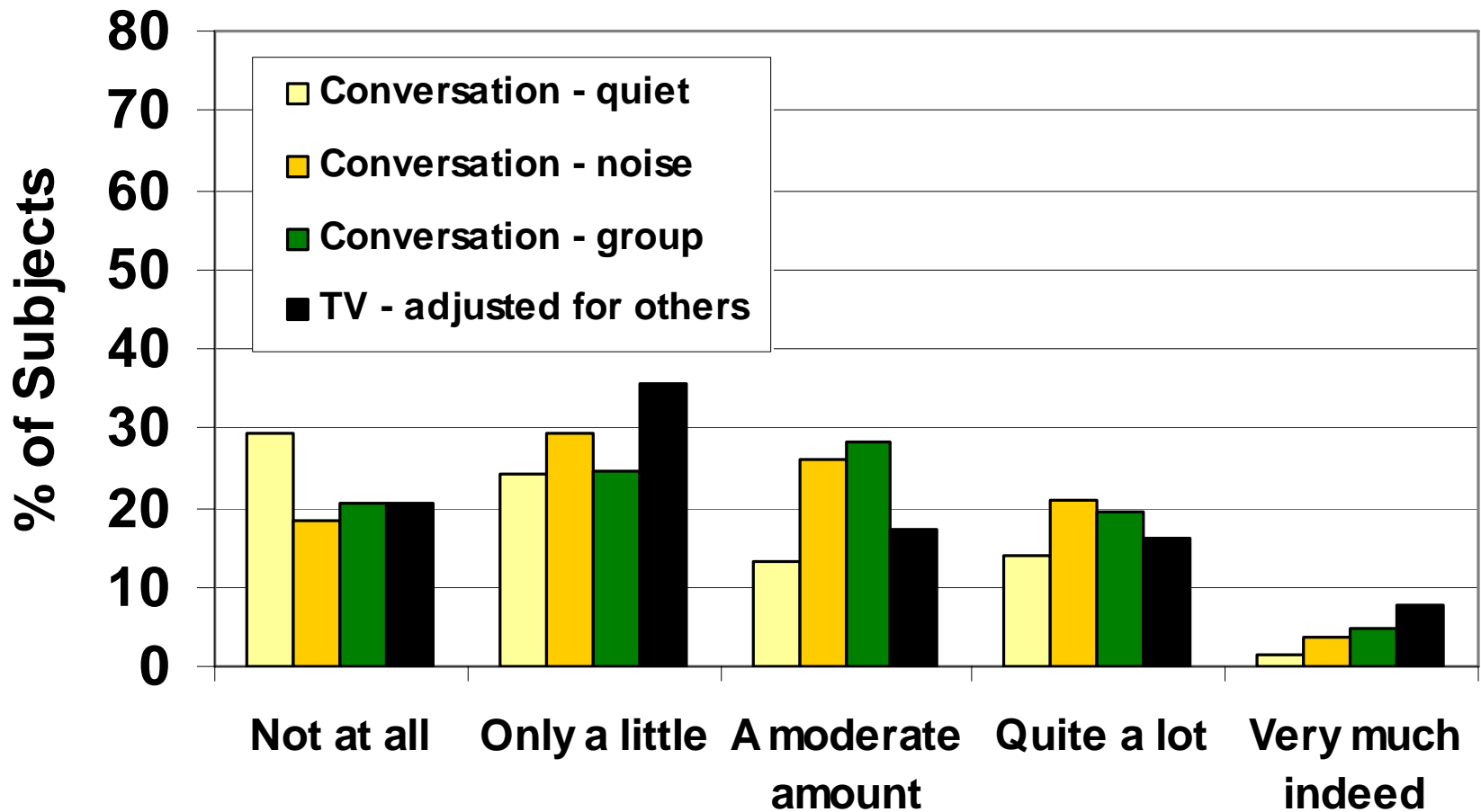
Glasgow

- **Designed to assess:**
 - **Pre-fitting disability**
 - **Pre-fitting handicap**
 - **Post-fitting use**
 - **Post-fitting benefit**
 - **Post-fitting residual disability**
 - **Post-fitting satisfaction**

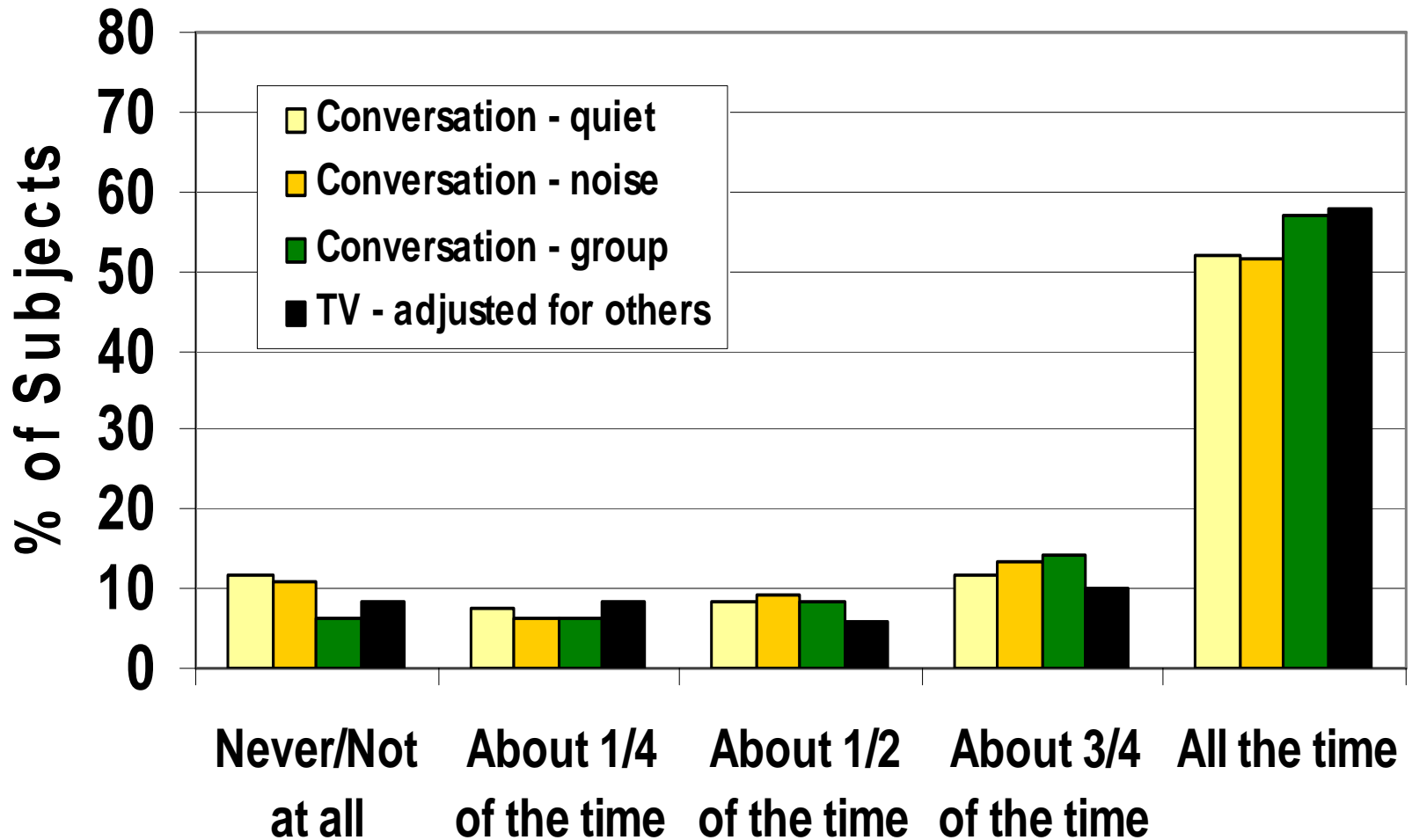
How much difficulty do you have in this situation? (disability)



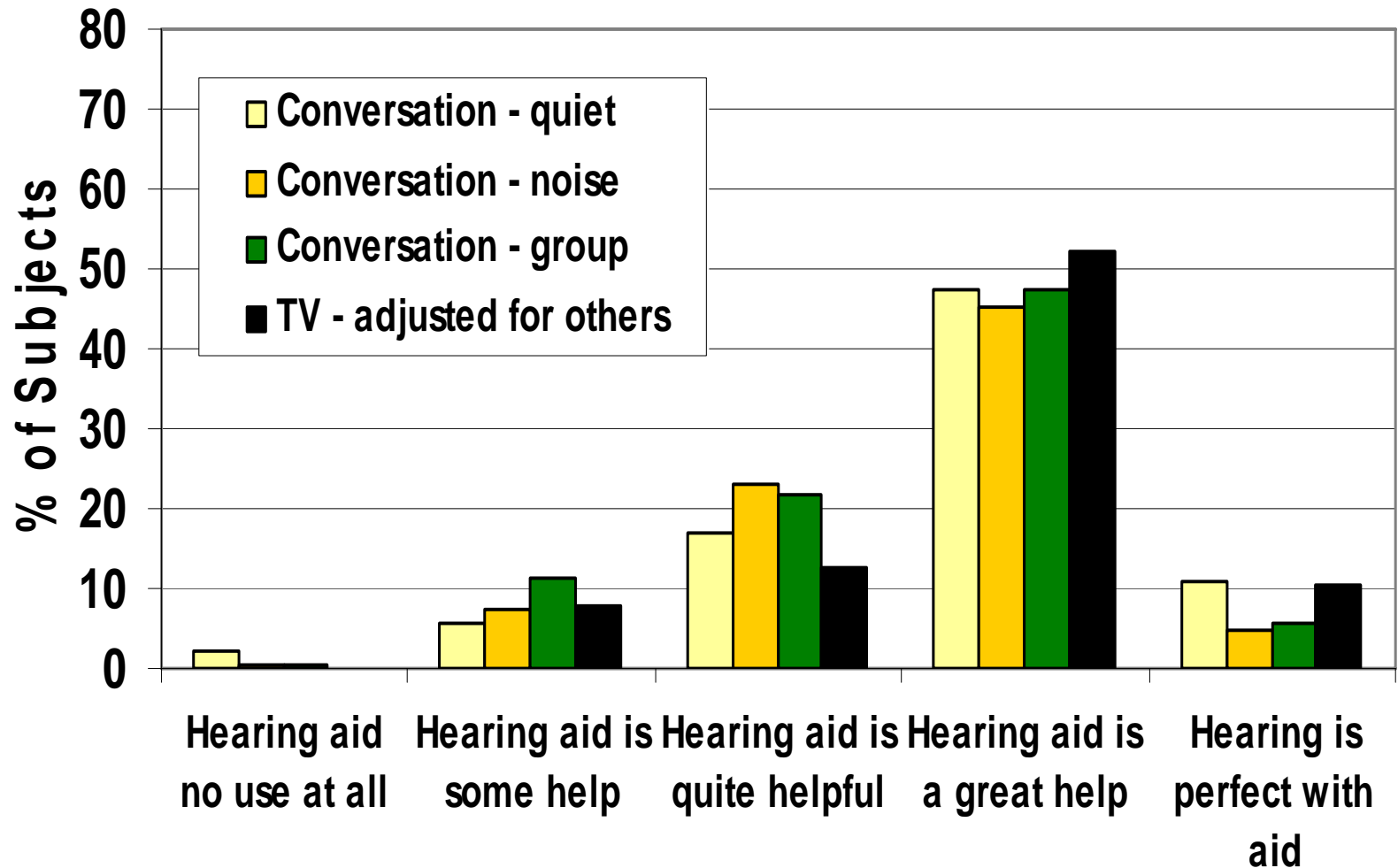
How much does any difficulty in this situation worry, annoy or upset you? (handicap)



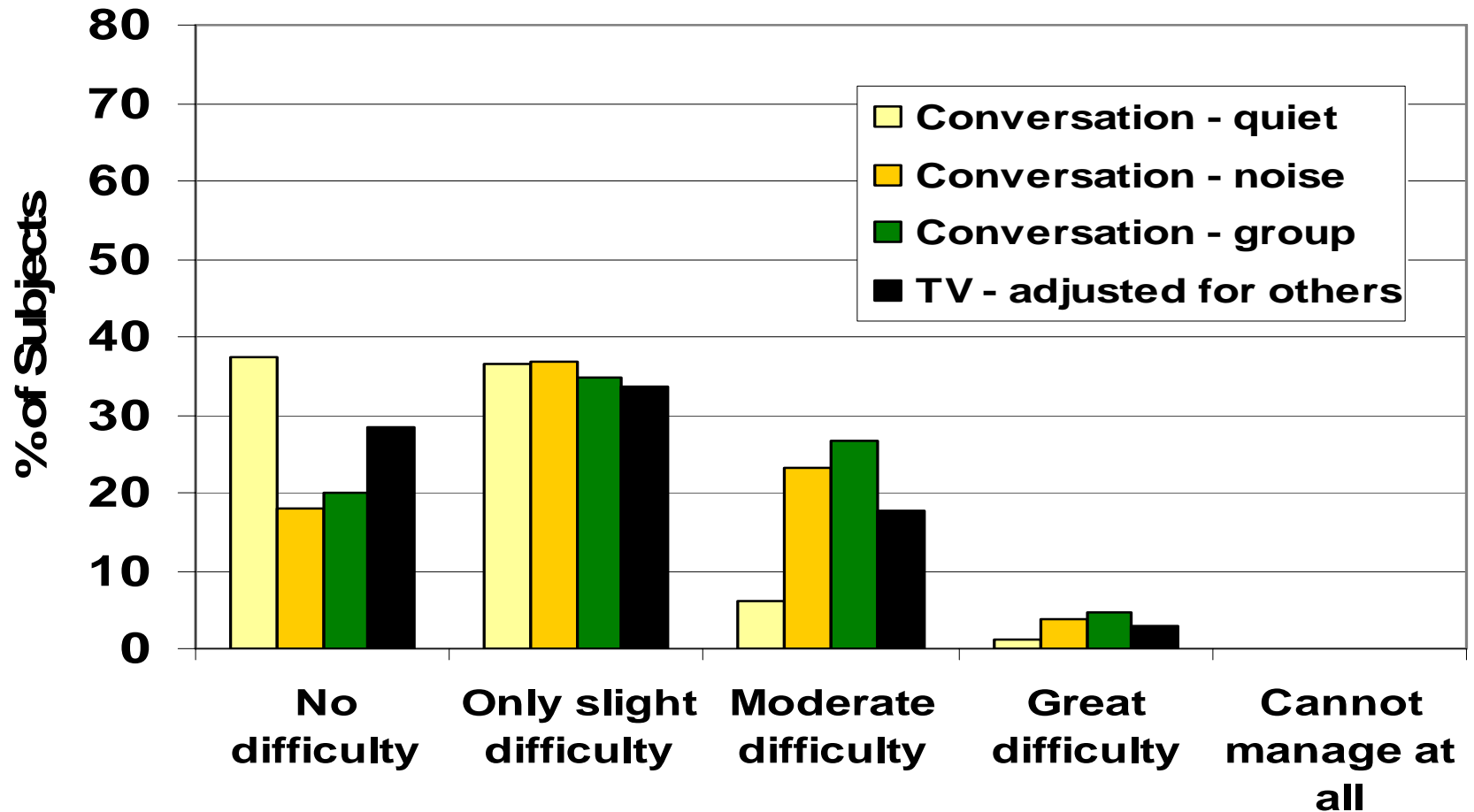
In this situation, what proportion of the time do you wear your hearing aid? (use)



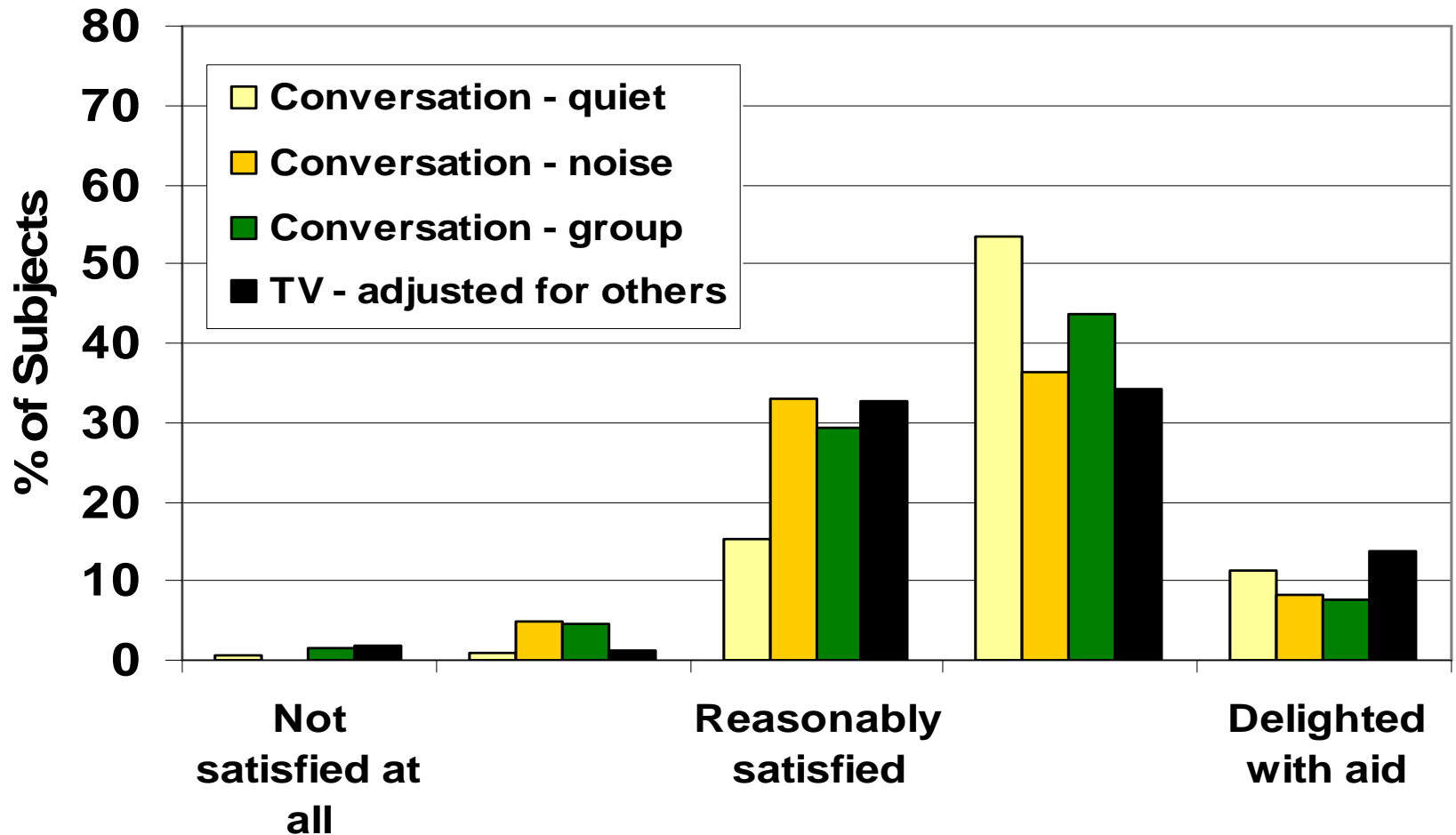
In this situation, how much does your hearing aid help you? (benefit)



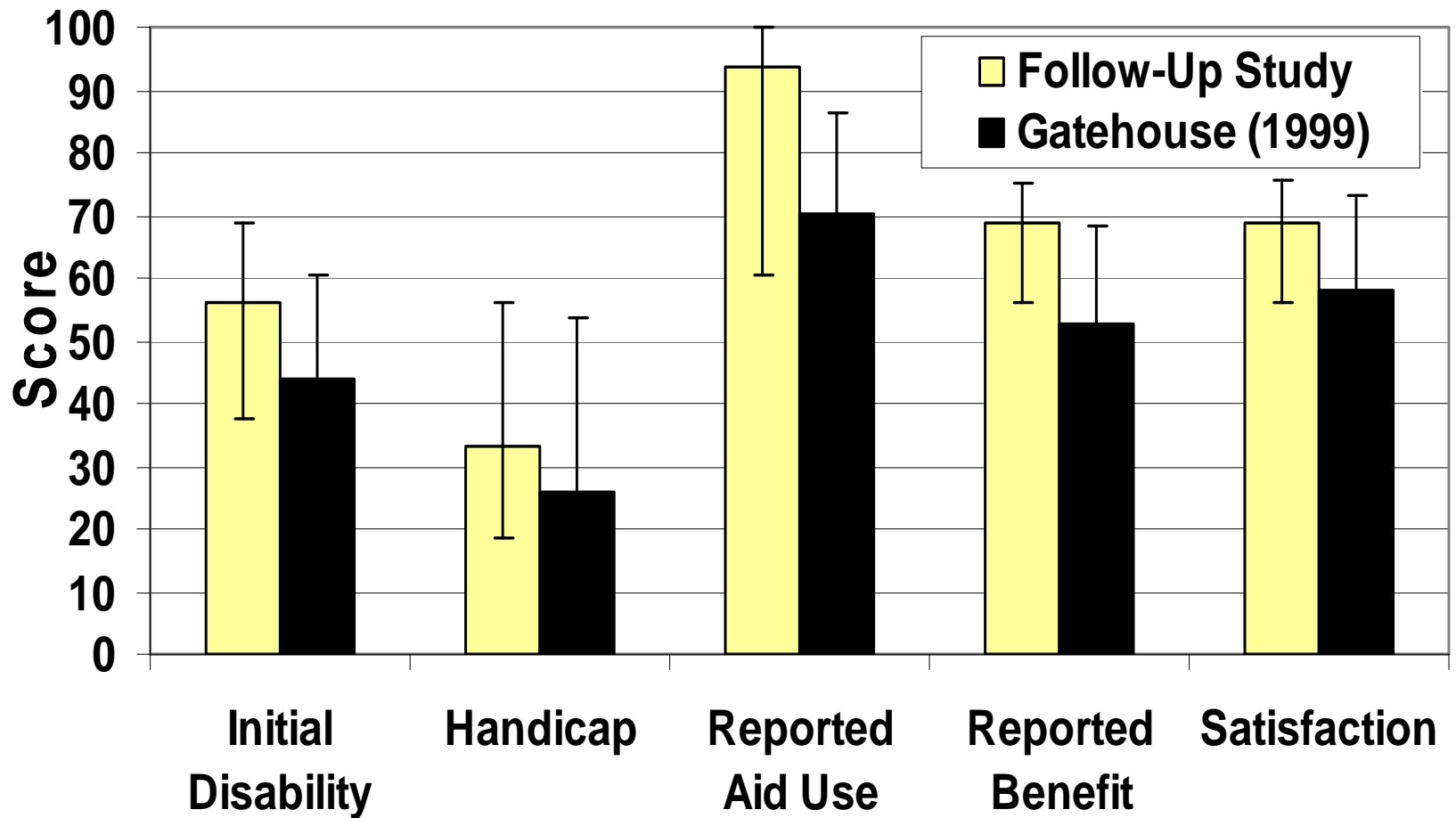
In this situation, with your hearing aid, how much difficulty do you now have? (residual disability)



For this situation how satisfied are you with your hearing aid? (satisfaction)



Comparison to Gatehouse (1999) Quartiles



Glasgow

- **More difficulty in noise or in group situations but wearing hearing aids about as often as in quiet**
- **Hearing aids “quite helpful” or of “great help” for conversations in quiet, in noise, and in group situations**
- **Reasonably or very satisfied with hearing aids for conversations in quiet, in noise, and in group situations**



Satisfaction with Amplification in Daily Life (SADL)

SADL

- 15 items
- Global score and 4 subscales
- Score is average response (4 items have reversed scoring)
- 7-category scale (not at all; a little; somewhat; medium; considerably; greatly; tremendously)
- Higher score means more satisfaction

SADL Scores

- **Global Satisfaction (GS) and four subscales:**
 - **PE** **Positive Effect**
 - **SC** **Service and Cost**
 - **NF** **Negative Features**
 - **PI** **Personal Image**

PE Positive Effect

- **Compared to using no hearing aid at all, do your hearing aids help you understand the people you speak with most frequently?**
- **Are you convinced that getting your hearing aids was in your best interests?**
- **Do your hearing aids reduce the number of times you have to ask people to repeat?**
- **Do you think your hearing aids are worth the trouble?**
- **Does wearing your hearing aids improve your self-confidence?**
- **How natural is the sound from your hearing aids?**

SC Service & Cost

- **How pleased are you with the dependability (how often it needs repairs) of your hearing aids?**
- **How competent was the person who provided you with your hearing aids?**
- **Does the cost of your hearing aids seem reasonable to you? (omitted)**

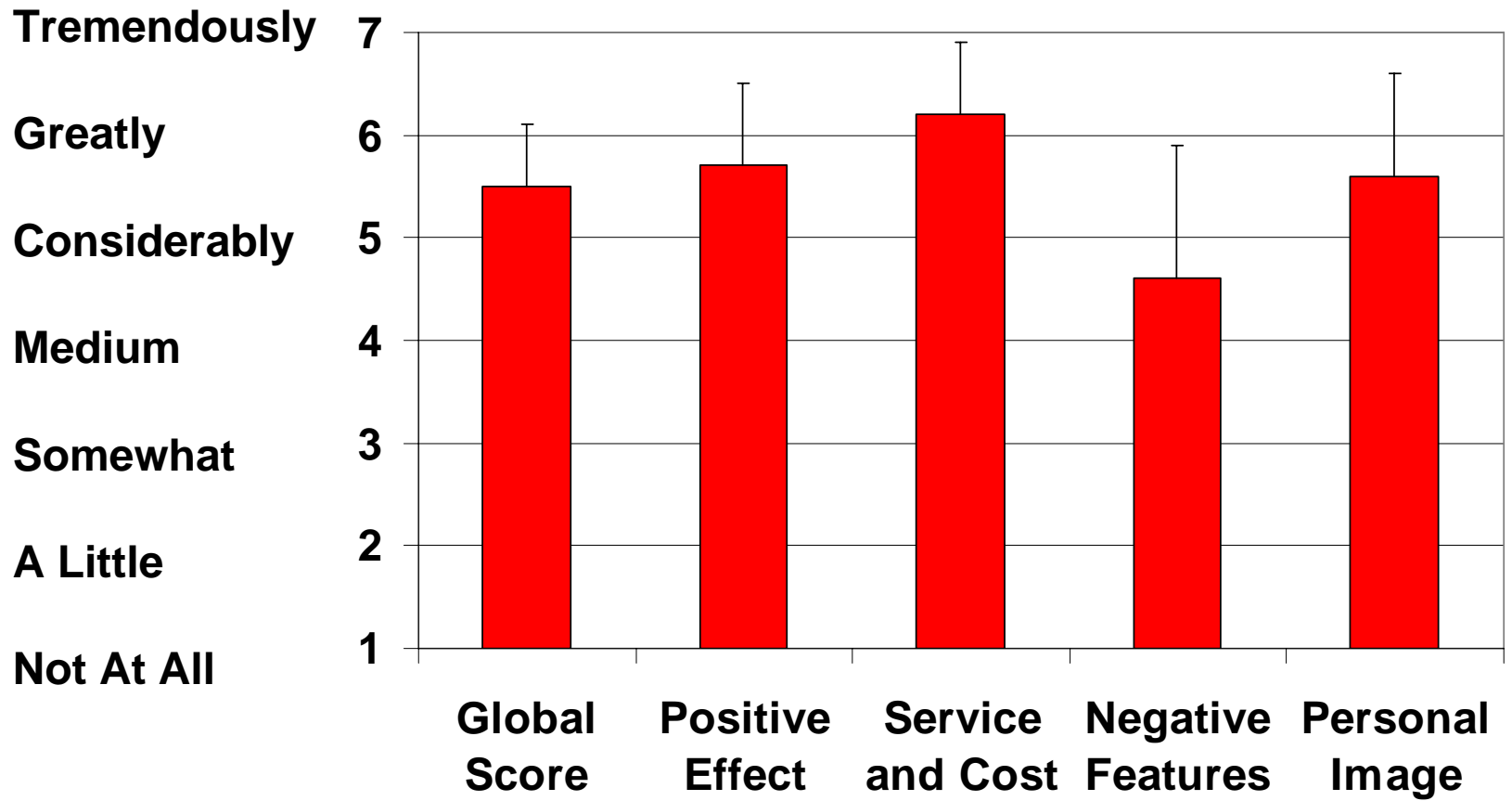
NF Negative Features


- **Are you frustrated when your hearing aids pick up sounds that keep you from hearing what you want to hear? (reversed)**
- **Are you bothered by an inability to get enough loudness from your hearing aids without feedback (whistling)? (reversed)**
- **How helpful are your hearing aids on MOST telephones with NO amplifier or loudspeaker? (If you hear well on the telephone without hearing aids, check box)**

PI Personal Image

- **How content are you with the appearance of your hearing aids?**
- **Do you think people notice your hearing loss more when you wear your hearing aids? (reversed)**
- **Do you think wearing your hearing aids makes you seem less capable? (reversed)**

SADL Results





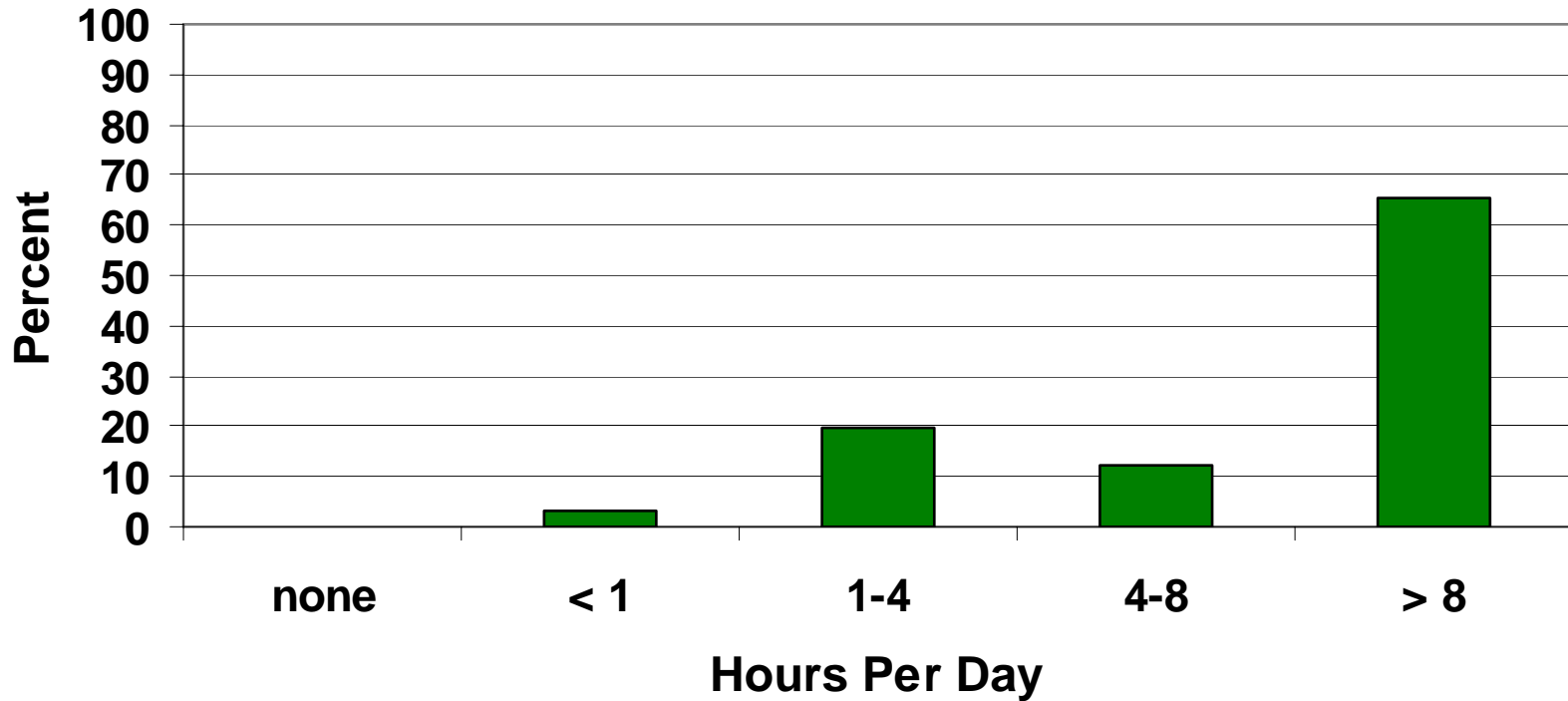
International Outcome Inventory for Hearing Aids (IOI-HA)

IOI-HA

- Self-assessment of hearing aid outcome
- 7 items (use, benefit, activity limitations, satisfaction, participation restrictions, impact on others, quality of life)
- 5 possible responses, scored 1 to 5
- Higher score indicates better outcome
- Two sets of norms based on self-perceived difficulty when unaided

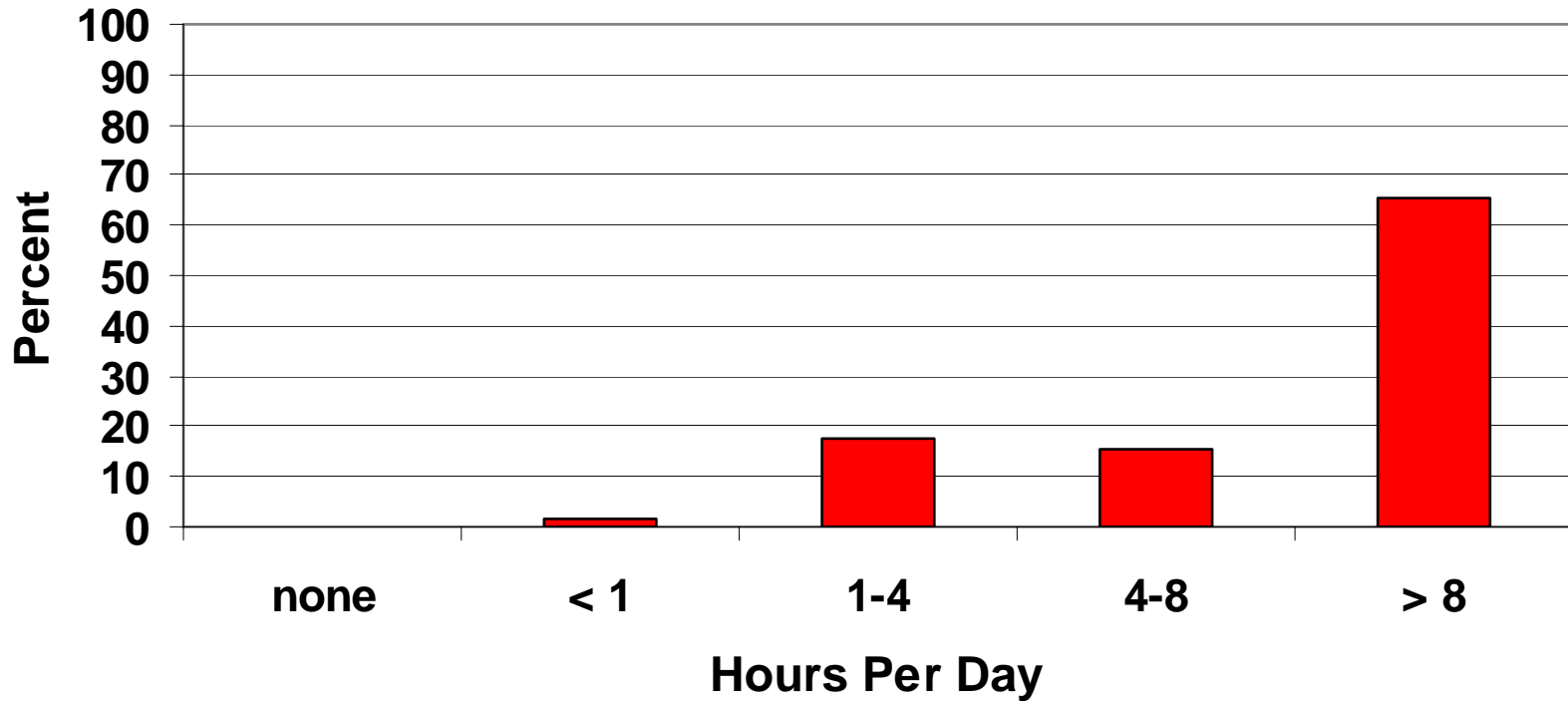
IOI-HA

Average Daily Hearing Aid Use in Past Month



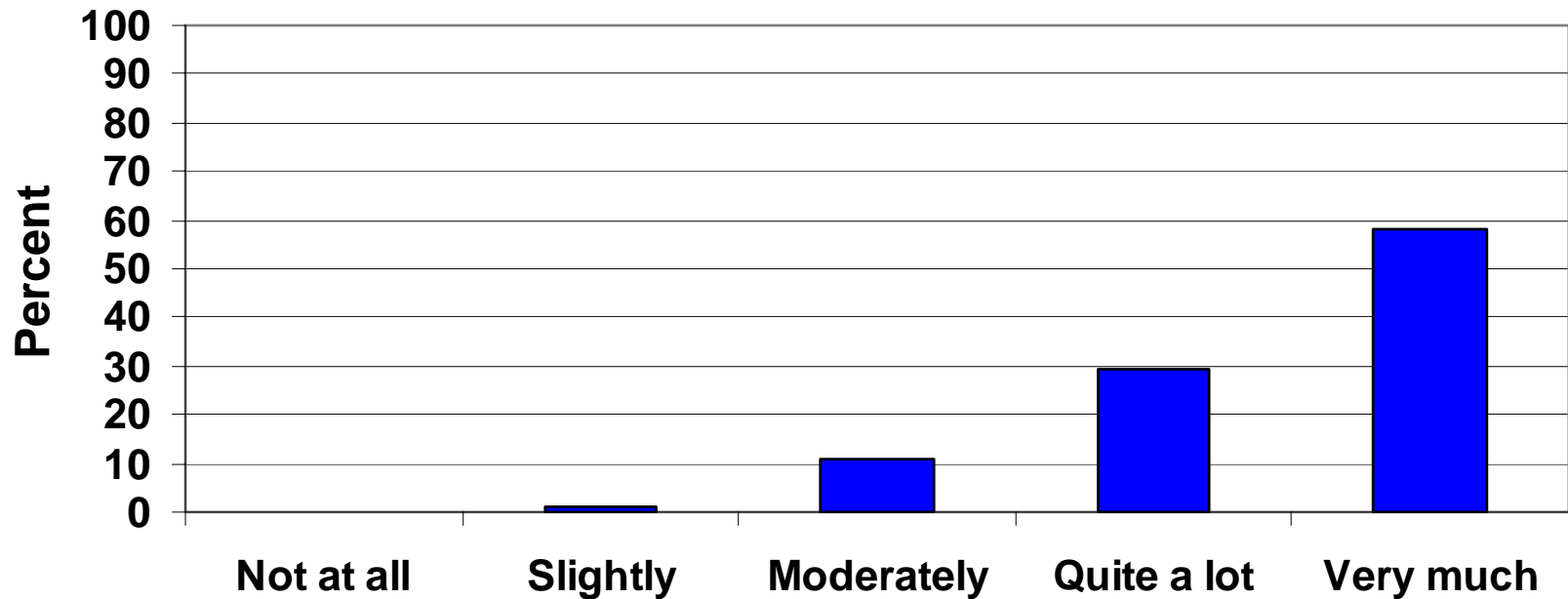
IOI-HA

Average Daily Hearing Aid Use in Past 5 Years



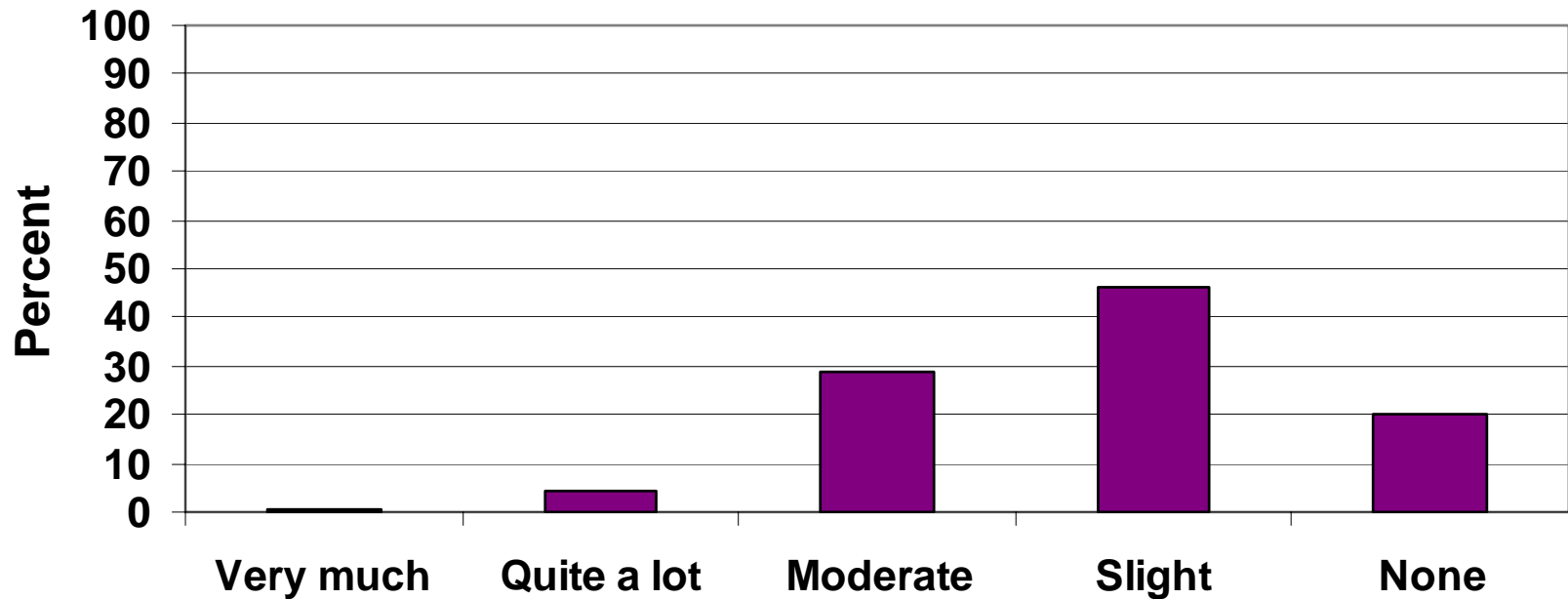
IOI-HA

How Much Have Hearing Aids Helped?



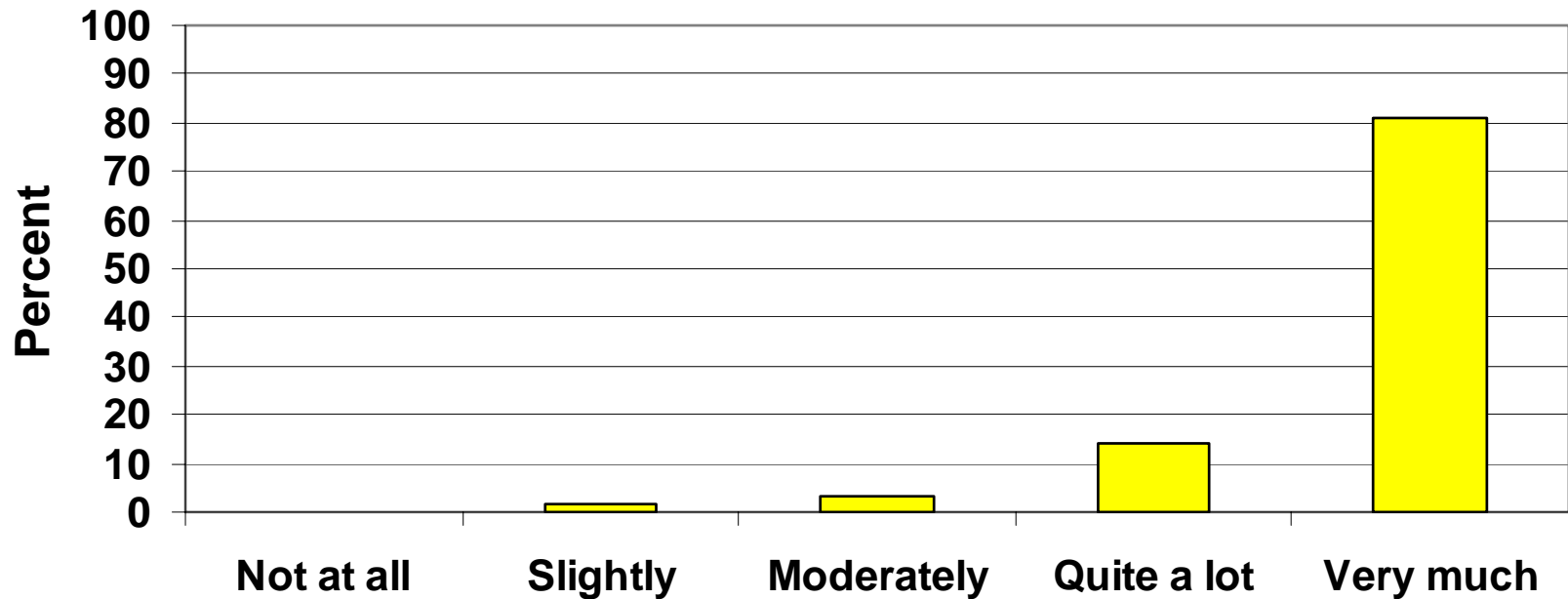
IOI-HA

How Much Difficulty Do You **STILL** have?



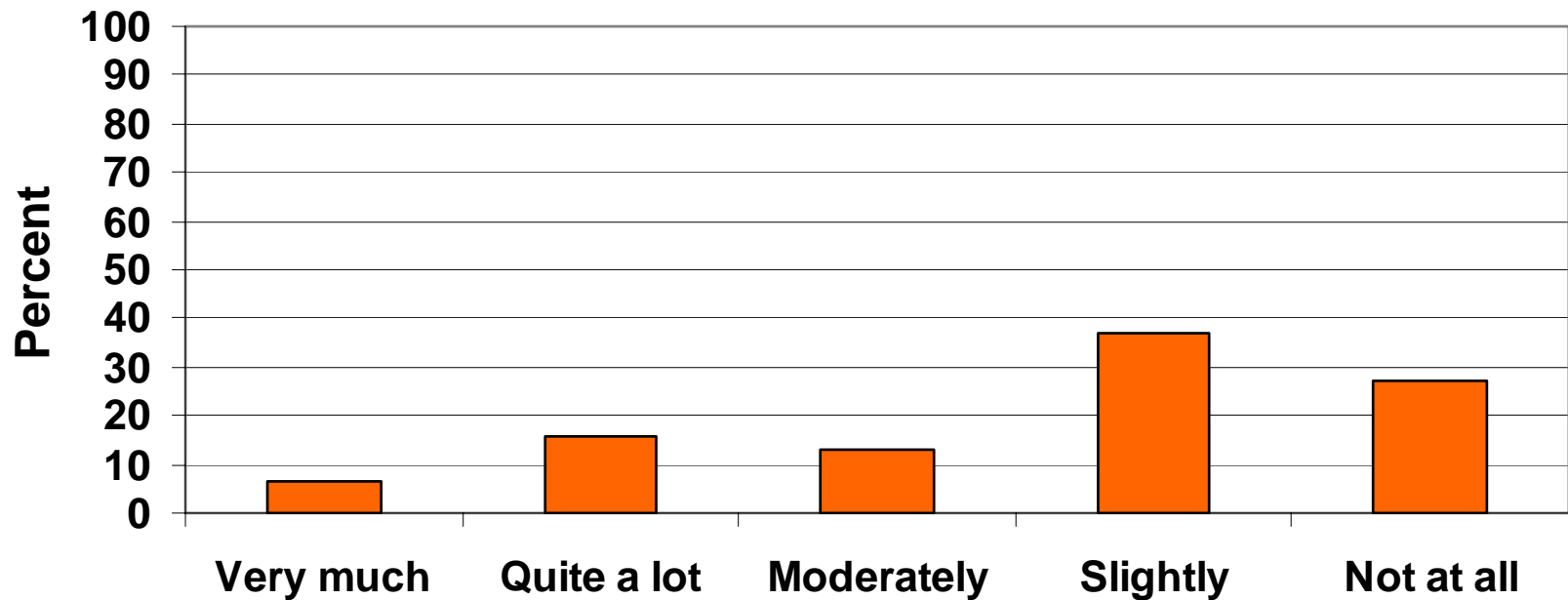
IOI-HA

Are Your Hearing Aids Worth the Trouble?



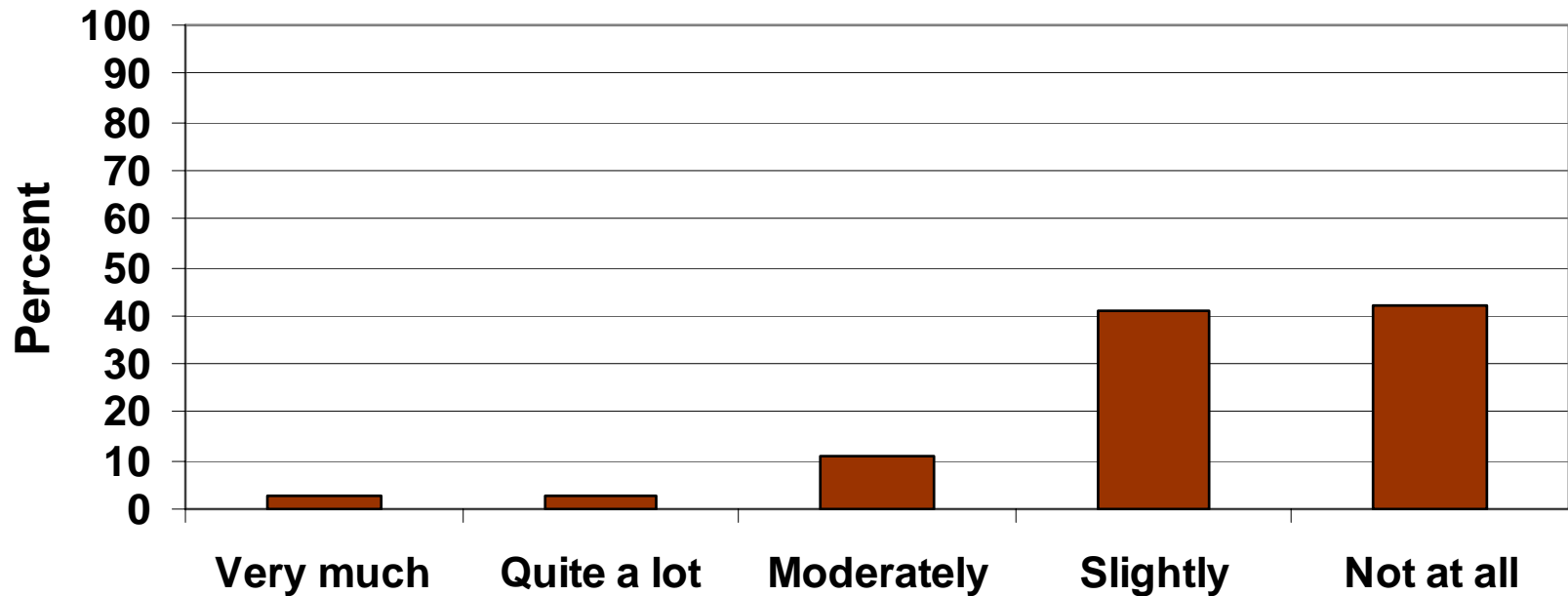
IOI-HA

Hearing Difficulties Affecting Things You Can Do?



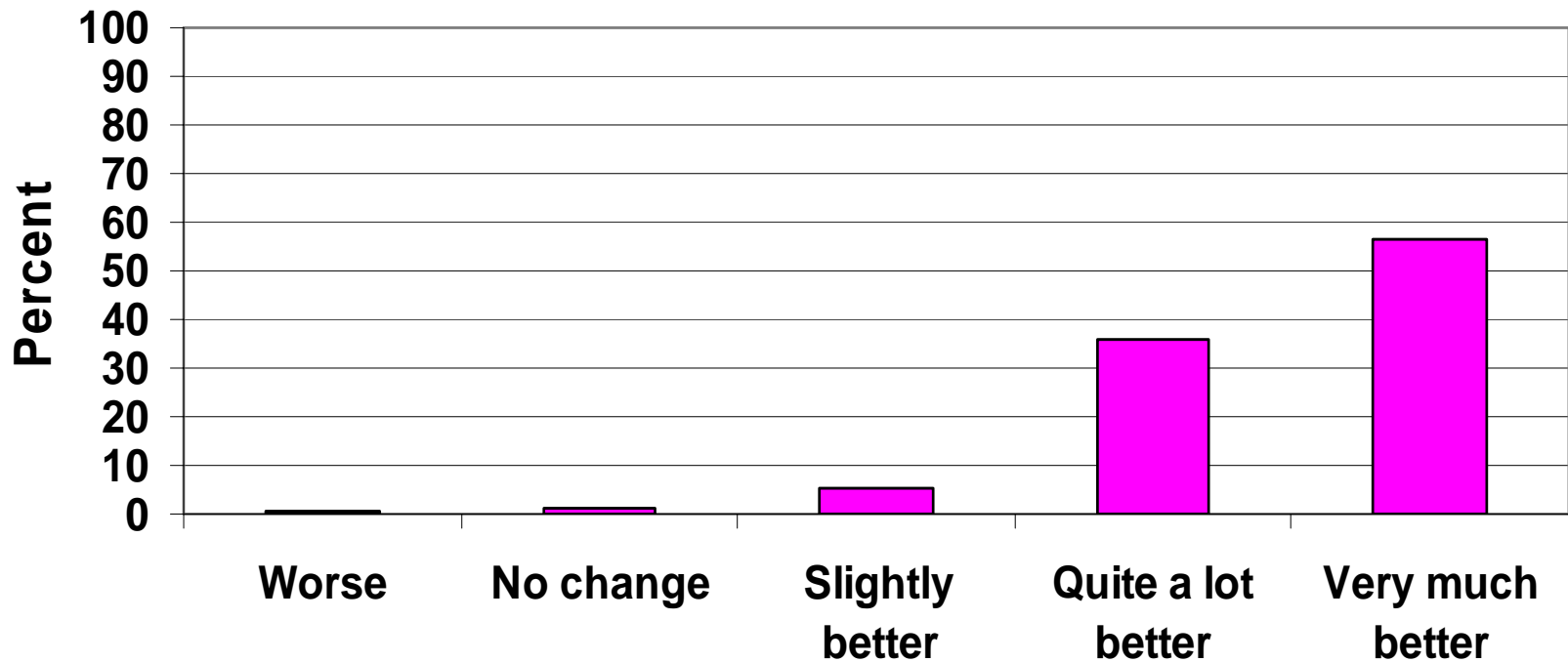
IOI-HA

How Much Are Others Bothered?



IOI-HA

Changed Your Enjoyment of Life?



Correlations

Significant Correlations ($r \geq 0.5$ and $p \leq 0.05$):

	IOI-HA Overall	SADL Global
Glasgow Satisfaction	.52	.54
Glasgow Benefit	.51	
SADL Global	.63	
SADL Positive Effect	.55	

SADL Global Score correlated with each of the
SADL subscale scores

Glasgow Satisfaction correlated with Glasgow
Benefit and Glasgow Residual Disability

Summary

- Considerable perceived benefit and satisfaction from hearing aids
- More perceived difficulty in easy listening situations and less perceived benefit in difficult listening situations in current study compared to original study
- No significant correlations with objective measures (NU-6, CST)