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## Patient satisfaction in the Central Institute for the Deaf Clinic

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# Patient Satisfaction in the Central Institute for the Deaf Clinic

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## ABSTRACT

The purpose of this study was to develop a patient satisfaction survey that would achieve three objectives, 1.) To establish a patient satisfaction for services baseline that would allow the Central Institute for the Deaf (CID) clinic to measure improvements in service delivery, 2.) To make the CID Patient Satisfaction Survey as short and easy to complete as possible, while maintaining a high degree of reliability, and 3.) To examine factors affecting patient satisfaction such as, degree of hearing loss, gender, age, and experience of the audiologist. Results revealed that the current CID Patient Satisfaction Survey was not a good measure of patient satisfaction. Questions on the survey, with the exception of 2 and 4, did not significantly correlate to the patients' overall satisfaction rating. Further research needs to be done in order to develop questions that may better measure patient satisfaction at the CID clinic.

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## INTRODUCTION

Self-assessment inventories developed for audiologists began to receive attention in the literature during the 1970's and 1980's (McCarthy 1994). In the past decade audiologists have begun to use these measures clinically to assess hearing aid benefit, quality assurance, treatment efficacy, as well as patient satisfaction. In light of the increased emphasis on documentation of services and a call for verification of services, these tools are becoming a significant part of clinical procedures.

Outcomes can be defined in two ways: as benefit to the patient or as quality of service (Boston 1994). The American Speech-Language-Hearing Association (ASHA) has recently endorsed a task force to develop a database that supports the position that the services of both audiologists and speech-language pathologist are important in the healthcare industry (Boston 1994). ASHA's focus is more on the cost-outcome ratio rather than overall patient satisfaction. However, this is a move toward the long road of healthcare reform, which is focusing on maximizing outcomes and minimizing costs more than improving general patient satisfaction of healthcare (Boston 1994).

With the growing support for healthcare reform it is important for audiologists to have tools to measure not only the benefit of the services given to patients, but also the patients' satisfaction with the services. Methods that objectively measure patient satisfaction for services have received little attention in audiology (Kargas and Doyle 1996). Most studies and surveys have focused on outcome measures for hearing aid satisfaction, aural rehabilitation services, and handicap inventories.

The Hearing Handicap Scale (HHS) developed by High, Fairbanks, and Glorig (1964) marked the beginning of a slow change in research and clinical procedures in audiology. Previously researchers and clinical audiologists had relied solely on objective measures such as, pure-tone audiometry and speech tests to determine hearing impairment, hearing handicap, and hearing aid benefit. Research by Berkowitz and Hochber (1971) and Tannahill (1979) further helped pave the way for the incorporation of subjective measures into the field of audiology. Results in their studies revealed a strong relationship between HHS scores and hearing aid benefit reported from audiometric tests.

In the last decade shorter and more efficient questionnaires and inventories have been developed for clinical use. Measures such as the Client Oriented Scale of Improvement (COSI), the Hearing Aid User's Questionnaire

(HAUQ), the Hearing Activity Questionnaire (HAQ), the Hearing Aid Performance Inventory (HAPI), the Shortened Hearing Aid Performance Inventory (SHAPI), and the Abbreviated Profile of Hearing Aid Benefit (APHAB) have frequently been used to assess hearing aid satisfaction (Cox and Alexander 1995; Cox 1997; Walden, Demorest, and Hepler 1984; Dillon, Birtles, and Lovegrove 1999; and Purdy 1999). The Hearing Handicap Inventory for the Elderly (HHIE) was designed to assess self-reported handicap of hearing impaired individuals (Ventry and Weinstein 1982). Recently, the Glasgow Hearing Aid Benefit Profile (GHABP) was developed to measure aspects of disability, handicap, and hearing aid benefit (Gatehouse 1999).

Outcome measures have become increasingly important in the last decade due to healthcare reform and the demand by third party payers for proof of quality care. However, professionals must not forget the active ingredient to all care is the patient. In order to maintain a client base, healthcare providers must not only be aware of the treatment benefit, but also the satisfaction of the individuals receiving the care. A study by Kargas and Doyle (1996) looked at patient satisfaction responses when compared to the amount of time spent in audiological consultations. The authors reported that the total amount of time in

consultation and the amount of time waiting prior to the consultation contributed most to the patient satisfaction ratings.

The following study was performed to achieve the following three objectives:

- 1) To establish a patient satisfaction for services baseline that would allow the Central Institute for the Deaf (CID) clinic to measure changes or improvements in service delivery.
- 2) To make the CID Patient Satisfaction Survey as short and easy to complete as possible, while maintaining a high degree of reliability.
- 3) To examine factors affecting patient satisfaction such as, degree of hearing loss, gender, age, and experience of the audiologist.

## METHODS

### QUESTIONNAIRE

The CID Patient Satisfaction Survey was comprised of 13 items divided into two subgroups, 7 questions dealing with professional services and 5 questions on services delivered by the office staff. The final question asked for an overall satisfaction rating of the CID clinic. Responses by the subjects were ratings on a



five-point scale ranging from very satisfied to very dissatisfied. The questions and rating scheme are shown in Table 1. The subjects circled the number which best represented their satisfaction with the service.

**TABLE 1. The CID Patient Satisfaction Survey**

QUESTION	Very				Very
	Satisfied	Satisfied	Neutral	Dissatisfied	Dissatisfied
1. Friendliness of the audiologist	1	2	3	4	5
2. Professionalism of the audiologist	1	2	3	4	5
3. Explanation of the purpose of the hearing tests	1	2	3	4	5
4. Explanation of the results of the hearing tests	1	2	3	4	5
5. Amount of time the audiologist spent with you	1	2	3	4	5
6. Promptness of the service by the audiologist	1	2	3	4	5
7. Cleanliness/appearance of the audiologist's lab	1	2	3	4	5
8. Friendliness of the office staff in the waiting room	1	2	3	4	5
9. Friendliness of the staff answering the telephone	1	2	3	4	5
10. Explanation of our payment and billing procedures	1	2	3	4	5
11. Cleanliness/appearance of the waiting room	1	2	3	4	5
12. Availability of appointments	1	2	3	4	5
13. Overall, how satisfied were you with your visit?	1	2	3	4	5

Comments or Suggestions:

## SUBJECTS

The subjects were 29 patients seen at the CID Clinic (18 males and 11 females) between December 1998 and March 1999. They had a mean age of 67.2 years, and an age range of 8 - 94 years. The Pure tone average (PTA) for the better ear of each subject ranged from 5 - 93 dB HL, with a mean of 39.1 dB HL. The subjects were given a copy of the CID Patient Satisfaction Survey at the end

TABLE 2. Number of times a response was selected on the CID Patient Satisfaction Survey.

RESPONSE	% OF ALL REPOSES	TOTAL NUMBER
VERY SATISFIED	83.3%	314
SATISFIED	14.9%	56
NEUTRAL	1.6%	6
DISSATISFIED	0%	0
VERY DISSATISFIED	0.2%	1

Relationship of each question to the total score

A correlation analysis (Gehring 1978) between each question and the total score on the survey revealed a wide range of correlations (Table 3). Questions 4 through 7 had moderate positive correlations with the total score (r values ranging from 0.56 - 0.6). Questions 8 through 11 had strong positive correlations with the total score (r values ranging from 0.67 - 0.86). All other questions on the survey (1-3, 12,13) did not show any significant correlation to the total score. The lack of a strong correlation between question 13 and the total score appears important. Questions 13 asks the patient to rate overall satisfactions with the visit.

**TABLE 3. Correlation of each question to the total score on the CID Patient Satisfaction Survey**

DEGREE OF CORRELATION	CORRELATED QUESTIONS	CORRELATION
NO SIGNIFICANT CORRELATION	Q1, Q2, Q3, Q12, Q13	-.05, .38, .38, .48, .33
MODERATED CORRELATION	Q4, Q5, Q6, Q7	.60, .56, .57, .56
STRONG CORRELATION	Q8, Q9, Q10, Q11	.70, .86, .67, .74

Relationship of the questions to one another

With the exception of questions 1 and 3, which showed no significant correlations, all other questions showed a moderate to strong correlation between one to five other questions on the survey (Table 4). There were only two questions (2 and 4) that correlated with the patients' overall satisfactions rating (question 13).

**TABLE 4. Correlations for questions on the Patient Satisfaction Survey with significant values ( $\geq .50$ )**

QUESTION	CORRELATED QUESTIONS	CORRELATION
Q1		
Q2	Q6, Q9, Q11, Q13	.56, .54, .6, .69
Q3		
Q4	Q6, Q13	.67, .56
Q5	Q6, Q12	.68, .56
Q6	Q2, Q4, Q5	.56, .67, .68
Q7	Q9, Q10	.64, .71
Q8	Q9, Q11	.74, .69
Q9	Q2, Q7, Q8, Q10, Q11	.54, .64, .74, .57, .79
Q10	Q7, Q9	.71, .57
Q11	Q2, Q8, Q9	.6, .69, .79
Q12	Q5	.56
Q13	Q2, Q4	.69, .56

Age of subject and the total score

A correlation analysis was completed to correlate the age of the subject to the total score of the survey. Results revealed no statistically significant correlation between the two variables ( $r = .3, p = .1398$ ).

Pure tone average (PTA) of the better ear and the total score

A correlation analysis was completed to correlate the PTA of the better ear to the total score of the survey. Results revealed no statistically significant correlation between the two variables ( $r = .07, p = .716$ ).

### Years of experience of the audiologist and the total score

A correlation analysis was completed to correlate the years of experience of the audiologist and the total score. Results revealed no statistically significant correlation between the two variables ( $r = .17$ ,  $p = .4013$ ).

### Gender and the total score

An unpaired t-test was performed to compare the relationship between total scores and the gender of the subject. Results revealed no statistically significant correlation between the scores for males and females (males = 15.56, females = 15.55,  $t = .01$ ,  $p = .9938$ ).

## DISCUSSION

### Establish a Patient Satisfaction Baseline

This study was performed to meet three objectives. The first objective was to establish a patient satisfaction for services baseline that would allow the CID clinic to measure the effects of changes or improvements to current service delivery. Responses on the survey were clustered to one side of the scale. Large majorities (98.2%) of the questions in the survey were answered with the *very*

*satisfied* or *satisfied* response. Only one time was a question on the survey answered with a negative response. This response pattern makes the baseline of little use. We would not be able to measure if a policy change had a positive effect on patient satisfaction.

There are several possible reasons for the disproportionate positive responses on the CID Patient Satisfaction Survey. First, it may be possible that only the subjects with positive experiences at the clinic were given a survey to fill out. Only a small percentage of the patients seen between December and March received or filled out questionnaires. We do not know the reason why some were given the questionnaires and others were not. Second, the surveys were filled out while the respondents were still in the clinic. The respondents may not have felt comfortable answering negatively while the office staff and audiologists were present. Third, individuals may not have filled out the survey if they did not feel as though they had a strong experience at the clinic. We do not know how many were offered a questionnaire and refused to answer. Finally, it is possible that all respondents had very positive experiences with the staff and audiologists at the CID clinic in the areas probed by the questions. New questions may result in a larger spread of responses.

### Reliability and Ease of Completion

The second objective of this study was to make the CID Patient Satisfaction Survey as short and easy to complete as possible, while maintaining a high degree of reliability. Correlations between each question and the total score could result in a reduction of the original survey from thirteen questions to nine questions. The selected questions included, #2, #4 - #11. Questions 4-11 were chosen on the bases that each question had moderate to strong correlations with the total score, as well as one another. Question 2 was selected because of its strong correlation with several of the included questions (questions 6, 9, and 11). All other questions were excluded from the final survey due to insignificant correlations with other questions and the total score.

Walden, *et al* (1984) used an Alpha statistic to describe the reliability of their questionnaire, the HAPI. The statistic is dependent on the item-total correlation and the number of questions. Eliminating questions 1, 2, 12, and 13 would have the least effect on the reliability of the questionnaire because they had the lowest correlation to the total score. The high inter-item correlation among the selected questions is an indicator that they are measuring the same thing.

### Factors Affecting Patient Satisfaction

The final objective of the study examined factors affecting patient satisfaction such as, degree of hearing loss, gender, age, and experience of the audiologist. Correlations between individual factors and the total score showed no significant relationship. In essence, an individual's satisfactions with the services at the CID clinic could not be determined from the factors looked at in this study.

### Additional Issues

During the distribution and collection of the CID Patient Satisfaction Survey several issues arose. Vision problems for one respondent resulted in unintentional negative responses to the survey. In order to avoid further situations like this in the future it may be advantageous to use a pictorial response scale. An example would be the use of smiley or sad faces instead of the 1-5 scale used in the original survey.

Also, many patients were unwilling to complete the survey do to time constraints. Reducing the number of questions will allow the CID Patient Satisfaction survey to be printed on a postcard then completed by the patient later. One disadvantage to the postcard however, is that respondents may forget to mail the completed survey back to the CID clinic.



Finally, in order to ensure accurate measurements of patient satisfaction at the CID clinic it is important to establish a system which will compile the responses of all patients. Surveys need to be distributed to every patient in order to have precise measurements of satisfaction with service at the CID clinic. In the end precise patient satisfaction data will only benefit and improve current services. With the growing move for healthcare reform it is important to ensure not only beneficial treatment, but also quality service.

#### Validity of the Scale

If our questionnaire was truly measuring patient satisfaction, we would expect a high correlation between question 13 (the rating of overall satisfaction) and the total score. The questions for inclusion in the final version then should have high correlation with question 13 and with the total score.

The fact that item 13 was not highly correlated with the total score suggests that the questionnaire was not measuring patient satisfactions. An examination of the questions that were most highly correlated with the total score indicates the patients may actually have been rating personality characteristics of the audiologist and staff.

The rating of overall satisfactions on item 13 was correlated most highly with items 2 and 4. This would indicate that the two factors related to the overall satisfaction of the patient were perception of the audiologist's professionalism and how well the results were explained to the patient.

### Recommendations

1. The CID Patient Satisfaction Survey should not be used in its current form. The validity of many of the questions is questionable. Also, the questions do not yield a sufficient spread of data to be useful.
2. We recommend the items (2 and 4) that correlated most highly with the patients' overall satisfaction rating be retained on the survey. Future studies could search for other items that would give a more comprehensive view of important factors for patient satisfaction.
3. The most common measurement being made in clinics today seems to be hearing aid outcomes. The CID clinic may want to concentrate in this area until a good patient satisfaction survey is developed.

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