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IMPROVING SOCIAL POLICY WITH NATIONAL DATA: A COMPARISON OF SOCIAL SUPPORT FOR STUDENTS AMONG CANADIAN PROVINCES

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Abstract: The purpose of this study was to examine social support for students as it related to individual and provincial characteristics in Canada, with data from the National Longitudinal Survey of Children and Youth and census data. The data included 7,648 students aged 8 to 11 years from 10 provinces. Factor analysis indicated two latent factors underlining social support for students: perceived personal support and perceived institutional support. Results of hierarchical linear modelling show that perceived personal support did not fluctuate with provincial characteristics. Students who were immigrants to Canada, with low socioeconomic status (SES), and with poor prosocial behavior perceived less personal support. Students in provinces with higher birth rates perceived less institutional support. SES and family size had strong effects on perceived institutional support in some provinces but weak effects in other provinces. Students from both-parent households, with emotional problems, and from large families perceived less institutional support.

Résumé: Cette recherche avait comme but d'étudier l'appui social pour les élèves en tenant compte de traits individuels et de caractéristiques provinciales au Canada et ce, par le biais de données provenant de l'Enquête longitudinale nationale sur les enfants et les jeunes d'une part et du recensement d'autre part. Les données touchaient 7648 élèves âgés de 8 à 11 ans et originaires des dix provinces. Une analyse factorielle a révélé la présence de deux facteurs latents à la base de l'appui social pour les élèves: l'appui personnel perçu et l'appui institutionnel perçu. Les résultats d'une modélisation hiérarchique linéaire indiquent que l'appui personnel perçu ne varie pas selon les caractéristiques provinciales. Les élèves qui avaient immigré au Canada, ceux dont le statut socio-économique (SES) était bas et ceux affichant un comportement peu prosocial percevaient moins d'appui personnel. Les élèves des provinces avec un taux de natalité plus élevé percevaient moins d'appui institutionnel. Dans certaines

provinces, le statut socio-économique et la taille de la famille influençaient beaucoup l'appui institutionnel perçu; dans d'autres, leur effet ne se faisait presque pas sentir. Les élèves provenant de foyers avec deux parents, ceux souffrant de troubles émotionnels et ceux de familles nombreuses percevaient moins d'appui institutionnel.

A healthy transition from childhood to adulthood is critical in an individual's life span, and it requires considerable social support (Hamburg, 1993). There is increasing recognition among parents, educators, and policymakers in various Canadian provinces of the importance of social support for students. For example, Alberta Education has identified five key areas for improvement, one of which is to work with other government departments to provide more preventative, community-based social support for students and their families (Council of Ministers of Education Canada, 1998). Although there is consensus that social support is crucial in reducing the risk of poor mental and physical health and promoting educational attainment for young adolescents facing various risks and challenges (Price, Cioci, Penner, & Trautlein, 1993), little effort has been devoted to the systematic study of social support for students across Canadian provinces.

Using data from the National Longitudinal Survey of Children and Youth (NLSCY) (Human Resources Development Canada & Statistics Canada, 1995) and census data from Statistics Canada, the following research questions were addressed in the present study:

1. What is the relationship between social support for students and student background?
2. Is there significant variation in social support for students among provinces?
3. Can this variation among provinces be explained through province-level variables?

The results of this study provide insight into the variation among provinces in social support for students and the individual and provincial factors that contribute to this variation. This knowledge is important for the development of federal and provincial policies and programs on social support for students. The need for such knowledge is particularly marked today because Canada is experiencing a major technological change (Lavoie & Roy, 1997) that can "disrupt social cohesiveness and stability, which in turn have negative effects on child development and the population's health and well-

being" (Keating & Mustard, 1996, p. 7). This knowledge is also important for the design of program evaluation of social services for students in Canadian provinces. Sax (1997) has reminded evaluators that effective program evaluation is always rooted in an adequate understanding of research literature and an effective adoption of research evidence.

Although the importance of social support for homeless children has long been recognized (see Stronge, 1995), social support for *all* students became a sensitive social issue only recently. Thus, the research literature in this area is relatively thin and so far has focused on documenting the positive effects of social support for students. Overall, adolescents' social adaptation is highly influenced by the availability of social support (e.g., Bowen & Chapman, 1996; Ying & Liese, 1994). In particular, the research literature points to two positive effects associated with social support for students. The first is that social support for students promotes better educational attainment (Kleemann, 1994). For example, Brooks and DuBois (1995) found that social support for students leads to a significant increase in students' grade point average. Specifically, Guinta (1997) reported that after-school social support programs significantly boost participants' achievement in reading and mathematics.

The second effect is that social support for students reduces the risk of mental and physical disorders. First, social support for students seems to prevent mental and physical disorders. Students perceiving higher levels of social support have lower levels of physical and psychological distress and adjust to social changes more easily (Ainslie, 1996; Brooks & DuBois, 1995; Solberg & Villarreal, 1997). Social support for students also reduces the risk of using alcohol and drugs (Christmon, 1994). The low suicide rate of African American females is related to the social support they receive (Nisbet, 1996), and satisfaction with social support generally reduces suicidal ideation (deMan, Leduc, & Labrèche-Gauthier, 1993). Second, social support for students appears to help heal mental and physical disorders. Brooks and DuBois (1995) and Mallinckrodt (1996) concluded that social support reduces psychological disorder symptoms. Victims of school violence are more likely to have poorer social support (Furlong, Chung, Bates, & Morrison, 1995), and social support for students does moderate the stigmatization process (Feiring, Taska, & Lewis, 1996).

The unit of analysis in the studies cited above has usually been the individual. However, the public and decision makers are often inter-

ested more in knowing how cities and provinces can shape and influence social support for the benefit of their students. Issues such as how the provinces are doing in providing social support for students, whether there is significant variation in social support for students among provinces, and which provincial variables are responsible for this variation contribute directly to the process of policy making. The present study addressed these questions; its results can fill in many gaps in the research literature on social support for students.

METHOD

Data Sources

What Works for Children — Information Development Program is part of the Canadian federal government's initiative, *Brighter Futures*. Human Resources Development Canada (HRDC) and Statistics Canada have designed the National Longitudinal Survey of Children and Youth (NLSCY) to "develop information for policy analysis and program development on critical factors affecting the development of children in Canada" (Statistics Canada & HRDC, 1995, p. 1). The NLSCY started in the winter of 1994 with a sample of approximately 25,000 children from the 10 provinces. Children's ages ranged from newborn to 11 years old. The first cycle of the NLSCY was conducted in 1995, with a national sample of 22,831 students. After the first cycle of data collection, the NLSCY will continue to be repeated every two years on the same sample of children as they grow into adulthood.

The household was the sampling unit in the NLSCY. The NLSCY staff randomly selected households from Statistics Canada's Labour Force Survey sample frame.[1] For children too young to complete the survey, the household member most knowledgeable about the child (in most cases the mother) provided information about the parents and children. The present study used data from the first cycle of the NLSCY. Realizing that children have to be old enough to experience social support (to be the recipients of social support), this study selected a subsample (children of age 8 years and older) from the first-cycle data. The sample size was 7,648 children from 10 provinces.

Measures and Variables

The instruments used in the NLSCY were developed in consultation with the Expert Advisory Group, subject matter specialists, and fed-

eral and provincial officials. The NLSCY covers a wide range of characteristics and factors that affect children's development. The present study was a multilevel analysis of social support for students, with child at the first level and province at the second level. All child-level variables in this study came from the NLSCY. However, the NLSCY contains little information describing provincial characteristics on various aspects such as demography, education, and health. To overcome this problem, this study also drew data from Statistics Canada's census data in which many factors were measured on a province-by-province basis. Therefore, this study used some census data as province-level variables, carefully selected measures collected around 1995 when the first cycle of the NLSCY was conducted.

At the child level, age, gender, socioeconomic status (SES), family size, the number of parents living in the household, immigration to Canada, prosocial behaviour, emotional disorder, conduct disorder, interpersonal relationship, and social support for students were included in this study (11 variables in total). Social support for students was the outcome variable, and others were explanatory variables. These explanatory variables provided adequate control over children's background, and some of them were closely related to the potential need for social support, such as prosocial behaviour, emotional disorder, conduct disorder, and interpersonal relationship. Most variables were based on single measures, but a few were composite variables based on scales or multiple items. These composite variables included prosocial behaviour, emotional disorder, conduct disorder, interpersonal relationship, and social support for students. Items forming each measurement scale are listed in the Appendix.

Prosocial behaviour was rated on a scale of 0–20, with a higher score indicating more prosocial behaviour. Emotional disorder was on a scale of 0–16, with a higher score indicating more anxiety or disorder. Conduct disorder was on a scale of 0–12, with a higher score indicating more disorder or aggression. Interpersonal relationship was on a scale of 1–5, with a higher score indicating more interpersonal problems. Finally, social support for students was on a scale of 0–18, with a higher score indicating more social support. Cronbach alpha value was 0.82 for prosocial behaviour, 0.79 for emotional disorder, 0.77 for conduct disorder, 0.71 for interpersonal relationship, and 0.82 for social support for students.

The upper part of the first column in Table 1 presents those variables taken from the NLSCY, with coding information. Parent recent working status and parental use of childcare came from the

Table 1
Coding Information and Descriptive Statistics of Outcome and Explanatory Variables

	Mean	SD
Variables from the National Longitudinal Survey of Children and Youth		
Age (8–11)	9.49	1.11
Gender (female = 1, male = 0)	0.49	0.50
Socioeconomic status (SES) (standardized)	0.00	1.00
Family size (2–6)	4.40	0.99
The number of parents (single-parent = 1, both-parent = 0)	0.14	0.35
Immigration to Canada (1 = no, 0 = yes)	0.94	0.24
Parent recent working status (working = 1, not working = 0)	0.75	0.43
Childcare (parent) (using childcare = 1, not using childcare = 0)	0.23	0.42
Prosocial behavior (0–20)	12.88	3.67
Emotional disorder (anxiety) (0–16)	2.87	2.79
Conduct disorder (0–12)	1.27	1.83
Interpersonal relationship (1–4.5)	1.71	0.57
Social support for students (0–18)	14.47	2.88
Variables from Statistics Canada		
Population (136.20–11100.90 thousands)	2957.23	3583.66
Percentage of visible minorities (0.70–17.90)	6.61	6.19
Percentage of internal migrants (0.11–0.20)	0.14	0.03
Birth rate (0.009–0.014)	0.01	0.01
Infant mortality rate (0.46–0.91)	0.63	0.15
Approved health-care beds per thousand (12.30–21.40)	15.32	2.77
Percentage of people with low education (33.83–47.16)	40.56	4.67
Percent increase in divorces (1995 to 1996) (-0.15–0.08)	-0.03	0.07

NLSCY, but were aggregated to the provincial level and thus used as province-level variables. Parent recent working status was renamed as "employment" at the provincial level and was intended to measure the effect of provincial employment condition on social support for students. Parental use of childcare was renamed as "childcare usage" at the provincial level and considered as a measure of the availability and accessibility of childcare facilities in a province. SES at the child level was also aggregated to the provincial level, creating another province-level variable named "provincial mean SES."

As mentioned earlier, most province-level variables came from Statistics Canada's census data.[2] In some cases, variables were created based on the census data. These variables included population, percentage of visible minorities, percentage of internal migrants, birth rate, infant mortality rate, approved health-care beds per thousand, percentage of people with low education, and percent increase in di-

vorces from 1995 to 1996. Together with the three provincial variables aggregated from the child level, there were in total 11 variables at the provincial level (see Table 1). These province-level variables were considered as being related to social support for students.

Statistical Analysis

Statistical analysis comprised three procedures: (a) factor analysis, (b) hierarchical linear modelling (HLM), and (c) graphical analysis. Factor analysis was used to unfold latent constructs underlining the outcome variable, social support for students. Principal components analysis was performed with quartimax rotation to minimize overlap between latent factors. Two latent factors were located, measuring different aspects of social support for students, and these factors were examined separately in the subsequent analyses.

HLM analyses were performed to address the research questions, using, as dependent measures, the two latent constructs describing different aspects of social support for students. Three HLM models were developed. The first model was the "null" model used to estimate the proportion of variance between provinces in social support for students. The second model contained individual characteristics only. This partial model estimated the relationship between individual characteristics and social support for students. For example, the model estimated the gender gap in social support for students. The third model was the full model containing variables at both individual and provincial levels. It determined which variables at the provincial level influence social support for students over and above the effects of individual-level variables.

For a fair evaluation of social support for students, the effects of SES at both individual and provincial levels have to be removed. The SES-adjusted provincial means, rather than the unadjusted means, were used for graphical analysis in the form of profile. As will be discussed later on in this article, the relationship between SES and social support for students was significantly different across provinces on one of the two latent constructs. The relationship between SES and outcome variables is often referred to as "socioeconomic gradient" and is of interest to both researchers and decision makers. From the viewpoint of social policies, a shallower gradient is usually preferable because it implies more equality among social classes. Therefore, another graphical analysis was carried out to investigate the pattern of the SES gradients among provinces.

RESULTS

The second and third columns of Table 1 present descriptive information on variables obtained from both the NLSCY and Statistics Canada. Means for dichotomous variables indicate percentages (frequencies) for those categories coded as 1. A factor analysis was performed on items measuring social support for students (outcome). Results are presented in Table 2. The factor-analytic outcomes clearly showed two latent factors or constructs. One factor had meaningful loadings from all items in the first block, and the other factor had meaningful loadings from all items in the second block. The two latent factors accounted for 49% of the total variance among items measuring social support for students. A careful examination of items loading on the first factor indicated that they all describe personal or individual support. This factor was then labelled as "personal support." On the other hand, items that loaded on the second factor all depict institutional or organizational support. This factor was then labelled as "institutional support."

Table 2
Latent Constructs of Social Support for Students from Results of Factor Analysis

Measure	Personal Support	Institutional Support
If something went wrong, no one would help me.	**0.53**	-0.04
I have family and friends who help me feel safe, secure, and happy.	**0.73**	0.01
There is someone I trust whom I would turn to for advice if I were having problems.	**0.78**	-0.04
There is no one I feel comfortable talking about my problems with.	**0.72**	-0.00
I lack a feeling of closeness with another person.	**0.73**	0.00
There are people I can count on in an emergency.	**0.77**	0.00
Did community or social service professionals help with your personal problems?	0.02	**0.68**
Did health professionals help with your personal problems?	-0.03	**0.73**
Did religious or spiritual leaders or communities help with your personal problems?	-0.02	**0.62**
Did books or magazines help with your personal problems?	-0.04	**0.69**
Eigenvalue	3.06	1.85
Percentage of variance explained	0.31	0.18

These factors are not only "statistically clean" but also theoretically sound in that they describe the two most important, distinct aspects of social support for students. A close inspection of the items also revealed that these items all measured the perceived availability of social support. Therefore, in the present study, the concept of social support for students highlighted the perception of individual students on the extent to which social support is available to them when they need it. Factor scores were derived based on these two latent factors and were then used in the subsequent statistical analyses.

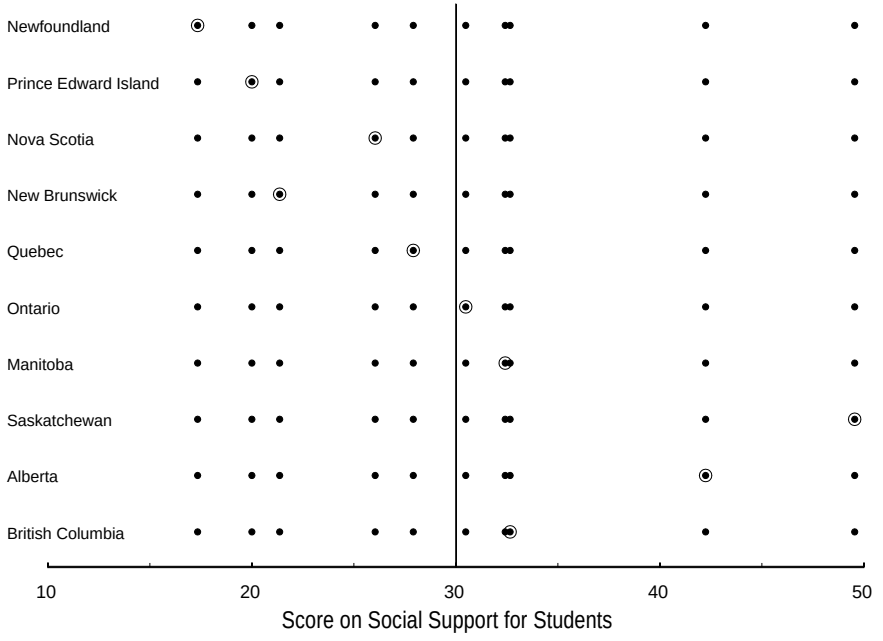
The first HLM model was aimed at estimating the proportion of variance in social support for students between provinces by separating the total variance into individual- and province-level components. Results showed that the vast majority of the variance in perceived social support was between individuals. Only 2–3% of the total variance was between provinces in both perceived personal support and perceived institutional support, although this proportion was statistically significant for both outcome variables. This indicates that provinces varied much less than individuals in terms of perceived social support for students. This was the reason why a partial model (with only individual-level variables) was set aside for analyses at the individual level. However, the between-province variance was indeed significant ($p < 0.001$), indicating that provinces did vary in perceived social support for students, though less significantly in comparison to individuals.

Graphical analysis was used to profile social support for students among provinces. The NLSCY contained a composite variable named social support for students, which is the same as personal support for students in the present study. To be consistent, this NLSCY composite variable was employed for the graphical analysis. One HLM model was fitted on this NLSCY composite variable, social support for students, with SES at the individual level and provincial mean SES at the provincial level. Therefore, the provincial means were adjusted for both individual and provincial socioeconomic backgrounds. The profile was then graphed separately for each province. Results are presented in Figure 1. The dots represent provinces in each line, and the large, empty circle indicates a particular province. Thus, the standing of each province in social support for students in comparison to other provinces is illustrated in the figure. To present the graph in a way that is easy to interpret, scores on social support for students were scaled to have a mean of 30 and a standard deviation of 10. The reference line in the middle of the graph represents the national mean.

Figure 1 clearly shows four bands that separate provinces. Newfoundland, Prince Edward Island, and New Brunswick clustered together, while Nova Scotia, Quebec, Ontario, Manitoba, and British Columbia fell into another band. Alberta and Saskatchewan were well above others, but also well separate from each other. Scores on social support for students ranged from 17 to 49 among provinces after adjusting for individual and provincial socioeconomic backgrounds.

Table 3 shows simplified HLM results on the relationship between different aspects of social support for students and individual- and province-level variables. Again, the partial models contained only individual-level variables, whereas the full models contained variables at both individual and provincial levels. In interpreting the

Figure 1
Profile of Canadian Provinces in Social Support for Students



Note. Scores on social support for students are scaled to have a mean of 30 and a standard deviation of 10. The reference line in the middle of the graph represents the national mean. The dots represent provinces in each line, and the large, empty circle indicates a particular province.

Table 3
Simplified HLM Results of Social Support for Students

	Personal support				Institutional support			
	Partial model		Full model		Partial model		Full model	
Explanatory Variable	Effect	SE	Effect	SE	Effect	SE	Effect	SE
Individual effects								
Socioeconomic status (SES)	0.20	0.01	0.20	0.01				
Family size					-0.07	0.02	-0.07	0.02
The number of parents					0.59	0.04	0.59	0.04
Immigration to Canada	0.47	0.07	0.47	0.07				
Prosocial behaviour	0.14	0.01	0.14	0.01	-0.06	0.01	-0.06	0.01
Emotional disorder					-0.14	0.01	-0.14	0.01
Conduct disorder					-0.05	0.01	-0.05	0.01
Interpersonal relationship					-0.05	0.01	-0.05	0.01
Provincial effects								
Birth rate							-0.47	0.16

Note. Presented in the table are effects that are statistically significant (at 0.05 level). Partial models contain individual variables only, whereas full models contain both individual and provincial variables. At the individual level, age and gender are statistically insignificant across all models. At the provincial level, population, mean SES, percentage of visible minorities, employment (aggregated from "recent working status" at the individual level), percentage of internal migrants, infant mortality rate, the number of approved health-care beds per thousand, childcare usage (aggregated from "childcare" at the individual level), percentage of people with low education, and percent increase in divorces are statistically insignificant across all models. For institutional support, the slopes of SES and family size are significantly variant (different) across provinces. These variations cannot be explained through any provincial variables included in this study.

results, it is necessary to note that the coefficient associated with a particular variable should always be considered as the effect of that variable on the outcome measure with all other variables in the model held constant (statistically controlled). To avoid repetition, a similar statement was not made each time an effect was interpreted.

In terms of personal support, the partial model was equivalent to the full model — no province-level variables were statistically significant. The largest effect was immigration to Canada. Because, as a dichotomous variable, non-immigrants were coded 1, the effect reported in the table is the effect for non-immigrants. Non-immigrants perceived significantly more personal support than im-

migrants (with a size of 47% of a standard deviation). Rosenthal and Rosnow (1984) have classified effect sizes more than 0.50 as large, effect sizes between 0.30 and 0.50 as moderate, and effect sizes less than 0.30 as small. The immigration effect was moderate.[3] For every 100 immigrants perceiving personal support, there are 147 non-immigrants perceiving the same amount of personal support.

Socioeconomic status was the next important individual-level variable. The positive sign indicates that individuals from high SES perceived more personal support than those from low SES. Because SES was standardized for the analysis, the effect size indicates that for two individuals with SES one standard deviation apart, the score of the one with higher SES was 20% of a standard deviation higher than that of the one with lower SES. Consider a scale for the perceived personal support score to have a mean of 100 and a standard deviation of 100. If the perception of the one with lower SES is 100 on personal support, then the perception of the one with higher SES would be 120. Such an effect is considered small according to the threshold introduced above.

Prosocial behaviour was the next important individual-level variable. The positive sign means that individuals with good prosocial behaviour perceived more personal support than those with poor prosocial behaviour. The effect on personal support was 14% of a standard deviation for one standard deviation increase in prosocial behaviour scores (prosocial behaviour was standardized for the analysis). Imagine two individuals with prosocial behaviour scores one standard deviation apart. If the perception of the one with poor prosocial behaviour is 100 on personal support, then the perception of the one with good prosocial behaviour would be 114. This effect is small in size and not as strong as the previous two variables.

None of the other variables at the individual level was statistically significant. These unimportant variables included age, gender, family size, the number of parents, emotional disorder, conduct disorder, and interpersonal relationship. In addition, none of the variables at the provincial level were statistically significant. Therefore, perceived personal support appears to be truly “personal” — it was not influenced by provincial characteristics including population, mean SES, percentage of visible minorities, employment, percentage of internal migrants, birth rate, infant mortality rate, the number of approved health-care beds per thousand, childcare usage, percentage of people with low education, and percent increase in divorces.

Table 3 also lists the HLM results on the relationship between institutional support and individual- and province-level variables. In terms of the individual effects, the partial model was equivalent to the full model. Six individual-level variables turned out to be statistically significant. Among these significant variables, the number of parents was the most important. Because, as a dichotomous variable, individuals with single parents were coded 1, those from single-parent households perceived significantly more institutional support than those from both-parent households. According to Rosenthal and Rosnow (1984), the effect was large — for every 100 individuals coming from both-parent households perceiving institutional support, there are 159 individuals coming from single-parent households perceiving the same amount of institutional support.

The next important individual-level variable was emotional disorder. Because emotional disorder was standardized and coded in such a way that a high score indicates the presence of behaviours associated with anxiety and emotional problems, a negative effect (14% of a standard deviation) showed that individuals with emotional disorder perceived less institutional support than those without emotional disorder. Consider two individuals who are one standard deviation apart in emotional disorder scores. If the perception of the one with more emotional disorder is 100 on institutional support, then the perception of the one with less emotional disorder would be 114. This effect is small, according to the threshold introduced above.

Respectively, individuals with better prosocial behaviour, worse conduct, and worse interpersonal relationship perceived significantly less institutional support. However, with effect sizes ranging from 5% to 6% of a standard deviation, these variables were far less important than the number of parents and emotional disorder. Individuals from large families perceived significantly less institutional support than those from small families. With a meaningful unit, one person, family size was not standardized. The effect size (7% of a standard deviation) means that for two families with one person difference in size, if the perception of the one from the larger family is 100 on institutional support, then the perception of the one from the smaller family would be 107. Family size has a potentially important effect on perceived institutional support — the effect can mount up to a substantial amount when the difference in size becomes large between families.

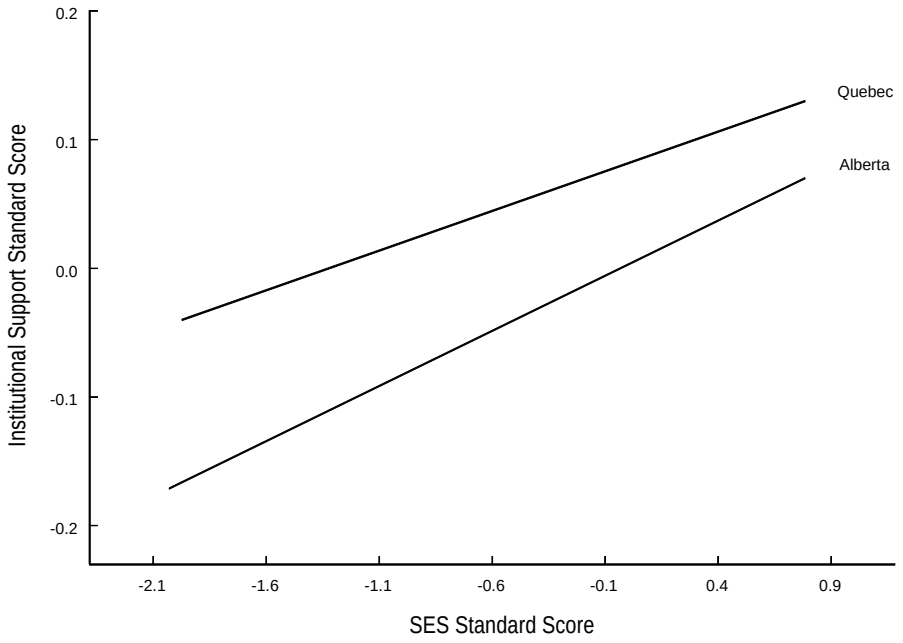
At the provincial level, there was only one statistically significant variable — birth rate. In provinces with a high birth rate, individuals perceived less institutional support than those in provinces a with low birth rate. In this study, birth rate was defined as the ratio between the number of newborn babies and the total population, and it was used as the number of units with 0.01% as one unit. As a percentage unit, birth rate was not standardized. Consider two provinces with a difference in birth rate of about 0.01%; if the perception of individuals in the province with a higher birth rate is 100 on institutional support, then the perception of individuals in the province with a lower birth rate would be 147. This is a moderate effect over and above significant individual effects. All other provincial-level variables were not statistically significant, including population, mean SES, percentage of visible minorities, employment, percentage of internal migrants, infant mortality rate, the number of approved health-care beds per thousand, childcare usage, percentage of people with low education, and percent increase in divorces.

The relationships (slopes or gradients) between different aspects of social support for students and individual-level variables were also examined across provinces in the HLM analyses. These relationships were not significantly different among provinces for personal support. However, the relationships of institutional support with SES and family size were significantly different across provinces. This indicates, for example, SES had strong effects on institutional support in some provinces, whereas in other provinces SES had weak effects.

Thus, SES was mainly a province-level characteristic, particularly given that SES was not statistically significant at the individual level. In contrast, family size was statistically significant at the individual level. Thus, family size was an individual as well as a provincial characteristic. The same group of province-level variables were used to model these differences in relationships among provinces, but none of the province-level variables could significantly explain these differences. As mentioned earlier, the SES gradient is of particular interest to many researchers and politicians. A graphical analysis was then carried out to investigate the pattern of the SES gradients among provinces (see Figure2).

The SES gradient of each province was examined separately. Eight out of 10 provinces did not show statistically significant SES gradi-

Figure 2
Significant SES Gradients for Institutional Support



ents. Two provinces (Quebec and Alberta), however, indicated statistically significant SES gradients. Because a higher value of the outcome variable indicates more perception of institutional support, individuals from high SES perceived significantly more institutional support than individuals from low SES in these two provinces. The other eight provinces had flat SES gradients (and thus were not graphed), indicating that overall, individuals from different SES perceived similar institutional support, although the level of perceived institutional support could be low in some of the eight provinces.

DISCUSSION

This study examined different aspects of social support for students as they related to individual and provincial characteristics. The analytic strength of this study was the use of HLM that takes into account the hierarchical structure of survey data (e.g., individuals nested within provinces) and simultaneously estimates the effects

of individual- and province-level variables. These features are important because policy initiatives implemented at one level of a social system are influenced by characteristics of the system at other levels. By separating total variance according to the hierarchical structure of the data and analyzing each variation in relation to others, HLM allows researchers to derive more credible policy implications.

Principal Findings

This study found two latent factors underlining social support for students. One factor was perceived personal support exclusively, and the other was perceived institutional support exclusively. Perceived personal support for students did not fluctuate with provincial characteristics. Three variables were influential at the individual level. Students who had immigrated to Canada perceived less personal support than non-immigrant students. Students from disadvantaged socioeconomic background perceived less personal support than those from advantaged socioeconomic background. Finally, students with poor prosocial behaviour perceived less personal support than those with good prosocial behaviour.

As to institutional support, individual students living in provinces with relatively high birth rates perceived less institutional support than those living in provinces with relatively low birth rates. SES and family size were also province-level characteristics — they had strong effects on perceived institutional support in some provinces, but weak effects in other provinces. Three factors were influential at the individual level. Students from both-parent households perceived less institutional support than those from single-parent households. Students with more emotional disorder perceived less institutional support than those with less emotional disorder. Family size had a potentially important effect on institutional support — students from large families perceived less institutional support than those from small families. Three other factors — prosocial behaviour, conduct disorder, and interpersonal relationship — had marginal effects on perceived institutional support which are not practically appreciable.

Policy Implications

Province-level variables were selected in this study to reflect (a) contextual characteristics of a province (population, provincial mean

SES, and percentage of visible minorities); (b) economic characteristics of a province (employment and percentage of internal migrants); (c) health-related characteristics of a province (birth rate, infant mortality rate, and the number of approved healthcare beds per thousand); (d) social services characteristics of a province (childcare availability and accessibility); (e) education level of a province (percentage of people with low education); and (f) societal characteristics of a province (percent increase in divorces).

This list of province-level variables is, of course, far from comprehensive (secondary analysis of survey data is subject to what is available in the data). Any of the above categories may not be measured adequately with the included variables. This is the reason that the names of individual variables, rather than the names of general categories, have been used in all interpretations so far. Another word of caution with regard to policy implications is that scales used in the NLSCY measured perceived social support for students rather than actual social support for students. Although these two may be highly correlated, they are different conceptually and practically. Finally, the two factors of social support for students accounted for only 49% of the variance in social support measures. This situation may impose some limitations on this study. Rather than being conclusive, the findings of this study open new doors for more investigation into the issue of social support for students.

The significant province-level variable, birth rate, has an important implication. This study implies that provinces with relatively higher birth rates need to examine their institutional support for students to make sure that both quality and quantity are adequate. A related finding is that family size was a province-level characteristic. Common wisdom states that students from large families may not have enough attention from their parents in comparison to students in smaller families. When personal problems occur, students from larger families may need more institutional support. Provinces, however, were divided on this regard — the perception of students from large families was not disadvantaged in some provinces, but was in others.

In the context of the variables included at both individual and provincial levels in this study, individual-level variables turned out to be more important than province-level variables. The following policy implications come from the individual level (all of the problems to be discussed are common among provinces). One major concern is that immigrant students perceived far less personal support than

students born in Canada. Commonly, immigrant students have many problems that non-immigrant students do not have — for example, they need to adapt to the new social cultural environment, their parents are overwhelmingly preoccupied with earning a living, and language problems may prevent them from making friends. Immigrant students in provinces with few visible minorities may feel even more isolated. There is a common need for all provinces to examine social programs and services that help immigrant students feel at home and merge into the society so as to ensure the adequacy of those programs and services in terms of both quality and quantity. Many organizations in the public sector, such as religious communities, can help with things like "friendship groups" where immigrant families are peered with local families to grow friendship.

It is important for students with poorer prosocial behaviour to perceive more personal support. But this study shows that the opposite was true — they actually perceived much less personal support. The reason may be twofold: (a) many adults usually like to help, or feel comfortable with helping, children with good prosocial behaviour; and (b) students with good prosocial behaviour make friends more easily. Programs are needed that motivate adults to work with and, more importantly, educate them in how to work with children with poor prosocial behaviour. Meanwhile, some counselling programs may help treat students with poor prosocial behaviour.

A similar concern to the above is also raised about institutional support for students — students with more emotional disorder perceived much less institutional support. This certainly does not mean that social institutions have largely left them alone. It is very likely that many institutions are not aware of these students in need. School staff and social services professionals may need to play a bigger role in identifying students with emotional disorders. This may not be an easy task because emotional problems are more hidden than behavioural problems. Parents, teachers, and peers can provide useful information to help identify students with emotional disorders.

In this study, the number of parents in the home had the strongest effect on perceived institutional support for students. It is certainly a trend in the right direction that students from single-parent households perceived more institutional support than those from both-parent households. However, the magnitude of this effect was somewhat abnormal, that is, there is a concern about students from both-parent households. In fact, an effect size of nearly 60% of a standard deviation indicates a big concern for students with two

parents at home. No one would argue that students with single parents need more social support, but the belief that two parents can provide adequate social support for their children has to be put in context and not taken for granted. This point becomes even more informative if one connects the above finding with the finding that students with single parents perceived as much personal support as students with both parents.

In this study, family size is a unique variable in that it was both an individual characteristic and a provincial characteristic. Students from large families perceived potentially far less institutional support than those from small families. The word "potentially" is worth emphasizing. If family sizes are different by one or two persons, the difference in perceived institutional support may not be appreciable practically. The attention needs to be paid to really large families. For example, perceived institutional support was far less for a student coming from a family with 6 or 7 persons than for a student coming from a family with 3 or 4 persons. In addition, as discussed earlier, family size also played a role at the provincial level. The problem associated with family size was small in some provinces but big in others.

Equality Issues

Equality issues have often been sensitive public concerns. Many equality issues are worth investigating, with the major ones being gender, socioeconomic, and racial equalities. This study found that gender was one of the two variables (age was the other) that were consistently insignificant across aspects of social support for students (personal and institutional support). Male and female students perceived similar personal and institutional support — there was no gender gap in perceived social support for students.

However, socioeconomic equality appears to be a concern. Students from low SES perceived less personal support than those from high SES — a typical scenario of socioeconomic inequality. As to institutional support, although SES was not significant at the individual level, it was a provincial characteristic. That is, in some provinces, SES had strong effects on perceived institutional support (less equality), whereas in other provinces, SES had weak effects (more equality). It is encouraging, though, that 8 of 10 provinces showed a flat SES gradient, indicating socioeconomic equality in perceived institutional support for students. The mechanism that makes Quebec

and Alberta have significant SES gradients needs to be investigated. Overall, social programs and services need to be examined to make sure that students from disadvantaged families cope with their personal problems through both personal support and institutional support in a way that is adequate in quality and quantity, particularly in the provinces showing salient SES gradients.

The racial equality issue cannot be addressed with available data. However, the variable of immigration to Canada offers some partial clue on this regard, given that most immigrants have come from third-world countries in the past decade. As discussed earlier, a huge gap in perceived personal support between immigrant students and non-immigrant students existed in the data. On the other hand, no appreciable gap was detected in perceived institutional support. Social institutions seem to have created a positive image of promoting equality among immigrant students, but individuals in the society seem not to have created a positive image of promoting equality among immigrant students. The public and private sectors may need to encourage and train individuals to participate in helping immigrant students, perhaps generally helping minority students with their personal problems. Awareness programs aimed at the general population may aid in this effort.

NOTES

1. The Labour Force Survey contains a nationally representative sample of Canadian households. It includes individuals representative of the civilian, non-institutionalized population 15 years of age or older in 10 provinces in Canada. The sample is obtained through a stratified, multi-stage design that employs probability sampling at all stages. The NLSCY is designed to select a representative sample of Canadian children on the basis of the sampling framework used in the Labour Force Survey. As a result, the NLSCY has a national probability sample of Canadian children in 10 provinces.

2. The use of single-item scales (including dichotomous scales) may impose limitations on data analysis in the present study. The major concern is that these scales cannot adequately represent constructs of interest, measuring only one specific aspect of a construct. For example, to adequately measure the economic condition of a province, one needs more information than just the employment rate. To alleviate this concern, the interpretation was closely tied to the meaning of each variable (at the individual and provincial levels).

With this caution, the results of the present study can still be used with confidence in spite of the above potential statistical problems.

3. Theoretically, the effects as reported in the table cannot be directly compared with the standards in Rosenthal and Rosnow (1984). Effect size unit, which is the ratio between the effect of a variable as reported in the table and the variance component (standard deviation) at the relevant level (individual or provincial) in the HLM model, needs to be calculated. The classification of effects as small or moderate in the present study was based on effect size units. This common metric allows for comparison of effects across variables.

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APPENDIX

Items Measuring Social Support for Students (Outcome), Prosocial Behaviour, Emotional Disorder, Conduct Disorder, and Interpersonal Relationship

Social Support for Students	
ASPHQ01A	If something went wrong, no one would help me.
ASPHQ01B	I have family and friends who help me feel safe, secure, and happy.
ASPHQ01C	There is someone I trust whom I would turn to for advice if I were having problems.
ASPHQ01D	There is no one I feel comfortable talking about my problems with.
ASPHQ01E	I lack a feeling of closeness with another person.
ASPHQ01F	There are people I can count on in an emergency.
	(1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree)
ASPHQ02A	Did community or social service professionals help with your personal problems during the past 12 months?
ASPHQ02B	Did health professionals help with your personal problems during the past 12 months?
ASPHQ02C	Did religious or spiritual leaders or communities help with your personal problems during the past 12 months?

ASPHQ02D	Did books or magazines help with your personal problems during the past 12 months? (1 = yes, 2 = no)

Prosocial Behaviour

ABECQ6A	How often would you say that your child shows sympathy to someone who has made a mistake?
ABECQ6D	How often would you say that your child will try to help someone who has been hurt?
ABECQ6H	How often would you say that your child volunteers to help clear up a mess someone else has made?
ABECQ6M	How often would you say that your child, if there is a quarrel or dispute, will try to stop it?
ABECQ6U	How often would you say that your child offers to help other children (friend, brother or sister) who are having difficulties with a task?
ABECQ6BB	How often would you say that your child comforts a child (friend, brother or sister) who is crying or upset?
ABECQ6GG	How often would you say that your child spontaneously helps to pick up objects which another child has dropped (e.g., pencils, books, etc.)?
ABECQ6OO	How often would you say that your child will invite bystanders to join in a game?
ABECQ6SS	How often would you say that your child helps other children who are feeling stick?
ABECQ6UU	How often would you say that your child takes the opportunity to praise the work of less able children? (1 = never or not true, 2 = sometimes or somewhat true, 3 = often or very true)

Emotional Disorder (Anxiety)

ABECQ6F	How often would you say that your child seems to be unhappy, sad or depressed?
ABECQ6K	How often would you say that your child is not as happy as other children?

ABECQ6Q	How often would you say that your child is too fearful or anxious?
ABECQ6V	How often would you say that your child is worried?
ABECQ6CC	How often would you say that your child cries a lot?
ABECQ6II	How often would you say that your child appears miserable, unhappy, tearful or distressed?
ABECQ6MM	How often would you say that your child is nervous, highstrung or tense?
ABECQ6RR	How often would you say that your child has trouble enjoying himself/herself?
	(1 = never or not true, 2 = sometimes or somewhat true, 3 = often or very true)

Conduct Disorder

ABECQ6G	How often would you say that your child gets into many fights?
ABECQ6X	How often would you say that your child, when another child accidentally hurts him/her, assume that the other child meant to do it, and then reacts with anger and fighting?
ABECQ6AA	How often would you say that your child physically attacks people?
ABECQ6FF	How often would you say that your child threatens people?
ABECQ6JJ	How often would you say that your child is cruel, bullies or is mean to others?
ABECQ6NN	How often would you say that your child kicks, bites, hits other people?
	(1 = never or not true, 2 = sometimes or somewhat true, 3 = often or very true)

Interpersonal Relationship

ARLCQ06	During the past 6 months, how well has your child gotten along with other kids, such as friends or classmates (excluding brothers and sisters)?

ARLCQ07 Since starting school in the fall, how well has your child gotten along with his/her teacher(s) at school?

ARLCQ08 During the past 6 months, how well has your child gotten along with his/her parents?

ARLCQ09 During the past 6 months, how well has your child gotten along with his/her brother(s)/sister(s)?

(1 = very well, 2 = quite well, 3 = pretty well, 4 = not too well, 5 = not well at all)