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LANGUAGE SKILLS OF ELEMENTARY-AGED CHILDREN WITH EMOTIONAL AND BEHAVIORAL DISORDERS

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ABSTRACT—A cross-sectional design was used to assess the language skills and prevalence of language disorders among 84 randomly selected public school children (K-5) receiving special education services for emotional and behavioral disorders (EBD). The mean receptive language standard score fell in the nonclinical range, whereas the mean total and expressive standard scores fell in the clinical range. The prevalence rates of total, expressive, and receptive disorders among children with EBD were 54%, 55%, and 42%, respectively. Approximately two-thirds of children experienced a language disorder (i.e., total, expressive, and/or receptive). Half of those experiencing a language disorder met clinical criteria in all language areas (i.e., total, receptive, and expressive). Approximately 86% of children meeting clinical criteria for total, receptive, and/or expressive language disorder were not receiving formal language services (i.e., false negatives). The findings and future research needs are discussed.

Key Words: elementary school children, emotional/behavioral disorders, special education, language skills

Introduction

The chief instrument of integration and order in human mental life is language (Vygotsky 1962). Language disorders have been associated with persistent depressed academic achievement, increased grade retention, demoralization, psychiatric problems, and reading disabilities (Aram et al. 1984; Silva et al. 1987; Catts 1993; Beitchman et al. 1998; Tomblin et al. 2000). Although students with emotional and behavioral disorders (EBD) appear to struggle in all academic areas, language problems seem to be most prevalent (Hinshaw 1992; Kaiser and Hester 1997). For example, Scruggs and Mastropieri (1986) found that a sample of 576 first- and second-grade children with EBD performed lowest in listening comprehension (i.e., receptive language) than all other academic subjects.

We begin by briefly defining commonly used language concepts. Communication refers to both speech and language. Speech is a verbal means of communicating or conveying meaning, whereas language (i.e., receptive, expressive, and pragmatic) is a socially shared code to communicate meaning (Owens 2001). Language disorders are of two main types, receptive and expressive. Receptive (e.g., listening) language disorders include problems understanding language. Expressive (e.g., speaking) language disorders are problems using language (Owens 1996). Furthermore, considered a component of language rather than a type of language disorder, pragmatic deficits are difficulties with the rules related to language use in a social setting (e.g., speaker-listener relationship, turn-taking, eye contact).

The number of youth in the United States receiving special education services under the category of emotional and behavioral disorders (EBD) is rapidly growing. Present figures represent a 2% increase over the previous year and a 20% increase over 10 years ago (U.S. Department of Education 2001). EBD is defined under the Individuals with Disabilities Education Act (IDEA), Public Law 101-476, as a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects educational performance: (a) an inability to learn that cannot be explained by intellectual, sensory, or health factors; (b) an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; (c) inappropriate types of behavior or feelings under normal circumstances; (d) a general pervasive mood of unhappiness or depression; or (e) a tendency to develop physical symptoms or fears associated with personal or school problems.

One of the five key conditions found in the federal definition of EBD (noted above) is an inability to learn that cannot be explained by intellectual, sensory, or health factors (U.S. Department of Education 2001). About 50% of students with EBD drop out of school, and consequently suffer from low employment levels and poor employment histories (U.S. Department of Education 2001). According to the Chesapeake Institute (1994), 73% of students with EBD who did not complete high school were arrested within five years of dropping out. Indeed, the learning problems that epitomize students with EBD have serious lifetime implications.

At the heart of the learning problems experienced by students with EBD are language problems (Nelson et al. 2004). Indeed, although students with EBD appear to struggle in all areas of learning, the language skills of these students are the most deficient area of functioning. A plethora of causal-comparative research suggests that over 70% of children with emotional and behavioral disorders experience language disorders (Baker and Cantwell 1985; Rutter and

Mawhood 1991; Toppelberg and Shapiro 2000; Benner et al. 2002). Although these studies suggest that language disorders are related to EBD, this research is limited in several ways. First, scant research is available on the language skills of public school children with EBD. Researchers of four studies (Camarata et al. 1988; McDonough 1989; Miniutti 1991; Ruhl et al. 1992) to date have examined the language skills of public school children with EBD. Children with EBD placed in public school settings appear to have a higher prevalence rate of overall, receptive, and expressive language disorders than those served in more restrictive non-public-school (i.e., clinical or psychiatric) settings. In a review of the literature, Benner et al. (2002) found that nearly 9 out of every 10 children with EBD served in public school settings have overall and/or expressive language disorders. This finding was based upon three studies (Camarata et al. 1988; McDonough 1989; Miniutti 1991) that reported prevalence rates of language disorders among public school children with EBD.

Second, researchers of all studies that have examined the language skills of children with EBD have used convenience samples. For example, Miniutti (1991) examined the language skills of 27 elementary-aged (mean age = 9.5) children with EBD served in self-contained classrooms. These children were urban, of lower socioeconomic status, and 85% were African American or Hispanic. Miniutti (1991) found that 81% of these children presented a severe language disorder. Although researchers have found high prevalence rates of language disorders among convenience samples of public school children with EBD, such research has limited external validity. No research to date has examined the language skills of elementary-aged public school children with EBD using random sampling procedures.

Third, researchers have not examined the number of public school children with EBD who evince language disorders yet fail to receive services for them. Such children are considered false negatives—a medical term used to refer to cases of pathology (i.e., language disorder) that go overlooked and consequently untreated (Kauffman 1999). Researchers have indicated that the language disorders experienced by children with EBD largely go overlooked and consequently untreated (Walker et al. 1994). Approximately 33% to 40% of children with EBD served in non-public-school settings (e.g., psychiatric settings) are false negatives with undetected language deficits (Cohen et al. 1993; Cohen et al. 1998; Cohen 2001). Those with undetected language deficits and EBD appear to be the most delinquent, depressed, aggressive, and demonstrate more severe challenging behavior than those with expressive language disorders in non-public-school settings (Cohen et al. 1993). Although researchers have examined the prevalence of false negatives for language disorder among children

with EBD in non-public-school settings, the prevalence of false negatives for language disorder (i.e., total, receptive, and expressive) among those served in public school settings remains unknown.

Researchers have found that the language disorders experienced by children with EBD in public school settings are often hidden by the severe behavior problems of these children (Walker et al. 1994). For example, children prone to noncompliance may have undetected receptive language disorders that limit their ability to comprehend and comply to repeated warnings or verbal cues (Fujiki et al. 1999). As a result, such children may misinterpret communications, become frustrated, and consequently develop chains of miscommunication and antisocial behavior patterns (Prizant et al. 1990; Ruhl et al. 1992). No research to date has examined the percentage of elementary-aged public school children with EBD who are false negatives with clinically significant language disorders.

Although previous research on children with EBD has indicated that language disorders and EBD are related, limited research has been conducted on those served in public school settings. There were two primary purposes of this study. The first was to examine the language skills and prevalence rates of language disorders among elementary-aged public school children (K-5) with EBD using a randomized cross-sectional design. The second was to examine the prevalence of false negatives that exhibit clinical language disorders but receive no diagnosis or treatment for them. The rationale for this study was to highlight the need to provide language intervention to children with EBD who experience language deficits.

Method

Participants

Participants were 84 students (K-5) receiving special education services for emotional and behavioral disorders in an urban city in the Midwest. Table 1 presents the demographic characteristics of participating children. The children were randomly selected from all elementary-aged (K-5) students with EBD served in a large public school district. Children with comorbid diagnoses of mental retardation, autism, or developmental disabilities were excluded from participation. Of the 84 children, 79% were male and 21% female. The mean age of participants was 8.6 (SD = 1.7). Sixteen of the 84 children (19%) were identified with a communication disorder and were receiving speech or language services. Ethnic breakdowns were 82% Caucasian, 16% African American, and 2% Native American.

TABLE 1

DEMOGRAPHIC CHARACTERISTICS OF PARTICIPATING CHILDREN (N = 84)

Age	
Mean age	8.6 (1.7)
Age range	6.0–11.7
Number of children by grade	
Kindergarten	11
First grade	17
Second grade	14
Third grade	15
Fourth grade	14
Fifth grade	13
IQ ^a	
Total	96.1 (14.8)
Verbal	91.8 (17.0)
Performance	98.2 (18.1)
Age of onset (diagnosis of EBD)	
Mean	6.4 (1.8)
Range	2.4–10.4
Minutes of special education per week	
Mean	346.5 (333.5)
Range	15.0–1880.0

^aIQ measures used were the WISC-III and WPPSI.

Note: Standard deviations are reported in parentheses.

Measures

Demographics. School records were searched to obtain demographic information on participants. Demographic information included: age, grade level, gender, ethnicity, minutes of special education services per week, intelligence test scores, and age of onset.

Language. The Clinical Evaluation of Language Fundamentals, 3rd ed. (CELF-3) (Semel et al. 1995) was used to assess language skills (i.e., receptive, expressive, and overall). The CELF-3 is an individually administered clinical tool for the identification, diagnosis, and follow-up evaluation of language disorders in persons from ages 6 through 21 years old. The core subtests are sentence structure, word structure, concepts and directions, formulated sentences, word classes, recalling sentences, sentence assembly, and semantic relationships. Standard scores are receptive, expressive, and total language. The CELF-3 is a

widely used measure of language. Investigations into the psychometric properties of the CELF-3 indicate adequate internal consistency for composite scores (e.g., coefficients ranged from .91 to .95 for the Total Language score), strong content validity, and adequate construct validity (Impara and Plake 1998). Administration time takes 30 to 45 minutes.

Design

A cross-sectional design was used to address the purpose of this study. Children with EBD were randomly selected from the population of all children with EBD at each grade level (K-5) across one school district.

Procedures

Training. Data collectors were trained to administer the CELF-3 and to manage the behavior of students during testing. Four-hour training sessions occurred weekly for one month. Training sessions were conducted using the training procedures outlined by the authors of the CELF-3. To demonstrate mastery of a test, data collectors were observed delivering the test to a child. Fidelity was assessed using a modified version of the observation checklist created by authors of the CELF-3. The checklist contained 12 items. When the data collector administered the test with 95% fidelity, the data collector was approved to test in the schools.

Fidelity. Fidelity checks were conducted on approximately every third test administration. Fidelity was calculated by dividing total number of occurrences (e.g., following testing script) and non-occurrences (e.g., not following testing script) by the total number of occurrences for each of the 12 items on the observation checklist. Item-by-item fidelity for administration of the CELF-3 ranged from 97% to 100%. Overall fidelity was 99% for administration of the CELF-3.

Testing. The CELF-3 was administered to each child with EBD in a quiet area of each child's school. Prior to administering the CELF-3 the examiner provided two behavioral expectations: listen and do your best. The examiner provided positive reinforcement over the course of test administration as the child displayed these behaviors. Moreover, the examiner divided testing into two 15- to 20-minute sessions to improve attention to each CELF-3 task.

Analysis

Descriptive statistics were used to detail the language skills, demographic characteristics, and prevalence of language disorders in children with EBD (Martella et al. 1999). Clinical language disorder (i.e., total, expressive, and receptive) was determined in two ways as outlined by authors of the CELF-3 (Semel et al. 1995). First, scores falling at or below one standard deviation below the mean were considered clinical (i.e., standard score criteria). Second, in the cases of receptive and expressive language scores, scores were considered clinical if the difference between expressive and receptive language scores was greater than or equal to 23 (i.e., discrepancy criteria). Differences of this magnitude occurred in 5% of the CELF-3 standardization sample. Because of the infrequency of such differences in the normal population, differences in receptive and expressive scores of 23 or more are clinically significant (Semel et al. 1995).

The prevalence of false negatives was estimated by determining the number of children with EBD meeting clinical criteria for a language disorder among those receiving formal language services based on a search of Individualized Education Plans (IEPs). The number of children receiving formal language services was then divided by the number meeting clinical criteria for a language disorder (i.e., total, expressive, or receptive).

Results

Language Skills and Prevalence of Language Disorders

Analyses revealed the following regarding the language skills of elementary-aged children with EBD. First, as indicated in Table 2, the average total language standard score fell in the clinical range (i.e., standard score of 85 or below). The prevalence of mild and moderate or severe language disorder was 54% and 32%, respectively.

Second, the mean expressive language standard score fell in the clinical range. The prevalence of mild and moderate or severe expressive language disorders was 55% and 33%, respectively. The standard score criteria were used to identify expressive language disorder in all but two cases. Performance varied across expressive language subtests. Children performed below average on the formulated sentences and sentence assembly subtests, whereas performance was average on the recalling sentences and word structure subtests.

TABLE 2
 CELF-3 STANDARD SCORES OF CHILDREN WITH EMOTIONAL
 AND BEHAVIORAL DISORDERS

Language area	Mean	Mild language disorder (%) ^a	Moderate or severe language disorder (%) ^b
Total language	85.0 (16.4)	53.6	32.1
Receptive language	88.9 (17.3)	41.7	21.4
Sentence structure	9.3 (3.3)	33.3	10.4
Concepts and directions	8.2 (3.0)	47.0	17.0
Word classes	8.0 (3.0)	45.8	23.0
Semantic relationships	8.1 (3.1)	42.9	20.0
Expressive language	83.3 (16.3)	54.8	33.3
Word structure	8.5 (2.5)	37.5	10.4
Formulated sentences	6.8 (2.6)	61.4	34.9
Recalling sentences	7.9 (3.2)	48.2	22.9
Sentence assembly	6.9 (3.0)	60.0	31.4

^a ≤ 1 SD, using standard score or discrepancy criteria.

^b ≤ 1.5 SD.

Notes: Standard deviations are reported in parentheses. Standard scores are based upon a mean of 100 and standard deviation of 15 for the total language, receptive language, and expressive language areas. The standard scores of the remaining subtests are based upon a mean of 10 and standard deviation of 3.

Third, the average receptive language score fell in the nonclinical range. The prevalence of mild and moderate or severe receptive language disorders was 42% and 21%, respectively. The standard score criteria was used to identify receptive language disorder in all but one case. Performance did not vary dramatically across receptive language subtests. Children performed in the average range on all receptive language subtests (i.e., sentence structure, concepts and directions, word classes, and semantic relationships).

Taken together, 67% ($n = 56$) elementary-aged public school children with EBD met clinical criteria for total, expressive, or receptive language disorder. Approximately 32% of children experienced pervasive (i.e., total, expressive, and receptive) language disorder. Approximately 23%, 10%, and 2% of children experienced expressive, receptive, and total language disorders only, respectively.

Prevalence of False Negatives

Of the 84 participating children with EBD, 17% ($n = 14$) were also diagnosed with a speech or language disorder or receiving language services. Of the 14 children, 8 met clinical criteria for a language disorder. The estimated prevalence of false negatives was 86%.

Discussion

Researchers of previous studies had reported high prevalence rates of language disorders among public school children with EBD. No research had examined the language skills of elementary-aged children with EBD using a cross-sectional design and random sampling procedures. There were two main purposes of this study. The first was to examine the language skills and prevalence rates of language disorders among elementary-aged public school children (K-5) with EBD using a randomized cross-sectional design. The second was to explore the prevalence of false negatives that exhibit clinical language disorders that go undetected.

Several findings warrant discussion. First, the prevalence rates of total, expressive, and receptive language disorders reported by researchers in previous studies differ from those reported in this investigation. In a recent review of the literature, researchers reported prevalence rates of total, expressive, and receptive language disorders among children with EBD served in public schools of 88%, 88%, and 68%, respectively (Benner et al. 2002). In the current study, the prevalence rates of total, expressive, and receptive disorders were 54%, 55%, and 42%, respectively. Furthermore, Miniutti (1991) reported that 81% of children with EBD evinced severe language disorders ($SD \leq 2$) using the Clinical Evaluation of Language Fundamentals–Revised (CELF-R) (Semel et al. 1987). In the present study, 18% of children met criteria for severe total language disorder. The discrepancies of prevalence rates between this and previous investigations may be explained by three fundamental differences: sampling procedures, the placement settings of participants, and dependent measures used. With regard to sampling procedures, all four previous studies examining

the language skills of children with EBD in public schools used convenience samples (Camarata et al. 1988; McDonough 1989; Miniutti 1991; Ruhl et al. 1992). With regard to demographic characteristics of participants, all but one (Camarata et al. 1988) of the four previous studies sampled from children served in self-contained or resource-room settings. Moreover, researchers of one study (Miniutti 1991) used a sample of children who had low socioeconomic status and were predominantly non-Caucasian from an urban area served in self-contained classrooms (Miniutti 1991). Finally, the dependent measures used by researchers may have impacted prevalence rates. For example, Camarata et al. (1988) reported that 97% of children with EBD presented language disorders using the Test of Language Development–Intermediate (TOLD-I; Hammill and Newcomer 1982).

Second, there appears to be a higher prevalence of expressive language disorders than receptive language disorders among children with EBD served in public school settings. This finding concurs with that of Camarata et al. (1988) who reported that 89% of children with EBD in public school settings presented expressive and 68% receptive language disorders. In the current study, approximately 55% of children met clinical criteria for an expressive language disorder and 42% for receptive language disorder. Furthermore, among samples of children with EBD served in clinical (e.g., psychiatric settings, residential treatment settings) the prevalence of expressive language disorders has been estimated at 64%, and receptive language disorders at 56% (Benner et al. 2002). Taken together, it appears that children with EBD may display higher prevalence rates of expressive than receptive language disorders regardless of general placement (i.e., public school or non-public school).

Third, almost 9 out of 10 (86%) children meeting clinical criteria for total, receptive, or expressive language disorder were not receiving formal language services. The high percentage of false negatives raises concerns regarding the assessment and intervention for language difficulties experienced by children with EBD in public schools (Kauffman 1999). Searches of school records indicated that few children with EBD receive language evaluation as part of initial evaluation or reevaluation for special education services (Walker et al. 1994; Beitchman et al. 1998). Interestingly, the prevalence rate of false negatives reported in this investigation is much higher than the 33% to 40% rate for children with EBD served in non-public-school settings (Cohen et al. 1993; Cohen et al. 1998; Cohen 2001). One reason for the high proportion of false negatives may be that recognition of language difficulties in public school children with EBD is often eclipsed by the challenge of managing the behavior of these students in the classroom (Warr-Leeper et al. 1994).

Fourth, the results of this study indicate that approximately two-thirds of elementary-aged children (K-5) with EBD in public schools appear to experience a language disorder (i.e., total, expressive, or receptive). This finding concurs with previous research that indicated that nearly 2 out of 3 children served in clinical settings experience comorbid EBD and language disorder (Benner et al. 2002). Among those served in clinical settings (i.e., speech clinics, treatment centers, or psychiatric clinics), the prevalence rates of language disorder (mean = 66%) among children with EBD is comparable to the prevalence rates of EBD (mean = 63%) in those with previously diagnosed language disorders. All told, it appears that approximately two-thirds of children with EBD experience comorbid language disorders, regardless of placement. Furthermore, one-third of children with EBD served in public school settings exhibit pervasive (i.e., broad-based) expressive, receptive, and total language disorders. This represents half of the children (K-5) with EBD experiencing some form of language disorder in public school settings.

Limitations

This study was limited in several important ways. First, only one dependent measure was used to assess the language skills of children. Future research on the language skills of children with EBD in public school settings should include a variety of dependent measures to assess a broader range of language skills (e.g., pragmatic language skills). Second, the participants were randomly selected from the population of children (K-5) with EBD in one school district in an urban city in the Midwest. The results of this study are not generalizable to the larger population of children with EBD. Future research should include larger-scale randomized studies of children with EBD served in public schools.

Third, the experimental methods used in this study provide no information regarding the strength or nature of the relationship between language skills and EBD. This study did not contribute to understanding the variables that predict and moderate language deficits experienced by children with EBD. Future research is needed to clarify the strength and nature of the relationship between EBD and language deficits. Finally, despite the wealth of research on the deficits in pragmatic language skills faced by children with EBD (Walker et al. 1994; Warr-Leeper et al. 1994; Rogers-Adkinson and Griffith 1999; Kauffman 2001), this study did not take into account such skills. Future investigations should consider pragmatic language skills in addition to expressive and receptive areas of language when examining the language skills of children with EBD.

Implications

There are several implications of this study. First, most of the intricacies of what a child must learn about with respect to complex social behaviors (e.g., cooperation and self-control), emotional regulation, and language are acquired through reciprocal interactions with their caregiver by age five (Patterson 1982; Kaiser et al. 2000; Nelson 2000). The findings of this and other investigations suggest that the majority of children with EBD experience language disorders. Language disorders may result from and serve as catalysts for ongoing problematic interactions between caregivers, peers, and teachers and children with EBD.

Second, children with EBD should be screened for language disorders, and involve speech and language pathologists in designing effective interventions for this population (Walker et al. 1994; Kauffman 2001). Untreated disorders in language are problematic given that language is the medium of instruction in the formal education system (Mack and Warr-Leeper 1992). Children are expected to learn through listening at least 60% of the time in elementary school and 90% of the time in high school (Warr-Leeper et al. 1994). Indeed, accurate screening and effective language instruction for young children with comorbid EBD and language deficits is a necessity (Hart and Risley 1995). The delivery of effective instruction is the best practice for the academic (e.g., language skill deficits) and behavioral problems faced by young children with EBD (U.S. Department of Education 2001).

Finally, early intervention and support programs for EBD, among other variables, should address language disorders. A narrow window of opportunity exists where there is still a chance to alter the course from chronic behavioral and language disorders to behavioral and language competence. According to Snow (1987), there appears to be a critical period or sensitive time in which children will benefit most from language instruction. Thus, it is critical to take a proactive and preventative stance rather than a reactive stance to effectively address the large number of children experiencing comorbid EBD and language disorders.

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