Editorial: Assessment as a Process in Pediatric Psychology¹

Annette M. La Greca² University of Miami

Kathleen L. Lemanek

University of Kansas

Received October 9, 1995; accepted October 16, 1995

This special issue of the Journal is dedicated to assessment in pediatric psychology, a difficult and challenging area for researchers and clinicians alike (La Greca, 1994). Pediatric psychologists are often confronted with the thorny issue of trying to obtain a good fit between their "question of interest" and the "available measures." There are no easy answers to the kinds of assessment problems that pediatric psychologists commonly encounter. In this opening editorial, however, we discuss several important considerations that may help researchers and clinicians to improve the quality and focus of their assessments in pediatric settings. Although much of what we have to say applies equally well to clinical and research situations, our emphasis is on research applications.

ASSESSMENT AS A PROCESS

First, it is critical to note that the term "assessment" is not synonymous with "test" or "measure." Rather, assessment is a *process*, and this process always begins with a *question*. In a clinical setting, the referral question typically prompts a clinician to design and implement an appropriate assessment of the

Portions of this paper were presented by the first author at the Florida Child Health Conference, Gainesville, Florida, April 1995. The authors express appreciation to Dennis Drotar and Donald Routh for their helpful comments on an earlier draft of this paper.

²All correspondence should be addressed to Annette M. La Greca, Department of Psychology, P.O. Box 249229, University of Miami, Coral Gables, Florida 33124.

problem. In a research setting, the study questions or hypotheses enable an investigator to determine what kind of a research design is needed, as well as which measures are appropriate to use. Thus, it is the questions that confront pediatric psychologists that essentially set into motion the assessment process.

Furthermore, we wish to emphasize the word "process," because it reflects the complex decision making and problem solving that assessment entails. At a minimum, planning an appropriate assessment involves choosing suitable informants; selecting methods that are feasible and appropriate; deciding on the best timing for the assessment; evaluating instruments' psychometric qualities, strengths, and limitations; and balancing the practical demands of a medical setting with the desire to obtain the best information possible. The decisions made during this process ultimately determine the kind of conclusions that can be drawn from the data that are collected.

To navigate this complex "assessment process," therefore, clinicians and investigators need to begin with good questions—ones that can be answered. Many times, problems in assessment are the direct result of poorly framed, imprecise questions. This situation holds true in both clinical and research settings. Consider the following scenarios.

Suppose you work in a pediatric health care setting. The child's primary care physician says to you, "This child needs a psychological. Please assess." Or, "Please evaluate parent-child bonding problems." Undoubtedly, most pediatric psychologists would initially work with the pediatrician to obtain a more precise formulation of the referral question, because the ones illustrated are much too broad and vague to be answered adequately.

The same concerns arise in research settings, where examples of poorly framed questions also abound. For example, a typical research question may be, "What is the *family functioning* of children with *cystic fibrosis* like?" This question is much too broad to be addressed in one study. (Note that you could replace "family functioning" with "peer relations" or another general psychosocial construct, and you could replace "cystic fibrosis" with another pediatric disease or condition, but you would have the same problem.) In this case, before beginning the assessment process, a more specific formulation of the question is needed. What is meant by family functioning? With whom are children with cystic fibrosis being compared? Is age or gender a consideration? An improvement would be, "Do school-aged children with cystic fibrosis perceive their families to be more cohesive than children with other chronic conditions or than healthy youngsters?" With a more specific formulation of the question, the researcher or clinician can begin to prepare an appropriate assessment.

Of course, it is entirely possible that the investigator *is* more broadly interested in family functioning, and not just one or two aspects of this construct. In this case, it must be recognized that an individual study is only able to answer a

limited question; additional studies, and preferably a systematic program of research, are needed to address the broader question.

How does one develop good questions? In pediatric research, it is our personal bias that questions should be theory-driven, yet sensitive to clinical needs. Research questions based on a conceptual framework or theory have the best chance of yielding information about psychological processes that affect children's health and well-being (see Drotar, 1994; Wallander, 1992). The practical relevance of the question for clinical applications is paramount as well (La Greca & Varni, 1993). Questions that incorporate both conceptual and practical considerations may be most valuable. For the present discussion, we assume that there are very good theoretical and practical reasons to ask a question in the first place.

When developing a good "question" researchers and clinicians should be aware of common pitfalls. Perhaps the biggest problem is that questions are too broad or vague (as illustrated above); they often lack precision with respect to the main construct of interest. In addition, questions often neglect temporal aspects of the disease or of the construct. For instance, consider the question, "Does stress lead to the development of Type I diabetes?" First, it is important to clarify what is meant by "stress" and, in addition, to specify the temporal course of the stressor. Stressors can be acute (e.g., appendicitis) or chronic (e.g., parental separation and divorce); stressors can be brief and highly impactful (e.g., experiencing an earthquake or major natural disaster) or ongoing and moderately irritating (e.g., daily hassles, such as having a long commute to work or school). Further, the investigator must determine whether he or she is interested in the person's appraisal of the stressors, or simply the occurrence of verifiable events. These aspects of "stress" need to be specified before proceeding further with the study design and measurement strategy.

Another issue to consider is the temporal course of the disease or condition, as this helps to determine the "timing" of the assessment (see Drotar, 1994). In many instances, it matters whether the investigator is interested in processes that occur at the time of disease onset, in the period following initial diagnosis, during the course of treatment, or after certain complications arise. Cancerrelated stressors, for example, may be more salient to children soon after their initial diagnosis rather than after their treatment is completed (Bull, 1993, as cited by Drotar, 1994). In some cases, it may even be relevant for investigators to consider temporal aspects of the *pre*disease state. Take the case of studying the role of stress in the etiology of diabetes. Type I diabetes is considered an autoimmune disease, with several identifiable stages of prediabetes preceding the actual clinical onset (Skyler & Marks, 1993). Consequently, in terms of the role of stress in the development of diabetes, the investigator needs to consider whether he/she is interested in studying stress that occurs during the first 2 years of life By framing the study question precisely, the investigator is in a good position to design the study and select appropriate measures. After gathering data and conducting appropriate analyses, an answer to the *specific* study question should be obtained (and, often, new questions emerge). Without a precise initial question, however, it is extremely difficult to develop an effective measurement strategy. Sometimes investigators hope (or believe) that finding the "best" measure will solve many problems or even substitute for asking precise questions. However, even a very good measure is not useful if the study questions are poorly framed.

A parallel process can be observed in clinical settings. Following from a clear and precise referral question, the clinician is in a position to develop an appropriate assessment strategy. A careful review, analysis, and interpretation of the information gathered in a clinical assessment should yield an answer to the initial referral question, or suggest further avenues for exploration. In our experience, pediatric psychologists rarely proceed with a clinical assessment without first seeking clarification of a vague or unclear referral question; the wisdom of this approach needs to be extended to research settings as well.

ISSUES INVOLVED IN DEVELOPING AN APPROPRIATE MEASUREMENT STRATEGY

Assuming now that the investigator has formulated a specific, answerable question and developed an appropriate study design, what are some important considerations for selecting appropriate measures? At a minimum, the investigator now finds herself confronted with choices regarding selecting appropriate informants (i.e., Who to assess?) and methods (i.e., What types of measures to use?), as well as constraints related to children's developmental level and disease status.

Informant Issues: Who to Assess?

Investigators (and clinicians) should always aim to identify the "best" informant for the problem in question. By best informant, we mean the person (or persons) who can provide the most valid, accurate picture of the problem or area of functioning. The researcher should also consider which informant's perspective is of most central interest to the research question at hand.

Identifying the best informant is often difficult and challenging, as this

varies as a function of the child's age or developmental level, and of the type of problem studied. As a *general rule*, for children under 6 years of age, the parents or primary caretakers are the best informants. For young children who spend considerable time in a child care setting, the care provider may also be a useful informant. Once the child reaches the elementary school years, approximately 6 to 12 years of age, parents/caretakers, teachers, and the children themselves are likely to represent the best possible informants, *depending on the construct of interest*. By early to midadolescence (approximately 13 years and older), however, teachers become much less useful as informants, given their more limited daily contact with students. Adolescents and parents are more valuable informants at this stage. For certain areas (e.g., subjective feelings, such as anxiety and depression; deviant behaviors, such as smoking, drinking, or antisocial activities), adolescents represent the best source of information (see Loeber, Green, & Lahey, 1990).

In addition to age considerations, the best informants also vary as a function of the type of problem or area that is being assessed. For externalizing problems that are readily observable (e.g., noncompliance, aggressive behavior), adultssuch as parents, teachers, or health care providers---may be in the best position to evaluate children (e.g., Barkley, 1988; McMahon & Forehand, 1988). In contrast, for internalizing behaviors (e.g., anxiety, depression), or subjective phenomena such as pain, children themselves may be the best informants (except for very young children) (see Dahlquist, 1990; Kazdin, 1990; Stone & Lemanek, 1990). Parents represent a valuable secondary source in these situations. Teachers, on the other hand, are less useful informants for children's subjective feelings (Loeber et al., 1990), especially with older children and adolescents. When it comes to health care behaviors, such as adherence to a treatment regimen, the parent and the child/adolescent are the best informants, with relatively greater emphasis on the parent for children under 12 years, and on the adolescent for teens (Dahlquist, 1990). Finally, in terms of peer relations and social competence, the child or the child's peers may represent the best informant source (Landau & Milich, 1990).

As the above discussion suggests, the best informant for one type of problem is not necessarily the best informant for another. Often in pediatric research, parents (especially mothers) serve as the sole informant (e.g., Manne et al., 1995; Stein & Newcomb, 1994). Parent reports may be fine for assessing observable behaviors, but are less adequate for assessing children's internal states or social competence. For example, the study by Gragg et al. (1996) highlights the different perspectives on pain experiences that youngsters, parents, or physicians provide. Similarly, other research suggests that children are likely to be better reporters of internal states, such as anxiety or depression, than are parents or other adults (see Kazdin, 1990; Wachtel, Rodrigue, Geffken, Graham-Pole, & Turner, 1994). Furthermore, parents' estimates of their children's social competence is often at odds with teachers' or children's reports of peer relations (e.g., Colegrove & Huntzinger, 1994; Lemanek, Horowitz, & Ohene-Frempong, 1994). Thus, if pediatric psychologists continue with the strategy of using parents (i.e., mothers) as the sole informant, we may seriously misrepresent levels of internalizing problems or of social competencies in child health populations.

Integrating developmental considerations with "construct" considerations makes for an even more complicated assessment picture (Table I). Pediatric researchers need to recognize that assessing multiple constructs in the same study (e.g., internalizing and externalizing problems; peer relations and health care), or assessing youngsters across a broad age range (e.g., 4–12 years; 6–18 years) may create serious informant difficulties. The best informant for one of the constructs or ages. Moreover, developmental shifts in informant status present a special challenge for longitudinal research, as investigators need to decide whether to change informants in order to obtain a more accurate picture of the problem, or maintain informant continuity at the risk of obtaining a less satisfactory assessment at one developmental stage.

Two implications for assessment follow from the foregoing discussion. First, in many cases *multiple informants* are necessary to adequately answer research questions. At a minimum, it is desirable to have the best informant for each of the constructs being assessed, although data obtained from a key informant can be misleading at times, as the findings of Drotar, Angle, Eckl, and Thompson (1996) illustrate. The use of multiple informants often raises concerns about how to integrate information from diverse sources (Stone & Lemanek,

| Construct | Infancy/ preschool | Elementary school years | Adolescence |
|---------------------------------------|-----------------------|----------------------------|---------------------|
| Behavior problems | | | |
| Externalizing behaviors | Parent, teacher | Parent, teacher | Teenager, parent |
| Internalizing behaviors | Parent | Child, parent | Teenager |
| Family functioning | Parent | Parent, child | Teenager, parent |
| Health-related areas | | | 0 |
| Behavioral distress | Parent, observer | Parent, observer | Teenager, observer |
| Conceptions of illness (e.g., AIDS) | Preschooler | Child | Teenager |
| Disease management (e.g., adherence) | Parent | Parent, child | Teenager, parent |
| Health beliefs and attitudes | Parent | Parent, child | Teenager |
| Illness perceptions (e.g., symptoms) | Parent | Parent, child | Teenager, parent |
| Quality of life | Parent | Parent, child | Teanson asses |
| Subjective distress (e.g., pain) | Preschooler | Child | Teenager |
| Peer relations/social competence | Teacher, peers | Peers, child | Teenager Teacher |
| School functioning/academic behavior | Teacher | Teacher | Teacher |
| Self-perceptions (e.g., self-concept) | Preschooler | Child | Teenager |

Table I. "Best" Informant as a Function of Both Developmental Level and Construct of Interest

1990). In the future, efforts to study factors that affect discrepancies in informants' perspectives, such as the work of Drotar et al. (1996) or Wachtel et al. (1994), would be very useful and informative.

Second, efforts should be made to *study more cohesive developmental groupings*. For example, the work of Peterson, Saldana, and Heilblum (1996), as well as Kistner et al. (1996), focused exclusively on elementary school-aged children. Informant issues make it exceedingly difficult, if not impossible, to include very diverse age groups in the same study and obtain an adequate assessment.

Before proceeding to measurement selection, our next topic, we also wish to highlight the importance of examining the utility of other potential informants. In pediatric health care research, by and large, the most common informant sources are mothers, children/adolescents, and nurses. Pediatric psychologists may be overlooking other valuable sources---such as fathers, siblings, teachers, and physicians. For example, recent work by Greco, Harris, Wysocki, Elder, and Harvey (1995), as well as that by Kazak, Penati, Waibel, and Blackall (1996), highlights the important perspective that fathers can provide. Teachers also represent a valuable, but often overlooked, informant source. Many pediatric conditions and treatments have implications for children's academic behavior and social functioning; teachers are valuable informants in such areas (e.g., Colegrove & Huntzinger, 1994). Many investigators have shied away from studying peer relations among pediatric populations because of difficulties in obtaining peer reports. Yet, at least for preschoolers and school-aged children, teachers' perspectives may prove useful, and may be more feasible to obtain than peer reports.

Measurement Issues: What Method or Instrument To Use?

In addition to informant issues, the investigator must also determine what *assessment method* to use, and select the specific instruments that represent the construct of interest. In this construct, we think of "measures" as "tools." Thus, to use this analogy, the next challenge in the assessment process is to select the proper tool for job. To make this selection, the investigator needs to be knowl-edgeable about what each tool can and cannot do.

Selecting a Method. First, an investigator might consider the method of assessment that fits within the demands and context of the study. Part of this process involves evaluating the method's strengths and weaknesses (e.g., checklists are fast and practical but may not provide the kind of detail the investigator is seeking). Although a discussion of the assets and limitations of various assessment methods is beyond the scope of this paper, the reader is referred to several resources (La Greca & Stone, 1992; Mash & Terdal, 1988; O'Leary & Johnson, 1986). As a general rule, multiple methods are desirable, as any one method has its limitations.

Matching Measures to the Study's Purpose. Once a method is selected, the investigator would likely consider the available measures or instruments. Psychometric issues (reliability, validity, type of population measure is appropriate for) are certainly important considerations (e.g., Flannery, 1990; O'Leary & Johnson, 1986). However, it is critical that the process of measurement selection not stop here. In addition, investigators should ask, "what does this measure do best?" Is it a screening tool? Is it good for establishing a diagnosis or for obtaining a detailed picture of the problem? Is it best for evaluating treatment outcome? The method and measure should match the study's purpose (which goes back to the main study question). If an investigator wants to assess how a specific chronic disease affects children's peer relations, he/she may be less interested in a very broad screening measure, such as the Social Competence scale of the Child Behavior Checklist (CBCL), than in a detailed interview of voungsters' peer interactions and friendships. The CBCL has strong psychometric properties, but it may not be the best available measure for the investigator's purpose.

Consider Problems of Shared Method Variance. Investigators need to be especially careful when the "predictor" and "outcome" variables share the same method or source. Consider the example of studying the relationship between parental anxiety and child behavior problems in cancer patients. If mothers serve as the sole informants, and only checklist measures are used (e.g., mothers' reports of anxiety on the State Trait Anxiety Inventory and of child behavior problems on the CBCL), then the predictor and outcome variables may be related due to the shared method and source variance, rather than because of a true relationship. The use of multiple informants and multiple measures helps to diminish this problem, and leads to greater confidence in the obtained findings.

Content Overlap. Another potential measurement confound occurs when there is an overlap of *content* between the predictor and outcome measures. Perhaps the best illustration of this problem arises in the study of stress and disease. Measures of stressful life events often contain "illness" items (e.g., serious illness or injury; hospitalization); this may inflate the observed relationship between stress and illness. Another example is the study of depression and metabolic control among youth with diabetes; some of the physiological symptoms of depression (e.g., irritability, trouble concentrating) are also signs of poor metabolic control. In such cases, an investigator may need to reanalyze data after removing the overlapping content, or deliberately select measures that do not confound the variables of interest.

Generic Versus Disease-Specific Measures. Another issue in measurement selection is the decision of whether to use generic versus disease-specific mea-

sures. For the most part, this decision depends upon the research question. Either or both types of measures may be useful and appropriate.

In our opinion, disease-specific measures will become increasingly important in the future, as pediatric psychologists focus to a greater extent on research questions that examine within-group factors (i.e., moderating variables) that are predictive of adjustment or health outcomes among youth with pediatric conditions, rather than simply documenting differences between healthy and ill youth. As we shift research paradigms from between-group to within-group studies, the kinds of measures that are of interest change. We may wish to know more about disease-specific factors that influence coping and disease adaptation. For example, investigators may be interested in whether certain types of *disease-specific* social support are important for successful adaptation to a chronic condition (e.g., Hanson, De Guire, Schinkel, Henggeler, & Burghen, 1992; La Greca et al., 1995). In this context, disease-specific measures may provide information that translates directly into specific treatment recommendations, something that is useful to both investigators and clinicians. In addition, disease-specific measures can be particularly useful when studying the impact of pediatric interventions—such as the effects of a family intervention on adolescents with diabetes. It is possible that a disease-specific intervention could be effective for improving the way families manage their adolescents' disease, yet have little impact on family functioning overall. In this specific instance, both diseasespecific and generic measures of family functioning would be desirable, as together they may better elucidate the processes underlying the intervention's impact than either type of measure would alone. Because of the growing importance of disease-specific measures in future pediatric psychological research, we see the development of such measures as a "growth area" in pediatric psychology. In fact, several of the articles in this special issue (e.g, Fritz et al.; Kistner et al.; Peterson et al.; Quittner et al.; Spieth & Harris) describe new measures or methodologies that will prove valuable in future child health research. When developing new disease-specific measures we suggest that investigators examine the linkages between these new measures and their more generic counterparts. In this way, investigators can relate the new measures to more general levels of functioning. For example, peers who provide more diabetes-specific support should also be perceived as providing more social support overall (La Greca et al., 1995). Without these kinds of linkages, it will be difficult, if not impossible, to draw generalizations about children's psychosocial functioning and adaptation from pediatric psychological research (see Drotar, 1994).

Qualitative Measures. A final consideration we address is the use of qualitative measures in child health research. For example, structured or open-ended interviews may provide a wealth of information that cannot be gleaned from standardized, quantitative instruments. In this special issue, Quittner et al. (1996) illustrate the use of qualitative measures (i.e., structured interviews) in

the development of a role-play test. As another example, in a study of family and peer support for adolescents' diabetes care (La Greca et al., 1995), we examined the content of adolescents' responses, as well as their quantitative ratings of supportive behaviors. We were surprised by some of the adolescents' responses. Several adolescents reported that they found "nagging" by family members to be supportive, even though nagging has been considered to be an example of a "nonsupportive" family behavior (e.g., Schafer, McCaul, & Glasgow, 1986). Many adolescents found it to be supportive when their friends "reminded them" to test or take insulin. Others liked it when their friends "watched them" test their blood or take an insulin shot; in fact, as one teen said, it made him feel like a "hero." This kind of qualitative information could be useful in designing supportive interventions for adolescents with diabetes, but would not have been gleaned from quantitative analyses alone. Moreover, when studying "relationship" constructs, such as support or conflict, it is critical to consider informants' appraisals of the behaviors or event that illustrate the construct. One cannot assume the psychological properties of complex, relationship-centered constructs; they need to be documented. In sum, measurement strategies that incorporate quantitative and qualitative approaches may help to capture the richness of the content areas that pediatric psychologists study. Qualitative measures may be especially revealing in new areas of research, where few standardized measures are available.

PRACTICAL PROBLEMS THAT CONFRONT PEDIATRIC PSYCHOLOGISTS

A colleague recently was asked the following question by a team of physicians who were sincerely interested in their patients' psychological health and adjustment. "How can we assess 'quality of life' in children with cancer, with a reliable and valid measure, that won't take more than 10 minutes to administer, and that can be used with children between the ages of 4 and 18 years?" This question typifies the practical constraints that child health researchers and clinicians confront.

Time Constraints. For the most part, pediatric researchers do not have the luxury of time. In many instances, behavioral or psychosocial measures are incorporated into a larger protocol that involves other medical procedures; in this case, psychosocial assessments may take a second seat to medical variables of interest. Or, subjects may be recruited as they are waiting to receive medical treatment, and the investigator may need to tailor the protocol to this narrow window of time. Time constraints have encouraged the development of brief instruments that can be administered and scored quickly, such as the 15-item Kidcope for assessing children's coping strategies (Spirito, Stark, & Williams,

1988), or the 17-item Diabetes Family Behavior Checklist for assessing supportive and nonsupportive behaviors for persons with diabetes (Schafer et al., 1986). These instruments may be useful for obtaining a "snapshot" of an area of functioning. In some instances, investigators have used single-item measures to assess a construct, such as adherence to a treatment regimen, even though the reliability and validity of single-item measures have been seriously questioned (Glasgow & Anderson, 1995). Although detailed measures often have better psychometric properties than brief or single-item measures, investigators must achieve a balance between obtaining a good assessment of the construct of interest and working within the time constraints available. When a particular construct is of central importance to a study, investigators would be wise to avoid cutting corners to save time.

Temporal Course of the Study. In any context, longitudinal studies are a challenge to conduct, but this is especially true in medical settings. In pediatric research, often the timing of the follow-up assessment is not entirely under the investigator's control, but rather determined by the participants' schedule for medical care, and their ability to keep medical appointments. Repeated measurements present a variety of additional problems for the assessment process, in that practice effects as well as subjects' boredom and fatigue must be taken into account.

Subject Recruitment. Many pediatric psychologists would agree that subject recruitment is the most difficult aspect of conducting research in a medical setting. Efforts to work collaboratively across centers may help to increase sample size and enhance generalizability of findings (Drotar, 1994), although multisite studies often present other logistic challenges (Armstrong, 1995). One problem we believe results from difficulties with subject recruitment is the tendency for investigators to administer a large battery of measures to subjects, even though the rationale for measures is not well developed. The logic behind this assessment strategy is that, once the difficult task of recruiting has occurred, investigators try to make the most of the opportunity; however, the focus of the research may be sacrificed. As editors, we have seen many submissions to this journal of studies that included a plethora of measures, often assessing very different types of constructs, without a coherent rationale for the measures or analyses presented. In such cases, typical recommendations to authors are to develop a conceptual rationale for the study, present the research questions more clearly, and focus the results directly on the measures that address the research question. We believe strongly that this process should be done *before* a study is initiated, if at all possible. Rather than using a shotgun approach to assessment, hoping that something of interest will emerge, investigators might consider implementing more *focused* assessments in the first place. For example, rather than administering measures of peer relations, family functioning, stress, depression, and self-care in one study, it would be more constructive to use the available time

to obtain a more detailed, comprehensive assessment of one or two of these areas.

Reading and Language Barriers. A topic that receives little attention but may be a common obstacle in pediatric research, is the readability and language requirements of our measures. Many investigators are interested in studying disadvantaged populations who may be less well educated, or minority groups who may come from different cultural or language backgrounds. We know little about the reading levels or language requirements of many of the tests and measures that are used. It would be extremely helpful for investigators to calculate the reading levels of their instruments, using standard readability formulas (e.g., Fry, 1990; Schuyler, 1982). In many cases, these calculations are not time consuming, but could provide invaluable practical information for other researchers and clinicians.

SUMMARY AND CONCLUSIONS

In this editorial, we have highlighted several key aspects of the assessment process. First, we consider it critical that pediatric psychologists view "assessment as a process," and not as a test or measure. Assessment begins with the formulation of a precise, answerable question—and this maxim is equally important for researchers and clinicians. It is especially critical that research questions be conceptually based, as well as of applied interest. The development of an appropriate assessment strategy should always follow directly from the question that is posed.

Second, in developing an assessment strategy, we advocate selecting the "best" informants and the "best" measurement methods available, also taking into consideration the developmental level of the participants and the types of constructs being assessed. In most cases, it will be desirable to use multiple informants, rather than relying on a single source. Given the measurement constraints discussed earlier, we also advocate using multiple measures to assess a construct, and avoiding single-item measures. We also feel strongly that pediatric psychologists should consider designing *focused* studies of developmentally appropriate age groups, rather than evaluating children from a very broad age range (e.g., infants to teens).

Third, as pediatric psychological research moves into new areas of inquiry, assessment should represent a "growth area." We need psychometrically sound measures that are appropriate for use with pediatric health populations. We also need to develop assessment strategies that capture the rich and complex process of dealing with health and disease and, therefore, we should consider gathering qualitative data, to supplement standardized questionnaires.

Finally, we recognize that pediatric psychologists face many practical con-

straints and challenges in the assessment process, especially in today's volatile health care climate. We have seen and will continue to see radical changes in the way health care is provided; pediatric psychologists and other care providers are continually making adjustments in their activities to respond to these frequent shifts and changes. In part because of these changes, pediatric psychologists need to develop and use methods to assess the financial costs and benefits of their interventions. With the increasing emphasis on providing quality medical care at the lowest possible price, efforts to document the valuable contributions of pediatric psychologists become paramount. By sharing our ideas and strategies, as many of the contributors to this issue have done, we stand a better chance of making a better future.

REFERENCES

- Armstrong, F. D (1995). Commentary: Childhood cancer Journal of Pediatric Psychology, 20, 417-421.
- Barkley, R. A. (1988). Attention deficit disorder with hyperactivity. In E J Mash and L G. Terdal (Eds.), Behavioral assessment of childhood disorders (3rd ed., pp. 69-104). New York: Guilford.
- Colegrove, R. W, & Huntzinger, R. M. (1994). Academic, behavioral, and social adaptation of boys with hemophilia/HIV disease. Journal of Pediatric Psychology, 19, 457-473.
- Dahlquist, L. M. (1990). Obtaining child reports in health care settings. In A. M. La Greca (Ed.), Through the eves of the child: Obtaining self-reports from children and adolescents (pp. 395-439). Boston, MA: Allyn & Bacon.
- Drotar, D. (1994). Psychological research with pediatric conditions: If we specialize, can we generalize? Journal of Pediatric Psychology, 19, 403-414.
- Drotar, D., Agle, D. P., Eckl, C. L., & Thompson, P. A. (1996). Impact of the repressive personality style on the measurement of psychological distress in children and adolescents with chronic illness: An example from hemophilia. *Journal of Pediatric Psychology*, 21, 283-293.
- Flanery, R. C. (1990). Methodological and psychometric considerations in child reports. In A. M. La Greca (Ed.), *Through the eyes of the child: Obtaining self-reports from children and adolescents* (pp. 57-82). Boston, MA: Allyn & Bacon.
- Fritz, G. K., Yeung, A., Wamboldt, M. Z., Spirito, A., McQuaid, E. L., Klein, R., & Seifer, R. (1996). Conceptual and methodological issues in quantifying perceptual accuracy in childhood asthma. Journal of Pediatric Psychology, 21, 153-173.
- Fry, E. (1990). A readability formula for short passages. Journal of Reading, 33, 594-597.
- Glasgow, R. E., & Anderson, B. J. (1995). Future directions for research on pediatric chronic disease: Lessons from diabetes. *Journal of Pediatric Psychology*, 20, 389-402.
- Gragg, R. A., Rapoff, M. A., Danovsky, M. B., Lindsley, C. B., Varni, J. W., Waldron, S. A., & Bernstein, B. H. (1996). Assessing chronic musculoskeletal pain associated with rheumatic disease: Further validation of the Pediatric Pain Questionnaire. *Journal of Pediatric Psychology*, 21, 237-250.
- Greco, P., Harris, M., Wysocki, T., Elder, C., & Harvey, L. M. (1995, April). The role of fathers in pediatric psychology assessment: The underappreciated parent. In A. M. La Greca (Chair), Assessment in pediatric psychology. Florida Conference on Child Health Psychology, April.
- Hanson, C. L., De Guire, M. J., Schinkel, A. M., Henggeler, S. W., & Burghens, G. A. (1992). Comparing social learning and family systems correlates of adaptation in youths with IDDM. *Journal of Pediatric Psychology*, 17, 555-572.

- Kazak, A. E., Penati, B., Waibel, M. K., & Blackall, B. F. (1996). The Perception of Procedures Questionnaire: Psychometric properties of a brief parent-report measure of procedural distress. *Journal of Pediatric Psychology*, 21, 195-207.
- Kazdin, A. E. (1990). Assessment of childhood depression. In A. M. La Greca (Ed.), Through the eves of the child: Obtaining self-reports from children and adolescents (pp. 189-233). Boston, MA: Allyn & Bacon.
- Kistner, J., Eberstein, I. W., Balthazor, M., Castro, R., Foster, K., Osborne, M., Sly, D., & Quadagno, D. (1996). Assessing children's conceptions of AIDS. *Journal of Pediatric Psychol*ogy, 21, 269-281.
- La Greca, A. M. (1994). Assessment in pediatric psychology: What's a researcher to do? Journal of Pediatric Psychology, 19, 283-290.
- La Greca, A. M., Auslander, W. F., Greco, P., Spetter, D., Fisher, E. B. Jr., & Santiago, J. V. (1995). I get by with a little help from my family and friends: Adolescents' support for diabetes care. *Journal of Pediatric Psychology*, 20, 449-476.
- La Greca, A. M., & Stone, W. L. (1992). Assessing children through interviews and behavioral observations. In C. E. Walker & M. C. Roberts (Eds.), *Handbook of clinical child psychology* (2nd ed., pp. 63-83). New York: Wiley.
- La Greca, A. M., & Varni, J. (1993). Interventions in pediatric psychology: A look toward the future. Journal of Pediatric Psychology, 18, 667-680.
- Landau, S., & Milich, R. (1990). Assessment of children's social status and peer relations. In A. M. La Greca (Ed.), Through the eyes of the child: Obtaining self-reports from children and adolescents (pp. 259-291). Boston, MA: Allyn & Bacon.
- Lemanek, K. L., Horowitz, W., & Ohene-Frempong, K. (1994). A multiperspective investigation of social competence in children with sickle cell disease. *Journal of Pediatric Psychology*, 19, 443-456.
- Loeber, R., Green, S. M., & Lahey, B. B. (1990). Mental health professionals' perception of the utility of children, mothers, and teachers as informant on child psychopathology. *Journal of Clinical Child Psychology*, 19, 136-143.
- Manne, S. L., Lesanics, D., Meyers, P., Wollner, N., Steinherz, P., & Redd, W. (1995). Predictors of depressive symptomatology among parents of newly diagnosed children with cancer. *Journal* of Pediatric Psychology, 20, 491-510.
- Mash, E. J., & Terdal, L. G. (1988). Behavioral assessment of child and family disturbance. In E. J. Mash and L. G. Terdal (Eds.), Behavioral assessment of childhood disorders (3rd ed., pp. 3-65). New York: Guilford.
- McMahon, R. J., & Forehand, R. (1988). Conduct disorders. In E. J. Mash and L. G. Terdal (Eds.), Behavioral assessment of childhood disorders (3rd ed., pp. 105-153). New York: Guilford.
- O'Leary, K. D., & Johnson, S. B. (1986). Assessment and assessment of change. In H. C. Quay & J. S. Werry (Eds.), *Psychopathological disorders of childhood* (3rd ed., pp. 423-454). New York: Wiley.
- Peterson, L., Saldana, L., & Heiblum, N. (1996). Quantifying tissue damage from childhood injury: The Minor Injury Severity Scale. Journal of Pediatric Psychology, 21, 251-267.
- Quittner, A. L., Tolbert, V. E., Regoli, M. J., Orenstein, D. M., Hollingsworth, J. L., & Eigen, H. (1996). Development of the Role-Play Inventory of Situations and Coping Strategies for parents of children with cystic fibrosis. *Journal of Pediatric Psychology*, 21, 209-235.
- Schafer, L. C., McCaul, K. D., & Glasgow, R. E. (1986). Supportive and non-supportive family behaviors: Relationships to adherence and metabolic control in persons with Type I diabetes. *Diabetes Care*, 9, 179-185.
- Schuyler, M. R. (1982). A readability formula program for use on microcomputers. Journal of Reading, 25, 560-591.
- Skyler, J. S., & Marks, J. B. (1993). Immune intervention in Type I diabetes mellitus. Diabetes Reviews, 1, 15-41.
- Spieth, L. E., & Harris, C. V. (1996). Assessment of health-related quality of life in children and adolescents: An integrative review. Journal of Pediatric Psychology, 21, 175-193.
- Spirito, A., Stark, L. J., & Williams, C. (1988). Development of a brief checklist to assess coping in pediatric patients. Journal of Pediatric Psychology, 13, 555-574.

- Stein, J. A., & Newcomb, M. D. (1994). Children's internalizing and externalizing behaviors and maternal health problems. Journal of Pediatric Psychology, 19, 571-594.
- Stone, W. L., & Lemanek, K. L. (1990). Developmental issues in children's self-reports. In A. M. La Greca (Ed.), Through the eyes of the child: Obtaining self-reports from children and adolescents (pp. 18-56). Boston, MA: Allyn & Bacon.
- Wachtel, J., Rodrigue, J. R., Geffken, G. R., Graham-Pole, J., & Turner, C. (1994). Children awaiting invasive medical procedures: Do children and their mothers agree on child's level of anxiety? Journal of Pediatric Psychology, 19, 723-735.
- Wallander, J. L. (1992). Theory-driven research in pediatric psychology: A little bit on why and how. Journal of Pediatric Psychology, 17, 521-536.