SOCIAL SKILLS OF CHILDREN IN THE U.S. WITH COMORBID LEARNING DISABILITIES AND AD/HD

Thomas J. Smith
Steve Wallace
Northern Illinois University

This study examined data from the Special Education Elementary Longitudinal Study (SEELS, 2003) to compare the social skills of children in the U.S. with comorbid learning disabilities and attention-deficit/hyperactivity disorder (LD+AD/HD) to their peers with LD-only and AD/HD-only, and to assess how specific demographic factors moderate the relationship between disability status and social skill. Results showed that the social skills deficits of children with comorbid LD+AD/HD were more marked than those of children with LD-only. Additionally, family involvement significantly moderated the relationship between disability status and social skill, with increased family involvement associated with increased social skills among children with comorbid LD+AD/HD and AD/HD-only.

The development of social skills among children with disabilities has long been a concern among educators, parents, and researchers. Social skills and the development of healthy peer relationships in childhood are recognized as valuable predictors of community participation (Bryan, 1997; Gresham, 1981), long-term life success (Parker & Asher, 1987), and long-term quality of life (Guralnick, 2005). Social skills deficits may limit access to social and educational opportunities (Guevremont & Dumas, 1994; Landau & Moore, 1991), contribute to rejection by peers (Whalen, Henker, Castro, & Granger, 1987), and affect psychosocial adjustment in later adolescence and adulthood (Barkley, 1998). It is generally accepted that, compared to their peers without disabilities, children with disabilities show deficits in social skills (Fusell, Macias, & Saylor, 2005), and are more apt to experience social isolation (Pearl et al., 1998). They also show difficulty comprehending nonverbal cues and problem-solving (Cartledge, & Millburn, 1996; Forness & Kavale, 1996; Nixon, 2001).

While the social skill deficits among children with disabilities are fairly well-documented, less well understood are specific and relative distinctions in social skill among specific subgroups of children with disabilities (Fusell, Macias, & Saylor, 2005). When the social skills of children with a learning disability (LD) are considered, the picture is complex. Although numerous studies have demonstrated social skills differences between children with learning disabilities (LD) and children without LD (see meta analysis by San Miguel, Forness, & Kavale, 1996), other studies show no such differences (e.g., Cartledge, Stupay, & Kaczala, 1986). Similarly, studies have shown no differences in social skill when children with LD are compared to children with other disabilities (Schumaker, Hazel, Sherman, & Sheldon, 1982).

Among children with learning disabilities, much debate has centered upon whether observed deficits in social skills are an inherent characteristic of learning disabilities, or whether these deficits are due to other factors related to the presence of learning disabilities. A number of hypotheses (as summarized in San Miguel, Forness, & Kavale, 1996) have been proposed to explain these social skills deficits. These include: (a) neurological dysfunction that underlies the academic deficit of the child (Boucher, 1986; Bryan, 1982; Oliva & La Greca, 1988; Renshaw & Asher, 1983; Wiener, 1980), (b) poor self-concept, peer rejection, or other social obstacles that ensue from poor academic performance (Osman, 1987), (c) limited environmental opportunities for the child (Gresham, 1988), (d) reduced social support from the family due to the stress of dealing with the child's disability (Amerikaner & Omizo, 1984; Kronick, 1978; Wilchesky & Reynolds, 1986), or (e) the comorbidity of LD with other conditions, such as

depression or attention-deficit hyperactivity disorder (AD/HD). The latter hypothesis, known as the psychiatric comorbidity hypothesis, was first proposed by Forness and Kavale (1991).

Although a number of studies have addressed the effects of LD+AD/HD comorbidity on academic outcomes (e.g., Mayes, Calhoun, & Crowell, 2000; Faraone, Biederman, Monuteaux, Doyle, & Seidman, 2001; Tirosh, Berger, Cohen-Ophir, Davidovitch, & Cohen, 1998), the association of comorbidity on outcomes related to social skill is less well understood. Smith and Adams (2006), in their examination of data from the 2001 National Household Education Survey, found that parents of children with comorbid LD+AD/HD were significantly more likely than parents of children with LD-only to be contacted by teachers about behavioral problems at school. Flicek (1992) examined young boys with comorbid LD+AD/HD and compared their social skills to boys with AD/HD-only, LD-only, AD/HD + low achieving, low achieving (only), and a control group. When teacher and peer ratings of social skill were considered, children with comorbid LD+AD/HD showed the greatest impairment. Sprouse, Hall, Webster, and Bolen (1998) assessed social perception in a sample of 57 children with LD-only, comorbid LD+AD/HD, or children without disabilities. The authors report that children with comorbid LD+AD/HD did not show significantly lower scores in a facial expression subtest than either children with LD-only or without disabilities. They also found that, when teacher ratings of behavior were considered as an outcome, children with comorbid LD+AD/HD did not differ from children with LD-only in social perceptivity, but did show lower ratings than children without disabilities. In a study of 85 children with disabilities, Fusell, Macias, and Saylor (2005) found that the comorbid presence of LD+AD/HD did not significantly impair social skills compared to children with AD/HD-only or LD.

Findings, then, are mixed concerning the additive or intensification effects of comorbidity on the social skills of children with learning disabilities. Also, the studies examining the effect of comorbidity on social skills have been limited to relatively small sample sizes, with the exception of the study by Smith and Adams (2006). That study, however, did not examine social skills outcomes directly, but used indirect indicators such as suspension/expulsion and teacher contact of parents regarding behavioral problems.

The purpose of the present study was to use a large, nationally-representative sample of school-aged children in the U.S. to compare the social skills of children with comorbid LD+AD/HD to their peers with LD-only and AD/HD-only. A second purpose was to assess how these disabilities are related to demographic factors (gender, age, ethnicity, and poverty status). A third purpose was to examine how the interaction of disability status with specific demographic factors (gender, age, ethnicity, and poverty status), as well as the factors of school type and family involvement are related to social skill. To these ends, we addressed the following research questions:

1. Do the social skills of children with comorbid LD+AD/HD differ from their peers with either AD/HD-only or LD-only?
2. How are specific demographic factors (gender, age, ethnicity, poverty status) related to the occurrence of AD/HD-only, LD-only, and comorbid LD+AD/HD?
3. Do specific demographic factors (gender, age, ethnicity, and poverty status) moderate the relationship between disorder status and social skill?
4. Does family involvement moderate the relationship between disorder status and social skill?
5. Does type of school (regular vs. other) in which a child is enrolled moderate the relationship between disorder status and social skills?

Method

This study used data from the Special Education Elementary Longitudinal Study,Wave 1 (2003). The Special Education Elementary Longitudinal Study (SEELS) is a longitudinal data collection effort commissioned by the U.S. Department of Education's Office of Special Education (OSEP). The data pertained to U.S. school students age 3-13 classified as special education students. A complex stratified sampling design was used to select participants, with local education agencies (LEAs) selected first, and students within LEAs selected second. This sampling design had implications for the data analyses carried out. First, due to the selection strategy, particular subgroups in the population were over-represented and other subgroups under-represented. Second, the cluster sampling methodology used resulted in observations that were not independent, which created the possibility of artificially small standard errors. To address these issues, we carried out all analyses using the SPSS Complex Samples module, implementing the sampling weights supplied with the data, and adjusting all standard errors and

significance tests using the supplied cluster and stratum information. Institutional Review Board (IRB) approval was obtained from the authors' home institution.

Analyses for this study were carried out using data from Wave 1 of the Parent Interview, which included parent reports of each child's demographic characteristics, school and family characteristics, school experiences (including school programs, extracurricular activities, and related services), and various academic, behavioral, and attitudinal outcomes. The total (unweighted) sample size was n = 4059. Disability status was determined by asking each parent or guardian (hereafter, *parent*) to confirm the reported disability designation provided by the school district.

To assess the social skills of these children, scores on a Child Social Skills Scale (CSSS) were considered. The CSSS consisted of eleven items pertaining to specific social skills of the child (see Table 1). For each item, the parent being interviewed was asked to indicate how often her or his child demonstrated the indicated social skill (0 = never, 1 = sometimes, 2 = very often). For each child, a composite CSSS score was obtained by summing the item scores for the eleven items. Higher composite CSSS scores reflected stronger social skills and lower scores indicated poorer social skills. Scores on the CSSS demonstrated adequate reliability (coefficient alpha = .78).

Table 1. Child Social Skills Scale (CSSS) Items

Frequency that child…	
joins groups without being told	receives criticism well
makes friends easily	controls temper when arguing with other children
ends disagreements with respondent calmly	keeps working at something until he/she is finished
seems confident in social situations	speaks in an appropriate tone at home
avoids situations that are likely to result in trouble	cooperates with family members without being asked to do so
starts conversations rather than waiting for others to start	

Note. Response scale: 0 = *Never*, 1 = *Sometimes*, 2 = *Very Often*.

To ascertain the disability status of each child, each interviewed parent was asked to confirm the school's designation of the primary disability of the child. For the purposes of this study, three groups of children were considered: (a) children who were confirmed as having LD without another disability (hereafter, LD-only), (b) children with AD/HD and no other disability (AD/HD-only), and (c) children with both LD and AD/HD (hereafter, comorbid LD+AD/HD). To examine how disability status was related to selected demographic characteristics, analyses of cross-classification tables using the Rao-Scott procedure was carried out. The Rao-Scott procedure (Rao & Scott, 1987) is an adjusted version of the chi-square test of independence appropriate for examining associations between categorical variables when data from complex samples are used. To investigate the association of comorbid LD+AD/HD with social-behavioral outcomes, pairwise contrasts were constructed using the Child Social Skills Scale score as the dependent variable, and the Wald F-statistic computed, with error degrees of freedom equal to the number of primary sampling units minus the number of strata in the data (see Korn & Graubard, 1999). The Wald contrasts are appropriate for examining mean differences in scores when data are from complex samples. Significance levels were adjusted for multiple comparisons using a Bonferroni correction.

Results

Table 2 shows the population estimates (based on the provided sampling weights) for the frequency of children in each of the four specified disability categories; (LD+AD/HD, AD/HD-only, LD-only, neither AD/HD nor LD). As indicated, although children with AD/HD-only or LD-only comprised fairly large proportions of the population of children aged 3 to 13 with disabilities (17.5% and 27.7%, respectively), the proportion of children with comorbid AD/HD was not insubstantial. Specifically, 10.2% of the

population of children with disabilities was reported as having comorbid LD+AD/HD. Table 3 shows the demographic characteristics (gender, ethnicity, age, household income level) for the three groups. The mean age of children in the sample was 10.2 (95% CI: 9.96, 10.09). Analyses of cross-classification tables using the second-order Rao-Scott procedure (Rao & Scott, 1987) indicated that disability status was significantly associated with child's ethnicity ($F(4.80, 992.99) = 3.33$, $p = .01$), age ($F(1.96, 406.45) = 8.45$, $p < .01$), gender ($F(1.98, 410.78) = 26.89$, $p < .01$), and family income ($F(5.55, 1147.86) = 35.68$, $p = .02$). Specifically, (a) compared to their white peers, Hispanic children showed a greater tendency towards LD-only, while African American children showed a greater tendency towards comorbid LD+AD/HD; (b) compared to younger children, older children showed a greater tendency towards LD-only or LD+AD/HD; (c) although girls were less likely to have any of the three disabilities than boys, relatively more girls had LD-only than either AD/HD or LD+AD/HD; and (d) low family income (less than $20K/year) was associated with a greater propensity towards comorbid LD+AD/HD designation for a child, low-middle income ($20K-35K) was associated with greater tendency towards LD-only, and higher income ($50K+) was associated with greater tendency towards AD/HD-only.

Table 2. Frequency Distribution of Children with Specified Disabilities

Disability status	Weighted sample frequency	Weighted pop. estimate	95% C.I. for population estimate	
			Lower bound	Upper bound
AD/HD-only	1512	468,141 (31.9%)	413,251 (29.6%)	523,030 (34.2%)
LD-only	2361	730,923 (49.8%)	648,779 (47.0%)	813,067 (52.6%)
Comorbid LD+AD/HD	871	269,553 (18.4%)	228,222 (16.2%)	310,884 (20.8%)
Total	4744	1,468,617 (100.0%)	1,330,532	1,606,701

Differences in Child Social Skills by Disability

Table 4 shows descriptive statistics for the composite CSSS score by disability status. A set of pairwise contrasts was constructed to compare the mean scores of children with comorbid LD+AD/HD to each of the other two groups (AD/HD-only and LD-only). Age, gender, ethnicity, and family income were used as covariates to control for possible mediating effects. Results showed that children with comorbid LD+AD/HD showed significantly lower CSSS scores (i.e., weaker social skills) than children with LD-only ($F(1, 207) = 15.99$, $p < .01$), with a small-to-moderate effect ($d = 0.26$). No significant mean difference in scores was evident between children with comorbid LD+AD/HD and children with AD/HD-only ($F(1, 207) = 0.94$, $p = .67$).

Moderating Effects of Gender, Ethnicity, Age, and Poverty Status of Child

We next examined how various demographic variables might moderate the relationship between disability status and social skills. A general linear model (using disability status and gender as the fixed factors, and age, gender, ethnicity, and family income as covariates) indicated no significant interaction between disability status and gender ($F(2, 204) = 0.36$, $p = .70$). Similarly, when the interactive effects of child's ethnicity, child's age, and poverty status of the child's family were considered, general linear models again indicated no significant interaction (See Table 5).

Moderating Effects of Family Involvement

We next considered how family involvement with the child at home moderated the relationship between disability status and child social skills (controlling for age, gender, ethnicity, and family income). To examine this, we considered responses of the parent to two survey items designed to assess family involvement at home: (1) *During this past school year, how often did you or another adult in the household help (child's name) with (his/her) homework?*, and (2) *How often during this past school year did you or another adult in the household talk with (child's name) about (his/her) experiences in school?* The summed scores for these two items constitute a family involvement at home score (SEELS, 2006). A general linear model using this composite variable indicated a significant interaction with child's disability status ($F(2, 198) = 8.69$, $p < .01$). As Figure 1 shows, children with AD/HD-only or comorbid

LD+AD/HD showed stronger social skills in home settings with high family involvement, while children with LD-only showed stronger social skills in settings where family involvement was low.

Table 3. Demographic Characteristics of Children by Disability Status (Weighted Population Estimates)

	AD/HD-only		LD-only		LD+AD/HD	
	Freq.	*Percent*	*Freq.*	*Percent*	*Freq.*	*Percent*
Gender						
Female	106,786	22.8%	279,680	38.3%	67,861	25.2%
Male	361,354	77.2%	451,243	61.7%	201,692	74.8%
Ethnicity						
White	322,679	68.9%	440,793	60.3%	170,231	63.6%
African American	91,602	19.6%	144,106	19.7%	68,128	25.5%
Hispanic	41,863	8.9%	122,108	16.7%	25,742	9.6%
Other Ethnicity	11,997	2.6%	23,903	3.3%	3,526	1.3%
Age						
7-9 years	168,160	36.4%	181,365	24.9%	73,448	27.3%
10-12 years	250531	54.2%	467,129	64.1%	158,950	59.1%
13-14 years	43,652	9.4%	80,445	11.0%	36,537	13.6%
Family Income						
$0 to $20K	132,504	29.8%	207,157	31.2%	96,795	38.3%
$20,001 to $35K	102,368	23.1%	175,083	26.4%	52,458	20.8%
$35,001 to $50K	71,918	16.2%	122,681	18.5%	39,595	15.7%
Over $50K	137,259	30.9%	158,512	23.9%	63,818	25.3%

Table 4. Descriptive Statistics for Child Social Skills Scale (CSSS) by Disability Status

Disability status	*n*	*M*	*SD*	95% C.I. for *M*
AD/HD only	1512	12.77	3.90	(12.47, 13.08)
LD only	2361	14.10	3.65	(13.81, 14.42)
Comorbid LD+AD/HD	871	13.12	3.90	(12.58, 13.47)
Total	4744	14.15	3.84	(14.00, 14.30)

Table 5. Interactive Effects of Disability Status with Gender, Ethnicity, Age, Poverty Status, Family Involvement, and School Type

Effect	df_{effect}	df_{error}	*F*
Disability status × gender	2	204	0.36
Disability status × ethnicity	6	208	1.83
Disability status × age	2	204	0.56
Disability status × poverty status	2	204	0.60
Disability status × family involvement	2	198	8.69**
Disability status × school type	2	204	2.82

Note. **p < .01.

Moderating Effects of School Type

When the type of school a child attended was considered as a possible moderator of the relationship between disability status and social skills, results approached significance ($F(2, 204) = 2.82$, $p = .06$). Here, when controlling for age, gender, ethnicity, and family income, children with AD/HD-only or LD-

only showed weaker social skills in regular school settings than in other school settings (i.e., special schools, magnet schools, charter schools, alternative schools, or other types of schools). In contrast, children with comorbid LD+AD/HD showed stronger social skills in regular school settings than in other school settings (see Figure 2).

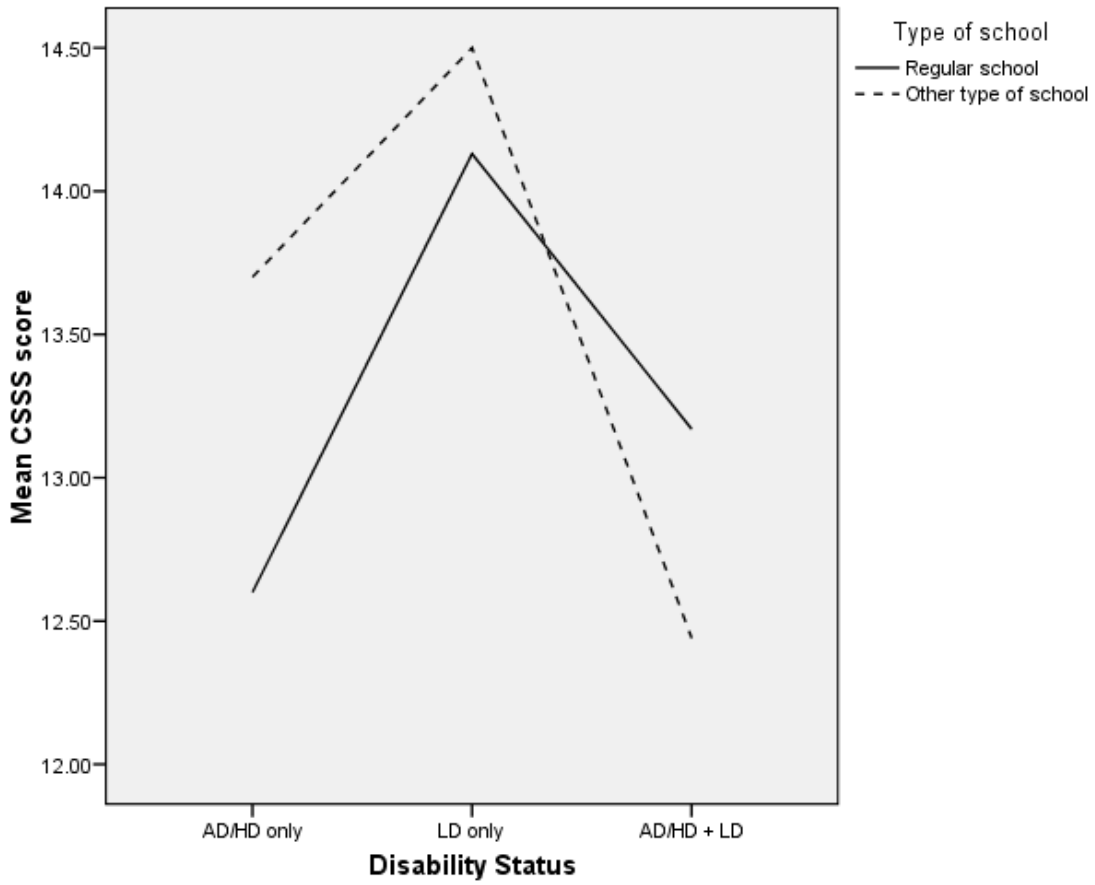

Figure 1. Mean CSSS scores by disability status and family involvement.

Discussion

The development of social skills among pre-teen children is a key factor related to later academic and social success. Among children with disabilities, it becomes more an even more crucial element, as these children already face existing and substantial challenges related to their disability. The present study examined how the comorbidity of LD and AD/HD was related to social skills in children, and also examined factors that could potentially moderate this relationship. In this study, children with comorbid LD+AD/HD showed significantly lower social skills than children with LD-only. This result is consistent with the findings of Flicek (1992), but differs from the findings of Fusell, Macias, and Saylor (2005) or Sprouse, Hall, Webster, and Bolen (1998). Also, although this result does not directly confirm the psychiatric comorbidity hypothesis of Forness and Kavale (1991), it does not disconfirm it. That is, the observed social skills deficits of children with comorbid LD+AD/HD (when compared to the children with LD-only) are a result that would be predicted by this hypothesis. It should be noted however, that the SEELS data do not contain information on children without disabilities, so it was not possible to compare this group to children with LD-only. Specifically, it is still possible that, although they show stronger social skills than children with comorbid LD+AD/HD, children with LD-only may still present weakened social skills when compared to non-disabled children. Additionally, in the present study children with comorbid LD+AD/HD did not differ in social skill when compared to children with AD/HD-only. This differed from the findings of Fusell et al., who found children with AD/HD-only to have lower social skills than the children with comorbidity. Both findings, however, suggest that LD+AD/HD comorbidity at least does not appear to further impair the social skills of children with AD/HD-only.

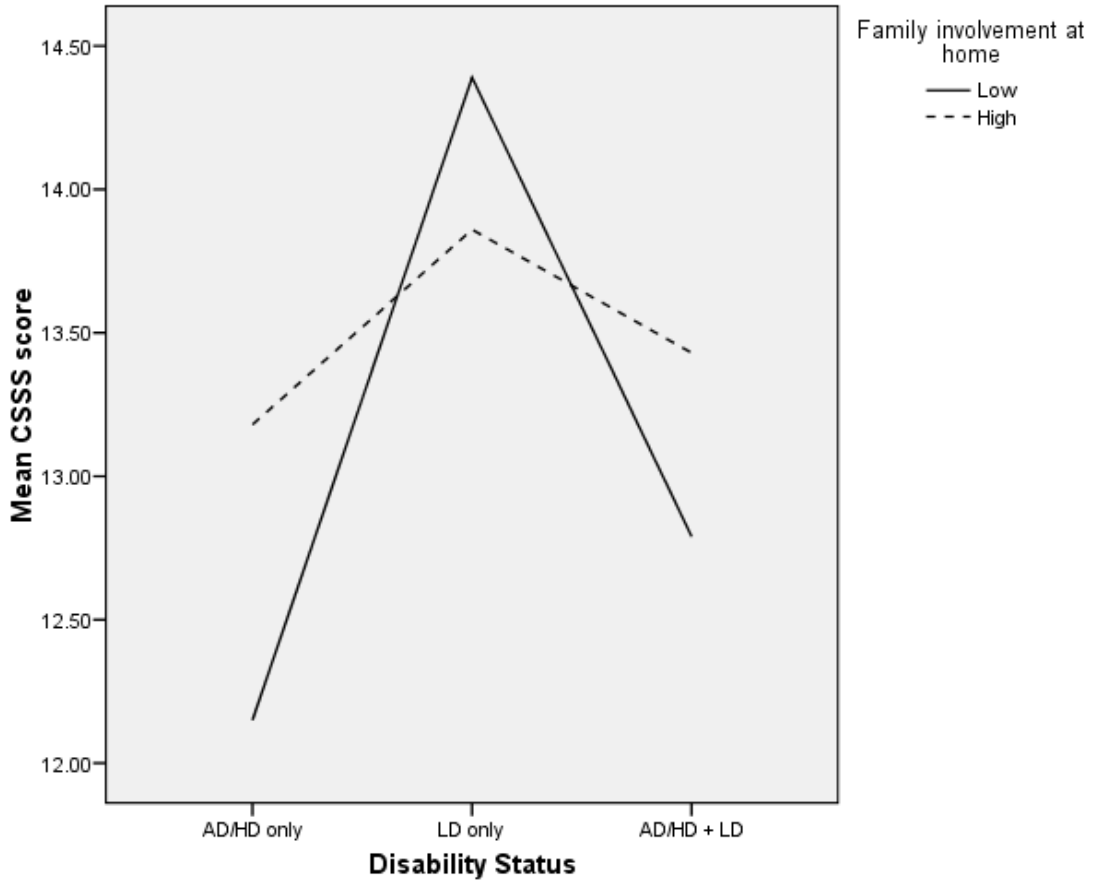

Figure 2. Mean CSSS scores by disability status and type of school.

A second notable finding was that a family income was associated with propensity towards distinct disabilities. Specifically, low family income was associated with a greater tendency towards comorbidity of LD and AD/HD, low-middle income was associated with greater tendency towards LD-only, and upper income was associated with greater tendency towards AD/HD-only. It is certainly possible that the particular environmental factors associated with low family income (e.g., lessened access to effective treatment or intervention, lower-quality living conditions, variations in diet, etc.) may contribute to the observed increase in comorbidity. These same factors, however, might just as easily influence the occurrence of LD or AD/HD in isolation, so they may not entirely explain this occurrence. Also, the association of gender with disability type, with boys showing more tendency than girls towards AD/HD-only and comorbid LD+AD/HD (as compared with LD-only) is consistent with previous findings (e.g., Biederman et al., 2002) that show AD/HD as more prevalent among boys. Biological or gender-related child-rearing differences are the most dominant reasons put forth to explain these differences (see e.g., Barkley, 1989; Reid et al., 2000).

Family involvement was identified as the only significant moderator of the relationship between disability status and social skill. Here, increased family involvement was associated with stronger social skills for children with either AD/HD or comorbid LD+AD/HD. This is consistent with findings by Xu and Corno (2003), who found that family involvement in a child's homework was related to a child's control of emotion; and also consistent with the results of Milne and Plourde (2006), who identified family involvement as the most influential contributor to students' social achievement (showing an even greater influence than SES). In the present study, however, increased family involvement was associated with lower social skills among children with LD-only. This observation is more difficult to explain. Although it is possible that (as suggested by the results of Xu & Corno) family involvement has relatively greater effect on a child's affective development than her/his cognitive development, and thus may affect children with AD/HD to a greater extent than children with LD, it does not explain why

children with LD-only who experience high family involvement exhibited *weaker* social skills than their peers with high family involvement. Although an attempt was made to control for a number of outside variables in this study, it is possible that the observed effect of family involvement is not causal (that is, higher family involvement causing lower social skills). Rather, it may be that children with more severe learning disabilities (and presumably weaker social skills) experience increased family involvement as a result of that increased severity. However, a similar argument could be made for children with AD/HD-only and comorbid LD+HD, where the negative relationship was not observed. The explanation for this association remains open, and certainly deserving of additional study.

Although the interaction of school type with disability status was not significant, the effect approached significance, and thus is also deserving of additional study. The nature of the observed relationship in this study was that children with AD/HD-only and LD-only showed higher social skills in a regular school setting, while children with comorbid LD+AD/HD showed higher social skills in non-regular school settings (special schools, magnet schools, charter schools, alternative schools, or other types of schools). These differences, if they indeed exist, might be explained in several ways. First, it is possible that children with comorbid LD+AD/HD in a regular school setting may, by virtue of their comorbid status, feel uniquely *different* from their peers without disabilities as well as from their peers with non-comorbid disabilities, and may lack the opportunity to form friendships with other students who share their experience. Children with LD-only or AD/HD-only, in contrast, may find the opportunity to assimilate into a heterogeneous school culture a challenging but achievable task that helps to promote their social development. Another possibility is that children with comorbid LD+AD/HD may experience the opportunity for more focused pedagogical attention and heightened understanding of and/or sensitivity towards the issue of comorbidity, as well as a curriculum that more effectively addresses the needs of a child with comorbidity, which may help facilitate social development. In contrast, children with AD/HD-only or LD-only who are in a regular school setting may find that existing curricular and pedagogical practices, shaped by the more recent attention given to these disabilities as they occur in isolation, effectively meet their needs and allow them to socially thrive. Finally, although in the present study an attempt was made to control for a number of outside variables, it is possible that children with more severe forms of comorbid LD+AD/HD (and presumably weaker social skills) may be more likely to find placement in a regular school setting, while children with less severe comorbidity may find themselves placed in a non-regular school setting, while the opposite is true for children with LD-only and AD/HD-only. This scenario, however, is difficult to envision, and difficult to rationalize.

Implications for Practice

The findings of this study have several implications for practice. First, given the recognized importance of social skill development in enhancing a child's subsequent quality of life, together with the observed finding that children with comorbid LD+AD/HD show social skill deficits that exceed those of children with LD-only, it is critical these children are offered opportunities and experiences that serve to enhance their social skills. Specifically, this may involve ensuring that individualized education program (IEP) goals for children with comorbid LD+AD/HD address specific social skills, such as cooperation with peers, taking initiative in joining peer activities, and initiating conversations. It is also imperative that educators and parents increase their awareness of the potential for these social skills deficits among this specific population, and also increase their awareness of environmental situations that can serve to either exacerbate these deficits, or to address and rectify them. A teacher attuned to the specific social skill sensitivities of a child with comorbidity, for example, may be more apt to intervene in situations where the opportunity exists for the child to strengthen these skills, such as peer activities, recreational activities, or cooperative group work. It is also essential for educational professionals to communicate clearly and effectively with parents of children with comorbid LD+AD/HD, helping them to understand the unique social skills challenges that their children experience, and how these challenges might be effectively addressed. Additionally, given the finding that increased family involvement is associated with increased social skill among these children, it becomes critical that parents are educated about the key role they can play in enhancing these social skills, and that parents and educators work together to develop a shared approach to these challenges.

References

Amerikaner, M.J., & Omizo, M. M. (1984). Family interaction and learning disabilities. *Journal of Learning Disabilities, 17*, 540-543.

Barkley, R. A. (1989). Hyperactive girls and boys: Stimulant drug effects on mother-child interactions. *Journal of Child Psychology and Psychiatry, 30*, 379-390.

Barkley, R. A. (1998). Attention-deficit hyperactivity disorder. In E. J. Mash & R. A. Barkley (Eds.), *Treatment of childhood disorder, 2nd ed.* (pp. 55-110). New York, NY: Plenum Press, 55-110.
Biederman, J., Mick, E., Faraone, S. V., Braaten, E., Doyle, A., Spencer, T., Wilens, T. E., Frazier, E., & Johnson, M. A. (2002). Influence of gender on attention deficit hyperactivity disorder in children referred to a psychiatric clinic. *American Journal of Psychiatry, 159*, 36-42.
Boucher, C.R. (1986). Pragmatics: The meaning of verbal language in learning disabled and nondisabled boys. *Learning Disability Quarterly, 9*, 285-294.
Bryan, T. H. (1982). Social skills of learning disabled children and youth: An overview. *Learning Disability Quarterly, 5*, 332-333.
Bryan, T. (1997). Assessing the personal and social status of students with learning disabilities. *Learning Disabilities Research and Practice, 12*, 63–76.
Cartledge, G., & Millburn, J. F. (1996). *Cultural diversity and social skills instruction: Understanding ethnic and gender differences.* Champaign, IL: Research Press.
Cartledge, G., Stupay, D., & Kaczala, C. (1986). Social Skills and Social Perception of LD and Nonhandicapped Elementary-School Students. *Learning Disability Quarterly, 9*(3), 226-234.
Faraone, S.V., Biederman, J., Monuteaux, M.C., Doyle, A. E., & Seidman, L.J. (2001). Learning disabilities and executive dysfunction in boys with attention-deficit/hyperactivity disorder. *Neuropsychology, 15*(4), 544-556.
Flicek, M. (1992). Social status of boys with both academic problems and attention-deficit hyperactivity disorder. *Journal of Abnormal Child Psychology, 20*(4), 353-366.
Forness, S.R., & Kavale, K.A. (1991). Social skills deficits as primary learning disabilities: A note on problems with the ICLD diagnostic criteria. *Learning Disabilities Research and Practice, 6*, 44-49.
Forness, S. R., & Kavale, K. A. (1996). Treating social skill deficits in children with learning disabilities: A meta-analysis of the research. *Learning Disability Quarterly, 19*, 2-14.
Fusell, J. J., Macias, M. M., & Saylor, C. F. (2005). Social skills and behavior problems in children with disabilities with and without siblings. *Child Psychiatry and Human Development, 36*(2), 227-241.
Gresham, F. M. (1981). Assessment of children's social skills. *Journal of School Psychology, 19*, 120–133.
Gresham, F.M. (1988). Social competence and motivational characteristics of learning disabled students. In M. Wang, M. Reynolds, & H. Walber (Eds.), *The handbook of special education: Research and practice* (pp. 283-302). Oxford, England: Pergammon Press.
Guevremont, D. C., Dumas, M.C. (1994). Peer relationship problems and disruptive behavior disorders. *Journal of Emotional and Behavioral Disorders*, 2(3), 164-172.
Guralnick, M.J. (2005). Early intervention for children with intellectual disabilities: Current knowledge and future prospects. *Journal of Applied Research in Intellectual Disabilities, 18*, 313-324.
Korn, E. L., & Graubard, B. I. (1999). *Analysis of health surveys.* New York: John Wiley and Sons, Inc.
Kronick, D. (1978). An examination of the psychosocial aspects of learning disabled adolescents. *Learning Disability Quarterly, 1*, 86-93.
Landau, S., & Moore, L. A. (1991). Social skill deficits in children with attention-deficit hyperactivity disorder. *School Psychology Review, 20*(2), 235–251.
Mayes, S. D., Calhoun, S. L., & Crowell, E. W. (2000). Learning disabilities and ADHD: Overlapping spectrum disorders. *Journal of Learning Disabilities, 33(5)*, 417-424.
Milne, A., & Plourde, L. (2006). Factors of a low-SES household: What aids academic achievement? *Journal of Instructional Psychology, 33*, 183-93.
Nixon, E. (2001). The social competence of children with attention deficit hyperactivity disorder: A review of the literature. *Child Psychology & Psychiatry Review, 6*, 172-179.
Oliva, A. H., & La Greca, A. M. (1988). Children with learning disabilities: Social goals and strategies. *Journal of Learning Disabilities, 21*, 301-306.
Osman, B. B. (1987). Promoting social acceptance of children with learning disabilities: An educational responsibility. *Reading, Writing and Learning Disabilities, 3*, 111-118.
Parker, J. G., & Asher, S. R. (1987). Peer relations and later personal adjustment: Are low-accepted children at risk? *Psychological Bulletin, 102*, 357-389.
Pearl, R., Farmer, T. W., Van Acker, R., Rodkin, P., Bost, K. K., Coe, M., & Henley, W. (1998). The social integration of students with mild disabilities in general education classrooms: Peer group membership and peer-assessed social behaviour. *The Elementary School Journal, 99*, 167–186.
Rao, J. N. K., & Scott, A. J. (1987). On simple adjustments to chi-square tests with sample survey data. *The Annals of Statistics, 15*, 385-397.
Reid, R., Riccio, C. A., Kessler, R. H., DuPaul, G. J., Power, T. J., Anastopoulos, A. D., Rogers-Adkinson, D., & Noll, M. (2000). Gender and ethnic differences in ADHD as assessed by behavior

ratings. *Journal of Emotional and Behavioral Disorders, 8*(1), 38-48.
Renshaw, P., & Asher, S. (1983). Children's goals and strategies for social interaction. *Merrill-Palmer Quarterly, 29*, 353-374.
San Miguel, S. K., Forness, S. R., & Kavale, K. A. (1996). Social skills deficits in learning disabilities: The psychiatric comorbidity hypothesis. *Learning Disability Quarterly, 19*(4), 252-261.
Schumaker, J.G., Hazel, J.S., Sherman, J.A., & Sheldon, J. (1982). Social skill performances of learning disabled, nonlearning disabled, and delinquent adolescents. *Learning Disability Quarterly, 5*, 409-414.
Smith, T.J., & Adams, G. (2006). The effect of comorbid AD/HD and Learning Disabilities on parent-reported behavioral and academic outcomes of children. *Learning Disability Quarterly, 29*(2), 101-112.
Special Education Elementary Longitudinal Study, Wave 1 [CD-ROM database, with accompanying documentation] (Produced Under Contract No. ED-00-CO-0017). (2003). Available from U.S. Department of Education, Office of Special Education Programs.
Special Education Elementary Longitudinal Study, Wave 1 Data Dictionary (2006). Department of Education, Office of Special Education Programs.
Sprouse, C.A., Hall, C.W., Webster, R.E., & Bolen, L.M. (1998). Social perception in students with learning disabilities and attention-deficit/hyperactivity disorder. *Journal of Nonverbal Behavior, 22*(2), 125-134.
Tirosh, E., Berger, J., Cohen-Ophir, M., Davidovitch, M., & Cohen, A. (1998). Learning disabilities with and without attention deficit hyperactivity disorder: Parents' and teachers' perspectives. *Journal of Child Neurology, 13(6),* 270-276.
Whalen, C. K., Henker, B., Castro, J., & Granger, D. (1987). Peer perceptions of hyperactivity and medication effects. *Child Development, 58*, 816-828.
Wiener, J. (1980). A theoretical model of the acquisition of peer relationships of learning disabled children. *Journal of Learning Disabilities, 13*, 42-47.
Wilchesky, M., & Reynolds, T. (1986). The socially deficient LD child in context: A systems approach to assessment and treatment. *Journal of Learning Disabilities, 19*, 411-415.
Xu, J., & Corno, L. (2003). Family help and homework management reported by middle school students. *Elementary School Journal, 103*(5), 503–518.