Exceptionality Education International

Volume 19 | Issue 1

Article 3

1-1-2009

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This paper provides a description of the demographic characteristics as well as the social and academic experiences of a nationally representative sample of Canadian students receiving special education services for an Emotional/Behavioural Difficulty (EBD) and a comparison group of students without disabilities (ND). Data summarized in this article were drawn from the National Longitudinal Survey of Children and Youth. Results reveal numerous areas of difference between groups from student, parent, and teacher perspectives. In particular, the EBD group contained a significantly greater proportion of boys and students from low income families. Students in the EBD group reported having difficulty making friends and not liking school as much as their ND peers. Academic expectations reported by teachers and parents for children with EBD were significantly lower than for children without disabilities. Discussions of these findings as well as implications for practice and for future research are presented.

Little is known about the characteristics and academic and social experiences of students in Canadian schools who have been identified as having an Emotional/Behavioural Difficulty (EBD). These students "experience less school success than any other subgroup of students, with or without disabilities," according to some researchers (Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005, p. 79). These students are at risk for a variety of negative outcomes including poor academic performance, school dropout, and psychosocial maladjustment (Finn, Heath, Petrakos, & McLean-Heywood, 2002; Kauffman, 2001; Royer, 1999). Clearly, identifying char-

acteristics that contribute to the continuing difficulties faced by students with EBD is necessary if improvements are to be made in current educational practice. Currently, studies examining these issues on a large-scale basis do not exist in Canada.

Unlike in the United States, there is no federally mandated definition of EBD used in Canadian schools. However, while criteria required for special education identification of EBD vary across provinces, all contain the requirement that the student display behaviour problems—either internalizing or externalizing—that are severe, chronic, pervasive, and negatively impact on his or her ability to learn and function in a classroom setting (e.g., Alberta Learning, 2004; British Columbia Ministry of Education, 2006; Ontario Ministry of Education, 2001; Winzer, 2008).

National data sampling of students with EBD is more systematic in the United States as education is federally rather than provincially administered, as is the case in Canada. In 2000, the U.S. Department of Education noted the lack of information available regarding the experiences of students receiving special education services. As a result, the Special Education Elementary Longitudinal Study (SEELS; SRI, 2004) was developed. SEELS data come largely from interviews with parents of students identified in schools with various disabilities as well as several direct student measures. Information about youth with EBD in the United States is also available through the National Longitudinal Transition Study 2 (NLTS-2; SRI, 2008), which began in 2001 and focuses on the characteristics and experiences of youth aged 13–16 through parent and student interviews as well as teacher surveys. Both SEELS and NLTS-2 (SRI, 2004, 2008) were launched as part of the national assessment of the 1997 Individuals with Disabilities Education Act. Researchers have access to both databases and studies have begun to emerge documenting the experiences of students with Emotional Disturbance (ED), which is the U.S. Special Education category that parallels the Canadian category of EBD (e.g., Wagner et al., 2005).

There are no national studies in Canada that assess the experiences of students receiving special education services. The Participation and Activity Limitation Survey (Statistics Canada, 2003) was designed to collect information on children and adults with disabilities that limit functioning, including chronic conditions such as asthma and physical impairments. Rich data exist in this survey; however, the Participation and Activity Limitation Survey is not focused on school-based disabilities or on the school experiences of students. The National Longitudinal Survey of Children and Youth (NLSCY), however, contains school-based nationally stratified data and is maintained jointly by Statistics Canada and what is now Human Resources and Skills Development Canada. Specifically,

The National Longitudinal Survey of Children and Youth (NLSCY) was developed with the objective of collecting data to identify risk factors for Canadian children, thereby improving society's understanding of the important process of child development. It is expected that information from the NLSCY will provide strategic insight for the formulation of more effective programs and policies for children at risk. (Human Resources and Social Development Canada, 1996, p. i)

Every 2 years, beginning in 1994, surveys are completed by children (over 10 years of age) and their parents and teachers. Topics within the surveys include the physical, emotional, and cognitive development of the child; parenting practices; education-related factors; and influences such as peers, schools, and the larger community (Statistics Canada, 1997). Of particular relevance is the teacher survey which details whether children are receiving special education services in school and for what difficulty or disability they are receiving these services. An examination of the experiences of students with learning disabilities (LD) using NLSCY data was published in

2007 (Whitley, Lupart, & Beran). The present study will focus on the children who have been identified as receiving special education services because of an EBD.

The school success of students with EBD is impacted by myriad factors. Research focusing on a selection of these will be summarized in three sections: (a) demographic characteristics, (b) social experiences, and (c) academic/school experiences.

Demographic Characteristics

Sex. As with many special education or disability categories, boys are more often identified with EBD. According to data from SEELS, boys comprised 80% of the EBD sample compared to approximately 65% of the sample of students with other disabilities (Wagner et al., 2005). A rate of 76% was reported by Valdes, Williamson, and Wagner (1990). Oswald, Best, Coutinho, and Nagle (2003), using longitudinal data collected by the U.S. Department of Education Office of Civil Rights Elementary and Secondary Civil Rights (1976–1997), found that boys were 3.5 times more likely to be identified as having EBD compared to girls. This risk ratio was higher than that for any other type of disability, including LD and Mild or Moderate Mental Retardation. Finally, among a small sample of high school students in California, male students were twice as likely to be identified with EBD (Lane, Carter, Pierson, & Glaeser, 2006). One Canadian study that described a small sample of elementary-aged students receiving special education services because of behavioural difficulties found that 20% were female and 80% were male (Déry, Toupin, Pauzé, & Verlaan, 2004).

Explanations for the sex differences found in the U.S. and Canadian studies have focused most recently on teacher bias with regard to student behaviour and the lack of fit between sex-stereotyped "male" behaviour and school expectations. Traditional male behavioural patterns may be viewed by female teachers as being inappropriate, placing boys at risk for misidentification as having an EBD (McIntyre & Tong, 1998). There is also some evidence that boys are more likely to display externalizing behaviours (Rosenfield, 2000) and that students with externalizing behaviours are also more likely to be referred for services than internalizing behaviours, thus further increasing the likelihood of boys being identified with EBD (Caseau, Luckasson, & Kroth, 1994; Sciutto, Nolfi, & Bluhm, 2004). Other explanations include biological sex differences, which dictate cognitive and behavioural patterns; the delayed maturation of boys compared to girls; and the higher likelihood of pre- and post-natal complications (Eme, 1980; Halpern, 1992; Oswald et al., 2003; Skårbrevik, 2002). Examining sex differences in the current study is essential, given the overwhelming U.S. evidence and some limited Canadian data supporting this finding.

Socioeconomic status. An inverse relationship between socioeconomic status (SES) and emotional and behavioural difficulties has been shown in both Canadian and U.S. studies (Brooks-Gunn & Duncan, 1997; Evans, 2004). Children living in low-income families are more likely to be exposed to "greater levels of violence, family disruption, and separation from their family" (Evans, 2004, p. 78). Other avenues through which SES may impact emotional and behavioural difficulties include parenting style, social networks, parent mental health, neighbourhood safety, and physical resources (Evans, 2004).

Brooks-Gunn and Duncan (1997) summarized the results of several U.S. national longitudinal data sets with respect to the effect of family income on children's outcomes. They found that young children living in poverty exhibited more internalizing and externalizing behaviour

problems than children who had never been poor. Differences remained even while factors such as maternal education and age, nutrition, and current poverty status were held constant. However, differences were small and inconsistent depending on the types of emotional and behavioural difficulties assessed. Authors further noted that the majority of the databases cited in their study focused on elementary-aged children and that research investigating the impact of income on adolescent behaviour was scarce. Analyses of further U.S. data from an entire Midwestern state (Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Chung, 2005) showed that students living in a high-poverty school board were twice as likely as students in wealthier boards (as measured by proportion of students eligible for free lunch) to be identified with EBD.

Wagner and her colleagues (2005), in analyzing data from SEELS, found that significantly greater numbers of students with ED (33.2%) lived in poverty compared to students with other disabilities (23.8%) and the general population (16%). Similar results were found for employment status, where students with ED were significantly more likely to live in a household whose head was not employed (23.6%) compared to students with other disabilities (16.5%) and those without (10.3%). Finally, with respect to education level, students with ED were significantly more likely (21.2%) than students without disabilities (8.1%), but not students with other disabilities (19.9%), to live in a household whose head was not a high school graduate. However, this finding held only for elementary and middle-school children; differences among secondary school students were not significant.

The limited Canadian data that exist draw largely from the NLSCY and parent reports of problem behaviours among young children. Overall, these studies have found that lower family SES was associated with greater incidences of behaviour problems including aggression, conduct problems, and hyperactivity (Boyle & Lipman, 1998; Tremblay et al., 1996; Wade, Pevalin, & Brannigan, 1999). The current analysis will extend the existing literature to examine the SES characteristics of Canadian students in special education using indicators including family income, parent level of education, and neighbourhood safety ratings.

Social Experiences

As difficulties with social interactions are typically included in criteria used to identify students with EBD (Lane et al., 2006), it would be expected that these students would be scored lower by themselves, their teachers, and parents on ratings of social skills. Certainly, existing research supports this assertion (see Gresham & MacMillan, 1997, for a review and Sabornie, Cullinan, Osborne, & Brock, 2005, for a meta-analysis). According to SEELS data (Wagner et al., 2005), students with EBD have lower social skills as rated by parents than students with other disabilities. Almost 30% of students with EBD were rated as having low social skills. Only 6% of students with EBD were rated as having high social skills compared to 20.8% with other disabilities. Lane and her colleagues (Lane et al., 2006) compared the characteristics of secondary students with ED (N = 45) and those with LD (N = 49). They found that students with ED scored significantly lower than the LD group on the Social Skills Rating System (Gresham & Elliott, 1990) according to teachers. The ED group also scored approximately one standard deviation below the mean of the standardization sample.

Contrary to what may be expected, there is extensive evidence that students with various behaviour disorders rate themselves as being as socially competent as their non-disabled peers (Diener & Milich, 1997; Hoza, Pelham, Dobbs, Owens, & Pillow, 2002; Hoza, Pelham, Milich, Pillow, & McBride, 1993). They also tend to report themselves as more socially adept than their

teachers do (Hoza et al., 2002; Owens & Hoza, 2003), suggesting an over inflated sense of competence on the part of these students. Whether these findings extend to a national sample of Canadian students with EBD will be assessed in the present study.

Academic/School Experiences

Student perspective. A number of studies have documented that when students feel engaged with and enjoy their school they are likely to experience high academic achievement and school completion (Beran, Hughes, & Lupart, 2008; Buhs, 2005; Finn, 1993; Ontario Ministry of Education and Training, 2005; Sinclair, 1994). For students with EBD, who are at-risk for school dropout, these factors are of even greater importance. Few studies have explored the potentially differential experiences of students with EBD with respect to school experiences. An exception is a study by Murray and Greenberg (2001) where fifth- and sixth-grade students' ratings of their relationships with their teachers and bonds with school were examined. Of the 289 students who participated, approximately 33% were identified as having mild-moderate disabilities including ED, Other Health Impairment, LD, and Mild Mental Retardation. Results indicated that students with ED reported significantly less satisfaction and affiliation with their teachers than students with LD, Other Health Impairment, and those without disabilities. They also reported lower school-bonding scores than students without disabilities. These findings are of concern given the poor long-term outcomes for students with EBD, but are perhaps not surprising given the relational difficulties often experienced by these students described previously. Clearly, student perceptions of school enjoyment and belonging are important factors to be included in a description of the experiences of students receiving special education services for EBD.

Parent perspective. For all students, their parents' educational expectations have a positive impact on academic achievement. Believing that their children have the potential to succeed elicits behaviours encouraging similar beliefs among the children themselves and also encourages parent behaviours that support further learning (Davis-Kean, 2005; Englund, Luckner, Whaley, & Egeland, 2004; Patrikakou, 1996; Sy & Schulenberg, 2005). These behaviours may include various types of parent involvement, such as monitoring of homework, participation in school conferences, and discussions surrounding future academic aspirations, which have been found to be significantly related to achievement (Beran et al., 2008; Catsambis, 1998; Wang, Haertel, & Walberg, 1990).

According to data from the NLTS-2 (Newman, 2005), parents' involvement and academic expectations are related to the outcomes for adolescents with disabilities in several ways. Somewhat surprisingly, students whose parents reported greater support for education at home (e.g., talking about school, helping with homework) had lower grades than those with less support. Explanations included the likelihood that students who were doing more poorly at school required greater help at home. Analyses conducted with U.S. SEELS data (Wagner et al., 2005) similarly show that parents of students with EBD report helping with homework frequently at significantly higher rates than parents of students without disabilities.

As well, students whose parents expected them to go on to postsecondary education had positive classroom engagement behaviours, better grades, fewer disciplinary actions, and greater affiliations with organized groups (Newman, 2005). It is not clear whether parent expectations lead to higher academic achievement and more positive behaviours or whether success in these areas leads parents to develop high expectations for their children. Whatever the direction of

causation however, academic expectations are important indicators of positive outcomes for students. Parent involvement—defined as home support of learning for students with EBD—will be explored in the present study.

Teacher perspective. Students with EBD have often been referred to as "tough-toteach" (Shores & Wehby, 1999; Sutherland, Lewis-Palmer, Stichter, & Morgan, 2008), particularly those exhibiting externalizing behaviours. Studies investigating the interactions between students with EBD and their teachers have found that students receive attention from teachers more often for negative behaviours than for academic needs (Shores & Wehby, 1999; Sutherland et al., 2008). Students with EBD are also less likely to receive praise and positive reinforcement from their teachers (Wehby, Symons, & Shores, 1995). As students with EBD are at high risk for academic failure (Lane et al., 2006; Reid, Gonzalez, Nordness, Trout, & Epstein, 2004), teacher beliefs and behaviours regarding these students are of even greater importance. Jordan and Stanovich (2001) have shown that the learning and self-concept of students are positively impacted by teachers who have interventionist beliefs. Teachers with these beliefs feel that students with disabilities have the potential to learn and that teaching methods they employ will promote learning among these students. Thus, if teachers have low expectations for their students with EBD and focus their interactions mainly on behavioural corrections, academic and affective outcomes for these students may be further jeopardized. In the present study, teachers' educational expectations for their students and ratings of their effort will be analyzed.

Teacher ratings of parent involvement will also be examined. Research literature has shown the impact of teacher perceptions of parent involvement on teacher ratings of student achievement (Bakker, Denessen, & Brus-Laeven, 2007; Hughes, Gleason, & Zhang, 2005). Therefore, whether or not teachers view parents of students with EBD as being less involved than parents of typically-developing students is an important aspect of the school success of these students.

Present Study

The purpose of this article is to describe demographic characteristics, as well as social and academic correlates that are related to the potential success of students with EBD. Teacher and parent reports, as well as student self-reports will be used to present a range of perspectives. This information will provide insight into the needs of students with EBD and will help inform identification and intervention practices. The data summarized in this article, drawn from the NLSCY, represent a national sample of Canadian students, and, as such, make a significant and unique contribution to the limited existing literature.

Method

Participants

This study includes a weighted sample of 4257 students in elementary and middle school who participated in the fourth cycle (2000–2001) of the NLSCY. Two groups of students participated in the present study. The first group was students with Emotional/Behavioural Difficulties (EBD group; n = 223) who were identified through their teachers' responses to a two-part ques-

tion. First, teachers were asked, "Does this student receive special/resource help because a learning disability, a physical, emotional, behavioural, or other problem limits the kind or amount of school work he/she can do?" For teachers who responded in the affirmative, the following was asked: "What type of problem limits this student's ability to do school work in a regular classroom?" Those students for whom teachers replied with "emotional/behavioural problem" were included in the EBD sample for the present study. Students identified as having multiple limitations (emotional/behavioural problem and another limitation) were excluded from the study. The second group consisted of students whose teachers did not identify them as receiving special/resource help for any reason (ND group; n = 4034).

Measurement

Items chosen from the NLSCY for inclusion in the present analysis consisted of a number of single survey questions as well as two scales comprised of multiple questions. Items were selected from three surveys: Parent, Child (referred to here as student), and Teacher. The individual survey questions answered by students, their parents, or their teachers are presented in the Results section in their entirety and the scales are described below. In order to meet Statistics Canada guidelines for release of data, those response categories with coefficients of variance of 33.5 or higher were collapsed where possible to produce more acceptable estimates (Statistics Canada, 2001a, p. 135). For example, parents were asked the following question: "How far do you hope your child will go in school?" Parents responded on a 5-point scale, ranging from 1 = complete some secondary or high school to 5 = obtain a university degree. As few parents chose the lowest level of education, the lowest two levels (some secondary and secondary completion) were combined, resulting in a 4-point scale.

The Neighbourhood Safety Scale assesses parents' perceptions of their neighbourhood in terms of safety at night and the availability of safe play spaces for their children. As such, it is an important aspect of assessing socioeconomic status. Parents responded to three questions on a 4-point scale ranging from $1 = strongly \ disagree$ to $4 = strongly \ agree$: (a) "Is it safe to walk alone in this neighbourhood after dark?" (b) "Is it safe for children to play outside during the day?" and (c) "Are there safe parks, playgrounds and play spaces in this neighbourhood?" Responses on the three questions were summed and then 1 point was subtracted from each item to create a scale score with a ceiling of nine with high scores indicating a high perception of neighborhood safety. The scale was adapted from the Simcha-Fagan Neighbourhood Questionnaire (Simcha-Fagan & Schwartz, 1986) and has a Cronbach's Alpha of 0.70 (Statistics Canada, 2001a, p. 66).

Teachers completed the Social Skills scale, intended to measure social and personal skills demonstrated by the child in the class. The scale consisted of nine items which were rated on a 5-point scale ranging from 1 = never to 5 = always: "Please indicate how often this student: (a) works co-operatively with other students, (b) plays co-operatively with other students, (c) follows rules/instructions, (d) makes friends easily, (e) demonstrates self-control, (f) shows self-confidence, (g) shows respect for adults, (h) shows respect for other youth/children, and (i) accepts responsibility for his/her own actions." Teacher responses on the nine questions were summed and then 1 point was subtracted from each item to create a scale score with a ceiling of 36 where high scores indicate strong social skills. NLSCY documents indicated that items for this scale were selected from a study by Freeman and Hatch (1989) and the Cronbach's alpha was reported as 0.93 (Statistics Canada, 2001b, p. 31), indicating good internal consistency.

Analysis

The NLSCY uses a complex sampling design which requires that weights be applied to the data in order to obtain accurate sample variance of survey estimates. The use of raw data to calculate estimates of population characteristics is not appropriate as it does not take into account the sampling design which is purposefully stratified rather than random (Statistics Canada, 2003). Accordingly, frequencies were calculated for students using WesVar 4.0 (Westat, 2000) and a set of cross-sectional Bootstrap weights provided by Statistics Canada. Using this procedure, the percentages reported are weighted population estimates which are nationally representative for the years when the data were collected (2000 and 2001).

Descriptive analyses of the data were conducted. Specifically, the proportion of respondents that endorsed each level of categorical variables is presented for students in the EBD and ND groups. In addition, chi-square analyses with the Rao-Scott 2 adjustment for the design effect (Rao & Scott, 1987) were conducted to determine whether the responses of the groups differed more than would be expected by chance. A Bonferroni adjustment, relative to the number of multiple comparisons for each survey (Parent, Student, Teacher), was applied to the p values as a conservative way to reduce the risk of finding false positive results. Effect sizes were calculated for comparisons that were significantly different using Cohen's w (Volker, 2006). For variables measured using a scale, two-tailed t tests were conducted and if significantly different, effect sizes were calculated using Cohen's d (Volker, 2006). All analyses were conducted using Wes-Var 4.0 (Westat, 2000).

Results

The results are presented in three sections: (a) demographic characteristics, (b) social experiences, and (c) academic/school experiences. Within each of these, descriptive data are presented for the students with EBD (EBD group) and those with no disabilities (ND group). Data in the first section (demographic characteristics) were provided solely by the participating parent of each student. Items in the second and third sections (social and academic/school experiences, respectively) were completed by students, parents, and teachers.

Demographic Characteristics

The characteristics of the students and their families are summarized in Table 1. There was a significant sex difference, with approximately $\frac{3}{4}$ of the EBD sample reportedly male (p = .00). Significant differences were not found across parent level of education, although higher numbers of parents of students in the EBD group reported not completing high school. Parents of students in the EBD group reported income that was significantly lower than those in the ND group (p = .00). Finally, no differences were found between the mean neighbourhood safety scale scores of students in the EBD and ND groups, t(4032) = .64, p = .52.

Table 1
Student and Family Characteristics of Students in the EBD and ND Samples

| Characteristic | EBD | ND | - X ² | p | W |
|-------------------------------------|-------|-------|------------------|------|-----|
| | % | % | ^ | | ** |
| Sex | | | | | |
| Male | 74.92 | 47.60 | 30.39 | .00 | .09 |
| Female | 25.08 | 52.40 | 30.39 | | |
| Parent's highest level of education | | | | | |
| Elementary | 15.89 | 9.67 | | 4.00 | |
| Secondary | 23.31 | 25.99 | 4 44 | | |
| Post-Secondary | 25.43 | 25.73 | 4.41 | 1.00 | |
| University | 35.37 | 38.61 | | | |
| Income Adequacy | | | | | |
| Low | 18.14 | 6.75 | | | |
| Middle | 34.13 | 25.08 | 30.62 | 00 | 00 |
| Upper middle | 38.80 | 36.46 | | .00 | .09 |
| High | 8.93 | 31.71 | | | |

Note. Bonferroni adjustment applied to p values. Sample sizes for these analyses range from 216 to 223 for the EBD group and 3969 to 4034 for the ND group.

Social Experiences

The social difficulties of students in the EBD group were reported by students themselves, parents, and teachers (see Table 2). Students in the EBD group rated themselves as less likely to get along easily with other students their age (p = .00) and believed that other students usually did not want them to be a friend (p < .05), compared to the ND group. Significant differences were not found in the parent report of the number of close friends their child had although greater numbers of parents of students in the EBD group had one friend compared to the ND group. Finally, the teacher-rated social skills of students in the EBD group were significantly lower for students with EBD than those without, t(2645) = 20.35, p = .00, d = 1.45.

Academic/School Experiences

Student perceptions. Students in both groups believed that they were mostly or always treated fairly by their teachers and that they typically did not feel like an outsider at school (see Table 3). Significantly greater numbers of students in the EBD group reported not liking school compared to the ND group (p < .03).

Parent perceptions. Parents of students in the EBD group had significantly lower educational expectations for their children than those in the ND group (p = .00; see Table 4). No differences were found between the frequency with which parents checked or helped with homework.

Table 2
Social Experiences of the EBD and ND Samples

| | EBD | ND | - X ² | р | W |
|---|-------|-------|------------------|-----|-----|
| | % | % | χ | ۳ | |
| I get along easily with others my age (Child) | | | | | |
| False | 41.33 | 12.65 | | | |
| Sometimes | 20.93 | 31.27 | 16.66 | .00 | .09 |
| True | 37.74 | 56.08 | | | |
| Others my age want me to be their friend (Child) | | | | | |
| False | 46.60 | 26.56 | | | |
| Sometimes | 27.74 | 35.30 | 9.46 | .05 | .07 |
| True | 25.66 | 38.14 | | | |
| How many close friends does your child have? (Parent) | | | | | |
| 1 Friend | 23.52 | 11.39 | | | |
| 2-3 Friends | 39.52 | 44.13 | 5.00 | .49 | |
| >4 Friends | 36.96 | 44.48 | | | |

Note. Bonferroni adjustment applied to p values. Sample sizes for these analyses range from 93 to 149 for the EBD group and 1789 to 2498 for the ND group.

Table 3
Student Perceptions of the School Experiences of the EBD and ND Samples

| | EBD | ND | . X ² | p | |
|---|-------|-------|------------------|------|-----|
| | % | % | | | W |
| How do you feel about school? | | | | | |
| I like school very much | 18.37 | 21.58 | | 02 | 00 |
| I like school quite a bit | 17.18 | 36.96 | 40.04 | | |
| I like school a bit | 33.90 | 27.23 | 12.31 | .03 | .08 |
| I don't like school very much | 30.56 | 14.24 | | | |
| In general, my teachers treat me fairly | | | | | |
| Always | 49.73 | 62.46 | | | |
| Mostly | 34.90 | 27.95 | 3.10 | 1.00 | |
| Sometimes | 15.37 | 9.59 | | | |
| How often do you feel like an outsider (or left out of things) at | | | | | |
| your school? | | | | | |
| Sometimes | 28.04 | 16.25 | | | |
| Rarely | 32.71 | 36.59 | 3.01 | 1.00 | |
| Never | 39.25 | 47.15 | | | |

Note: Bonferroni adjustment applied to p values. Sample sizes for these analyses range from 93 to 223 for the EBD group and 1949 to 4004 for the ND group.

Teacher perceptions. Teachers had lower educational expectations for students in the EBD group compared to the ND group (p = .00; see Table 5). Teachers estimated that 32% of students in the EBD group, compared to 88% in the ND group, had the potential to go to college or university. Teachers believed that students in the EBD group put significantly less effort into their work than students in the ND group: Over half of the students in the EBD group were rated as "rarely" putting effort into their work, while 7% of students in the ND group received this rating. Finally, teachers believed that parents of students in the EBD group were significantly less involved in their child's education (p = .00) than parents of students in the ND group.

Table 4
Parent Perceptions of the School Experiences of the EBD and ND Samples

| | EBD | ND | _ 2 | | |
|---|-------|-------|-------|-----|-----|
| | % | % | X | р | W |
| How far do you hope your child will go in school? | | | | | |
| Secondary/High School Completion | 25.72 | 5.23 | | .00 | .10 |
| Trade, Technical or Vocational School | 14.14 | 6.81 | 39.69 | | |
| Community College, CEGEP or Nursing School | 15.50 | 11.91 | | | |
| University | 44.65 | 76.05 | | | |
| How often do you check/help with homework? | | | | | |
| Less than once per week | 21.38 | 30.91 | 5.85 | | |
| A few times per week | 33.53 | 24.70 | | .32 | .04 |
| Daily | 45.09 | 44.39 | | | |

Note. Bonferroni adjustment applied to p values. Sample sizes for these analyses range from 93 to 223 for the EBD group and 1949 to 4004 for the ND group.

Table 5
Teacher Perceptions of the School Experiences of the EBD and ND Samples

| | EBD | ND | X ² | р | |
|--|-------|-------|----------------|-----|-----|
| | % | % | | | W |
| How far do you think this student has the potential to | | | | | |
| go in school? | | | | | |
| Some Secondary | 25.91 | 2.69 | 50.77 | | |
| Secondary Completion | 13.97 | 7.89 | | 00 | 10 |
| Learn a Trade (Apprenticeship) | 28.16 | 2.73 | 52.77 | .00 | .12 |
| College/University | 31.97 | 86.70 | | | |
| How involved are the parents of this child in their edu- | | | | | |
| cation? | | | | | |
| Very involved | 27.43 | 62.75 | | | |
| Sometimes involved | 56.99 | 34.34 | 29.08 | .00 | .09 |
| Not involved | 15.58 | 2.91 | | | |
| How often does this student put a lot of effort into | | | | | |
| work? | | | | | |
| Rarely | 52.49 | 7.00 | | | |
| Sometimes | 37.15 | 23.93 | 87.48 | .00 | .14 |
| Often | 10.36 | 69.07 | | | |

Note. Bonferroni adjustment applied to p values. Sample sizes for these analyses range from 93 to 223 for the EBD group and 1949 to 4004 for the ND group.

Discussion

The results from the NLSCY provide national level information about the experiences of students receiving special education services for EBD. While many similarities with U.S. data exist, several differences emerged as well.

Student and Family Characteristics

As was expected, the majority of students in the EBD group were male. The proportion of 75% was just slightly lower than the 80% reported in SEELS data (Wagner et al., 2005) and in the sole Canadian study (Déry et al., 2004). Clearly then, regardless of the country or method of identification, boys are far more likely than are girls to receive services for emotional and behavioural difficulties. Although not measured in the NLSCY, it is likely that the behaviours prompting referral and identification within the EBD category are largely externalizing, including aggression, hyperactivity, and so on. These are certainly more often seen among male students (Rosenfield, 2000). Students with primarily emotional difficulties may not be as easily identified by teachers as they are less disruptive and hard-to-teach than those displaying externalizing behaviours. Sex-stereotyped behaviours, then, may play a large role in this consistent finding (Caseau et al., 1994; Sciutto et al., 2004).

Parents of students with EBD did not have significantly different levels of education than those without disabilities, but did have significantly lower levels of income. Certainly, the relationship between income and behaviour problems is much clearer than that of parental education level in existing U.S. literature (Brooks-Gunn & Duncan, 1997; Skiba et al., 2005). The current findings support the assertion that students living in poverty are more likely to display emotional and/or behavioural problems and to receive special education services for these problems. Environmental variables, such as resource availability, parental stress, and exposure to aggressive behaviour, may mediate this relationship (Brooks-Gunn & Duncan, 1997; Evans, 2004).

Social Experiences

As expected, teachers rated students in the EBD group as having significantly lower social skills than those in the ND group. The effect size for this analysis was larger than any other (d = 1.45), indicating that the mean of the EBD group is at the 93^{rd} percentile of the ND group. As the social skills scale consists of largely behavioural items (e.g., works co-operatively with other students, follows rules/instructions, demonstrates self-control), this finding reinforces the significant difficulties that are evident in the classroom for students with EBD and supports the findings from the SEELS data (Wagner et al., 2005).

There is some evidence that students with EBD report their social competence as similar to students without EBD while their parents, and particularly teachers, rate them as much less competent (Hoza et al., 2002; Owens & Hoza, 2003). The present findings indicate that students with EBD report much poorer social experiences than students without. Teachers rated the social skills of students with EBD as being significantly lower than the ND group and while parents did not report on the social competence of their children, no significant differences between parent reports of the number of close friends were found. Although based on different measures of social acceptance, the finding that students with EBD in the present study view themselves as doing more poorly socially is in contrast to existing literature. While further research is needed to substantiate this finding, one possible explanation may relate to the school-based nature of the identification of the students with EBD in this study. The majority of the children in the Hoza et al. studies were recruited from clinics for children with ADHD and may represent a particularly severe, clinical population. The severity of the behaviour disorder may contribute to the inability of students to accurately perceive their social competence. Clearly, students with EBD in this sample are aware of the difficulties they have making friends, in part perhaps because of the fact

that they are receiving special education services for an EBD. This is an important finding for the development of social skills programming: If students are aware of the consequences of their difficulties, they may be more willing to participate in structured interventions. This finding also, however, speaks to the difficulties that students with EBD are experiencing in Canadian schools and the social areas in which we need to provide effective services.

Academic/School Experiences

Students in the EBD group believed that their teachers treated them no less fairly than students in the ND group. This is a very positive finding considering the differential treatment by teachers reported in previous studies (Jordan & Stanovich, 2001; Shores & Wehby, 1999). Having a positive relationship with a teacher will certainly benefit students with EBD in terms of both academic and affective outcomes. Students in the EBD group were not more likely to feel like an outsider than students in the ND group. This is an indication that students with EBD may not be feeling as disengaged from their school as might be expected, given the limited existing research and the social, academic, and behaviour difficulties that are often experienced by these students. Provincial policies promoting the inclusion of students with disabilities in regular education classrooms (e.g., Government of Alberta, 2003; Government of Ontario, 2000) and a positive behavioural approach to discipline (British Columbia Ministry of Education, 2008; Ontario Ministry of Education, 2007) may be contributing to these findings. As students with EBD recognize the commitment that their schools are making to their academic and social success, they may feel more included and engaged.

What is clear, however, is that both parents and teachers hold low educational expectations for students in the EBD group, despite the fact that academic and cognitive difficulties are not necessarily part of an EBD diagnosis. This is even more surprising given that students with co-morbid Learning or Intellectual Disabilities were removed from the sample. Teachers also believed that students in the EBD group rarely put effort into their work. The impact of the student's emotional and/or behavioural difficulties may make it difficult for parents and teachers to imagine that the student would be able to complete post-secondary programs, regardless of his or her cognitive abilities. Sutherland and his colleagues (2008) commented on the tendency of researchers and educators to focus on one level of the classroom context for students with EBD, namely the reduction of disruptive behaviour. They suggest that waiting for behaviour improvements to target academic areas may be ineffective as there is likely a reciprocal relationship between academic and behaviour difficulties. They point to

the need for practitioners to target those behaviours most related to meeting the classroom's learning demands (e.g., paying attention, staying organized, being flexible) in addition to specific academic skills...in terms of clarifying outcomes for students with EBD, reducing disruptive behaviour may be less important to academic outcomes for students than are increasing task engagement and active responding. (p. 230)

A more multi-level approach to intervention for students with EBD, comprising positive supports to improve behaviours essential to learning in tandem with academic programming, may prove to be effective in increasing positive outcomes.

Future Research

The relationship between academic achievement and EBD was not assessed directly in this study, but certainly the low expectations that significant adults have regarding the educational attainment of these students is of concern. Further exploration of the factors contributing to these beliefs and the consequences of them is warranted. For example, while information regarding the cognitive abilities of students with EBD was not available in the present study, this variable should certainly be included in future studies. As well, the positive school experiences reported by students with EBD should be investigated in more depth to be able to identify successful practices which can inform intervention.

Limitations

A number of limitations are inherent in the use of secondary data such as those provided by the NLSCY. The present analyses were limited by the items included in the survey. There were many items that appeared to capture important elements of the school experiences of students with EBD, but low coefficients of variance prohibited their release to researchers. Also, teachers were responsible for identifying students in the EBD group, and given that criteria are provincially mandated, their reports were certainly based on a range of definitions. Thus, student emotional and behavioural difficulties may vary in nature and severity across the country. Self-reports are used exclusively in the NLSCY and thus the addition of observational or more objective information may add weight to the findings. Finally, the NLSCY, as with all surveys, is dependent on families choosing to participate. Thus, while representative geographically, the sample may not capture the experiences and characteristics of all students (e.g., very low family SES backgrounds, limited English proficiency, low literacy levels).

Conclusion

Many of the findings reported in the United States through the use of data from surveys such as SEELS (Wagner et al., 2005) were also evident in the data drawn from the NLSCY. Children with EBD are likely to be male, come from families with low incomes, have difficulties with friendships, and experience poor classroom-based social skills. Positive indicators of school engagement were also observed in student ratings of teacher fairness and school belonging. The findings that are most striking are those regarding parents' and teachers' academic expectations as well as teacher ratings of effort. Students with EBD are not identified because of academic difficulties although these may certainly arise due to characteristics of the EBD or exist comorbidly. Perhaps analyses of data from surveys such as the NLSCY can promote a more ecological view of intervention for children with EBD. It is important that individual programming for these students includes recognition of the stressors that may exist within their home environments combined with their difficulties developing and maintaining relationships in order to improve efficacy.

References

- Alberta Learning. (2004). *Special education definitions* 2004/2005. Retrieved September 24, 2008, from http://education.alberta.ca/media/627989/specialed_def_2004-2005.pdf
- Bakker, J., Denessen, E., & Brus-Laeven, M. (2007). Socio-economic background, parental involvement and teacher perceptions of these in relation to pupil achievement. *Educational Studies*, *33*, 175-190.
- Beran, T., Hughes, G., & Lupart, J. (2008). A model of achievement and bullying: Analyses of the Canadian National Longitudinal Survey of Children and Youth Data. *Educational Research*, 50(1), 25-39.
- Boyle, M. H., & Lipman, E. L. (1998). *Do places matter? A multilevel analysis of geographic variations in child behaviour in Canada*. Hull, QC: Applied Research Branch of Strategic Policy, Human Resources Development Canada.
- British Columbia Ministry of Education. (2006). Special education services: A manual of policies, procedures and guidelines. Retrieved September 24, 2008, from http://www.bced.gov.bc.ca/specialed/ppandg/toc.htm
- British Columbia Ministry of Education. (2008). *Teaching students with Attention- Deficit/Hyperactivity Disorder: A resource guide for teachers.* Retrieved May 12, 2008, from http://www.bced.gov.bc.ca/specialed/adhd/
- Brooks-Gunn, J., & Duncan, G. J. (1997). The effects of poverty on children. *The Future of Children*, 7(2), 55-71.
- Buhs, E. S. (2005). Peer rejection, negative peer treatment, and school adjustment: Self-concept and class-room engagement as mediating processes. *Journal of School Psychology*, *43*, 407-424.
- Caseau, D. L., Luckasson, R., & Kroth, R. L. (1994). Special education services for girls with serious emotional disturbance: A case of gender bias? *Behavioral Disorders*, 20, 51-60.
- Catsambis, S. (1998). Expanding the knowledge of parental involvement in secondary education: Effects on high school academic success. Baltimore: Center for Research on the Education of Students Placed At Risk.
- Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology*, 19, 294-304.
- Déry, M., Toupin, J., Pauzé, R., & Verlaan, P. (2004). Frequency of mental health disorders in a sample of elementary school students receiving special educational services for behavioural difficulties. *The Canadian Journal of Psychiatry/La Revue canadienne de psychiatrie*, 49, 769-775.
- Diener, M. B., & Milich, R. (1997). Effects of positive feedback on the social interactions of boys with attention deficit hyperactivity disorder: A test of the self-protective hypothesis. *Journal of Clinical Child Psychology*, 26, 256-265.
- Eme, R. F. (1980). Sex differences in child psychopathology: A review. *Annual Progress in Child Psychiatry and Child Development*, 436-469.
- Englund, M., Luckner, A., Whaley, G., & Egeland, B. (2004). Children's achievement in early elementary school: Longitudinal effects of parental involvement, expectations, and quality of assistance. *Journal of Educational Psychology*, *96*, 723-730.
- Evans, G. W. (2004). The environment of childhood poverty. American Psychologist, 59, 77-92.
- Finn, J. D. (1993). School engagement and students at risk. Washington, DC: National Center for Education Statistics.
- Finn, C., Heath, N. L., Petrakos, H., & McLean-Heywood, D. (2002). A comparison of school service models for children at risk for emotional and behavioural disorders. *Canadian Journal of School Psychology*, 17, 61-68.
- Freeman, E. B., & Hatch, A. J. (1989). What schools expect young children to know and do: An analysis of kindergarten report cards. *Elementary School Journal*, 89, 595-605.

- Government of Alberta. (2003). *Policy 1.6.1 Educational placement of students with special needs*. Retrieved September 24, 2003, from http://www.learning.gov.ab.ca/EducationGuide/pol-plan/polregs/161.asp
- Government of Ontario. (2000). *Standards for school boards' special education plans*. Toronto, ON: Ministry of Education.
- Gresham, F. M., & Elliott, S. N. (1990). *Social skills rating scale SSRS*. Circle Pines, MN: American Guidance Service.
- Gresham, F. M., & MacMillan, D. L. (1997). Social competence and affective characteristics of students with mild disabilities. *Review of Educational Research*, 67(4), 377-415.
- Halpern, D. F. (1992). Sex differences in cognitive abilities (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Hoza, B., Pelham, W. E., Dobbs, J., Owens, J. S., & Pillow, D. R. (2002). Do boys with attention-deficit/hyperactivity disorder have positive illusory self-concepts? *Journal of Abnormal Psychology*, 111, 268-278.
- Hoza, B., Pelham, W. E., Milich, R., Pillow, D., & McBride, K. (1993). The self-perceptions and attributions of attention deficit hyperactivity disordered and nonrefereed boys. *Journal of Abnormal Child Psychology*, 21, 271-286.
- Hughes, J. N., Gleason, K. A., & Zhang, D. (2005). Relationship influences on teachers' perceptions of academic competence in academically at-risk minority and majority first grade students. *Journal of School Psychology*, 43, 303-320.
- Human Resources and Social Development Canada. (1996, October). *National longitudinal survey of children and youth: Overview report.* Ottawa, ON: Author.
- Jordan, A., & Stanovich, P. (2001). Patterns of teacher–student interaction in inclusive elementary class-rooms and correlates with student self-concept. *International Journal of Disability, Development and Education*, 48(1), 33-52.
- Kauffman, J. M. (2001). *Characteristics of emotional and behavioural disorders of children and youth* (7th ed.). Columbus, OH: Merrill.
- Lane, K. L., Carter, E. W., Pierson, M., & Glaeser, B. (2006). Academic, social, and behavioral profiles of high school students with emotional disturbance and learning disabilities. *Journal of Emotional and Behavioral Disabilities*, 14, 108-117.
- McIntyre, T., & Tong, V. (1998). Where the boys are: Do cross-gender misunderstandings of language use and behavior patterns contribute to the overrepresentation of males in programs for students with emotional and behavioral disorders? *Education & Treatment of Children*, 21(3), 321-332.
- Murray, C., & Greenberg, M. T. (2001). Relationships with teachers and bonds with school: Social emotional adjustment correlates for children with and without disabilities. *Psychology in the Schools*, 38(1), 25-41.
- Newman, L. (2005). Family involvement in the educational development of youth with disabilities. Menlo Park, CA: SRI International. Retrieved May 2, 2008, from www.NLTS-2.org/reports/ familyin-volve_report.html
- Ontario Ministry of Education. (2001). *Special education: A guide for educators*. Retrieved September 24, 2008, from http://www.edu.gov.on.ca/eng/general/elemsec/speced/guide.html
- Ontario Ministry of Education. (2007). *Progressive discipline and promoting positive student behaviour*, Policy/Program Memorandum No. 145. Retrieved January 12, 2008, from http://www.edu.gov.on.ca/extra/eng/ppm/145.pdf
- Ontario Ministry of Education and Training. (2005). Early school leavers: Understanding the lived reality of student disengagement from secondary school. Toronto, ON: Author.
- Oswald, D. P., Best, A. M., Coutinho, M. J., & Nagle, H. L. (2003). Trends in the special education identification rates of boys and girls: A call for research and change. *Exceptionality*, 11, 223-237.
- Owens, J. S., & Hoza, B. (2003). The role of inattention and hyperactivity/impulsivity in the positive illusory bias. *Journal of Consulting and Clinical Psychology*, 71, 680-691.

- Patrikakou, E. N. (1996). Investigating the academic achievement of adolescents with learning disabilities: A structural modeling approach. *Journal of Educational Psychology*, 88, 435-450.
- 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., Gonzalez, J. E., Nordness, P. D., Trout, A., & Epstein, M. H. (2004). A meta-analysis of the academic status of students with emotional/behavioral disturbance. *The Journal of Special Education*, *38*, 130-144.
- Rosenfield, S. (2000). Gender and dimensions of the self: Implications for internalizing and externalizing behavior. In E. Frank (Ed.), *Gender and its effects on psychopathology* (pp. 23-36). Arlington, VA: American Psychiatric Publishing.
- Royer, E. (1999). Transformer notre facon de faire oeuvre d'education avec les jeunes en difficulte de comportement. *Education Canada*, *39*, 22-24.
- Sabornie, E. J., Cullinan, D., Osborne, S. S., & Brock, L. B. (2005). Intellectual, academic, and behavioral functioning of students with high-incidence disabilities: A cross-categorical meta-analysis. *Exceptional Children*, 72(1), 47-63.
- Sciutto, M. J., Nolfi, C. J., & Bluhm, C. (2004). Effects of child gender and symptom type on referrals for ADHD by elementary school teachers. *Journal of Emotional and Behavioral Disorders*, 12, 247-253.
- Shores, R. E., & Wehby, J. H. (1999). Analyzing the classroom social behavior of students with EBD. *Journal of Emotional and Behavioral Disorders*, 7(4), 194-199.
- Simcha-Fagan, O., & Schwartz, J. E. (1986). Neighborhood and delinquency: An assessment of contextual effects. *Criminology*, 24, 667-703.
- Sinclair, M. F. (1994). Are we pushing students in special education to drop out of school? Washington, DC: Special Education Programs.
- Skårbrevik, K. J. (2002). Gender differences among students found eligible for special education. *European Journal of Special Needs Education*, 17(2), 97-107.
- Skiba, R. J., Poloni-Staudinger, L., Simmons, A. B., Feggins-Azziz, L. R., & Chung, C. (2005). Unproven links: Can poverty explain ethnic disproportionality in special education? *The Journal of Special Education*, 39(3), 130-144.
- SRI. (2004). SEELS home and news. Retrieved May 7, 2008, from http://www.seels.net/seels_textonly/txindex.htm
- SRI. (2008). Welcome to NLTS-2. Retrieved May 7, 2008, from http://www.nlts2.org/
- Statistics Canada. (1997). National longitudinal survey of children & youth: Overview of survey instruments for 1996-97 data collection, Cycle 2. Catalogue no. 89FOO78XIE.
- Statistics Canada. (2001a). Microdata user guide. National longitudinal survey of children and youth. Cycle 4 September 2000 to May 2001. Ottawa, ON: Author.
- Statistics Canada. (2001b). *Microdata user guide. National longitudinal survey of children and youth:* Secondary file. Cycle 4 September 2000 to May 2001. Ottawa, ON: Author.
- Statistics Canada. (2003). *Profile of disability among children*. Retrieved May 1, 2008, from http://www.statcan.ca/english/freepub/89-577-XIE/children.htm
- Sutherland, K., Lewis-Palmer, T., Stichter, J. P., & Morgan, P. (2008). Examining the influence of teacher behavior and classroom context on the behavioral and academic outcomes for students with learning and behavior problems. *Journal of Special Education*, 41, 209-222.
- Sy, S. R., & Schulenberg, J. E. (2005). Parent beliefs and children's achievement trajectories during the transition to school in Asian American and European American families. *International Journal of Behavioral Development*, 29, 505-515.
- Tremblay, R. E., Boulerice, B., Harden, P. W., McDuff, P., Pihl, R. O., & Zoccolillo, M. (1996). Do children in Canada become more aggressive as they approach adolescence? In Human Resources Development Canada and Statistics Canada (Eds.), *Growing up in Canada: National longitudinal survey of children and youth* (pp. 127-137). Ottawa, ON: Statistics Canada.

- Valdes, K. A., Williamson, C. L., & Wagner, M. M. (1990). *The national longitudinal transition study of special education students*. Menlo Park, CA: SRI International.
- Volker, M. A. (2006). Reporting effect size estimates in school psychology research. *Psychology in the Schools*, 43, 653-672.
- Wade, T. J., Pevalin, D. J., & Brannigan, A. (1999). The clustering of severe behavioural, health and educational deficits in Canadian children: Preliminary evidence from the national longitudinal survey of children and youth. *Canadian Journal of Public Health*, 90, 253-259.
- Wagner, M., Kutash, K., Duchnowski, A. J., Epstein, M. H., & Sumi, W. C. (2005). The children and youth we serve: A national picture of the characteristics of students with emotional disturbances receiving special education. *Journal of Emotional and Behavioral Disorders*, 13, 79-96.
- Wang, M. C., Haertel, G. D., & Walberg, H. J. (1990). What influences learning? A content analysis of review literature. *Journal of Educational Research*, 84(1), 30-43.
- Wehby, J. H., Symons, F. J., & Shores, R. E. (1995). A descriptive analysis of aggressive behavior in classrooms for children with emotional and behavioral disorders. *Behavioral Disorders*, 20(2), 87-105.
- Westat. (2000). WesVar 4.0, user's guide. Rockville, MD: Westat, Inc.
- Whitley, J., Lupart, J., & Beran, T. (2007). The characteristics and experiences of Canadian students receiving special education services for a learning disability. *Exceptionality Education Canada*, 17(3), 85-109.
- Winzer, M. (2008). *Children with exceptionalities in Canadian classrooms* (8th ed.). Toronto, ON: Pearson Prentice Hall.

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