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A Tutorial: Use of the WHO ICIDH-2 for Determining Aural Rehabilitation Goals

By

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A Professional Research Project submitted to the Faculty of the
Department of Communication Sciences and Disorders
University of South Florida

Doctor of Audiology

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Nancy M. Patterson

(ABSTRACT)

The purpose of this project was to implement the newly revised *International Classification of Functioning, Disability and Health* (ICIDH-2) developed by the World Health Organization (WHO), to establish specific aural rehabilitation goals. Five graduate clinicians in speech language pathology and audiology interviewed ten participants with adult onset hearing loss. A modified version of the General Questions for Participation and Activities (i.e., a structured interview technique) from the ICIDH-2 Checklist, was developed. Prior to completing this checklist, the students attended a brief training session to become familiar with the major components of the ICIDH-2, specifically the ICIDH-2 Checklist. Completion of the ICIDH-2 Checklist, Version 2.1a, clinician form (prefinal draft, December 2000), allowed the students to classify and qualify disability and health according to the constructs of Activity and Participation, (i.e., *what a person can and cannot do as a result of hearing loss* and *what a person does and does not do as a result of hearing loss,* respectively). Following completion of Parts 2 (Activities and Participation) and 3 (Environmental Factors) of the Checklist for each of the ten clients interviewed, aural rehabilitation goals were developed. Four participants are highlighted to illustrate how the ICIDH-2 is used to objectify the impact of hearing loss and to establish specific treatment goals. The results support the use of the modified version of the General Questions for Participation and Activities in development of aural rehabilitation goals for clients with adult onset hearing loss. Graduate clinicians demonstrated the ability to complete the checklist with little assistance, suggesting that the use of the ICIDH-2 by experienced clinicians should be a relatively easy task. Goal development was also a relatively easy task using the checklist ratings, and the ratings related directly to the individual participant's quality of life in their current situation.

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To the participants in this project, thank you for your support, kindness and sharing that continues to feed my pursuit of knowledge in the field of audiologic rehabilitation.

DEDICATION

The completion of this project and paper was not just an academic pursuit of excellence, it was life; all its beauty, chaos, challenges and accomplishments. This is the work of a family, brought together by my husband, William R. Patterson. It is the laughter and the tears, the love and the fears of our blended family, searching for direction in life. Laura brings the melody of life to my ears and heart, Matthew brings the challenges and laughter, Grant brings kindness never ending. And my husband brings love, not the love that holds one back, but the love of encouragement. I dedicate this work to my husband Bill, with love.

INTRODUCTION

Acquired hearing loss in adults is currently one of the largest health care issues in the United States (Johnson & Danhauer, 1999), with recent figures indicating that approximately 28 million people experience adult onset hearing loss. During the past century, health care has grown to include concern not only for the diagnoses of diseases and disorders which lead to hearing loss, but also for the functional consequences of impaired hearing. The functional consequences of a hearing loss relate primarily to a reduction in communicative efficiency, which in turn, may affect employment, educational achievement, social interaction and emotional state (Alpiner & McCarthy, 1993; Hull, 1997; Sanders, 1993; Spitzer, Leder & Giolas, 1993).

The need for providing adequate intervention for individuals disabled by hearing loss is rapidly increasing. This is primarily due to two factors: (1) the implementation of universal newborn hearing screening, resulting in early detection of hearing loss; and (2) the growth of the aging population for whom hearing is currently considered the second most prevalent chronic health care condition (Benson & Marano, 1998). One factor influencing the provision of intervention to individuals with hearing loss is the rise in managed care. Managed care systems provide services to individual patients based on reimbursement from third-party payers, with health care providers in between. Affiliation with managed care organizations frequently requires involvement in outcome measures as part of patient management and reimbursement structure. Audiologists providing rehabilitation services, including hearing aid dispensing and aural rehabilitation therapy, are currently involved in outcomes measurement. In order for the effects of and therapy for hearing loss to be adequately understood in this milieu, there is a critical need to be able to describe its functional effects with methodology that can be used across health conditions.

Disability assessment is an important component of total health care management, as medical diagnosis alone fails to predict service needs, receipt of disability benefits, work performance, and social integration. Diagnosis and disability assessment combined can predict health service utilization, return to work, and work performance. Disability assessment is useful in health care policy decision-making to identify needs, measure

outcomes and effectiveness, set priorities, and determine resource allocation (WHO, 1999).

Models of disability form the set of guiding concepts about the nature of disability on human experience. Three basic models of disability are currently in use today: medical, functional, and environmental. The most known model, the medical model of disability, has the longest history. The medical model employs more objective, concrete, standardized measures using experts to define characteristics, causes, prognoses and methods of treatment. The environmental model of disability suggests that the individual's environment, both the social and physical, can cause or define the disability. Members of the Deaf Culture, who view deafness as part of their culture, identify with the environmental model. The functional model of disability suggests that the ability and the actual participation of the individual in a variety of activities of daily living are what determine the disability. Hearing impairment, as the identifying name suggests, is frequently addressed using the medical model of disability. Yet, in audiologic rehabilitation, a functional model is more frequently embraced concerning treatment needs of the individual (Smart, 2001).

The medical model of disability guided the development of the1980 World Health Organization's (WHO) *International Classification of Impairments, Disabilities, and Handicaps (ICIDH).* The ICIDH originated as a member of the WHO family of international classifications, the most widely known document being the *International Classification of Disease (ICD).* The ICD was based on classification of disease, developed from causes of mortality. The ICIDH, in contrast, was to include the variety of experiences that people with health conditions live with. Following almost twenty years of use and changes in health care provisions based on greater societal understanding of disability, revision was required. The ICIDH document was initially widely adopted as a model for classification, but it did not provide a full coding system or an operational definition for functional use (Threats, 2000).

Based on an increased understanding of disability, WHO, in 1995 began to revise the ICIDH. The WHO-1980 categories of impairment, disability and handicap were modified to include human health and health-related states. Thus, in addition to the concept of impairment, the concepts of activity limitations, participation restriction, and

the contextual factors influencing functional status were introduced. The ICIDH-2, *International Classification of Functioning and Disability* Beta 1 draft became available in 1997. Field trials continued until December of 1998, involving mostly expert and insider opinion (Threats, 2000). The ICIDH-2, *International Classification of Functioning and Disability* Beta 2 Draft, became available in 1999 for field trial purposes. Goals of the field trials included use of the scale by various professions for test-retest reliability, inter-rater reliability and face validity determinations. Included in the field trials for this document, were basic questions asked of researchers, clinicians, and persons with disability in regard to the structure of the ICIDH-2 and the actual usefulness of this measure in assessment of patients Clinicians included both speech-language pathologists and audiologists and adults with hearing loss were included as persons with disabilities.

Specific aims of the ICIDH-2 were to provide a scientific basis for understanding and studying the functional states associated with health conditions; to establish a common language for description and discussion of functional states associated with health conditions; to permit comparison of data across countries, health care disciplines, services and time; and, to provide a systematic coding scheme for health information systems (WHO, 1999). Applications of the document include: 1) use as a statistical tool in collection and recording of data; 2) use as a research tool in measurement of outcomes, quality of life, or environmental factors; 3) use as a clinical tool in needs assessment, vocational assessment, rehabilitation, and outcome evaluation; 4) use as a social policy tool for use in social security planning, compensation systems, policy design, and implementation; and. 5) use as an educational tool for curriculum design (WHO, 1999).

The ICIDH-2 is designed to encompass all aspects of human health and relevant aspects of well-being. As illustrated in Figure 1, the structure of the ICIDH-2 is hierarchical. First, the ICIDH-2 is organized in two general parts**:** Part I. Functioning and disability; and, Part II. Contextual Factors. Part I is then divided into two "components": 1) the Body, its *structure* and *function;* and, 2) Activities and Participation. Part II also consists of two "components": 1) Environmental Factors; and, 2) Personal Factors.[1] Each

[1] Personal factors are not classified in the ICIDH-2 because of the large social and cultural variance and are therefore not considered here.

"component" consists of various *domains*. For example, one of the domains under Body Functions is " *Sensory Function and Pain*" (b2). Then, within each of the d*omains* are "categories". Thus, a category under the Body Function domain of "*Sensory Function and Pain" (b2)* is the category "hearing" (b230).

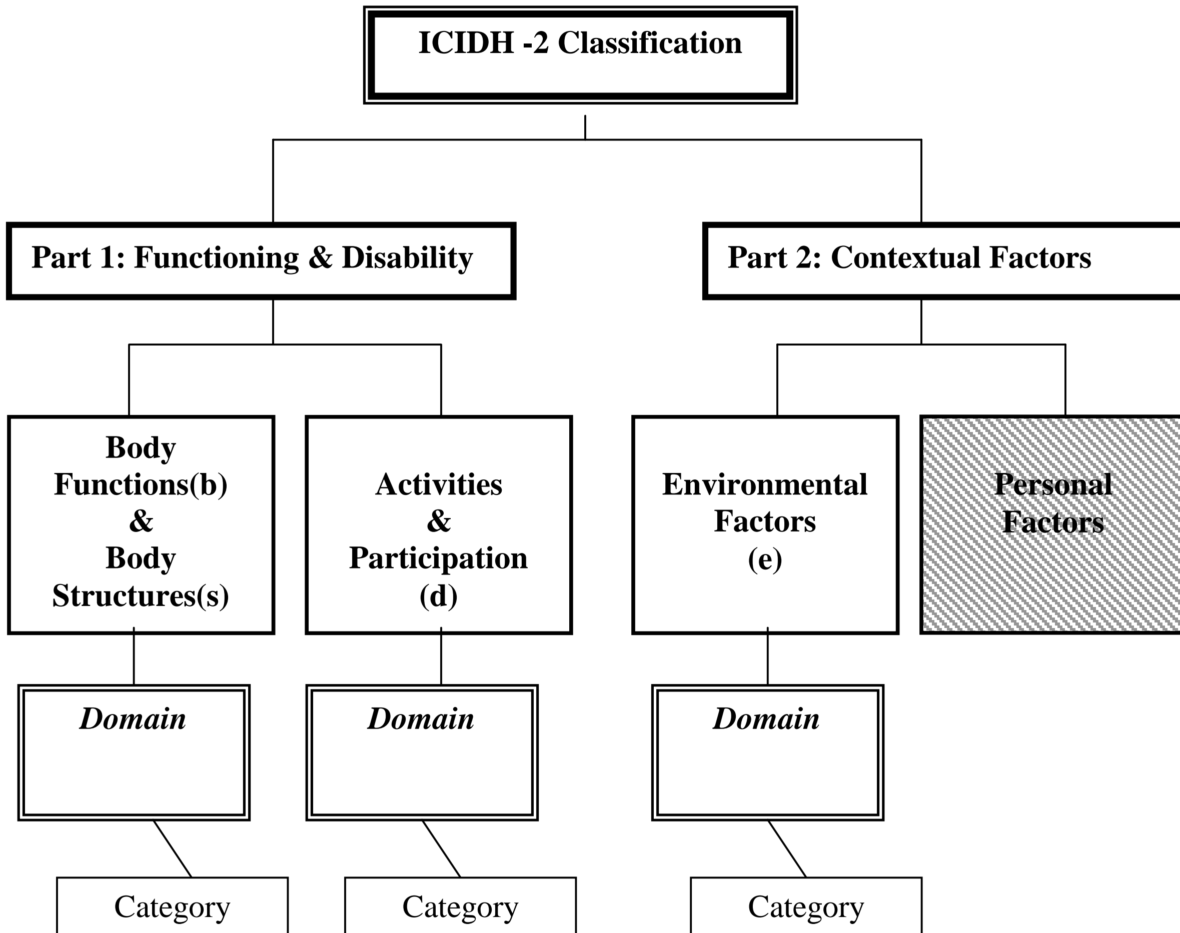

Figure 1. Structure of ICIDH-2

The ICIDH-2 is available in two versions to meet the needs of different users: a Full Version (classification at four levels of detail), and a Short Version (the four level classification of the Full Version aggregated into a higher level two-level classification). The ICIDH-2 Checklist is a separate document and only uses the higher two-level classification scheme found in the Short Version of the ICIDH-2.

The most current version, the International Classification of Functioning, Disability and Health (ICIDH-2), Final Draft (April, 2001), is now available via the WHO website (http://www.who.int/icidh). The ICIDH-2 *Checklist* from the Final Draft contains three parts: Part 1**.** a. Impairments of Body Function and Part 1.b. Impairments of Body Structure; Part 2. Activity Limitations and Participation Restriction; and Part 3. Environmental Factors. To complete the *Checklist,* the clinician can use a series of structured interview questions, referred to as *General Questions for Participation and Activities,* to obtain relevant information from clients. This information is then utilized for "rating" or "qualifying" the client's activity and participation, and the environmental factors affecting the individual on the *Checklist*. The current version presupposes familiarity and understanding of the terminology used in each of the "categories". For those not yet familiar with these categories, further information can be obtained by referring to the Full Version of the ICIDH-2.

The ICIDH-2 has great potential as a tool that can be used to compare the functional effects of diseases and disorders and their treatments across health conditions. One previous paper has described the use of the ICIDH-2 for working with individuals with hearing loss (Fisher & Thelin, 1999). This work was focused on the development of individualized educational plans for children with hearing loss. The application of the ICIDH-2 to adults with hearing loss and the development of intervention goals from the information obtained has not yet been described.

Traditionally, intervention for non-medically treatable adult onset of hearing loss has been called aural rehabilitation. While the cornerstone of aural rehabilitation is the use of hearing aids, there are many other facets to a comprehensive program. Traditional models of aural rehabilitation focused on incorporating lip-reading and auditory training. More recent models incorporate both the listener and speaker in designing approaches for improving functional abilities (Erber, 1996; Gagné & Jennings, 1999). Thus, as Gagné 1998) states, aural rehabilitation is the process of eliminating or reducing situations of handicap experienced by individuals who have hearing loss and those individuals with normal hearing with whom they interact. This conceptual model suggests that factors related to or involved in creating a situation of handicap, include factors related to the individual and factors related to the environment. That is, the

physical, social and cultural environment of the individual, including the attitudes, beliefs, norms, and behaviors held by others in the group affect or create the situation of handicap (Gagné & Jennings, 1999). If the goal of aural rehabilitation is to reduce or alleviate situations of handicap, then clinicians must also define the environment to identify what steps would be acceptable for a given individual. Use of the ICIDH-2 *Checklist* and the *General Questions for Participation and Activities* are structured to provide just that type of information.

The ICIDH-2 has the potential to be a particularly useful tool in audiologic rehabilitation. This project was designed as one step in examining utility of the ICIDH-2. Specifically, the use of a modified version of the *General Questions for Participation and Activities* was examined to determine if the information obtained could be used by an audiologist to complete the clinician *Checklist* - Part 2 (Activity Limitations and Participation Restriction) and Part 3 (Environmental Factors). These sections of the checklist allow the clinician to classify and qualify disability and health using the constructs of Activity and Participation (i.e., *what a person can or cannot do as a result of hearing loss* and *what a person does or does not do as a result of hearing loss*, respectively). The structured interview provides the clinician with a series of questions designed to elicit information needed for completion of the activities and participation section of the checklist. This interview format has not previously been used in rehabilitative audiology. The second component of this project was to illustrate how the information in the Clinician *Checklist* could be used to develop appropriate recommendations and intervention goals.

Use of the Modified Interview Questions in Completion of Checklist-
Methods, Results, & Preliminary Discussion

Participants

Ten clients with self-reported adult onset binaural hearing loss, currently enrolled in group aural rehabilitation sessions through the University of South Florida Communications Disorders Center, were recruited for participation in this project. At the time of testing, audiograms were available for only the first four of the ten subjects. Of the four participants selected for presentation, two wore binaural amplification. Two

participants did not wear amplification. One participant (#1), did not wear hearing aids due to the configuration of the hearing loss (high frequency severely sloping binaural hearing loss at 3000Hz and above), previous lack of satisfaction with trial amplification, and current income limitations. The other participant (#3) did not benefit from use of amplification and was not a cochlear implant candidate due to other health-related conditions. Specific information regarding the ten participants is provided in Table 1 below.

Table 1. Relevant Participant Characteristics

Client	Age	Gender	Hearing Loss	HA
# 1	60+	Male	Hi-frequency Sensorineural	None
# 2	80+	Male	Severe Sensorineural	Binaural
# 3	70+	Female	Profound Mixed	None
# 4	60+	Female	Severe Sensorineural	Binaural
# 5	30+	Female	Profound Sensorineural	Monaural*
# 6	60+	Male	Severe Sensorineural	Binaural
# 7	60+	Female	Moderate Sensorineural	Binaural
# 8	40+	Female	Mod/severe Sensorineural	Monaural*
# 9	70+	Male	Mod/severe Sensorineural	Binaural
#10	20+	Male	Severe Sensorineural	Binaural

*client has profound loss on unaided ear due to NF II

Modification of the General Questions for Participation and Activities

The original General Questions for Participation and Activities developed in the ICIDH-2 Checklist, Version 2.1a, Clinician Form (ICIDH-2, Beta-2, December 1999), are shown in Table 2. These questions were given to 37 speech language pathology students in a graduate level aural rehabilitation class. The students were asked to reword the questions so that the focus was specifically on hearing. Prior to rewording, the graduate students were presented with the definitions of *impairment, disability* and *handicap* as developed by the World Health Organization (WHO) in 1980. As noted previously, these definitions are focused more on a medical model rather than a

rehabilitative model (Threats, 2000). The WHO (1980) model is predominant in the literature. The older definitions were presented to assist students in understanding the transition in conceptualization that has occurred in the current model (WHO, 1999). Students were then introduced to the newer concepts of *impairment, activity,* and *participation* as presented in the ICIDH-2 revisions. During the next class meeting, the same 37 graduate students were divided into small groups (approximately 5 groups of 9 students), during which they modified the General Questions for Participation and Activities. All suggested revisions were compiled and presented to the students. General consensus on the most appropriate rewording of each question was obtained. The results of this modification are shown in Table 3.

Administration of the General Questions for Participation and Activities

Five graduate students, four female and one male, currently enrolled in the aural rehabilitation practicum at the University of South Florida Communication Disorders Center were selected to administer the structured interview questions as part of their routine clinical practice. Three of the students were in the speech language pathology graduate program and two were in the Doctor of Audiology program. Each student interviewed two of the ten clients initially selected as participants. Before conducting the structured interview, the student clinicians were provided with brief written instructions regarding the administration procedures (Appendix A). Just prior to the interview, each client was provided with written and verbal instruction regarding the interview process (Appendix B). In addition, the clients were given a typed copy of the General Questions for Participation and Activities as visual support (Appendix C). Each client was interviewed individually during regularly scheduled therapy sessions. Interviews lasted from a minimum of thirty to a maximum of sixty minutes. Each interview session was audio-taped so that the investigator could confirm the accuracy of the clinicians in recording of client responses.

Use of Structured Interview Responses for Completion of Checklist

To enable the student clinicians to complete the ICIDH-2 Checklist (Parts 2 & 3), introductory training (approximately 90 minutes) was presented by the investigator. This

Table 2. General Questions for Participation and Activities

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1. Do you get adequate heath care ?
2. Do you have insurance? What kind: private, public, health, rehabilitation?
3. Do you have a pension? Which type: age, disability, others?
4. What type of a place do you live in? (house, apartment, nursing home, etc)
5. Do you have a family or group of people with whom you live? How are your relationships with members of your family?
6. How do you get along with your friends/colleagues with whom you have regular contacts?
7. Do you find it difficult to move around? Do you have problems in using public transport? Or your own personal vehicle?
8. Do you have any problems with looking after your personal cleanliness or in dressing?
9. Do you have any problems with household activities, such as cleaning house, washing dishes, and similar chores?
10. Are you in a training or academic course? Is the school/course/program sensitive to your needs.
11. Do you have a paid job? Have you had problems getting a job or keeping a job?
12. Do you have any financial problems? Are you financially okay?
13. Do you engage in any sports, games or other recreational activities?
14. Do you involve yourself with any organization/association: recreational, religious, self-help, etc.?
15. Do you have any health condition that you feel you hide from others?
16. Do you ever feel insulted by the attitudes of other people towards your health condition?
17. Have you ever been prevented from doing what you would like to do because of social attitudes, (i.e. avoidance, discrimination) by the law or other environmental barriers?
18. Are you prevented from voting?

---

consisted of a modification of the training program developed by WHO and available on their website (http://www.who.int/icidh). Of importance to new users of the ICIDH-2 *Checklist* is the need to reference the Full Version of the ICIDH-2 document to understand definitions, terminology, and coding used in the checklist. A segment of the ICIDH-2 terminology and coding scheme is presented in Table 4 below. Modifications in the training materials were made to focus on the use of pertinent areas for aural rehabilitation. The areas were previously identified by the investigator during

Table 3. Modified General Questions for Participation and Activities

1. In regard to your hearing loss, tell me about your health care.
2. How does your insurance cover your needs as someone with a hearing loss?
3. Describe your retirement income.
4. What are your living arrangements? Do you live in a house, an apartment, or in an assisted living facility or other setting?
5. Whom do you live with? What situations do you have the most difficulty with in living with them?
6. Do you get along with friends, family, caregivers, and coworkers? How does your hearing loss affect communication with them?
7. Does your hearing loss cause difficulty or problems when traveling or getting around town?
8. What problems do you have in regard to dressing or personal cleanliness as it relates to use of hearing aids, cochlear implant or assistive devices?
9. Do you have any problems with household activities due to your hearing loss?
10. If in any type of training or school, does your hearing loss cause difficulty? Does the school/work place assist you in your listening needs?
11. Tell me about your work? Do you get paid for your work? Have you had problems getting a job or concern with keeping your job?
12. Does your hearing loss affect your financial situation? Is your hearing loss affecting you financially?
13. What do you do for fun? Would other activities would you like to engage in? Does your hearing loss affect your performance in any sports, games or other recreational activities?
14. Does your hearing loss affect your involvement in organizations or associations? Are you involved in organizations/associations or support groups for individuals with hearing loss?
15. Do you hide your hearing loss from others? Can you describe in what situations?
16. How do you feel others perceive hearing loss?
17. What social events do you avoid due to your hearing loss? What ways do you find your life restricted because of your hearing loss?
18. Do you encounter any problems when voting because of your hearing loss? Does your hearing loss have any effect on your ability to vote?

participation in the Beta-2 field trials of the ICIDH–2 Full Version.[2]

[2] The areas selected in regard to hearing were compared with the categories previously selected by Fisher and Thelin, 1999, and found to be consistent.

Table 4. ICIDH-2 Terminology and Coding Scheme

Full Version

SENSORY FUNCTIONS AND PAIN (b2)
SEEING AND RELATED FUNCTIONS (b210-b229)
Seeing Functions (b210)
(sensory functions relating to sensing the presence of light and sensing the form, size …)
Visual acuity function (b2100)
Binocular acuity (b21000)

Short Version (Checklist format)

SENSORY FUNCTIONS AND PAIN (b2)
Seeing (b210)

After training, students were required to complete the ICIDH-2 Checklist for each of their two clients. The parts of this checklist used in this project are shown in Appendix D. All five graduate students were instructed to apply the information obtained from the structured interview for each client, as well as any information obtained during informal direct observation or individual file review to complete Part 2 (Activity Limitations and Participation Restrictions) and Part 3 (Environmental Factors) of the checklist. All students were able to use the information obtained in the structured interview to complete the checklist without assistance. One student did demonstrate some difficulty in her willingness to complete the checklist following training. However, the difficulty she experienced was based on her need to continue with training until she felt completely confident that she understood all aspects of the Full Version of the ICIDH-2, including all definitions. This student previously demonstrated similar behavior during her graduate level aural rehabilitation class and in her clinical practicum experiences. The student was therefore provided with the greatest amount of training by the investigator.

The investigator reviewed the ICIDH-2 Checklist completed for each client to determine if the ratings given were the same as she would have given based on the answers obtained in the structured interview. There was approximately 80% agreement in the ratings. Variation in ratings was noted primarily in the category selected for rating,

not in the application of qualifiers. The investigator more readily applied other known information to the responses given by the client (hearing loss information, observation of strategy use by the client, etc.), thus applying the information more broadly. Of greater significance was the observation that the graduate students tended only to rate the categories they could easily identify from the checklist, without referencing the detailed descriptions available in the ICIDH-2 Full Version which was provided as a reference. However, given that the student clinicians were essentially inexperienced individuals, it seems logical to conclude that if they could easily use the structured interview information to complete the checklist, an experienced clinician should have little to no difficulty with the same task.

Use of the Checklist Information to Develop Aural Rehabilitation Goals

Methods, Results, & Preliminary Discussion

After completion of the Checklist for each of the 10 clients, the investigator selected 4 cases to use in the illustration of goal development. The cases were selected to provide as broad a range of client characteristics as possible. The goals developed along with the rating of the each client's *impairment, activity limitation* and *participation restriction* are presented along with a preliminary discussion.

In order to understand the use of the ICIDH-2 Checklist (WHO, 2000), it is important to first understand its structure. As stated previously in the introduction of this paper, the classification is hierarchical and is organized in two parts:(I) functioning and disability and (II) contextual factors. The Checklist has three parts; Body function (b) and structure (s), Activities and Participation (d), and Environmental factors (e). The ICIDH-2 classifies health and health related states. Detailed information regarding the hierarchy and all definitions used in the ICIDH-2 document are available in the appendices of the Full-Version of the document available on the WHO website (http://www.who.int/icidh).

The three parts of the Checklist, Part 1, usually completed from general case history and audiometric data and Parts 2 & 3, completed from the modified General Questions for Activities and Participation and the respective definitions and qualifiers are shown in Table 5.

Table 5. ICIDH-2 Checklist Definitions and Qualifiers

Section	Definition	Qualifier(s)		
PART 1a: IMPAIRMENTS of BODY FUNCTIONS (b)	Body Functions are the physiological functions of the body systems (including psychological functions) Impairments are problems in body function as a significant deviation or loss	Extent of Impairment 0 = no impairment 1 = mild 2 = moderate 3 = severe 4 = complete 8 = not specified 9 = not applicable		
PART 1b: IMPAIRMENTS of BODY STRUCTURES (s)	Body Structures are anatomical parts of the body such as organs, limbs, and their components Impairments are problems in structure as a significant deviation or loss	First Qualifier Extent of Impairment 0 = no impairment 1 = mild 2 = moderate 3 = severe 4 = complete 8 = not specified 9 = not applicable	Second Qualifier Nature of the change 0 = no change in structure 1 = total absence 2 = partial absence 3 = additional part 4 = aberrant dimensions 5 = discontinuity 6 = deviating position 7 = qualitative changes in structure, including accumulation of fluid 8 = not specified 9 = not applicable	Third Qualifier Location 0 = more than one region 1 = right 2 = left 3 = both sides 4 = front 5 = back 6 = proximal 7 = distal

Table 5. ICIDH-2 Checklist Definitions and Qualifiers (continued)

Section	Definition	Qualifier(s)	
PART 2: ACTIVITY LIMITATIONS & PARTICIPATION RESTRICTIONS (d)	Activity is the execution of a task or action by an individual. Participation is involvement in a life situation. Activity limitations are difficulties an individual may have in executing activities. Participation restrictions are problems an individual may have in involvement in life situations.	First Qualifier: Performance Extent of Participation Restriction 0 = no difficulty 1 = mild difficulty 2 = moderate difficulty 3 = severe difficulty 4 = complete difficulty 8 = not specified 9 = not applicable	Second Qualifier: Capacity (without assistance) Extent of Activity Limitation 0 = no difficulty 1 = mild difficulty 2 = moderate difficulty 3 = severe difficulty 4 = complete difficulty 8 = not specified 9 = not applicable

*The Performance qualifier describes what an individual does in his or her current environment. "DOES HE"
The Capacity qualifier describes an individual's ability to execute a task or an action. "CAN HE"

Section	Definition	Qualifiers in environment: Barriers or Facilitators	
PART 3: ENVIRONMENTAL FACTORS (e)	Environmental factors make up the physical, social and attitudinal environment in which people live and conduct their lives.	0 = no barriers 1 = mild barriers 2 = moderate barriers 3 = severe barriers 4 = complete barriers	0 = no facilitator +1 = mild facilitator +2 = moderate facilitator +3 = substantial facilitator +4 = complete facilitator

Client Information

For each client, pertinent background information is presented first, followed by a listing of the domains and/or categories that were rated using the specific verbal qualifiers for each client. The qualifying terms rather than the numerics are also given (i.e., 2 = moderate). This was done to provide the reader with a more translucent picture of the client's functioning (the reader does not have to translate each number to a qualifying statement). It should be noted that in describing body structures, the qualifying terms are presented in order; extent of impairment (if any), nature of change (if any), and location. For describing the areas of activity and participation, the first qualifier given is related to the client's capacity (limitations) and the second qualifier is related to the functioning (performance) in the current environment. Finally, recommendations and goals are given based on the ratings.

Client # 1

Background Information

This client was a 60+ year-old male who exhibited a severe, high frequency, bilateral sensorineural hearing loss at 3000Hz and above. The client did not use amplification as discussed under the participant section. The client previously attended group aural rehabilitation therapy sessions and is currently employed in a public library setting. This client lives and cares for his mother who is reportedly quite hard of hearing but in denial. This client is not married. He did not bring a significant other to the interview session.

Checklist Rating

Body Functions (b)

Sensory functions and pain (b2)

Hearing (b230) - severe impairment (3) (*note: this rating is different in severity from investigator, investigator rated as 1).

Body Structure (s)

Eye, ear and related structures (s2) –no impairment, qualitative changes in structure , both ears

Activities and Participation (d)

Learning and applying knowledge (d1)

Listening (d115) – moderate limitations in listening capacity, severe difficulty in listening performance in his current

environment.

Communication (d3)

Communicating with-receiving-spoken messages (d310) - moderate limitations in his capacity to communicate, severe difficulty in performance when receiving spoken messages in his current environment

Communication with-receiving-nonverbal messages (d320) - moderate limitations in his capacity to receive nonverbal messages (receptive sign language skills), moderate difficulty in his current environment

Conversation (d355) - mild limitations in terms of his capacity to exchange messages dynamically and interactively, through spoken, written, sign or other forms of language, currently experience moderate difficulty in his environment

Interpersonal interactions and relationships (d7)- carrying out the actions and tasks required for interactions with people in a contextually and socially appropriate manner

Basic interpersonal interactions (d710) - mild limitations, moderate difficulty in performance in his current environment

Complex interpersonal interaction (d720) - moderate limitations, severe difficulty in performance in current environment

Relating with strangers (d730) - mild limitations, severe difficulty in performance in his current environment

Formal relationships (d740) - moderate limitations, severe difficulty in performance

Informal social relationships (d750) - mild limitation, moderate difficulty in performance in current environment with other hard of hearing and late-deafed individuals

Family relationships (d760) - mild limitations, moderate difficulty with mother who is hard of hearing and in denial

Major life areas (d8) - engaging in and carrying out all of the tasks and actions required to perform in education, work and employment and economic transactions.

Informal education (d810) - mild limitations and mild difficulty when learning tasks at home or in some other non-institutional setting

School education (d820) - moderate limitations during school years

Higher education (d830) - moderate limitations and severe difficulty in performance in his present environment

Remunerative employment (850) - moderate limitations and severe difficulty when engaging in all aspects of his current work in a public library setting

Community, social and civic life (d9) - the actions and tasks required to engage in

social life outside the family

Community life (d910) - mild limitations and mild difficulty in engaging in all aspects of community social life, such as service clubs or professional social organizations

Recreation and leisure (d920) - mild limitations yet moderate difficulty in performance in current environment with other hard of hearing and late-deaf friends

Environmental factors (e)

Natural environment and human made changes to environment (e2) - the animate and inanimate elements of the natural and physical environment, and components of the environment that have been modified by people, as well as population in that environment

Sound (e250) - sounds and background noises of varying intensity and quality - severe barriers to listening

Support and relationships (e3) -people or animals that provide practical physical or emotional support, nurturing, protection, etc

Acquaintances, peers, colleagues, neighbors and community members- viewed as mild facilitators in his environment

Attitudes - (e4)

Individual attitudes of immediate family members (e410) - the general or specific opinions and beliefs of the immediate family members about the person or about other matters etc. - a mild barrier in his current situation

Societal attitudes (e460) - severe barrier in his current environment

Social norms, practices and ideologies (e465) - severe barrier in his current environment

Services, systems and policies (e5) - the structured programs, operations, services, the systems that comprise the administrative control and monitoring mechanisms, the policies that comprise the rules, regulations and standards

Legal systems, services and policies (e550)

Health systems, services and policies (e580)

Education and training services, systems and policies (e585)

Labor and employment services, systems and policies (e590)

All of the above are currently rated as severe barriers in his environment.

Goals Developed

Based on this assessment, the major goals for this client are as follows:

1. Increase client knowledge about hearing loss and hearing aid technology. Specific objectives to include counseling regarding improved hearing aid technology, further audiological assessment, determination of financial assistance for hearing aid

purchase and trial hearing aid fitting. Administration of a communication needs assessment and The Client Oriented Scale of Improvement (COSI).

Rationale: The client is not currently using amplification or assistive listening devices and perceives his current difficulties (listening d115*, communication d3)* to be greater than his actual limitations based on degree and configuration of hearing loss.

2. Participate in auditory training exercises to improve awareness of current auditory capacity in absence of visual cues.

   Rationale: The client perceives his current hearing difficulties (listening d115*, communication d3)* to be greater than his actual limitations.

3. Practice listening to spoken language in the presence of varying noise environments.

   Rationale: The client needs to develop his ability to compensate and apply repair strategies when confronted with difficult listening environments (sounds of varying intensity and quality, e250) because client indicates noise is a severe barrier in his current environment.

4. Practice use of communication strategies in structured adult, group, rehabilitation sessions in quiet and noise backgrounds.

   Rationale: The client needs to develop his spontaneous use of strategies to assist him in *communication (d3),* particularly when receiving spoken messages (d310), in conversation (d355) and when in noise backgrounds (e250) because he currently experiences more difficulty in performance than his capacity without assistance.

5. Improve receptive sign language skills.

   Rationale: The client indicates moderate difficulty with receiving nonverbal messages (d320).

6. Practice use of communication repair strategies in various role-play situations demonstrating contextually and socially appropriate manners including showing respect, warmth, appreciation, tolerance in relationships and responding to criticism and social cues in group aural rehabilitation sessions.

   Rationale: The client experiences moderate to severe difficulty in *interpersonal interactions and relationships (d7)* which are not consistent with capacity to perform based on his degree of hearing loss and communication proficiency.

7. Participate in aural rehabilitation sessions to identify assertive, aggressive and passive behaviors when informing others about hearing loss and hearing needs.
   Rationale: The client reports severe barriers in his current environment in regard to *attitudes (e4)* and *services, systems and policies (e5).*
8. Refer for psychological and rehabilitative counseling specific to hearing loss needs (available at Deaf Service Center).
   Rationale: To assist client's need to develop *interpersonal interactions and relationships (d7)* and identify specific employment and education needs (d820, d850).
9. Continue to participate in support group for hard of hearing individuals and significant others.
   Rationale: To assist the client's desire to engage in greater aspects of community social life (d910) and recreation and leisure activities (d920) due to mild to moderate difficulty in performance in his current environment.

Client # 2

Background Information

This client was a 80+ year-old male who exhibited a severe bilateral sensorineural hearing loss. The client wore binaural behind-the-ear amplification. This client previously attended group aural rehabilitation therapy sessions. He is currently retired and lives with his wife in a single-family home. The client's wife did not attend the interview session.

Checklist Rating

Body Functions (b)

Sensory functions and pain (b2)

Hearing (b230) - severe impairment

Body Structure (s)

Eye, ear and related structures (s2) - qualitative changes in structure, both ears

Activities and Participation (d)

Learning and applying knowledge (d1)

Listening (d115) - severe limitations in listening capacity, severe difficulty in listening performance in his current environment. Functions to full capacity based on auditory limitations imposed by hearing loss.

Communication (d3)

Communicating with-receiving-spoken messages (d310) - severe limitations in his capacity to communicate, severe difficulty in receiving spoken messages in his current environment. Functions to full capacity based on auditory limitations imposed by hearing loss.

Conversation (d355) - severe limitations in terms of his capacity to exchange messages dynamically and interactively, through spoken, written, sign or other forms of language, currently experiences severe difficulty in his environment.

Interpersonal interactions and relationships (d7)- carrying out the actions and tasks required for interactions with people in a contextually and socially appropriate manner

Relating with strangers (d730) - severe limitations, severe difficulty in current environment

Family relationships (d760) - moderate limitations, moderate difficulty in performance in current family settings

Intimate relationships (d770) - mild limitations in is ability maintain close relationship with his wife (may include romantic or sexual), mild difficulty in performance in his present relationship with his wife.

Major life areas (d8) - engaging in and carrying out all of the tasks and actions required to perform in education, work and employment and economic transactions.

School education (d820) - moderate limitations and moderate difficulty in his current environment (in this case applies to community educational experiences such as seniors classes).

Higher education (d830) - severe limitations and severe difficulty in present environment

Remunerative employment (850) - moderate limitations and moderate difficulty if working for payment

Community, social and civic life (d9) - the actions and tasks required to engage in social life outside the family

Community life (d910) - mild limitations and mild difficulty in engaging in all aspects of community social life, such as service clubs or professional social organizations

Recreation and leisure (d920) - moderate limitations and moderate difficulty in current environment- hearing wife and hearing and hard of hearing friends

Environmental factors (e)

Products and technology (e1) - the natural or human-made products, equipment and technology in an individual's immediate environment. Assistive Technology

as used here refers to items that are not generally available, are adapted and specialized.

Products for communication (e125) - complete facilitators in his current environment. Television listening device in his home environment facilitates performance (does not apply to the telephone- see e535 below).

Natural environment and human made changes to environment (e2) - the animate and inanimate elements of the natural and physical environment, and components of the environment that have been modified by people, as well as population in that environment

Sound (e250) - sounds and background noises of varying intensity and quality - severe barriers to listening

Support and relationships (e3) -people or animals that provide practical physical or emotional support, nurturing, protection, etc

Immediate family (e310) - wife and children are viewed as complete facilitators in his environment.

Acquaintances, peers, colleagues, neighbors and community members- viewed as mild facilitators in his environment

Attitudes - (e4)

Societal attitudes (e460) - moderate barrier in his current environment

Social norms, practices and ideologies (e465) - moderate barrier in his environment.

Services, systems and policies (e5) - the structured programs, operations, services, the systems that comprise the administrative control and monitoring mechanisms, the policies that comprise the rules, regulations and standards

Communication services, systems and policies (e535) - included telephone and telephone relay services, post office and those who provide the services - severe barrier in his environment

Education and training services, systems and policies (e585) - includes services and programs concerned with acquisition, maintenance, and improvement of knowledge, expertise and vocational or artistic skills - severe barrier in current environment

Labor and employment services, systems and policies (e590) - related to finding suitable work for those who are unemployed - moderate barrier in his environment.

<u>Goals Developed</u>

Based on this assessment, the major goals for this client are as follows:

1. Develop synthetic speechreading skills in the combined auditory and visual modes in quiet and noise environments.

Rationale: The client's is auditory performance in his environment is consistent with auditory capacity, functions with severe difficulty during listening (d115) and when noise in present (e250).

2. Practice use of communication strategies in structured adult, group, rehabilitation sessions in quiet and noise backgrounds.

   Rationale: The client needs to develop his spontaneous use of strategies to assist him when receiving spoken messages (d310), in conversation (d355), in *interpersonal interactions and relationships (d7)* and when in noise backgrounds (e250). He currently experiences severe difficulty in performance.

3. Continue group aural rehabilitation sessions to
   a) develop assertive behaviors through participation in role-plays and
   b) share positive communication situations

   Rationale:
   a) to assist the client in securing services in regard to communication (e535), education (e585), and employment (e590) which he indicates are severe barriers in his current environment.
   b) to illustrate facilitators in *one's environment (e1)*

4. Continue to participate in support group for hard of hearing individuals and significant others.

   Rationale: To assist the client's desire to engage in greater aspects of community social life (d910) and recreation and leisure activities (d920) due to mild to moderate difficulty in performance in his current environment.

Client #3

Background Information

This client was a 70+ year-old female who exhibited a profound bilateral mixed hearing loss. The client did not use amplification as discussed under the participant section. The client previously attended group aural rehabilitation therapy sessions. She is currently unemployed. She is widowed and lives alone in an apartment complex setting. This client did not bring a significant other to the interview session.

<u>Checklist Rating</u>

Body Functions (b)

Sensory functions and pain (b2)

Hearing (b230) - complete impairment

Pain (b280) - not specified

Neuromusculoskeletal and movement related functions (b7)

Mobility of joint (b710) - severe impairment

Body Structure (s)

Eye, ear and related structures (s2) - complete impairment, total absence(bilateral fenestration surgery), complete deterioration of middle ear structures, both ears

Activities and Participation (d)

Learning and applying knowledge (d1)

Listening (d115) - limitations in listening capacity were not specified, complete difficulty in listening performance in her current environment.

Community, social and civic life (d9) - the actions and tasks required to engage in social life outside the family

Community life (d910) - mild limitations and mild difficulty in engaging in all aspects of community social life, such as service clubs or professional social organizations

Recreation and leisure (d920) - mild limitations and mild difficulty in current environment - interacts with hearing and hard of hearing friends

Religion and spirituality (d930) - mild limitations and mild difficulty when engaging in religious activities such as attending church,

Human rights (d940) - mild limitations and mild difficulty with enjoying rights that are accorded to people by virtue of their humanity alone, the right to control over one's destiny

Political life and citizenship (d950) - mild limitations and mild difficulty In enjoying the rights, protections, privileges and duties associated with the right to vote, run for political office, etc.

Environmental factors (e)

Attitudes - (e4)

Societal attitudes (e460) - general or specific opinions and beliefs generally held by people of a culture, society, or other social group -moderate barrier in her current environment, suggesting negative practices (i.e., stigmatizing, stereotyping and marginalizing or neglect of the person)

<u>Goals Developed</u>

Based on this assessment, the major goals for this client are as follows:

1. Develop synthetic speechreading skills using tactile cues provided through use of a vibrotactile device during individual speechreading sessions.
   <u>Rationale</u>: The client's auditory performance indicates complete difficulty in listening (d115) and complete loss of hearing (b230), therefore, important to provide tactile information to supplement lipreading alone.
2. Continue enrollment in sign language classes for late-deafened adults.
   <u>Rationale</u>: The client's auditory performance indicates complete difficulty in listening (d115) and complete loss of hearing (b230). Information obtained by lipreading alone suggests 30% to 50% comprehension of spoken language at best.
3. Continue to participate in support group for late-deafened individuals.
   <u>Rationale</u>: To assist the client's desire *to engage in greater aspects of community social and civic life (d9).*
4. Continue psychotherapy sessions offered through Deaf Service Center with real-time captioning provided.
   <u>Rationale</u>: Client needs a means to deal with societal attitudes or others in her environment as it relates to her deafness.

Client #4

<u>Background Information</u>

This client was a 60+ year-old female who exhibited a severe bilateral sensorineural hearing loss. The client wore binaural behind-the-ear amplification during the interview process. This client previously attended group aural rehabilitation therapy sessions. She lives with her husband in a single-family dwelling and is retired. The client did not bring her husband to the interview session.

<u>Checklist Rating</u>

Activities and Participation (d)

Learning and applying knowledge (d1)

Listening (d115) - mild limitations in listening capacity, moderate difficulty in listening performance in his current

environment.

General tasks and demands (d2) - relates to aspects of carrying out single or multiple tasks, organizing routines and handling stress.

Undertaking a single task (d210) - mild limitations in her capacity to complete a task without assistance but moderate difficulty in her current environment

Communication (d3)

Communicating with-receiving-spoken messages (d310) - mild limitations in her capacity to communicate, moderate difficulty in receiving spoken messages in her current environment.

Conversation (d355) - mild limitations in terms of her capacity to exchange messages dynamically and interactively, through spoken, written, sign or other forms of language, currently experiences moderate difficulty in her current environment.

Interpersonal interactions and relationships (d7)- carrying out the actions and tasks required for interactions with people in a contextually and socially appropriate manner

Basic interpersonal interactions (d710) - mild limitations, mild difficulty in her current environment

Complex interpersonal interaction (d720) - mild limitations with moderate difficulty in current environment

Relating with strangers (d730) - mild limitations, moderate difficulty in her current environment

Formal relationships (d740) - mild limitations, moderate difficulty

Informal social relationships (d750) - mild limitation, moderate difficulty in current environment with hearing individuals

Family relationships (d760) - mild limitations, mild difficulty with family in current environment

Intimate relationships (d770) - mild limitation in her ability to maintain close relationship with her husband (may include romantic or sexual relationships), mild difficulty in performance in her present relationship with her husband

Goals Developed

Based on this assessment, the major goals for this client are as follows:

1. Participate in hearing aid orientation sessions. Specific objectives to include telephone training with amplification, assistance with use of hearing aid programming options and assistance with proper insertions techniques for behind-the-ear hearing aids.

Rationale: Client needs to improve her use and understanding of new programmable hearing aids (difficulty with insertion noted through direct client information and limited knowledge regarding use was noted during initial therapy session conversation).

2. Referral for medical assessment.

   Rationale: Client has greater difficulty in communicating-receiving-spoken messages (d310) and in conversation (d355) than her capacity without assistance. Rule-out possible memory problems or transient ischemic attacks (mini-strokes). *It is interesting to note that the investigator rated this under b144, the category for difficulty in registering and storing information and retrieving it as needed that was not consistent with age of client. The student clinician rated as indicated above.*

3. Participate in auditory training exercises to improve awareness of current auditory capacity in absence of visual cues.

   Rationale: The client perceives her current hearing difficulties (listening, d115) to be greater than her actual limitations.

4. Participate in support group for hard of hearing individuals and significant others.

   Rationale: The client perceives difficulties with interpersonal relationships (formal relationships, d740 and informal social relationships, d750) greater than her actual limitations.

5. Refer for psychological counseling available at Deaf Service Center.

   Rationale: To assist client's need to develop *interpersonal interactions and relationships (d7)*, specifically family relationships (d760) and intimate relationships (d770).

Discussion and Summary

The primary purpose of this project was to examine the use of the ICIDH-2 Checklist and modified interview questions in rehabilitative audiology. The first step in accomplishing this goal was to modify the General Questions used in the structured interview to be directly applicable to individuals with hearing loss. With these modifications, the application of the structured interview to 10 adults with hearing loss

provided useful information for completion of the clinician checklist. Thus it can be concluded that the results of this project support the use of questions developed to focus specifically on hearing and presented in Table 3 as an effective means of obtaining client data necessary for completion of the ICIDH-2 Checklist.

The interview and checklist portions of the project were completed by graduate student clinicians in Speech-Language Pathology and Audiology. Their participation is noteworthy, as they had relatively little experience with completing this type of clinical task. The fact that the student clinicians had the ability to complete the interview and checklist with little assistance, suggests that the use of the ICIDH-2 by experienced clinicians should be a relatively easy task.

It is important to note that although practicing clinicians may have little difficulty with obtaining information using a structured interview format and completing the checklist, it is possible that they will need training in using the information to generate goals and make appropriate recommendations. Initially, it was thought that the graduate student clinicians could generate the goals for each of the clients. An initial attempt was made to do this. After review of the first student generated goals, it was determined that the students would need a great deal more support before they could complete such a task without significant assistance from a more experienced clinician. Thus the goals for the selected clients were written by the investigator.

Developing goals and recommendations using the revised ICIDH-2 was a relatively easy task. By simply examining the ratings given for particular categories, several goals were generated for each client. For example, when ratings given in terms of "performance" of activities in Part 2, Activity Limitations & Participation Restriction, were compared to ratings given for “capacity” to engage in specific activities, it was easy to identify several important areas of need for each client.

> Client #1, who was rated as having moderate difficulty (2) in "performance" during conversation (d355), was also rated mild (1) in terms of his "capacity" to converse without assistance in structured settings (code = d355.21). A goal was generated for use of communication strategies when conversational breakdown occurs to assist the client in establishing conversational fluency.

Development of goals could include referrals to services in other areas in communication disorders (such as the need to learn the basics of sign language), or to referrals to other resources (such as use of a real-time captioning for the classroom).

This project incorporating the use of the revised ICIDH-2 in development of aural rehabilitation goals is consistent with the "components of health" classification. "Components of health" define what constitutes health, not the consequences that follow as a result of a disease or disorder condition. Thus, applied to hearing, the focus is on what the individual can and does do in his current life situation versus what the individual cannot do as a consequence of hearing loss.

Use of the ICIDH-2 moves the focus of audiology from the medical model of disability to a more rehabilitative model. In has been standard practice to describe an individual's hearing performance from audiometric data alone. The ICIDH-2 allows the audiologist to qualifying how the person with hearing loss functions in his current life situation. Complex communicative behaviors and adjustment to hearing loss are easily identified and qualified using the ICIDH-2. Identification of needs, recommendations, and goal planning can be easily accomplished using a structured interview format and clinician checklist. Results are directly related to the individual's quality of life in their current situation. In addition, after rehabilitative services have been provided, the checklist could again be completed. In this sense, use of the ICIDH-2 has the potential to become a useful outcomes measure. In the field of audiology, the need for the use of generic outcome measures to secure reimbursement for services provided through third party payers remains. However, further research is needed to validate the usefulness of the ICIDH-2 Checklist as an outcome measure.

In conclusion, the ICIDH-2 is recognized by the current investigator as a useful tool when applied in rehabilitative audiology. The use of the structured interview and completion of the Checklist are relatively easy tasks, and even inexperienced clinicians should be able to incorporate these facets into their practice with relative ease. It will be important, however, to become familiar with the terminology utilized in the Checklist. To achieve this goal, clinicians will initially need to refer to the Full version of the ICIDH-2. Thus, there will be a learning curve in the use of the instrument. It may be appropriate to

develop workshops to be given at professional meetings or computer-based training programs, to increase learning rates. Once audiologists understand the Checklist components, it will be relatively simple for them to develop recommendations and goals for clients that focus on improving quality of life.

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Appendix A. Clinician Instructions

You are being asked to collect information from clients using the attached interview questionnaire. The purpose is to assist you in planning individual aural rehabilitation goals. These questions were developed as part of the revision of the World Health Organization's International Classification of Impairment, Disability, and Handicap (ICIDH-2). For each question, the underlined item represents a guide to assist you in interviewing the client about problems in functioning in terms of participation in society and in daily-life activities. Graduate students assisted in the development of the rephrasing of questions to relate the items to hearing impairment and hearing loss. You will be video/audio-taped during the interview process to allow for verification of client responses following the interview if needed. You will complete this questionnaire for two clients during your normal therapy time. Please review the questionnaire and let me know if you have any questions?

Appendix B. Participant Instructions

The clinicians will ask you to answer a series of 18 questions. If you do not understand a question or experience a communication breakdown, feel free to ask the clinician to clarify for you. We are videotaping/audio-taping in order for the clinician to check the accuracy of his/her data collection in response to your answers. We appreciate your cooperation and thank you in advance for your participation. Do you have any questions before we begin?

Appendix C: Modified General Questions for Participation and Activities Appendix 2 of the ICIDH-2 Checklist (WHO, 1999)

Underlined items represent a guide to assist the examiner in interviewing the respondent about problems in functioning in terms of participation in society and in daily life activities. Probes should be rephrased as open-ended questions if necessary to elicit greater information.

1. Do you get adequate heath care?
   In regard to your hearing loss, tell me about your health care.
2. Do you have insurance? What kind: private, public, health, rehabilitation?
   How does your insurance cover your needs as someone with a hearing loss?
3. Do you have a pension? Which type: age, disability, others?
   Describe your retirement income.
4. What type of a place do you live in? (house, apartment, nursing home, etc)
   What are your living arrangements? Do you live in a house, an apartment, or in an assisted living facility or other setting?
5. Do you have a family or group of people with whom you live? How are your relationships with members of your family?
   Whom do you live with? What situations do you have the most difficulty with in living with them?
6. How do you get along with your friends/colleagues with whom you have regular contacts?
   Do you get along with friends, family, caregivers, and coworkers? How does your hearing loss affect communication with them?
7. Do you find it difficult to move around? Do you have problems in using public transport? Or your own personal vehicle?
   Does your hearing loss cause difficulty or problems when traveling or getting around town?
8. Do you have any problems with looking after your personal cleanliness or in dressing? What problems do you have in regard to dressing or personal cleanliness as it relates to use of hearing aids, cochlear implant or assistive devices?
9. Do you have any problems with household activities, such as cleaning house, washing dishes, and similar chores?
   Do you have any problems with household activities due to your hearing loss?
10. Are you in a training or academic course? Is the school course or program sensitive to your needs? If in any type of training or school, does your hearing loss cause difficulty? Does the school/work place assist you in your listening needs?
11. Do you have a paid job? Have you had problems getting a job or keeping a job?
    Tell me about your work? Do you get paid for your work? Have you had problems getting a job or concern with keeping your job?

12. Do you have any financial problems? Are you financially okay?
    Does your hearing loss affect your financial situation? Is your hearing loss affecting you financially?

Appendix C. (continued)

13. Do you engage in any sports, games or other recreational activities?
    What do you do for fun? Would other activities would you like to engage in? Does your hearing loss affect your performance in any sports, games or other recreational activities?
14. Do you involve yourself with any organization/association: recreational, religious, self-help, etc.?
    Does your hearing loss affect your involvement in organizations or associations? Are you involved in organizations/associations or support groups for individuals with hearing loss?
15. Do you have any health condition that you feel you hide from others? Do you hide your hearing loss from others? Can you describe in what situations?
16. Do you ever feel insulted by the attitudes of other people towards your health condition?
    How do you feel others perceive hearing loss?
17. Have you ever been prevented from doing what you would like to do because of social attitudes, (i.e. avoidance, discrimination) by the law or other environmental barriers?
    What social events do you avoid due to your hearing loss? What ways do you find your life restricted because of your hearing loss?
18. Are you prevented from voting?
    Do you encounter any problems when voting because of your hearing loss? Does your hearing loss have any effect on your ability to vote?

Appendix D. Checklist Parts 2 and 3

ICIDH-2 CHECKLIST
Version 2.1a, Clinician Form
for International Classification of Functioning, Disability and Health
(ICIDH-2, Prefinal Draft, December 2000)

This is a checklist of major categories of the International Classification of Functioning, Disability and Health (ICIDH-2 Prefinal Draft, December 2000) of the World Health Organization . The ICIDH-2 Checklist is a practical tool to elicitand record information on the functioning and disability of an individual. This information can be summarized for caserecords (for example, in. clinical practice or social work). The checklist should be used along with the ICIDH-2 PrefinalDraft, December 2000.

When completing this checklist, use all information available. Please check those used:
[1] written records [2] primary respondent [3] other informants [4] direct observation

If medical and diagnostic information is not available it is suggested to complete appendix 1: Brief Health Information (p 9-10) which can be completed by the respondent.

PART 2: ACTIVITY LIMITATIONS & PARTICIPATION RESTRICTION

- *Activity is the execution of a task or action by an individual.. Participation is involvement in a life situation.*
- *Activity limitations are difficulties an individual may have in executing activities. Participation restrictions are problems an individual may have in involvement in life situations.*

The Performance qualifier describes what an individual does in his or her current environment. Because the current environment brings in the societal context, performance can also be understood as "involvement in a life situation"or "the lived experience" of people in the actual context in which they live. This context includes the environmental factors – all aspects of the physical, social and attitudinal world that can be coded using the Environmental Factors.

The Capacity qualifier describes an individual's ability to execute a task or an action. This construct indicates the highest probable level of functioning that a person may reach in a given domain at a given moment. Given their health condition to precisely assess the ability of the individual, one would need to have a "standardized" environment to neutralize the varying impact of different environments on the ability of the individual. As standardized environment may be: (a) an actual environment commonly used for capacity assessment in test settings; or (b)where this is not possible, a hypothetical environment a uniform impact.

Note: Use Appendix 2 if needed to elicit information on the Activities and Participation of the individual.

Appendix D. (continued)

First Qualifier: ***Performance*** ***Extent of Participation Restriction***	**Second Qualifier:** ***Capacity (without assistance)*** ***Extent of Activity limitation***
0 No difficulty **1** Mild difficulty **2** Moderate difficulty **3** Severe difficulty **4** Complete difficulty **8** Not specified **9** Not applicable	**0** No difficulty **1** Mild difficulty **2** Moderate difficulty **3** Severe difficulty **4** Complete difficulty **8** Not specified **9** Not applicable

Short List of A&P domains	***Performance Qualifier***	***Capacity Qualifier***
d1. LEARNING AND APPLYING KNOWLEDGE		
d110 Watching		
d115 Listening		
d140 Learning to read		
d145 Learning to write		
d150 Learning to calculate *(arithmetic)*		
d175 Solving problems		
d2. GENERAL TASKS AND DEMANDS		
d210 Undertaking a single task		
d215 Undertaking multiple tasks		
d3. COMMUNICATION		
d310 Communicating with -- receiving -- spoken messages		
d320 Communicating with -- receiving -- non-verbal messages		
d330 Speaking		
d335 Producing non-verbal messages		
d355 Conversation		
d4. MOBILITY		
d430 Lifting and carrying objects		
d440 Fine hand use *(picking up, grasping)*		
d450 Walking		
d465 Moving around using equipment *(wheelchair, skates, etc.)*		
d470 Using transportation *(car, bus, train, plane, etc.)*		
d475 Driving (riding bicycle and *motorbike, driving car, riding animals, etc.)*		
d5. SELF CARE		
d510 Washing oneself *(bathing, drying, washing hands, etc)*		
d520 Caring for body parts *(brushing teeth, shaving, grooming, etc.)*		
d530 Toileting		
d540 Dressing		
d550 Eating		
d560 Drinking		

Appendix D. (continued)

d6. DOMESTIC LIFE		
d620 Acquisition of goods and services *(shopping, etc.)*		
d630 Preparation of meals *(cooking etc.)*		
d640 Doing housework *(cleaning house, washing dishes laundry, ironing, etc.)*		
d660 Caring for others		
d7. INTERPERSONAL INTERACTIONS AND RELATIONSHIPS		
d710 Basic interpersonal interactions		
d720 Complex interpersonal interactions		
d730 Relating with strangers		
d740 Formal relationships		
d750 Informal social relationships		
d760 Family relationships		
d720 Complex interpersonal interactions		
d770 Intimate relationships		
d8. MAJOR LIFE AREAS		
d810 Informal education		
d820 School education		
d830 Higher education		
d850 Remunerative employment		
d860 Basic economic transactions		
d870 Economic self-sufficiency		
d9. COMMUNITY, SOCIAL AND CIVIC LIFE		
d910 Community Life		
d920 Recreation and leisure		
d930 Religion and spirituality		
d940 Human rights		
d950 Political life and citizenship		
ANY OTHER ACTIVITY AND PARTICIPATION		

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Appendix D. (continued)

PART 3: ENVIRONMENTAL FACTORS

- Environmental factors *make up the physical, social and attitudinal environment in which people live and conduct their lives.*

Qualifier in environment:
Barriers or facilitator

Barriers	Facilitators
0 No	**0** No
1 Mild	+**1** Mild
2 Moderate	+**2** Moderate
3 Severe	+**3** Substantial
4 Complete	+**4** Complete

Short List of Environment	*Qualifier Barrier*	*Qualifier facilitator*
e1. PRODUCTS AND TECHNOLOGY		
e110 For personal consumption *(food, medicines)*		
e115 For personal use in daily living		
e120 For personal indoor and outdoor mobility and transportation		
e125 Products for communication		
e150 Products of design, building and construction for public use		
e155 Products of design, building and construction for private use		
e2. NATURAL ENVIRONMENT AND HUMAN MADE CHANGES ENVIRONMENT		
e225 Climate		
e240 Light		
e250 Sound		
e3. SUPPORT AND RELATIONSHIPS		
e310 Immediate family		
e320 Friends		
e325 Acquaintances, peers, colleagues, neighbors and community members		
e330 People in position of authority		
e340 Personal care providers and personal assistants		
e355 Health professionals		
e360 Health related professionals		
e4. ATTITUDES		
e410 Individual attitudes of immediate family members		
e420 Individual attitudes of friends		
e440 Individual attitudes of personal care providers and personal assistants		
e450 Individual attitudes of health professionals		
e450 Individual attitudes of health related professionals		
e460 Societal attitudes		
e465 Social norms, practices and ideologies		
E5. SERVICES, SYSTEMS AND POLICIES		
e525 Housing services, systems and policies		
e535 Communication services, systems and policies		
e540 Transportation services, systems and policies		
e550 Legal services, systems and policies		

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Appendix D. (continued)

Short List of Environment	***Qualifier Barrier***	***Qualifier facilitator***
e570 Social security, services, systems and policies		
e575 General social support services, systems and policies		
e580 Health services, systems and policies		
e585 Education and training services, systems and policies		
e590 Labour and employment services, systems and policies		
ANY OTHER ENVIRONMENTAL FACTORS		

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BIRTH PLACE Buffalo, New York

MARITAL STATUS Married

CHILDREN Laura (age 14)
Matthew (age 12)
Grant (age 12)

EDUCATION

University of South Florida
Tampa, Florida 1999
Acceptance in AuD Program
Audiology/Aural Rehabilitation

University of South Florida
Tampa, Florida 1997
Initial Second Master's Study
hours completed
Major: Speech Pathology

Ball State University
Muncie, Indiana 1980
Master of Arts
Major: Audiology

Ball State University
Muncie, Indiana 1976
Bachelor of Arts
Major: Speech Pathology and Audiology
Minor: Educational Psychology

SUNY College at Fredonia
Fredonia, New York 1974
Completed 2 years

APPOINTMENTS

University of South Florida
Communication
Audiology Clinical Instructor, Communication Disorders Center. Supervision in audiologic rehabilitation, audiology diagnostics and involved in developed of cochlear implant program.

Bolesta Center, Inc.
Part-time audiology services.

Audiology Clinical Instructor**,** University of South Florida, 1989-1993.

Audiologist, HRS and Children's Medical Services of Hillsborough County, Tampa, Florida, 1988-1989.

Adjunct instructor, speech-language pathology and audiology undergraduate program, University of South Florida, Tampa, Forida, spring semester 1988.

Educational Audiologist, Hillsborough County Public Schools, Tmpa, Florida 1985-1986.

Speech-language clinician, Hillsborough County Public Schools, Tampa, Florida 1984.

Contract audiologist, Texas Christain University, Miller Seech and Hearing Clinic, Fort Worth, Texas, part-time 1982.

Speech-language clinician/audiologist, Regional Day School Program for the Deaf, Fort Worth, Texas, 1981-1984.

Educational audiologist, Fort Worth Independent School District, Fort Worth, Texas, 1979-1981.

Speech-language clinician, Fort Worth Independent School District, Fort Worth, Texas, 1977-1979.

SERVICE AND CREATIVE ACTIVITY

Involved in organization and development of the Tarrant County Association for Hearing Impaired Children and served as Chairman of the Board for Tarrant County Society for Hearing Impaired Infants and Youth, Inc.,

Presentations for Parent-Infant meetings, Hillsborough County Public Schools. Provided support and counseling for involved families.
Program Chair for FLORIDA SPEECH, LANGUAGE, AND HEARING ASSOCIATION convention in conjunction with Hillsborough County Public Schools. May 1991.

Submitted and accepted for presentation for FLORIDA SPEECH, LANGUAGE, AND HEARING ASSOCIATION convention May 1992.

Member Sertoma (Charter - Health professionals) 1991.

Participant in Central Florida Audiology Study Group, 1991.

MEMBERSHIPS

Current memberships in American Speech, Language, and Hearing Association, American Academy of Audiology, Florida Speech, Language, and Hearing Association. Past memberships included Alexander Graham Bell Association, Shhh, Kappa Delta Pi and Delta Kappa Gamma Educational Societies, Educational Audiologists Association, Florida State Teachers Association, Texas State Teachers Association, and Fort Worth Classroom Teachers Association. Past provisional member of Tampa Junior Women's Club.