

**PRAGMATIC LANGUAGE SKILLS OF
ADOLESCENTS WITH ADHD**

by

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ABSTRACT

The nature and prevalence of pragmatic language deficits were investigated in conversations of 137 adolescents with their mothers. Adolescents diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD) or ADHD comorbid with ODD or CD demonstrated more problems with pragmatic language than the comparison group of normally developing adolescents (NC). Deficits and impairment were measured using summary scores on both scales of the *Profile of Pragmatic Impairment in Communication*. Adolescents were observed in video-taped conversations in two situations: neutral, planning a hypothetical family vacation, and conflict, solving behavior problems identified by their mothers. The computed Mean Length of Utterance was used to measure the youths' level of talkativeness. Results confirmed that ADHD youth talked more than NC youth. Differences were found between ADHD and ADHD-ODD adolescents' behavior in the conflict situation. Results also illustrated the need for the assessment of pragmatic language skills in children and youth diagnosed with ADHD.

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"The time has come" the Walrus said,
"to talk of many things" (Carroll, 1872)

It is difficult to remember a time when this dissertation was not ahead of me, or when I was not thinking about it, or when I was not in the midst of it. There have been landmarks: the proposal, institutional review board permissions granted, data collection begun, the last protocol scored, the data entered, the first draft submission, and finally the defense. Each of these moments has been recognized, some even celebrated. Many more hours along the way have been just that, some tedious, some onerous, others best unimagined.

Through it all, I have never been alone. There is no doubt, nor was there ever, that I could or would have reached this conclusion without an immeasurable amount of support for which my gratitude will always be insufficient. However, in putting my thanks in words, I would like to think that each time they are read, I have been able to express my gratitude.

This is true of the many friends and fellow students who have shared some of the journey with me. I cannot name

them all, but in concluding the paper, I happened upon the following quotation, taken from *Love's Labours Lost* "your reasons at dinner have been sharp and sententious; pleasant without scurrility, witty without affection, audacious without impudency, learned without opinion, and strange without heresy" (Act V, Scene 1) and knew that, as Robin Holt would have observed, I was simply rediscovering the Bard.

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CHAPTER 1

Introduction

"ADHD is the Bermuda Triangle of the brain."

As one young man explained his experience of Attention-Deficit/Hyperactivity Disorder, he identified the unpredictability of his own impulsive responses to stimuli, his difficulty maintaining persistence in the absence of intrinsically relevant motivation, and the impact that his need for increasing and novel stimulation has on his overall functioning as a young adult. He recognized the actual and potentially devastating effects the symptomatic behavior threatens to have on his life. He described his experience of living with ADHD as that of "navigating a particularly unpredictable and treacherous sea with a faulty compass." The disclosure and his self-awareness touched me in a singular way. As his parent I have witnessed many of the difficulties he has encountered growing up and shared his understanding that his struggle with the effects of ADHD would continue throughout his life.

Statement of the Problem

Attention-Deficit/Hyperactivity Disorder (ADHD) is one of the most commonly occurring mental disorders in the

United States, with an estimated 3% to 7% of all children meeting diagnostic criteria (Diagnostic and Statistical Manual of Mental Disorders, Text Revision, American Psychiatric Association, 2000; *DSM-IV*; see Appendix A for diagnostic criteria). These children experience levels of hyperactivity, impulsivity, and inattentiveness that significantly and negatively affect their functioning in multiple areas of their daily lives, at home, in school, and in other social interactions. Literally thousands of articles in dozens of journals have been written on myriad aspects of this disorder. Illustrative of this is a recent search of the Medline database for the past 10 years using Attention-Deficit/Hyperactivity Disorder as the keyword that resulted in over 7500 articles. The foci of research articles included diagnosis, etiology, and treatment. Instruments have been developed to enable clinicians, parents, and teachers to identify and report characteristic problem behaviors. Pharmaceutical trials continue to be initiated for new medications and innovative delivery systems for drugs previously shown to ameliorate symptoms. Theoretical debate continues as to the conceptualization of the disorder. At the same time, research seeks to clarify the neurobiological and genetic factors of ADHD and those disorders that commonly occur with ADHD which intensify its

consequences for affected individuals, their families, and communities.

With neither a preventable cause nor a recognized cure, the overall prognosis for children diagnosed with ADHD is poor (Barkley, 2002, 1994, 1990; Barkley, Fischer, Edelbrock, & Smallish, 1989; Fischer, Barkley, Edelbrock, & Smallish, 1990; Fischer, Barkley, Smallish, & Fletcher, 2002; Weiss & Hechtman, 1993). Longitudinal studies have found that ADHD is pervasive throughout the lifespan. The current fact sheet published by the National Institute of Mental Health lists ADHD as the fourth most prevalent mental health disorder among adults. Estimated prevalence figures indicate that 18.1% of all adults (age 18 and above) suffer one or more of the Anxiety Disorders; 9.5 % suffer Mood Disorders (with 6.7% having Major Depression). The prevalence of ADHD is estimated to be 4.1% of all adults in the age range of 18 to 44 (National Institute of Mental Health, [NIMH], 2006).

Although most individuals with ADHD are diagnosed in childhood, the effects of ADHD continue to compromise their socialization as they age. The long-term negative effects of ADHD have been identified in studies documenting lowered educational achievement, lack of stability in employment, greater likelihood of antisocial or delinquent behavior,

higher rates of adolescent pregnancy and sexually transmitted disease, and increased risks for personality disorders and additional psychiatric diagnoses (Barkley, 2002; Biederman et al., 1996; Fischer et al., 2002; Weiss & Hechtman, 1993; Whalen & Henker, 1991). Taken together, these findings imply an overall negative effect of ADHD on individuals' social development into adulthood.

Research supports the primacy of communication competence among the factors contributing to appropriate socialization (Ellis, 1999; Gallagher, 1991; McTear & Conti-Ramsden, 1992; Winsler, Diaz, McCarthy, Atencio, & Chabay, 2000). Indeed, the ability to use language to communicate is "an inherently social phenomenon" (Gallagher, p. 11). The inextricable interdependence of communication skills and social development provides the context in which to consider the role of the symptomatic behavior of ADHD as undermining the socialization of ADHD individuals. For example, in his review of the life outcomes of ADHD, Barkley noted that up to 54% of children with ADHD experience speech problems that he associates with executive processing. He also recognized the increased incidence of expressive language disorders as well as problems with pragmatic language (2002, p.11). While not endorsing the radical proposal of Baird, Stevenson, and Williams (2000) that ADHD may be more accurately understood

as a communication disorder, per se, it is reasonable to seek clarification of the relationship of ADHD and language problems, particularly pragmatic language skills.

There is concurrence that certain behaviors are symptomatic of ADHD, and therefore necessary for the confirmation of a diagnosis of ADHD based on the criteria of the *DSM-IV*. Recently the proposition that several of the criteria for a diagnosis of ADHD represent deficits in pragmatic language skills has entered discussion (Bruce, Thernlund, & Nettelbladt, 2006; Damico, Damico, & Armstrong, 1999). Barkley noted that problems in "sharing, cooperation, and turn taking" undermine peer relationships (2002, p. 12). These problems characterize all pragmatic language deficits. However, while such behaviors may be symptomatic of ADHD, they are not identified as pragmatic deficits within the context of diagnostic criteria for ADHD. Nor, in fact, are pragmatic language deficits considered in the context of the communication disorders defined by *DSM-IV*.

Pragmatic language skills and deficits refer to the appropriate or inappropriate use of verbal, nonverbal, and paralinguistic elements of language in the context of interpersonal communication. Unlike semantics, which concerns the meaning of an utterance, or syntactics, which concerns the grammatical form of an utterance, pragmatics is

concerned with how individuals use language to interact with others. How does one determine the topic of a conversation, negotiate turn-taking between conversationalists, or convey meaning beyond the actual words of an utterance? Are there rules, explicit or implicit, about how one uses language? What determines the appropriateness of one's utterances?

There is an extensive literature that focuses on the co-occurrence of ADHD with the other behavior disorders, specifically Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD) (Abikoff & Klein, 1992; Bagwell et al., 2001; Barkley, 1998; Barkley et al., 1990; Biederman, Newcorn, & Sprich, 1990; Brown, 2000; Fischer et al., 2002; Jensen et al., 2001). Although diagnosis of ADHD depends on evidence of some symptoms prior to age seven, ODD and CD are generally diagnosed later than ADHD, from approximately age eight through the early adolescent years. The criteria for a diagnosis of ODD comprise an overall pattern of disobedient, hostile, and defiant behavior that is characterized by difficulty in interactions with authority figures such as parents and teachers. These youth are seen as insolent, angry, and argumentative, and as openly defying legitimate requests and rules. While ODD is characterized by a negativistic, hostile attitude and negative verbal behavior, Conduct Disorder is characterized by hostile physical

behavior that violates the rights of others. It is characterized by physical aggression toward people, animals, destruction of property, significant deceitfulness, or theft, and serious violations of rules, such as truancy or running away from home. CD is related to the diagnosis of Antisocial Personality Disorder.

Studies vary on findings of ODD or CD comorbidity with ADHD. The co-occurring ODD has been found in 39% (Keller et al., 1992) to 60% of children and youth diagnosed with ADHD (Barkley et al., 1990). In a study investigating ODD and CD, Greene et al. (2002) found that although approximately 80% of the youth diagnosed with ODD did not exhibit symptoms of CD, approximately 90% of those diagnosed with both ODD and CD also had comorbid ADHD. In a follow-up of children diagnosed with ADHD at age 10, Biederman et al. (1996) found that 73% of the youth met criteria for ODD and 28% for CD at age 14. In a similar follow-up study conducted eight years after their initial study, Barkley et al. (1990) found that nearly 60% of their ADHD sample met criteria for ODD and 43% for CD. (See Appendix B for diagnostic criteria for ODD and Appendix C for CD criteria.) Although there is a direct relationship between ODD and Conduct Disorder, not all youth with ODD eventually meet criteria for CD. However, when a child meets diagnostic criteria for both ODD and CD, the CD

diagnosis will subsume the ODD diagnosis (*DSM-IV*, p.68). Consequently ODD is often seen as a precursor for the significantly more serious Conduct Disorder (Abicoff & Klein, 1992). Longitudinal studies have demonstrated that the comorbidity of either ODD or CD significantly increases the negative effects of ADHD on the individual (Barkley, Fischer, Smallish, & Fletcher, 2006; Biederman et al, 1996).

ADHD has also been found to be significantly comorbid with language disorders (Bishop, Chan, Adams, Hartley, & Weir, 2000; Cohen et al., 2000; Tannock, Purvis, & Schachar, 1993; Tannock & Schachar, 1996). The consensus is that as many as 50% of the children diagnosed with ADHD have a language disorder and that this comorbidity exacerbates the effects of ADHD, particularly with respect to social development. Within the language literature, research on the effects of language disorder on socialization has focused on pragmatic competence (Adams & Bishop, 1989; Bishop et al; Cohen, Davine, Horodezky, Lipsett, & Isaacson, 1993; Gallagher, 1991; Turkstra, McDonald, & Kaufmann, 1995; Prutting, 1982). Only a few studies have specifically integrated the issues to address the relationship of symptomatic ADHD behaviors and pragmatic skills (Bain, 2000; Cohen et al; Friedman et al., 2003; Gizzo, 2001; Humphries, Koltun, Malone, & Roberts, 1994; Kim & Kaiser, 2000; Purvis

& Tannock, 1997; Theriault & Holmberg, 2001). In one study of ADHD comorbidity with language disorders, Tannock and Brown (2000) reviewed the extant research on ADHD and pragmatic deficits and identified nine studies that have investigated specific pragmatic deficits in children with ADHD. Most of these studies have sampled the child population, with ages ranging from 6 to 12 years. One exception is the study by Friedman et al. who addressed aspects of adult pragmatic skills. There appears to have been no investigation of pragmatic language skills in an adolescent cohort diagnosed with ADHD. The lack of research does not invalidate the extensive experiential data gathered from thousands of affected individuals, or from the parents, teachers, and clinicians who diagnose, interact with, or care for them. It does, however, indicate the need for current research to investigate the relationship of ADHD and the potential effects that it has on the pragmatic aspects of communication competence. Understanding the effects of ADHD is the initial step in ameliorating its negative consequences.

Purpose of the Study

This study investigates the conversational skills of adolescents diagnosed with ADHD, specifically the pragmatic language skills or deficits they demonstrate in

conversational interactions with their mothers. The purpose of this study is twofold in addressing the underlying research questions. The first purpose is to determine the nature and prevalence of pragmatic language deficits demonstrated by adolescents with ADHD and adolescents with ADHD comorbid with ODD or CD. The second is to compare the pragmatic skills of normally developing adolescents with those of ADHD and ADHD-ODD or ADHD-CD-diagnosed adolescents.

Significance of the Study

To date, no empirical study of the pragmatic skills of adolescents with ADHD appears to have been conducted. There have been a limited number of studies of the pragmatic language competence of both normal and clinical samples of children and adults (Bain, 2000; Friedman et al., 2003; Gizzo, 2001; Humphries et al., 1994; Kim & Kaiser, 2000; Purvis & Tannock, 1997; Tannock & Brown, 2000), but few of these have included adolescents. There is a dearth of research including participants aged eleven through seventeen. The results of this study will provide the basis for comparisons of the pragmatic language competence of adolescents diagnosed with ADHD or ADHD comorbid with ODD or CD with those adolescents developing normally. The results will support the consideration of some ADHD diagnostic

criteria as deficits in pragmatic language. In identifying specific pragmatic deficits in youth with ADHD, this study will identify specific targets for therapeutic intervention. Finally, this research may suggest additional investigations of pragmatic language competence across the age range of individuals diagnosed with ADHD.

Summary

The symptomatic behavior of those with ADHD continues to contribute to negative outcomes for these youth as they enter young adulthood. This is particularly evident in the overall difficulty they experience in personal interactions across educational, vocational, and interpersonal contexts. Patterns of symptomatic behavior suggest underlying deficits in pragmatic communication skills. However the study of the development of pragmatic language skills beyond childhood has been limited both for those adolescents who are developing normally as well as for those identified as having ADHD. This study focuses on identifying deficits in pragmatic language, which, it is hypothesized, contribute to the negative prognoses for youth with ADHD. The present study integrates theory and research derived from the disciplines of developmental psychology and speech and language pathology. The following chapter therefore

comprises a review of the relevant literature in both fields.

PREVIEW