

Learning Disabilities and Child Altruism, Anxiety, and Aggression

by Anne Milan, Feng Hou, and Irene Wong

Most children in Canada are physically and emotionally healthy, and the majority of children do not have social and behavioural problems. Yet some children do experience challenges both in the classroom and the wider society. One group of children whose characteristics may affect their behaviour is those who have been identified as learning disabled. They may have difficulties with written or spoken language, comprehension, calculation, or reasoning and often experience academic disadvantages or difficulties with their social relationships.

This paper uses Canadian data from the 2002/03 National Longitudinal Survey of Children and Youth (NLSCY) to examine the levels of altruism or prosocial behaviour, anxiety or emotional disorder, and physical aggression or conduct disorder for children aged 8 to 11 with and without learning disabilities, controlling for characteristics of the child, the family and parenting style. Children were identified as having learning disabilities if they were diagnosed as having this long-term condition by a health professional.

GST Definition of Learning Disabilities¹

Partial definition adopted by the Learning Disabilities Association of Canada on January 30, 2002, and presented on their website «www.ldac-tacc.ca».

“Learning Disabilities” refer to a number of disorders which may affect the acquisition, organization, retention, understanding or use of verbal or nonverbal information. These disorders affect learning in individuals who otherwise demonstrate at least average abilities essential for thinking and/or reasoning. As such, learning disabilities are distinct from global intellectual deficiency.

Learning disabilities result from impairments in one or more processes related to perceiving, thinking, remembering or learning. These include, but are not limited to: language processing; phonological processing; visual spatial processing; processing speed; memory and attention; and executive functions (e.g., planning and decision-making).

Learning disabilities range in severity and may interfere with the acquisition and use of one or more of the following:

- oral language (e.g., listening, speaking, understanding);
- reading (e.g., decoding, phonetic knowledge, word recognition, comprehension);
- written language (e.g., spelling and written expression); and
- mathematics (e.g., computation, problem solving).

Learning disabilities may also involve difficulties with organizational skills, social perception, social interaction and perspective taking.

Learning Disabilities Association of Canada. «www.ldac-tacc.ca» Accessed Oct 20, 2005.

How do learning disabilities influence social behaviour

According to the 2002/03 NLSCY, about 4% of 8- to 11-year-olds were identified as being learning disabled in 2002. Existing research findings on the social and behavioural outcomes for children with and without learning disabilities have been varied, and may depend on how particular behavioural outcomes are measured. Some studies have concluded that there are few differences between children with and without learning disabilities on certain social dimensions, for example, in peer acceptance and self-concept¹. Two reviews of recent research literature reported that although children with learning disabilities have a lower self-perception in the academic domain, their overall self-concept is on par with other children.² An earlier study, however, found that children with learning disabilities were less well-liked and less accepted compared to other children.³

Previous research indicated that social cues seem to be important to children with learning disabilities⁴, and social skill deficits may be an important part of having this condition.⁵ Social indicators of children with learning disabilities may include impulsiveness, frustration, poor sportsmanship, and difficulties with creating friendships, accepting changes in routine, interpreting subtle or nonverbal cues, and working with others.⁶ The lack of self-esteem experienced by students with learning disabilities might create feelings of inadequacy or inferiority,⁷ which could be an impediment to establishing social relationships. Consequently, children with learning disabilities might find it difficult to develop an altruistic or compassionate attitude towards others. The results of the present study show that 8- to 11-year-olds with learning disabilities had lower average scores on the altruism/prosocial behaviour scale than did other children. According to the NLSCY, children identified as having learning disabilities scored 12.84

	No learning disabilities	Learning disabilities
Children age 8-11		
Altruism	14.45	12.84*
Anxiety/emotional disorder	2.63	3.89*
Aggression	1.27	2.29*

1. Includes learning disabilities identified in 2000 or 2002
 * Statistically significant at p < .05 from children with no learning disabilities
 Source: Statistics Canada, National Longitudinal Survey of Children and Youth, PMK Report, 2002/03.

on the altruism/prosocial behaviour scale compared to 14.45 for children without learning disabilities. Once children's age and sex were taken into account in the statistical model, the altruism/prosocial behaviour scores for children with learning disabilities narrowed slightly to 1.51 points below children without learning disabilities (from a gap of 1.61 points).

Anxiety and aggression more common for children with learning disabilities

Children who exhibit emotional problems, depression or anxiety are less likely to develop to their full potential. Research results on the association between learning disabilities and anxiety/emotional disorder have been mixed. Some findings indicate that there is little difference in the depression or anxiety measures for children with and without learning disabilities when rated by children, although a higher level of depression among children with learning disabilities was found when rated by teachers.⁸ Researchers have also documented that children with learning disabilities experience more minor somatic complaints — such as fatigue — than do other children, which can increase anxiety.⁹ Other research found that although there were no consistent differences between children with and without learning disabilities in their non-academic problem solving, the anxiety

of children with learning disabilities increased in testing situations relative to other children.¹⁰

According to the present study, the anxiety/emotional disorder scores of children in the NLSCY was higher for those with learning disabilities, compared to other children (scale scores of 3.89 and 2.63, respectively). The presence of learning disabilities continued to be statistically significant after entering child's age and sex into the model. The results from Model 1 show that the difference between the anxiety/emotional disorder scores of children with and without learning disabilities remained virtually the same (i.e., 1.27 points higher for children with learning disabilities compared to other children).

Related to greater difficulties in the areas of anxiety and altruism, children with learning disabilities may also show more physical aggression or conduct disorder. The frustration that typically accompanies learning disabilities¹¹ may result in aggression if children feel that circumstances are beyond their control. The social skills deficits reported to characterize children with learning disabilities¹² may also be manifested through aggressive behaviour. In fact, patterns similar to the results of anxiety/emotional disorder hold for the findings of aggressive behaviour. That is, children who have learning disabilities have higher scores on the

	Altruism	Anxiety	Aggression
Model 1			
Learning disabilities	-1.51*	1.27*	1.00*
<i>Child characteristics</i>			
Age of child	0.06	-0.04	-0.10*
Female	1.50*	0.00	-0.35*
Intercept	13.12*	3.05*	2.37*
Adjusted R ²	0.05	0.01	0.03
Model 2			
Learning disabilities	-0.69	0.74*	0.60*
<i>Child characteristics</i>			
Age of child	0.08	-0.02	-0.09*
Female	1.32*	0.11	-0.23*
<i>Family characteristics</i>			
Two parent	-0.38	-0.38*	0.11
Low-middle income adequacy	0.01	0.26*	0.26*
Family functioning score	-0.10*	0.02*	0.01
Ineffective parenting	-0.22*	0.22*	0.20*
Intercept	16.00*	0.96*	0.31
Adjusted R ²	0.13	0.14	0.20

1. Includes learning disabilities identified in 2000 or 2002

Note: *significant at p < .05

Unstandardized regression coefficients for altruistic/prosocial behaviour, anxiety/emotional disorder, and physical aggression/conduct disorder of children aged 8-11.

Source: Statistics Canada, National Longitudinal Survey of Children and Youth, PMK Report, 2002/03.

the influence of household income on the behavioural and cognitive outcomes of children.¹⁵ Perhaps most significant is the role of parenting practices. A 2005 study found that children whose parents use more punitive measures exhibited higher levels of aggressive behaviour, higher levels of anxiety and lower levels of pro-social behaviour.¹⁶

In the present study, controlling for family characteristics eliminated the statistically significant difference in the level of altruism or prosocial behaviour between children with and without learning disabilities. Once family characteristics were included in the statistical models, the scores on the anxiety/emotional disorder scale continued to be statistically significant, but the scores for children with learning disabilities were only 0.74 points higher than children without learning disabilities (from an original difference of 1.26). Similarly, when family characteristics were introduced in Model 2, the gap in aggression/conduct disorder scores between children who had learning disabilities and other children fell to 0.60 points (compared to a gap of 1.02 without controlling for such factors). Overall, the combined effects of family and child characteristics account for about 41% of the difference in the anxiety/emotional disorder score, as well as the aggression/conduct disorder score, for the children with learning disabilities compared to other children.¹⁷

Family characteristics reduce much of the impact of learning disabilities

According to the NLSCY, children with learning disabilities do experience less altruism, and greater anxiety and aggression, but the strength of the association is rather weak. In other words, children with learning disabilities exhibit only slightly higher behavioural problems than other children. It is clear that although the presence of learning disabilities is associated with behavioural

aggression/conduct disorder scale than do other children – a difference of 1.02 points (scores of 2.29 and 1.27, respectively).

Children’s age and sex may influence their aggressive behaviour, given that recent research found that young girls (aged 5 to 11) showed less physical aggression compared to boys, and decreased with age for girls while remaining constant for boys.¹³ According to the results of the present study, the gap on the aggression/conduct disorder scale for children with and without learning disabilities remained largely

unchanged even after including child’s age and sex in the statistical model (a difference of 1.00 point).

Why family characteristics matter

Family-related characteristics such as growing up in a lone-parent household, or in families with low income or high levels of dysfunction can have a negative effect on child outcomes. Children of lone parents fare less well in their emotional and behavioural outcomes compared to all children.¹⁴ Similarly, previous research found some support for

GST What you should know about this study

The National Longitudinal Survey of Children and Youth (NLSCY) is used to examine the extent to which children with learning disabilities exhibit altruism or prosocial behaviour, anxiety or emotional disorder, and physical aggression or conduct disorder, based on the NLSCY behaviour scales (see "Variable Descriptions" for individual scale items). The NLSCY is a joint project between Human Resources and Social Development Canada and Statistics Canada, and focuses on the characteristics and life experiences of children in Canada as they develop from birth to adulthood. The children are followed longitudinally, with interviews every two years, excluding children living in institutions for six months or more, and those living in the Yukon and Northwest Territories. In the initial cycle (1994/95) information was collected for nearly 23,000 children aged 0 to 11. In addition to a household-based interview with the Person Most Knowledgeable (PMK) about the child (typically the mother), the NLSCY collected information using self-completed questionnaires for 10 and 11-year-olds. In this study, only the PMK assessed information about the children is included in the analyses.

This study uses responses for about 5,000 children aged 8 to 11 in 2002/03. Of this group, about 200, representing 61,000 children, have learning disabilities. Because of the nature of the longitudinal sample, 8 to 11-year-olds in 2002 are children still in the survey and who were originally sampled as 0 to 3-year-olds in 1994. While the longitudinal sample is representative of the 1994 population, it may not be representative of the 2002 population as children may have left the study or the country since 1994, or may have entered Canada as immigrants.

Only those who recently (2000 to 2002) have been diagnosed by a health professional with a long-term learning disability¹ and who still have a learning disability in 2002 are

identified as learning disabled in this article. The models include several control variables such as age and sex, income adequacy in 2002 relative to family size, family type, family functioning, and ineffective parenting.

For the analyses, family functioning and ineffective parenting are scales operationalized at the interval level (see "Variable Descriptions" for scale items). Age of child is measured in years, while the remaining indicators are coded as: sex of child (female, male), income adequacy (low/middle, high), family type (two or one parent), with the last categories serving as the reference groups. Multiple regression is used to relate the independent variables to the child outcomes. The slope estimates or regression coefficients indicate the average change in the dependent variable associated with a unit change in each of the independent variables, when the other independent variables are held constant.² The unstandardized coefficients for each child outcome show the difference in the scale values for children with and without learning disabilities, taking into account the characteristics of the child (Model 1) and both child and family characteristics (Model 2).

Differences between frequent and occasional behaviours (i.e., altruism, anxiety, or aggression) were not distinguished in these analyses. Most children are prosocial, and do not have problem behaviours with aggression or anxiety. Furthermore, even higher levels of aggressive or anxious behaviours for children with learning disabilities compared to other children may still be considered within the normal range.

1. Long-term learning disabilities refer to an actual or expected duration of six months or more.
2. Lewis-Beck, M.S. 1989. *Applied Regression: An Introduction*. Newbury Park, CA: Sage.

difficulties, there are other factors which are better able to explain the variation in the child outcomes.¹⁸ Throughout the analyses, adding family characteristics to the models reduced the differences between children with and without learning disabilities. For example, children who experienced an ineffective parenting style also had higher levels

of aggression/conduct disorder and anxiety/emotional disorder, and lower altruism/prosocial behaviour scores. An earlier study found that families of children with learning disabilities experienced greater stress but are similar to other families with respect to family cohesion and household rules.¹⁹

Summary

Early life experiences of children can have a significant influence on their development and well-being. The influence of these experiences for children with learning disabilities is found to be similar to other children. Children with learning disabilities did have lower altruism or prosocial behaviour, and higher

levels of anxiety/emotional disorder and aggression/conduct disorder than did other children, however, the differences in the scores between children with and without learning disabilities were not large, and may well be within the normal range of these behaviours. Although children with learning disabilities were slightly more likely to exhibit behavioural problems than other children, including family characteristics in the statistical models reduced much of the impact of learning disabilities. This suggests that the challenges faced by children with learning disabilities may be at least partially offset by a positive and supportive family environment.



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16. Statistics Canada. 2005. "National Longitudinal Survey of Children and Youth: Home environment, income, and child behaviour." *The Daily*, February 21.
17. This proportion is calculated as [(the difference in the scale scores between children with and without learning disabilities) – (the difference in the coefficients between these groups once child and family characteristics are included in the model)/ (the difference in the scale scores between children with and without learning disabilities)]. For example, the combined effects of child and family characteristics contribute 41% to the difference in the prosocial behaviour scores for children with and without learning disabilities, i.e., (1.26-0.74)/ 1.26=41%.
18. This improvement is based on the increase in the R² values from Model 1 to Model 2 for each outcome, i.e., the proportion of variation in the dependent variable that can be explained by particular independent variables in a model.
19. Dyson, L.L. 1996. "The experiences of families of children with learning disabilities: Parental stress, family functioning and sibling self-concept." *Journal of Learning Disabilities*, 29(3):280-286.

Family functioning scale items

The scale includes the following 12 questions, each of which contains four response categories (i.e., 1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree). The total score for the additive scale ranges from 0 to 36, a high score indicating the higher levels of dysfunction. Values were recoded in order to have a value of 0 for the lowest score, that is, individual items were recoded from 0 to 3 (rather than the original range of 1 to 4), and reversed where necessary so that higher scores indicated dysfunction. This strategy also applies to the other scales included in the analyses.

- Planning family activities is difficult because we misunderstand each other.
- In times of crisis we can turn to each other for support.
- We cannot talk to each other about sadness we feel.
- Individuals (in the family) are accepted for what they are.
- We avoid discussing our fears or concerns.
- We express feelings to each other.
- There are lots of bad feelings in our family.
- We feel accepted for what we are.
- Making decisions is a problem for our family.
- We are able to make decisions about how to solve problems.
- We don't get along well together.
- We confide in each other.

Ineffective parenting scale items

The scale includes the following seven questions, each of which contains five response categories. The first item has the response categories: never, about once a week or less, a few times a week, once or two times a day, many times each day. The response categories for the other six items are: never, less than half the time, about half the time, more than half the time, all the time. The total score ranges from 0 to 28, a high score indicating the presence of hostile/ineffective interactions.

- How often do you get annoyed with ... for saying or doing something he/she is not supposed to do?
- Of all the times that you talk to ... about his/her behaviour, what proportion is praise?
- Of all the times that you talk to ... about his/her behaviour, what proportion is disapproval?
- How often do you get angry when you punish ...?

- How often do you think that the kind of punishment you give him/her depends on your mood?
- How often do you feel you are having problems managing him/her in general?
- How often do you have to discipline him/her repeatedly for the same thing?

Low to middle income adequacy consists of the following categories

- Household income is less than 40,000 and household size is up to 4 persons; or
- Household income is less than 60,000 and household size is 5 or more persons.
- Respondents who do not fall into these categories were coded as high income adequacy.

Altruism/prosocial behaviour scale items

The scale includes the following ten questions, each of which contains three response categories (i.e., never or not true, sometimes or somewhat true, often or very true). The total score ranges from 0 to 20, a high score indicating the presence of prosocial behaviour.

- Shows sympathy to someone who has made a mistake.
- Will try to help someone who has been hurt.
- Volunteers to help clear up a mess someone else has made.
- If there is a quarrel or dispute will try to stop it.
- Offers to help other children (friend, brother, or sister) who are having difficulty with a task.
- Comforts a child (friend, brother, or sister) who is crying or upset.
- Spontaneously helps to pick up objects which another child has dropped (e.g. pencils, books).
- Will invite bystanders to join in a game.
- Helps other children (friend, brother, or sister) who are feeling sick.
- Helps those who do not do as well as he does.

Anxiety/emotional disorder scale items

The scale includes the following seven questions, each of which contains three response categories (i.e., never or not true, sometimes or somewhat true, often or very true). The total score varies from 0 to 14, a high score indicating the presence of behaviours associated with anxiety and emotional disorder.

GST Variable Descriptions – concluded

- Seems to be unhappy, sad or depressed.
- Is not as happy as other children.
- Is too fearful or anxious.
- Is worried.
- Cries a lot.
- Is nervous, high-strung, or tense.
- Has trouble enjoying self.

Physical aggression/conduct disorder scale items

The scale includes the following six questions, each of which contains three response categories (i.e., never or not true, sometimes or somewhat true, often or very true).

The total score ranges from 0 to 12, a high score indicating behaviour associated with conduct disorders and physical aggression.

- Gets into many fights.
- When somebody accidentally hurts..., ...reacts with anger and fighting.
- Physically attacks people.
- Threatens people.
- Is cruel, bullies or is mean to others.
- Kicks, bites, hits other children.