

Assessment of Communication Disorders in Children

Resources and Protocols

THIRD EDITION

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M. N. Hegde, PhD
Frances Pomaville, PhD
California State University, Fresno





5521 Ruffin Road
San Diego, CA 92123

e-mail: info@pluralpublishing.com
Website: <http://www.pluralpublishing.com>

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Preface

The third edition of this book, *Assessment of Communication Disorders in Children*, is a companion volume to the second edition of the *Assessment of Communication Disorders in Adults* (Hegde & Freed, 2017). Together, these two texts provide a comprehensive set of resources and protocols for assessing both children and adults with communication disorders. The two books share the same clinical philosophy: Clinicians need both scholarly information on disorders of communication and practical protocols for assessing them.

Clinicians typically find that they have to seek scholarly and background information on assessment in one source and practical assessment tools in another. Most background information on assessment techniques are to be found in more traditionally written textbooks on assessment. More practical assessment tools are typically presented in resource books. Clinicians often find this an inefficient arrangement to gain access to both scholarly background and practical procedures of assessment. Sometimes, the different sources that clinicians have to access may be somewhat inconsistent with each other, creating further problems of integration and validation. Therefore, to solve these practical and technical problems, we have designed an assessment book that includes two chapters each on the most commonly assessed communication disorders in children: one to provide the scholarly background and the other to give practical assessment protocols. Thus, in a single source, the clinicians can find both scholarly information and practical protocols to assess speech, language, fluency, voice disorders, as well as nonverbal communication in children with limited verbal skills. We have also written a single chapter on literacy skills that offers both the background information and assessment parameters and procedures, and a single chapter introducing assessment for augmentative and alternative communication (AAC) systems.

This book, similar to the companion volume, *Assessment of Communication Disorders in Adults* (Hegde & Freed, 2017), has an initial section on the *foundations of clinical assessment*. This section includes chapters on common assessment procedures and major assessment matters and issues. The first chapter gives the outline of a basic assessment procedure. The second chapter then offers all the protocols commonly used in assessing most, if not all, disorders of communication in children. This section includes additional chapters on assessment based on standardized tests, assessment of ethnoculturally diverse children, and alternative assessment procedures, along with a model that integrates alternative and traditional approaches. All chapters offer extensive background information and critical reviews of major issues.

A unique philosophy that has guided the writing of this book is that the *alternative and traditional assessment procedures need to be integrated in assessing all children—including mainstream children*. We do not believe that traditional assessments are good for all children, and do believe that alternative procedures are needed for some children. Certain fundamental limitations of standardized tests do not disappear when they are administered to mainstream children. Many alternative procedures are designed to overcome the limitations of standardized tests and those limitations are evident even when the tests are administered to children included in the standardization sample (mainstream or culturally diverse). Most alternative procedures have additional strengths that will enhance the

reliability and validity of assessment data obtained on any child, not just an ethnoculturally diverse child. We have added behavioral assessment as an additional alternative approach, a well-established method in applied behavior analysis, but somewhat new to most speech-language pathologists. Behavioral assessment offers several distinct advantages over the traditional linguistically oriented approach popular in speech-language pathology. Our chapter on alternative assessment procedures not only reviews extensive information on alternative procedures, but also describes a model of assessment that integrates the strengths of the traditional approach with those of the various alternative approaches.

The first chapter on each disorder, called the *Resource* chapter, is a review of scholarly information on assessment, the kind typically found in traditional textbooks. The chapter gives the research base on the normal skill development when relevant, describes the disorder and its classification, summarizes etiologic information, specifies any associated clinical conditions, and gives a descriptive overview of assessment. Each Resource chapter offers critical review of issues related to assessing the particular disorder. In addition, the chapter includes a description of diagnostic criteria, differential diagnosis, and probabilistic prognostic statements. All Resource chapters include a section on postassessment counseling, in which the clinician gives the parents or other caregivers the assessment results and answers their questions. The most frequently asked questions and the clinician's answers are written in a dialogue format that the student and the beginning clinician can model after.

The second chapter on each disorder and on augmentative and alternative communication is a collection of detailed, as well as *practical and precisely written*, Protocols to make complete and valid assessments. The protocols go beyond the typical resources offered to speech-language pathologists. Most protocols are detailed enough to be used immediately in assessing any child with a communication disorder. All protocols may be individualized on the companion website and printed out for clinical use. In addition, the common and standard assessment protocols given in Chapter 2 may be combined with specialized protocols given in the respective chapters on disorders of speech, language, fluency, voice, and on alternative and augmentative communication. Therefore, with the help of resources and protocols given in the book and the companion website, the clinician can develop child-specific, individualized assessment packages that can be easily and readily used during assessment sessions.

For this third edition, we have updated assessment research and tools throughout the book. All chapters and protocols have been revised as found necessary. New research on assessment techniques and approaches has been summarized.

We would also like to thank Valerie Johns for her excellent editorial support, and Kalie Koscielak for the fine production of this book. As always, Plural Publishing's President Angie Singh's behind-the-scene support is greatly appreciated.

Creating Child-Specific Assessment Packages with Protocols on the Companion Website

Assessment protocols are detailed forms clinicians can use to complete specific diagnostic tasks. These protocols are time-saving devices for the clinician. The accompanying website contains all the standard protocols: the child case history form, the orofacial examination and hearing screening form, and the assessment report outline. These protocols are essential in assessing all children with any disorder of communication.

The *companion website* also contains protocols included in various *protocol chapters* in the book. These specific protocols help assess speech sound production and phonological patterns, various language skills, fluency disorders, voice disorders, and nonverbal and minimally verbal children. Although the protocols are offered as detailed procedures in specific formats, we emphasize that assessment is a dynamic process. No procedure can be applied to a child without modifications. Tailoring assessment procedures to suit the individual child and the family requires both creativity and scholarship; in fact, this is one of the themes of the book. Therefore, we do not expect the clinician to photocopy the protocols from the printed book and use them during assessment. Instead, we expect the clinician to modify the protocols on the *companion website* to suit an individual child and family, print them out, and use them during assessment. Even as they use printed forms during assessment, clinicians will modify certain procedures, change the wordings of questions to be asked, and alter the manner in which information is given to the families.

Individualizing a protocol is accomplished with relative ease because the bulk of the information on the *companion website* will be relevant to most children and families. A few additions and deletions may help individualize each protocol for a specific child. The clinician can also type in the name of the school or clinic, along with all the identifying information needed (e.g., the name and address of the child and the parents, name of the clinician, the date of assessment, etc.). Therefore, the protocols can easily be converted into the clinician's stationery formats. When filled out and printed, they will be appropriate to be placed in a child's clinical folder.

In addition to an opportunity to individualize the protocols, clinicians are also offered the possibility of *putting together a comprehensive assessment package for a child* efficiently and relatively quickly. The clinician can select the protocols needed for a given child's assessments, individualize them, and print them for clinical use. This feature is especially useful when a child needs to be assessed for multiple communication disorders. For example, for a child who exhibits both a speech sound and a language disorder, the clinician may print out all the basic protocols plus the several speech and language protocols. For a child with a diverse ethnocultural background, the clinician may print out the specific speech and language protocols given in Chapters 6 and 8 and attach them to all the other protocols used.

An additional advantage of the protocols is that several of them *help assess speech and language skills without the use of those standardized tests* that may not be appropriate for certain children. For example, the clinician can assess apraxic or dysarthric speech

features and the production of grammatic morphemes, basic vocabulary, conversational skills, and so forth with protocols designed in the manner of criterion-referencing without normative comparisons.

We encourage clinicians to freely individualize and use the practical and time-saving protocols to design a child-specific and comprehensive assessment packages. The assessment report outline given on the *companion website* will further expedite the task of writing an assessment report.

PART

I

**Foundations of
Assessment**



CHAPTER 1

Assessment of Communication Disorders in Children

- Assessment, Evaluation, and Diagnosis
- Written Case History
- The Initial Clinical Interview
- Hearing Screening
- Orofacial Examination
- Diadochokinetic Tasks
- Speech-Language Sample
- Standardized Assessment Instruments
- Alternative and Integrative Assessment Procedures
- Assessment of Nonverbal and Minimally Verbal Children
- Assessment of Literacy Skills
- Stimulability
- Postassessment Counseling
- Assessment Report
- Chapter Summary
- Study Questions
- References

No communication disorder may be effectively treated without a thoughtful assessment. Treatment is a systematic effort to change an existing condition, and assessment is a first step to determine what needs to be changed, and if possible, why. In medicine, diagnosis of the disease precedes treatment; in communication and other behavioral disorders, efforts designed to understand the nature of the problem precedes treatment.

Treatment may not be offered unless the clinician knows what exactly to treat. On the other hand, treatment may be more effective if the cause of a disorder can be determined. Generally, causes may be better inferred or demonstrated for physical diseases than for communication disorders, especially for the commonly treated speech sound and language disorders in children. A highly correlated clinical condition such as a cleft of the palate, traumatic or congenital brain injury, autism, or similar disorders may suggest causation of communication disorders but, in fact, both the clinical condition and the communication disorder are coexisting conditions. Potential causes of communication disorders, especially of those characterized as *functional*, are inferred, rather than experimentally demonstrated.

Assessment, Evaluation, and Diagnosis

Because of the difficulty in establishing the causes of communication disorders in many cases, speech-language pathologists typically use the term *diagnosis* in a restricted sense. Strictly speaking, diagnosis specifies a cause of a set of symptoms, but because such specification is impractical in many cases of communication disorders, diagnosis often means naming the disorder (e.g., language disorders, stuttering) and describing its characteristics with or without speculation about its causes. Speech-language pathologists have preferred to describe a set of pretreatment activities as assessment or evaluation. The term *assessment* means *to determine the value of something*. But as used in speech-language pathology, assessment is inclusive of several kinds of clinical activities that result in: naming the communication disorder of a client (diagnosis), making statements about prognosis for improvement with or without treatment, and offering recommendations for communication treatment, additional assessment, or other kinds of specialized services. The term *evaluation* is often used interchangeably; we make no distinction between *assessment* and *evaluation* in this book. We use the term diagnosis in the restricted sense of naming the disorder and determining its parameters (characteristics).

Communication disorders may be diagnosed in a different sense, too. Although it may be difficult to specify why a child has not acquired speech sounds or language behaviors, it may be possible to find out what maintains the child's current appropriate or inappropriate verbal repertoire. The maintaining causes of the disorders may be studied by what is known as a *functional analysis* in applied behavioral science (Duker, 1999; B.E. Esch, LaLonde, & J. Esch, 2010; Kelley, Shillingsburg, Castro, Addison, & LaRue, 2007; Lerman et al., 2005; Maul, Findley, & Adams, 2016). This kind of functional analysis (assessment) has been demonstrated to be useful in diagnosing the maintaining or currently controlling variables of verbal behaviors of the kind specified by Skinner (1957). Furthermore, an identification of maintaining causes helps design an effective treatment procedure. Regrettably, most speech-language pathologists, being linguistically oriented by their training, have not included a functional analysis in their assessment of communication disorders. The traditional assessment helps identify what needs to be taught, but it

does not suggest what might be an effective treatment procedure. We describe the highly useful functional assessment in Chapter 4 on alternative assessment approaches and in Chapter 7 on assessing language skills in children.

Historically, the term *diagnosis* was more commonly used than *assessment*. The classic books of this kind were likely to be called *diagnosis in speech-language pathology* (Darley, 1964; Darley & Spriestersbach, 1978). Even if tentative, subject to later revision, *diagnosis* is the end result of a series of scientific and clinical activities, examinations, and data gathering through various means; adding a functional analysis to these traditional activities will greatly enhance the usefulness of the data collected in planning treatment. In this sense, diagnosis is a part of an overall assessment (or evaluation) strategy. In this book, we use the term *assessment* in this inclusive sense.

As different forms of disorders of communication have come to light through research and clinical observation, assessment also has become an increasingly complex activity. As we learn more about the behavioral, neurophysiologic, genetic, and cultural aspects of communication disorders, we find ourselves expanding the parameters of assessment. In the past, communication disorders in children were viewed with relatively little concern for the cultural and social contexts of speech and language. In most cases, *linguistic deviation* from established norms was sufficient to diagnose a disorder of communication. Clinicians now realize that linguistic deviation cannot be evaluated in isolation and needs to be evaluated in the context of the individual child, his or her family, the culture, the language background, the educational demands and objectives, the future occupational goals, and so forth. A linguistic deviation from some accepted norm by itself is not a basis to diagnose a disorder of communication. This realization is not surprising because communication is always social and cultural; a linguistic deviation may only be a cultural difference. Therefore, more than a linguistic deviation, a concept of verbal behavior deficits may better serve the ultimate purpose of assessment: treatment planning.

Parameters of assessment of communication disorders in adults and children share common elements, but there are significant differences. Not all, but most disorders of communication in adults are due to aging and related disease processes that affect previously mastered speech-language skills. To the contrary, most disorders in children are due to factors that tend to disrupt the speech-language learning process. Furthermore, many clinicians tend to specialize in assessing and treating communication disorders in either children or adults. Therefore, to offer comprehensive assessment information as well as a collection of practical tools, we have devoted this book to communication disorders in children.

We begin this initial chapter with an outline of the basic assessment process. Assessment, as noted, is a series of well-planned activities. These activities strive to be systematic and scientific, but all clinicians know that clinical experience and judgment also play their role. When science can do no more and more still needs to be done, experience and judgment can help.

From a procedural standpoint, assessment includes attempts at understanding the child's past and the present, the current problems, and the family constellation (case history), a face-to-face interview of people concerned (often the parents or other caregivers), and various examinations done in the clinic. When all the activities, including planned clinical examinations are completed, the clinician shares the findings with the family and the child, makes recommendations, suggests a prognosis, and answers questions. We begin with the first of these: the case history.

Written Case History

A written case history is a questionnaire that is completed by the child's caregiver, family member, or by the client if old enough. A *Child Case History Protocol* is available in Chapter 2. The purpose of a case history form is to understand both the past and the present of the child, by gathering information on the child, the disorder for which professional help is being requested, and the family constellation. A detailed case history may also serve as a guide for the clinical interview. A child case history form usually will include questions of various kinds, usually organized into sections whose descriptions follow.

Basic Identifying Information

This section includes the client's name, date of birth, age, address, and phone number. The parent's names, ages, address, and phone number(s) are also reported in this area. The child's physician and his or her contact information may be reported here.

Most printed forms allow the clinician to fill in the identifying information. It is important to have all the needed information because missing pieces of identifying information can be problematic for contacting the child and the family and the referral source.

Referral Source

Documentation of the referral source is important for several reasons. A child who is referred by a physician or another speech-language pathologist is likely to have a medical or clinical history that may need further exploration. The type of physician referral may also provide insight into other deficits or areas of concern. For example, a referral from an otorhinolaryngologist (ENT specialist) may indicate a significant hearing history, a referral from a pediatric neurologist may suggest possible neurologic problems, and a referral from a psychologist may suggest intellectual disabilities or an autism spectrum disorder.

Noting the referral source is also an important part of developing and maintaining professional relationships. If a physician or other rehabilitation professional refers a client, it is often helpful to send a thank you letter, and once the proper release forms are obtained, it may be helpful to provide the referring professional with a brief summary of results and recommendations.

Other Specialists Who Have Seen the Child

Information on other specialists is important in determining if the child's communication difficulties might be part of other problems, such as a hearing loss, physical condition, or neurologic disorder. A clinician may need to obtain background information from one or more of these sources. If the child has been seen by other speech-language pathologists, the clinician needs to follow up with them. The clinician should always obtain the caregiver's permission prior to contacting other specialists or agencies.

In addition, detailed information about previous therapy should be obtained during the interview. Details should include where and when treatment was received, the type of treatment that was provided, and the child's response to that treatment. The clinician

should be aware that if there is a long list of other speech-language pathologists who have evaluated the child, one may be dealing with “searching” parents who are looking for someone to tell them what they want to hear.

Statement of the Problem

The case history form asks the parent or caregiver to describe the problem. This might help the clinician prepare for assessing a specific type of communication disorder or level of severity. The problem statement will also help the clinician determine what the caregivers’ primary concerns are, and their level of knowledge regarding the child’s communication problem.

The problem statement should be recorded in the caregivers’ own words. During the interview, the clinician may explore the different meanings of this statement and get clarifications to derive a more technical description of the problem.

Developmental History

The case history usually includes an area for the caregiver to report the ages at which the child reached a variety of developmental milestones. This information is helpful in determining if the communicative disorder is part of a larger physical, neurologic, or behavioral disability.

The clinician should note that the developmental history the caregivers report may be more or less reliable. In some cases, the information may not be available. Careful interview and the use of a prepared inventory will help obtain useful information. To help complete this task, a checklist of developmental milestones of speech, language, and motor skills from 0 to 6 years of age is provided in Chapter 2.

Medical History

The case history includes an area for the caregiver to report any illnesses, accidents, or hospitalizations. The form typically lists several diseases that are of special importance to speech-language development.

During the interview, the clinician can explore the reported medical conditions further, as needed, to determine whether they are significant to the child’s communicative disorder or not. Although communication disorders in some children may not be associated with significant medical conditions, those in others may be, as in the case of children who have genetic syndromes or brain injury.

Family and Social Background

This area is used to collect information on the parents’ educational and occupational background, the child’s siblings, and the family constellation. It usually includes an area for the parent to comment on how well the child gets along with his or her siblings and peers, as well as the strategies the child uses to communicate at home and in social situations.

An important piece of information reported in this section concerns the family’s language status. It is essential to ascertain whether the child and the family speak a

dialect other than the mainstream English dialect and whether the child and the family are bilingual. If they are bilingual, additional information on the two languages the family members speak may be sought during the interview.

Educational Background

It is important to note if the child is attending daycare, preschool, or school. The name of the school and length of attendance is also important to know. A young child who has attended preschool often separates from the parent and adjusts to the clinical setting more quickly. If the child attends school, it is important to know if the communication problem has interfered with academic performance.

In the case of preschoolers and early elementary-age children, information may also be sought on the home literacy environment. The education of the parents, and the extent to which they read and write at home to provide literacy models may be recorded, or as is often the case, explored during the interview.

Although the case history is an economic means for gathering client and family information, it has limitations. The main limitation is variable reliability of information the family members state on the case history forms. Information may vary depending on who completes the form, when it is completed, and whether specific information is even available. For example, a mother might provide different information than a father or grandparent. In the case of an adoption, medical or developmental information may not be known. In addition, the respondent may not understand all the questions, or may have variable abilities for answering them in writing. Some parents may guess more often than others; their guesses may or may not be valid.

Despite such limitations, the case history questionnaire continues to be a valuable tool for collecting client and family information, and is a good starting point for discussion with a parent or caregiver. An extensive interview in which the clinician asks additional questions and gets clarification of information will help mitigate the limitations of information stated on the case history form.

The Initial Clinical Interview

The case history form the caregivers fill out may contain less than the amount of information desired. The information given may be vague or even inaccurate. Therefore, the clinician conducts an *initial interview* with the informants (those who accompany the child to the clinic and provide additional information).

During the initial interview, the clinician goes over the case history form with the informants, typically the parents of the child. The purpose of this verbal exchange, directed mostly by the clinician, is to: (a) get additional details on the child, the family, and the disorder of communication for which help is being sought; (b) obtain clarifications on what the parents have written on the form; and (c) answer any preliminary questions the parents may have about the assessment activities themselves.

This verbal interaction is conducted in a competent and supporting manner, so that the clinician establishes a good professional relationship with the child and the parents, who may begin to trust and feel comfortable working with the clinician. Although not neces-

sarily done during the initial assessment session, additional information or perspective on the child's speech and language skills may be obtained at a later time by interviewing other family members, teachers, daycare providers, or those who have frequent contact with the child.

To begin with, the clinician introduces herself or himself and perhaps engages for a brief duration of small talk (Shipley, 1992). The clinician then gives an overview of what is planned for the session and may ask a series of questions about the child's communication skills and the problems of concern. As the interview proceeds, the clinician adopts a more relaxed and conversational disposition to put the child and the parents at ease. This may encourage the client to talk more freely and ultimately succeed in evoking more detailed information.

The duration of the clinical interview will vary in length depending on the amount and type of information to be exchanged, the completeness of the written case history, and the behavioral dispositions of the people involved, including the clinician. Specific interview questions also will vary, depending on the disorder for which clinical services are being sought. Such disorder-specific questions are included in the *Interview Protocol* provided in the protocols chapters on speech, language, fluency, and voice assessment.

To make clinical interviews efficient and successful, clinicians may follow these guidelines:

1. Be prepared for the interview. If possible, review the written case history ahead of time. Be clear about what you think is the purpose of the interview. Develop a list of questions or key areas you want to cover. A structured, well-planned interview promotes a professional image and reduces clinician anxiety.
2. Always record your interview (audio or video). Do not rely on your memory; take notes on critical information the interviewee offers. However, try not to take excessive written notes, as this tends to take attention away from the client and the informants and may reduce the amount of information they provide. Limit your written notes to a few key points or items you want to explore further at a later point in the interview. You can always review the audio or videotapes for details.
3. Conduct the interview in a physical environment that is comfortable, attractive, and free from distractions.
4. Take your time. Do not rush the informants or limit their responses. Let them speak freely and redirect them only as needed.
5. Avoid too many questions that can be answered with a simple "yes" or "no." Use open-ended questions and ask the respondent to provide examples.
6. Avoid talking too much yourself and do not fall into stereotypical, repetitive responses.
7. Use professional jargon sparingly and define or describe the technical terms in everyday language.
8. Seek information about the client's physical symptoms and etiologic factors by exploring the conditions associated with the onset and development of the disorder.

9. Address the client's and family members' feelings, attitudes, and beliefs regarding the communication problem, its origin, and potential remediation.
10. Ask the same question several different ways during the interview to confirm that you are getting reliable, consistent responses.
11. Be sensitive to cultural differences or language barriers that could interfere with obtaining or sharing information and establishing a positive relationship with the client and the informant.
12. Repeat important points several times during the interview.
13. At the close of the interview, summarize several key points, allowing the informant to rephrase or correct information. Ask if they have any additional questions.
14. Finish the interview by telling them what the next step will be and thanking them.

Hearing Screening

Speech-language pathologists often provide a hearing screening as part of their complete assessment of a child. A hearing screening is typically administered at 20 dB for the frequencies of 500, 1000, 2000, and 4000 Hz. It should be administered in a quiet environment using a well-maintained and calibrated audiometer. *Play audiometry* may need to be used with a young child. A child who fails the hearing screening (does not respond to one or more of the tones presented) should be referred to an audiologist for further evaluation. The form for recording the results of the hearing screening is included as part of the *Orofacial Examination and Hearing Screening Protocol* presented in Chapter 2.

Orofacial Examination

The orofacial examination is an important part of assessment, especially for assessment of speech production. It is designed to evaluate the structural and functional adequacy of the oral mechanism. *Structural adequacy* refers to the normal development of the orofacial structures and their relationship to each other. In addition, the clinician needs to note whether the presence of irregular structures is affecting speech production. *Functional adequacy* refers to how these structures move and perform during speech production (Tomblin, Morris, & Priestersbach, 2002). During the orofacial examination, the clinician needs to note any irregularities in the strength, range, coordination, and consistency of movements.

The materials needed to complete an orofacial examination include gloves, a flashlight, tongue depressors, a mirror, and a stopwatch or a clock with a second hand. To promote tongue movement while assessing young children, it may be helpful to replace the typical tongue depressor with a lollipop, or to place foods such as peanut butter in locations where tongue placement is desired. A specific and detailed *Orofacial Examination and Hearing Screening Protocol* is provided in Chapter 2. In addition, detailed *Instructions for Conducting the Orofacial Examination: Observations and Implications* are also provided in Chapter 2.