**Critical Review:**

Do children and adolescents with emotional/behavioural difficulties have associated deficits in language?

Sara Amato
M.Cl.Sc (SLP) Candidate
University of Western Ontario: School of Communication Sciences and Disorders

This critical review examines children and adolescents with emotional/behavioural difficulties and discusses associated language deficits in six studies. Study designs included: systematic review, meta-analysis, mixed group study, case control study, and two randomized cross-sectional designs. Overall, the research provides suggestive evidence that children and adolescents with emotional/behavioural difficulties have associated language deficits, primarily in their expressive language.

## *Introduction*

Children may be identified as having emotional and behavioural disorders through either educational or mental health systems. Emotional/Behavioural disorder (EBD) is defined under the Individuals with Disabilities Education Act (IDEA), Public Law 101-476, as a condition exhibiting an inability to learn and maintain interpersonal relationships, inappropriate types of behaviours or pervasive mood, and a tendency to develop fears (Benner, 2005). Children and youth, who have been identified as having EBD, face a myriad of challenges that affect development of academic and communication skills (Armstrong, 2011).

Students with this disorder face various emotional, behavioural, and social disabilities, and experience poor communication and language skills, and low academic achievement (Armstrong, 2011). Adolescents receiving mental health services have less well-developed figurative language, an important factor in developing social relationships (Im-Bolter, Cohen, & Farnia 2013; Nippold, 2007). Overall, learning problems experienced by students with EBD are mostly affected by language problems (Nelson, Benner, & Rogers-Adkinson, 2004).
A large proportion of children referred for psychiatric services have language impairments that remain unnoticed until a routine assessment is done. Findings of school-based population studies indicate that as many as 88% of children identified with EBD had not been evaluated for speech-language problems (Hyter, Rogers-Adkinson, Self, Simmons, & Jantz, 2001). For these children, problems in communication and language may be misinterpreted and labeled incorrectly as inattention and noncompliant or defiant behaviour problems, possibly leading to school expulsion (Cohen, 1998; Gilmour, Hill, Place, & Skuse, 2004; Ripley & Yuil, 2005). If these children are able to better identify their emotions and feelings as they occur, anxiety and unnecessary aggression may decrease (Armstrong, 2011).

Children with EBD are more likely to struggle with academics and drop out of school, face unemployment, abuse substances, receive mental health services, and abuse the criminal justice system. These factors are all strongly related to language proficiency (Bradley, Doolittle, & Bartolotta, 2008; Beitchman, Cohen, Konstantareas, & Tannock, 1996). Language development is the foundation of academic, social, and behavioral performance (Im-Bolter & Cohen, 2007; Toppelberg & Shapiro, 2000). Many studies explore the relationship between children with a language impairment and their emotional and behavioural outcomes, but few look at the reverse. The following review will appraise the current research pertaining to the language outcomes of children diagnosed with EBD. It is important to consider the language and communication needs of children identified with emotional behavioural disorder so that appropriate preventative supports can be put in place, as many children experience comorbid disorders (Mackie & Law, 2010; Prizant et al., 1990).

## *Objectives*

The objective of this article is to critically evaluate existing literature regarding the associated language deficits in children and adolescents with emotional/behavioural disorder.

## *Methods*

Search Strategy

Computerized databases, including PubMed, PsycINFO, PsycARTICLES, and Google Scholar, were searched using the following search strategy:
((EBD OR emotional behavioural disorder or mental illness) AND (language impairment OR communication disorder) AND (children OR adolescents)).

Selection Criteria

Studies that were selected for inclusion in this critical evaluation were required to investigate children and adolescents with emotional/behavioural disorder and their language outcomes. The children/adolescents in the studies had to be diagnosed or referred for emotional/behavioural disorders, with no associated language deficits diagnosed. Outcome measures were limited only by their ability to measure skills associated with expressive, receptive and pragmatic language.

Data Collection

Results of the literature search based on the selection criteria yielded the following types of articles: meta-analyses and systematic reviews, mixed group study, case control study and randomized cross-sectional studies.

## *Results*

Meta-analysis

**Hollo, Wehby, and Oliver (2014)** conducted random effects meta-analyses of 22 primary non-experimental group design studies examining 1,171 children aged 5-13 with formally identified EBD to determine the prevalence and severity of unidentified deficits in comprehensive, receptive, and expressive language proficiency. The authors analyzed if prevalence was moderated by differences in setting (school or clinic), number of measures (single or multiple), and purpose of assessment (research or practice).

Results demonstrated that the prevalence of previously unidentified language deficits in children with EBD was distributed around a mean of 81%, with 34% and 47% of deficits characterized as mild and moderate/severe respectively and a higher proportion in expressive language compared to receptive. Results also showed that moderate/severe language deficits were 18% higher in schools than clinical settings, and 15% higher in studies conducted for research purposes.

A limitation of the review is that nearly all of the studies represented samples of convenience; therefore the samples may not be representative of the general population. In each of the papers reviewed, the study characteristics were seldom clearly described. It is also possible that outcomes were affected by variations among test instruments. Strengths of the review include that the inter-rater agreement for screening procedures was 89% and reliability for coding was 90%. The authors used an exhausting search criteria and stringent inclusion criteria. Additionally, authors provided sound rational for their critiques and clearly outlined the implications of their analysis.

Overall, this systematic review presents compelling evidence of the presence of language impairment in children with EBD.

Systematic Review

**Benner, Nelson, and Epstein (2002)** conducted a systematic review of the literature examining the prevalence, strength, durability, and nature of language deficits in 2,358 children formally identified with emotional and behavioral disorders (EBD) and 438 children without EBD aged 4-19. Rigorous searching using broad inclusion criteria resulted in 26 primary studies. Researchers for 18 of the 26 studies examined the prevalence and types of language deficits of children with EBD. The type and number of language measures used varied widely across the 18 studies.

Overall, children with EBD experienced significant language deficits. Across studies, most children experienced pragmatic deficits, followed by expressive deficits and then receptive deficits. Nearly half of the children across studies had either a diagnosis of LI or standard scores below the 3rd percentile in comprehensive language proficiency. Children with EBD placed in public school settings appear to have a higher prevalence rate of overall, receptive, and expressive language deficits than those served in clinical settings.

Limitations of the systematic review include that only the number of language measures used across each study were stated, and not what language measures were used and whether they were standardized. In addition, authors were unable to assess potential moderator variables empirically; therefore did not statistically analyze the data and find specific results. Benner and colleagues suggested that between-studies heterogeneity might be due to variations among the testing instruments, diagnostic standards, and participant characteristics, which may have led to different associations and results. Researchers in seven studies did not specify the language cutoff criteria, which would have aided in comparing studies. It is important to note that all of the studies found the same pattern of results, at different rates; therefore the findings are still significant and show that this paper had appropriate inclusion criteria. In all cases, researchers used a casual/comparative design indicating a relationship between EBD and language deficits, however further investigation could look into the strength or nature of this association.

This systematic review provides a compelling level of evidence.

Mixed Group Study (Within and Between Study)

**Im-Bolter, Cohen, and Farnia (2013)** investigated the association of structural and figurative language with social cognitive skills in 138 adolescents who present for mental health services and 186 nonreferred adolescents aged 12-17. The participants were administered standardized measures of structural and figurative language, working memory, behavioural and emotional problems and social cognitive problem solving.

Results of appropriate statistical analysis revealed lower scores for the clinic group in structural language, figurative language and working memory compared to the nonclinic group, suggesting an association between language deficits and difficulties with social problem solving. A significantly higher percentage of youth in the clinic group (7.25%) met criteria for structural LI compared with youth in the nonclinic group (1.08%). Further correlation analysis showed figurative language to be a significant predictor of social cognitive maturity in the clinic group only.

Strengths of the study include the use of a large sample size and exclusion criteria for participants (e.g., excluded referred youth who had a previously identified language impairment or were receiving services for language/learning related problems). In addition, the authors used well-known standardized measures that had good test-retest reliability and internal consistency. The authors used appropriate statistical analysis when examining the data. A limitation of the study is that it failed to discuss specific types of figurative language that may be more problematic for the referred group (e.g., idioms, irony, metaphors, etc.); therefore it may not generalize to all types of figurative language. The authors also stated that in general, the participants were referred for mental health services for having symptoms associated with depression, hyperactivity, oppositional defiant disorder and conduct disorder. It is not stated if all participants had emotional/behavioural disorders; therefore this may affect the generalizability of the results to children with only EBD.

Overall, this study offers suggestive evidence supporting association between language impairment and emotional behavioural disorders.

Case Control Study

**Mackie and Law (2010)** investigated the level of association between pragmatic language skills and EBD among 33 children aged 7-11 years with or without EBD. The participants' language, literacy, and non-verbal cognitive ability were assessed using appropriate standardized measures or questionnaires. Parents and teachers completed questionnaires investigating communication skills, behaviour, and emotional wellbeing.

Results found that 38% of children in the referred group scored at or below the tenth percentile, indicating impaired language skills (LI), compared to zero children in the control group. A statistically significant proportion of individuals in the referred group (53%) had literacy skills below average compared to the control group. Analysis of pragmatic language abilities indicated poorer performance among the referred group.

Limitations of the study include the small number of final participants in the pragmatic measure due to the small number of valid checklists returned; therefore these results may not be generalizable (n=11). Only screening questionnaires were used to analyze EBD and pragmatic language, therefore participants in the study did not receive a diagnosis of EBD so the results may not be generalizable to children diagnosed with EBD. Appropriate statistical analysis was used. The study was intended to be a pilot study; therefore it provides significant information for a more conclusive study and used appropriate statistical analysis. Mackie and Law (2010) used exclusion criteria when selecting participants and matched analysis to prevent bias from confounding variables. Overall, this study provides a suggestive level of evidence regarding children with EBD and associated pragmatic language deficits.

Randomized Cross-Sectional Study

**Benner (2005)** examined the language skills and prevalence rates of language disorders among 84 elementary-aged public school children (K-5) with EBD using a cross-sectional design. The Clinical Evaluation of Language Fundamentals 3rd ed. (CELF-3) was used to assess language skills, including receptive, expressive, and total language skills.

Appropriate analyses revealed mild and moderate/severe language disorders was present in 54% and 32% of cases, respectively. There was a higher prevalence of expressive language disorders than receptive language disorders among children with EBD. Overall, 67% of elementary-aged public school children with EBD met clinical criteria for total, expressive or receptive language disorder, the majority of whom were not receiving formal language services.

A limitation of this study was the authors used a convenience sample; therefore the results may not be generalizable to the population. Strengths of the study

include the use of a random selection process for participants to prevent selection bias and the results will be more generalizable. In addition, this study excluded children with comorbid diagnoses to prevent biased results. The psychometric properties of the CELF-3 indicate adequate internal consistency for composite scores, strong content validity, and adequate contrast validity. Descriptive statistics were used to detail the language skills, demographic characteristics, and prevalence of language disorders in children with EBD, therefore providing appropriate statistics to make conclusions from the data (Martella, Nelson, & Marchand-Martella,1999).

Due to the methodological strengths listed, this paper offers a suggestive level of evidence.

**Nelson, Benner, and Cheney (2005)** investigated language deficits in a random sample of 166 students with classified emotional disturbance (ED) across grades K-12. Participants were assessed using measures of language (CELF-3) and problem behaviours (Child Behaviour Checklist: Teacher Report Form).

Results of appropriate analysis demonstrated that 68% of students have clinical language deficits. Students who exhibited externalizing problem behaviours, such as aggression, were more likely to experience language deficits than those who presented with internalizing behaviours, such as anxiety (McKiney & Forman, 1982; Epstein, Kutash, & Duchnowski, 1998).

Appropriate statistical analysis was conducted using multiple regression analyses. Strengths include that there was strong external validity and the used trained data collectors to administer the tests; therefore the results of the assessments were appropriate. They used a random sample of participants to prevent selection bias and the results were generalizable to the population as a whole. This study is limited as the sample of children was diagnosed with an emotional disturbance, therefore this does not generalize to children with behavioural disturbances as well. Overall, the study was well-designed and appropriate for the objectives of the current review and provides a suggestive level of evidence.

### *Discussion*

This review examined studies related to the outcomes of language in children diagnosed with emotional behavioural disorders. Overall, there was compelling and suggestive evidence indicating that there is an association between children with EBD and associated language deficits.

Differences in the cutoff criteria used by researchers to establish a language deficit resulted in a high degree of variability across studies in estimates of the percentages (i.e., 25%–95%) of children with EBD who had language deficits (Benner, Nelson, & Epstein, 2002). However, the same pattern of results was evident across the studies, indicating that children with EBD were more likely to exhibit a language impairment, prominent in the pragmatic and expressive language domains comparative to the normal population. It is important to note that the children's deficits may not solely be caused by their emotional behavioural disorder and could be due to a complex interaction between many factors (Hollo, Wehby, & Oliver, 2014).

The challenge across studies is that they all used different sampling procedures, cutoff criteria for language deficits, placement settings of participants and dependent measures, therefore there is a discrepancy between prevalence rates of children with EBD who had associated language deficits.

Language deficits will have an affect on how children and youth are able to engage in appropriate social and communication interactions with peers. Therefore, children with emotional behavioural disorders may have difficulty coordinating the complex interaction between language and cognitive skills necessary for interpreting complex and ambiguous information as well as interacting socially. Many children with EBD do not receive a language evaluation as part of their initial evaluation for special education services due to the challenge of managing their behaviour in the classroom (Warr-Leeper et al. 1994). This highlights the need for consideration of the language and communication needs of children identified with EBD so appropriate preventative supports can be put in place. It is possible that educating adults about the link between language and emotional behavioral problems could affect some change. Researchers have noted that recognizing that problem behaviors, such as noncompliance, could be in part due to deficits in comprehension or expression helps adults become "less likely to fault the children for their misbehavior" and more likely to perceive the child "in a more positive light" (Cohen et al., 1993).

### *Conclusion*

Based on the research evaluated within this critical review, the evidence suggests that children with EBD are likely to experience a language deficit, prominent in pragmatic and expressive language.

### *Clinical Implications*

Children diagnosed with emotional behavioural difficulties often have language deficits that go unnoticed. It is important to note that screening and identification of language deficits is important to facilitate early intervention in children with EBD. The language difficulties are often overlooked due to the obvious challenging behaviour management that is necessary with these children (Warr-Leeper, Wright, & Mack, 1994). Teachers and other adults in the child's environment may not recognize that the child could be acting out or experiencing anxiety due to language difficulties. The child may not understand instructions in the classroom, have the ability to express how he/she is feeling, or have social communication skills to relate to peers. It is important as clinicians to look past the challenging behaviours and recognize why this behaviour may be occurring and provide appropriate supports as necessary. A child with EBD should be screened for a language deficit as early as possible.

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