

Young Children with Special Needs: Prevalence and Implications in Nova Scotia*

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In a study of Nova Scotian children five years of age and younger with special needs, and of services available to them, questionnaires were sent to all schools with kindergarten classes, to all public health nurses in the province, and to the directors of all centres providing full- or part-day programs for preschool-aged children. Responses indicate that young children with special needs require more professional services and more programs. Many children's needs go undetected before school entry, with serious consequences for later school performance.

Dans une étude axée sur les enfants de la Nouvelle-Écosse de cinq ans et moins ayant des besoins spéciaux et sur les services qui leur sont offerts, des questionnaires ont été envoyés à toutes les écoles ayant une maternelle, à tous les infirmiers et infirmières hygiénistes de la province et aux directeurs de tous les centres offrant aux enfants d'âge préscolaire des programmes d'une journée ou de quelques heures par jour. Les réponses à ces questionnaires indiquent que les enfants ayant des besoins spéciaux requièrent plus de services professionnels et davantage de programmes. Un grand nombre des difficultés éprouvées par les enfants ne sont pas décelées avant qu'ils ne commencent l'école, ce qui a de graves répercussions sur leur rendement scolaire par la suite.

In the past twenty years, a number of major policy and legislative documents dealing with children with special needs have proposed and supported the development of programs for preschool children. They include the Commission on Emotional and Learning Difficulties in Children (CELDIC) in Canada (Lazure, 1979), the *Warnock Report* (Department of Education and Science [DES], 1978) and the *Education Act* (1981) in the U.K., and PL-94.142 (1975) in the U.S.A. In some areas, provisions have expanded considerably, but programs for the preschool child with special needs are by no means universal and in some places are still not available.

*The authors' contributions to this article were equal. Grants from Mount Saint Vincent University and Employment and Immigration Canada assisted in its preparation. The authors thank Robert Orr for his comments.

According to Thurman and Widerstrom (1985), special needs include anything (for instance, physical, mental or sensory impairment, family situation or social background) which causes the child to need help or intervention beyond that normally required to assure the best developmental outcome. We offer here a survey of the special needs of children aged five years and under in Nova Scotia and an examination of services for and future needs of these young children and of professionals working with them.

Authorities concerned with all aspects of special needs agree that optimum developmental outcome depends on earliest possible identification of the child's special needs and early provision of appropriate help and intervention for the child and family. Empirical research on the effectiveness of specific programs is controversial (Simeonsson, Cooper, & Scheiner, 1982), but a growing body of evidence indicates that well designed and implemented programs for various special needs can promote development and prevent future problems (e.g., Bailey & Wollery, 1984; Bronfenbrenner, 1974; Cooper, Moodley, & Reynall, 1979; Hayden & Haring, 1977; Karnes, 1977; Lazar & Darlington, 1982).

Although there were previously services for specific groups of young children, comprehensive educational programs for young children with special needs are a phenomenon of the past twenty-five years. Similarly, appropriate courses for preparing teachers, early childhood educators, and child care workers are recent and the question of an appropriate curriculum for both children and their teachers is still open.

The rationale for this survey was the assumption that the development of educational programs relevant to young children's special needs should be based on knowledge of what these needs are. However, because it is difficult to define, locate, and identify this population (Lesson & Rose, 1980; Lindsay, 1984), a complete picture of these needs is difficult to construct.

The best source of information on school-aged young children is the elementary schools. For preschool children no such source normally exists. In Nova Scotia there is neither legal requirement nor coordinated commitment to identify or provide services for preschool children with special needs. Only visually and hearing impaired preschool children are legally entitled to services (*Handicapped Persons Education Act*, 1974).

We aimed to compile as complete a picture as possible of the special needs of, and services for, preschool and kindergarten-aged children from (1) public health nurses, (2) directors of preschool programs (all centres providing full; or part-day care or part-day nursery programs for children aged five years and under), and (3) principals of elementary schools with kindergarten (primary grade in Nova Scotia) classes.

METHOD

Questionnaires were sent to all public health nurses in the province (N=180), the directors of all centres providing full- or part-day programs for preschool aged children (N=325), and to the principals of all elementary schools in the province (N=427).

Questionnaires solicited information on the numbers of children with special needs with whom the three groups had dealt during the previous twelve months and information on existing services and further provisions needed for these children. Questionnaires sent to each group differed slightly to accommodate differences in the age groups with whom they were primarily concerned.

All questionnaires asked respondents to indicate the number of children formally assessed and diagnosed as having a special need and the number of children whom they suspected had a special need not yet diagnosed formally. The questionnaire to grade primary teachers additionally requested information on the number of children assessed and diagnosed during the previous year in kindergarten, the number who (as far as teachers were aware) had received specialized preschool services, the number having a significant problem coping with the demands of kindergarten, and the number who would be repeating kindergarten the following year.

RESULTS

Questionnaires for the public health nurses, preschool and day care directors, and kindergarten teachers were returned by 77%, 25%, and 40% respectively. The low response rate of the preschool directors was unexpected and may be due, in part at least, to the fact that this study was conducted during the spring and summer when many smaller part-day preschools are closed.

The returns provided information on 28,983 children up to five years of age, almost 40% of the age cohort. Public health nurses' information was based on 21,358 children they had seen in the previous twelve months, while preschool directors reported on 3,189 and schools on 4,436 children. Table 1 shows the total numbers and percentages of children with special needs identified and suspected by the three groups.

A significant percentage of children with special needs have been identified during the preschool years, although the percentage increases once children enter elementary school.

These data indicate that almost one-fourth of children in kindergarten have difficulty meeting standard requirements for school. A total of 5.3% of children were repeating kindergarten, and this figure is the probable percentage of children with the most severe difficulties.

TABLE 1
Numbers and Percentages of Preschool Children Identified and Suspected as Having Special Needs

<i>Facility</i>	<i>Total number of children with special needs</i>	<i>Percentage of total number of children (%)</i>
Day cares/ preschools	216 (396)	6.77 (12.40) n=3,189
Schools	1046 (584)	23.58 (12.91) n=4,436
Nurses	2123 (2606)	9.87 (12.20) n=21,358

Note: Figures in parenthesis refer to numbers and percentages of children suspected of having special needs but not formally identified.

Results from all three groups of respondents indicate that approximately 12% of young children suspected of having special needs have not yet been formally identified. Although percentages differed, the rates of suspected special needs are approximately the same (i.e., between 12.2% and 12.9%). These percentages may be overestimated since the categories of special need by which children are identified are not mutually exclusive. Children might be hearing impaired, suffer language delay, and have behavioural problems and be identified by all three.

Table 2 indicates the number of young children by type of special needs as identified by the public health nurses.

Of preschool children nurses saw in the year before the study, 3.07% were thought to have significant needs due to social and economic background and 1.6% to have speech or language delay. Although other categories of special needs were smaller the total percentage of children having special needs was 9.9%. Due to the very young age of many children with whom they worked, nurses made a general prediction rather than specify the number of children suspected according to specific need.

Table 3 presents numbers of children by type of special needs identified and suspected by preschool directors.

The type of special need most often identified and also most often suspected in preschools is an emotional or behavioural problem (i.e., 2% and 5.7% respectively). Although lower than the 3–4% reported elsewhere (e.g., Fundudis, Kohn, & Garside, 1980; Neligan, Pridham & Steiner, 1974; Silva,

TABLE 2
Numbers and Percentages of Children by Types of Special Needs Identified by the Public Health Nurses

<i>Special needs</i>	<i>Total number of children with special needs</i>	<i>Percentage of total number of children (%)</i>
Environmental deprivation/disadvantage	656	3.07
Speech/language delay	346	1.62
Visual impairment	183	.86
Physical handicap	170	.79
Hearing impairment	158	.74
Developmental delay	158	.74
Emotional disturbance		
behavioural problem	145	.68
Mild mental retardation	103	.48
Severe mental retardation	93	.44
Abuse	53	.25
Other ^a	7	.20
<i>Total</i>	2072	9.90

^aNot identified.

1980), the second most often identified special need was language delays or disorders found in 2% of children. No children were reported to have suspected language difficulties and other handicaps had low incidence.

Table 4 shows numbers and percentages of children by type of special need identified and suspected by the kindergarten teachers.

Speech or language impairment is most often identified (9.2%), followed by hearing impairment (3.1%) and learning disability (2.9%). These data are in strong contrast to those of the preschool children, of whom less than 3% were identified as having language problems and hearing impairments.

Almost 5% of children enrolled in kindergarten were suspected of being significantly immature. The next highest category of suspected special need is environmental deprivation/disadvantage (3.7%), corresponding to the percentage identified by public health nurses. No child will be diagnosed formally under this label, but cultural and environmental factors undoubtedly constitute a special need. The categories of both immaturity and deprivation and disadvantage almost certainly overlap with the category of identified language problems in children.

In addition to prevalence data, questionnaires solicited information on the nature and extent of assessment and educational services for young children

TABLE 3
Numbers and Percentages of Children by Types of Special Needs Identified and Suspected by Day Cares/Preschools

<i>Special needs</i>	<i>Total number of children with special needs</i>	<i>Percentage of total number of children (%)</i>
Emotional/behavioural problem	64 (181)	2.01 (5.67)
Language delay/disorder	56 (0)	1.76 (0)
Physical handicap	31 (8)	.97 (.25)
Mental retardation	27 (1)	.85 (.03)
Hearing impairment	20 (135)	.63 (4.21)
Visual impairment	13 (13)	.41 (.41)
Other ^a	5 (58)	.16 (1.82)
<i>Total</i>	216 (396)	6.97 (12.39)

Note: Figures in parenthesis refer to numbers and percentages of children suspected but not identified as having special needs in these areas.

^aOther handicaps cited included multiple handicaps, rare syndromes, and other general developmental delays.

with special needs and the opinion of the professionals on additional services needed. Public health nurses were asked whether there were any assessment facilities available locally in their areas. They reported more assessment facilities available in urban areas (72.5%) than in rural (55.5%) and more for children three years and older (67.4%) than for children two years and below (60.8%) in both rural and urban areas.

Another indication of the adequacy of assessment facilities is the numbers of special needs children identified during the kindergarten year rather than before school entry. The percentage of children identified prior to school was 16.5%, and 6.7% were identified during the first year of school. This latter figure, taken together with the number of children still suspected of having undiagnosed needs, make it clear that not all special needs children are identified at an early age. Almost half of public health nurses (48.2%) and kindergarten teachers (42.8%) thought additional assessment facilities a high priority. Fewer than 10% of preschool personnel shared this opinion, but this probably reflects the different priorities of pre-school rather than their view of assessment. To the question, "What is your most pressing concern at this time?" 94% of preschool directors reported financial concerns.

Few children in kindergarten were known to have received any preschool education services. Teachers reported that 3% of the children had received services as far as they were aware. This 3% is a small percentage of preschool-

TABLE 4
Numbers and Percentages of Children by Types of Special Needs Identified by Kindergarten Teachers

<i>Special needs</i>	<i>Total number of children with special needs</i>	<i>Percentage of total number of children (%)</i>
Speech/language impairment	362 (115)	8.16 (2.50)
Hearing impairment	136	3.07
Learning disability	129	2.90
Visual impairment	100	2.25
Gifted	89	2.0
Emotional disturbance	61 (49)	1.38 (1.12)
Mild mental retardation	50	1.13
Severe mental retardation	26	.59
Emotional abuse	25	.56
Physical abuse	22 (33)	.50 (.74)
Physical handicap	16	.36
Significant immaturity	0 (218)	0 (4.90)
Emotional deprivation/disadvantage	0 (162)	0 (3.65)
Other ^a	36	.81
<i>Total</i>	1052 (577)	23.71 (12.91)

Note: Figures in parentheses refer to numbers and percentages of children suspected of having special needs but not formally identified.

^aNot identified.

ers with special needs. Most children with special needs will have been enrolled in regular preschool programs if they have been enrolled in any, as there are few programs in the province designated especially for children with developmental problems. Of the 216 children identified by preschool respondents as having special needs, 25% were in special programs, usually segregated. This proportion is a research artifact, since special programs were more likely to have returned the questionnaire. More than half of preschool respondents reported a child or children with special needs enrolled in their centres. As with assessment facilities, public health nurses reported fewer programs available in rural (43.1%) than in urban areas (66.7%) and fewer for very young children (48.5%) than for preschoolers aged three to five years (61.3%). Approximately 48% of kindergarten teachers, 45% of nurses, and 9% of preschool directors thought that additional preschool programs for children with special needs deserved higher priority.

TABLE 5
*Percentages of Preschools/Day Cares Receiving
 Information and/or Support From Agencies or
 Professionals on Individual Children*

<i>Agency/professional</i>	<i>Preschools/day cares</i>
Psychologist	20.2
Speech pathologist	45.2
Early childhood consultant	9.5
Physician/pediatrician	20.2
Public health nurse	44.0
Social worker	25.0
Other ^a	11.9

^aIncluded parent, family doctors, and audiologists

Preschool directors and kindergarten teachers were asked to identify professionals who had provided information, support, or active help to them over the previous twelve months for individual children's special needs. Tables 5 and 6 give percentages of preschools and elementary schools that had received support from individual agencies or professionals.

A variety of professionals provided information and support services. Speech pathologists, public health nurses, social workers, and psychologists were mentioned most often by preschool directors, and speech pathologists, psychologists, and school board personnel by teachers. This does not imply that all centres or schools received support or that there was sufficient support. Indeed, 47% of public health nurses, 94% of preschool directors, and 55% of teachers gave additional support services high priority. Of the three groups of respondents, only public health nurses considered services to parents a major need. No preschools identified services to parents as a major need.

DISCUSSION

Almost 7% of preschool aged children were identified by preschool directors as having some type of special need. However, by the first year of school the percentage rises to 24. Some children are being identified during preschool years, but most are not. Prevalence and incidence figures for children with special needs reported elsewhere invariably refer to school-aged children. The figure of 12% has traditionally been accepted in North America (Karagianis & Nesbit, 1980). The figure reported here is somewhat higher but

TABLE 6
Percentages of Kindergartens Receiving Information and/or Support From Agencies or Professionals on Individual Children Prior to School Entrance and During Kindergarten

<i>Agency/professional</i>	<i>Prior to child's entrance</i>	<i>During kindergarten</i>
Psychologist	35	43
Speech pathologist/audiologist	42	56
Medical ^a	23	10
Mental health personnel	9	10
School board resource personnel	9	37
Social worker	39	9
Day care/developmental centre personnel	3	0
Volunteer services ^b	0	3

^a Included public health nurses, family physicians, and pediatricians.

^b Included parents' groups and volunteer/charitable organizations.

similar to that in studies conducted in the United Kingdom which included children with mild and transitory (but nevertheless educationally significant) special needs (DES, 1978; Rutter, Tizard, & Whitmore, 1970; Webb, 1967).

Those special needs those most likely to be undetected prior to school age (i.e., speech and language impairment and hearing impairment) are precisely those that seriously affect school performance. It is possible to identify these needs prior to school entry (Fundudis et al., 1980; Lyon & Lyon, 1982; Silva, 1980) but this does not appear to be happening in many cases.

It was somewhat surprising that no preschool directors suspected children to have undiagnosed language difficulties. It may be that many young children with language problems exhibit behavioural problems that are more likely to be identified than the underlying difficulty in communicating. The directors' view is especially surprising considering that the second most often suspected problem is hearing impairment—which directly affects language development. This finding is important as language delay and disorder is the problem most often noted in school as a special need. The percentage of young children identified as having hearing impairments is also much higher in kindergarten than in preschools or as identified by public health nurses. The early identification of hearing problems is crucial. Many hearing losses are transient and remediable but may, if undetected and untreated, have long term educational implications (Lyon & Lyon, 1982).

A total of 7% of preschool aged children were identified by the preschool

directors as having or suspected of having significant emotional and behavioural problems. While this figure is somewhat lower than the 12% reported by Richman, Stevenson, and Graham (1982), it is much higher than the incidence reported by the public health nurses and teachers. One might think teachers would also report many children with or suspected of having emotional and behavioural problems. It may be that kindergarten as a transition year makes more allowance for behavioural problems and that data on older children may be different. Perhaps children who attend day care or preschool are there because of behavioural difficulties, or it may be that directors with such children in their care were more inclined to answer the questionnaire than others without such children in their centres.

Information on assessment, educational, and other services thought necessary showed that current services are not considered adequate. More assessment services are needed, particularly for very young children. Approximately half of all respondents thought new educational and intervention programs to be crucial. The vast majority of preschool respondents believed these programs should be offered within regular programs.

Public health nurses were the only group to argue for additional services for parents of children with special needs. It is not clear why so few kindergarten and no preschool teacher identified this as a priority, since it has been demonstrated that parental support and involvement are essential components of early childhood programs (Bronfenbrenner, 1974). The fact that preschool institutions did not do so probably shows that in preschool education basic financial requirements have yet to be met.

A number of implications and recommendations for social policy and professional training arise from these data. Successful identification and intervention programs for preschool and young school-aged children with special needs require cooperation from all professionals involved with young children (DES, 1978; Hayden, 1978). Legislation in the U.S.A. (PL 94-142) and in the U.K. (*Education Act*, 1981) has incorporated this principle. Although Nova Scotia has no coordinated plan either to identify or to provide for young children with special needs, children are being identified. Figures reported in this study, especially in the case of public health nurses' reports, correlate closely with prevalence studies conducted elsewhere. Comprehensive screening for children with special needs has been advocated; but, in view of screening problems (Lindsay, 1984) and evidence reported here that children can be identified in the absence of such a system, it may be more feasible to build a system of identification upon existing services. The value of the public health nurse in screening for children with special needs cannot be overstated.

One difficulty reported was the lack of information on what to do when one suspects a developmental problem. An identification system requires an

information service to facilitate assessment and programming for children with special needs. Although fewer assessment facilities are going to be available for children in rural areas and those below two years of age, the information service could, for example, help to direct parents and professionals, especially those outside the main centres, to facilities currently available.

Although children's special needs are being recognized, at least to some extent, they are not necessarily being met. Few children are receiving special help or intervention. Most children with special needs who receive early intervention are enrolled in regular programs. However, in the Nova Scotia system, there is little assistance or support (financial or professional) for these programs. Specialized centre- and home-based programs for children with particular or severe handicaps are required; but as most of the $\leq 20\%$ of children with special needs do not fit this category, regular programs need support services to enable appropriate programs for all children.

Early childhood teacher training curricula should prepare for work with young children with special needs, most of whom will be in regular programs. All trainees preparing to work with young children should be educated in both normal and abnormal development and in methods of designing and implementing programs for all children. Emphasis must be placed on identifying children who may have special needs. Currently, courses on children with special needs emphasize the relatively small numbers of children with more severe mental, physical, or sensory impairments. However, the majority of children identified as having special needs do not fall into these categories. Far more children have special needs, perhaps less severe or at least less obvious, in emotional and language development. Courses for all teachers should emphasize the promotion of children's mental health and language development. Graduates of early childhood education programs should be prepared to promote language development not only in children with specific aetiologically based language disorders, but also in those with socially based deficits in the language required for success in school. Students must be made aware of the effects of children's social backgrounds and the kind of special needs to which these may lead once the child has to meet the demands of the school system.

Graduates must be aware of services available in their areas and those that should still be developed. There is little provision for young children with special needs at either the preschool or early elementary level. Those who work with these children must be prepared to be advocates for the development of appropriate programs and services for them. A necessary component for this awareness is an understanding not only of early intervention and special education but also of social policies on these children and how they

have developed, and how they can be influenced. They should be exposed also to the best practices and provision of services in other places.

Teachers of young children should be prepared to function as members of an interdisciplinary team and be well aware of their own expertise and limitations, accepting as well as offering support. The fact that few teachers in either preschools or elementary schools identified parent involvement as a high priority shows the need to make students aware that parents must be considered vital members, indeed the most vital, of the team working with the young child with special needs.

In developing a relatively underdeveloped profession such as early childhood special education it is essential that training be based on accurate information. This study was a first step in gathering such data in Nova Scotia.

REFERENCES

- Bailey, D. B., & Wollery, M. (1984). *Teaching infants and preschoolers with handicaps*. Columbus, OH: Merrill.
- Bronfenbrenner, U. (1974). *A report on longitudinal evaluations of preschool programs. Volume II: Is early intervention effective?* (DHEW Publication No. [OHD] 76-30025). Washington, DC: U.S. Department of Health, Education and Welfare.
- Cooper, J., Moodley, M., & Reynall, J. (1979). The developmental language programme: Results from a five-year study. *British Journal of Communication Disorders*, 14, 57-69.
- Department of Education and Science. (1978). *Special educational needs* (The Warnock report). London: HMSO.
- Education Act* (1981). London: HMSO.
- Fundudis, T., Kohn, I., & Garside, R. F. (1980). A follow-up of speech retarded children. In L. A. Mason, M. Berger, & A. R. Nicol (Eds.), *Language and language disorders in childhood* (pp. 97-113). Oxford: Pergamon Press.
- Handicapped Persons Education Act*. Statute of Nova Scotia (1974).
- Hayden, A. (1978). Early childhood education. In K. E. Allen, V. A. Holm, & R. L. Schiefelbusch (Eds.), *Early intervention: A team approach* (pp. 27-53). Baltimore: University Park Press.
- Hayden, A. H., & Haring, N. G. (1977). The acceleration and maintenance of developmental gains in Down's Syndrome schoolage children. In P. Mittler (Ed.), *Research to practice in mental retardation. Volume I: Care and Intervention* (pp. 129-142). Baltimore: University Park Press.
- Karagianis, L. D., & Nesbit, W. C. (1980). Educational landmarks accenting exceptional children: CELDIC report, Public law 94-142, Warnock report. In G. M. Kysela (Ed.), *The exceptional child in Canadian education: Seventh yearbook* (pp. 75-83). Edmonton: Canadian Society for the Study of Education.
- Karnes, M. (1977). Exemplary early education programs for handicapped children: Characteristics in common. *Educational Horizons*, 56, 47-54.
- Lazar, I., & Darlington, R. B. (1982). *Lasting effects of early education: A report from the consortium for longitudinal studies*. Washington, DC: Society for Research in Child Development.

- Lazure, D. (Ed.). (1979). *The CELDIC report: One million children*. Toronto: Crainford.
- Lesson, E. I., & Rose, T. L. (1980). State definitions of preschool handicapped populations. *Exceptional Children*, 46, 467-469.
- Lindsay, G. (Ed.). (1984). *Screening for children with special needs*. London: Croom Helm.
- Lyon, D., & Lyon, M. (1982). The importance of early detection. *Journal of the Association of Canadian Educators of the Hearing Impaired*, 8, 15-37.
- Neligan, G., Pridham, D., & Steiner, M. (1974). *The formative years: Birth, family and development in Newcastle upon Tyne*. Oxford: Nuffield Provincial Hospitals Trust.
- Richman, N., Stevenson, J., & Graham, P. (1982). *Preschool to school: A behavioural study*. New York: Academic Press.
- Rutter, M. (1982). Social-emotional consequence of day care for preschool children. In E. F. Zigler & E. W. Gordon (Eds.), *Day care: Scientific and social policy issues* (pp. 3-32). Boston: Auburn House.
- Rutter, M., Tizard, J., & Whitmore, K. (Eds.). (1970). *Education, health and behaviour*. London: Longmans.
- Schwarz, J. C., Strickland, R. G., & Krolich, G. (1974). Infant day care: Behavioral effects at preschool age. *Developmental Psychology*, 10, 502-506.
- Silva, P. A. (1980). The prevalence, stability and significance of developmental language delay in preschool children. *Developmental Medicine and Child Neurology*, 22, 768-777.
- Simeonsson, R., Cooper, D., & Scheiner, A. (1982). A review and analysis of the effectiveness of early intervention programs. *Pediatrics*, 69, 635-641.
- Thurman, S. K., & Widerstrom, A. H. (1955). *Young children with special needs*. Boston: Allyn & Bacon.
- United States Public Law 94-142. Education for All Handicapped Children Act*. Washington (1975).
- United States Public Law 95-602. Rehabilitative Comprehensive Services and Developmental Disabilities Amendments*. Washington (1978).
- Webb, L. (1967). *Children with special needs in the infant school*. Gerrards Cross: Colin Smythe.

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