

Workforce Projections for Speech-Language Pathologists in Ontario

Perspectives de travail pour les orthophonistes en Ontario

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Abstract

The issue of supply and demand is relevant for all aspects of the workforce within health human resources. This is certainly true for speech-language pathologists (SLPs) in Ontario. Waitlists for services and unfilled positions represent an ongoing problem within this province. The purpose of this study was to investigate the issue of supply and demand of speech-language pathology services in Ontario. The current and future supply of SLPs was considered with respect to the population of the province and the needs of that population. The results indicate an ongoing shortage of SLPs within the province. This finding and its implications are presented and discussed.

Abrégé

La question d'offre et de demande est pertinente pour toutes les catégories d'occupation des ressources humaines du secteur de la santé. Cela est certainement le cas des orthophonistes de l'Ontario. Les listes d'attente pour les services et les postes non comblés constituent un problème constant dans cette province. L'objet de cette étude était d'examiner la question d'offre et de demande des services orthophoniques en Ontario. L'effectif actuel et futur d'orthophonistes a été étudié par rapport à la population de la province et aux besoins de cette population. Les résultats portent à croire qu'il y a une pénurie soutenue d'orthophonistes en Ontario. Cette conclusion et ses répercussions sont présentées et étudiées.

The issue of the supply and demand of speech-language pathologists (SLPs) has been discussed in many sectors of service provision and across any number of regions, in Ontario, across Canada, and internationally. The Ontario Association of Speech-Language Pathologists and Audiologists (OSLA) recently undertook a study into the recruitment and retention of SLPs and audiologists in Ontario. The results of that survey indicated that the supply of SLPs and audiologists in Ontario was insufficient to meet current and projected demands (Ontario Association of Speech-Language Pathologists and Audiologists, 2001a). Program waitlists and caseload numbers in various sectors of speech-language pathology and audiology have long been a problem in this province. In addition, the consistently large and repeat number of employment advertisements indicates that employers are unable to fill positions. The purpose of this study was to investigate the issue of supply and demand of speech-language pathology services in Ontario. The current and future supply of SLPs was considered with respect to the population of the province and the needs of that population.

Review of the Literature

Few studies over the years have looked directly at the issue of workforce supply and demand within the profession of speech-language pathology. A review of the literature revealed only one published study (Enderby & Davies, 1989), and none

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completed within the last ten years. However, several unpublished reports have addressed this issue. These reports, along with the Enderby and Davies study, are discussed below. In addition, studies conducted in the United States by the American Speech-Language-Hearing Association (ASHA) and other organizations are reviewed.

Within Ontario, groups of practitioners have investigated issues related to workforce and caseloads in different sectors of service. Neary and Little (1999) studied caseload trends in preschool and adult services provided through Ministry of Health funded hospitals ($n = 38$). They found that average caseload size increased 21% from 1988 to 1998, and the number of full-time equivalents (FTEs) of SLPs increased 21% over that time.

Speech-language pathology services provided in the schools in Ontario have also been examined recently (Ontario Association of Speech-Language Pathologists and Audiologists, 2001b). Representatives from sixty school boards (83% response rate), representing English Public ($n = 26$), English Catholic ($n = 24$), French Public ($n = 34$), and French Catholic ($n = 7$) systems responded to the survey. The smallest school board had a student population of 4,000 students; the largest school board had a student population of 300,000 students. The OSLA 2001 School Survey found that the average ratio across the 60 school boards was one speech-language pathologist to 5,120 students, or 19.53 SLPs per 100,000 students. The highest ratio was in the French Catholic school boards with 28.2 SLPs per 100,000 students. The lowest ratio was in the English public school boards with 18.2 SLPs per 100,000 students.

Enderby and Davies (1989) attempted to quantify the need for services within the United Kingdom. Their study examined the number of individuals of all ages requiring service, the amount of service required for individuals with varying communication disorders, and the number of SLPs required to provide these services. Based on the results of their study, they estimated that 26.2 qualified SLPs per 100,000 population were required; at that time, the United Kingdom had 5.5 SLPs per 100,000 population.

Criticism of the Enderby and Davies (1989) study has been made regarding the reliability and the validity of the data, and the procedures used to draw their conclusions (Bryan, Maxim, McIntosh, McClelland, Wirz, Edmundson, et al., 1991). In fact, Enderby and Davies themselves report that their findings may require revision in the future with the addition of more evidence. The primary criticism of this study is the validity of the therapy model used as a basis of the calculations for service requirements. Bryan and associates do not offer any alternatives for quantifying the requirements for

SLPs. Despite the criticisms launched, the ratios provided in the Enderby and Davies study are in line with those in the ASHA study discussed below.

In the United States, ASHA routinely considers issues related to service provision and caseload in their omnibus surveys. The most recent national-level survey was completed in 2000. While this survey investigated issues such as workplace facility, type of services provided, and caseload size, workforce supply and demand were not discussed (American Speech-Language-Hearing Association, 2000a). In 1998 ASHA undertook a workforce study that examined the issues of supply and demand for SLPs and audiologists (American Speech-Language-Hearing Association, 1999). The results of this study indicated that in 1998 in the U.S., the supply and demand for both SLPs and audiologists was in relative balance. The ratio of total ASHA-certified SLPs in 1999 (full-time and part-time) in the U.S. was 28.9 per 100,000 population (which translates to 23.9 FTEs per 100,000, using the formula presented later in this document). The results of the study estimated that, based on the current number of new graduates from speech-language pathology programs, attrition rates for the profession, and population growth estimates, there will be a surplus of SLPs in the U.S. by the year 2010.

One of the issues addressed in the ASHA Workforce Study was the imbalance in the supply and demand of SLPs in the U.S. in 1997-1998. According to this report, the dramatic increase in positions in nursing homes in 1997 led to a shortage of SLPs in the schools. However, this trend was reversed in 1998 with changes to the Medicare payment system. This report indicates that despite the difficulties in the transition of services in the U.S., the supply and demand of SLPs are in relative balance.

Other reports conducted in the U.S. during this time indicate a shortage of SLPs in the school system (Ohio Speech-Language-Hearing Association, 1998). As well, the ASHA 2000 School Survey found that 51% of SLPs who responded to the survey felt there was a shortage of qualified SLPs in their school district (based on 2,067 respondents, 43% of response rate). This was a decrease from 59% who felt there was a shortage in the previous study, completed in 1995 (American Speech-Language-Hearing Association, 2000b).

Study of Current and Projected Supply and Demand for SLPs

In order to examine the current supply and demand of SLPs in Ontario, information was gathered from a number of sources. Current and projected population data were extracted from the Provincial Health Planning Database (Ontario Ministry of Health and Long-Term

Care, 2001). The College of Audiologists and Speech-Language Pathologists of Ontario (CASLPO) provided the current numbers of SLPs working in Ontario (College of Audiologists and Speech-Language Pathologists of Ontario, 2001). Given that in Ontario all SLPs must be licensed and registered with CASLPO in order to practise, it was felt that this number should accurately include all persons providing speech-language pathology services in the province (with the exception of communication disorders assistants working under the supervision of SLPs).

The Model Used

The ASHA Workforce Study (1999) states that the supply/demand ratio for speech-language pathology was in a state of relative balance at the time of that study. A recent report by the Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA) suggests that the populations in Canada and United States are comparable with respect to the incidence/prevalence of diseases and disorders related to speech, language and hearing disorders (Brodsky & Wells, 2000). In consideration of this report, it was felt that the model presented in the ASHA Workforce Study (1999) could be used as a template for examining services in Ontario. However, one must bear in mind that certain aspects of speech-language services in the United States are quite different than those provided in Ontario (e.g., in the U.S., preschool services are included under the mandate of school services for children ages 0 to 21 years).

For the purposes of this study, the ratios of speech-language pathologist per 100,000 population provided in the ASHA Workforce Study (1999) were used as a benchmark for a balanced level of service. The population numbers for Ontario and the number of SLPs working in the province were compared to these ratios as an indicator of service levels in this province. Considering that not all of the SLPs in the province were employed full-time, the population ratios were considered with respect to number of individual SLPs and a formulaic expression of full-time equivalent (FTE) speech-language pathology positions, which is described below.

Current Speech-Language Pathology Supply

As of December 2000, there were 2,035 registered SLPs in Ontario (College of Audiologists and Speech-

Language Pathologists of Ontario, 2001). This number reflects full-time, part-time, and nonworking SLPs. However, not all of the SLPs in the province were employed full-time. According to information provided by CASLPO, 52% of SLPs provided patient care for more than 35 hours per week, 25% provided patient care for 8-35 hours per week, and three percent provided patient care for less than eight hours per week (B. Meissner-Fishbein - CASLPO, personal communication, June 2002). The large percentage of members who are providing between 8-35 hours of patient care may include those who work full-time, but have administrative responsibilities in addition to providing clinical services. In 2001, CASLPA had 4804 members, 79% of whom were registered as full members and 21% of whom were registered as part-time members (L. Noel-CASLPA, personal communication, June 2002). These numbers are in line with the ratio provided by ASHA (American Speech-Language-Hearing Association, 1999), where they indicated that 21% of their registered members worked part-time. As no definitive ratio of part-time versus full-time SLPs was available for Ontario, and the numbers provided by CASLPA were consistent with those provided by ASHA, the following formula, based on the ASHA Workforce Study, was used to convert the total number of SLPs to full-time equivalent positions (FTEs; American Speech-Language-Hearing Association, 1999):

- Seven percent of the registered SLPs were considered to be not working.
- Twenty-one percent of the registered SLPs were considered to be working part-time. This percentage was converted to FTEs by multiplying it by 0.5 (e.g., average part-time employment was considered to be 0.5 FTE).
- Using this formula, the number of speech-language pathologist FTEs in Ontario in December 2000 was estimated at 1,679 (see Table 1).

Future Supply of SLPs

Three universities in Ontario offer graduate level training for SLPs. The three programs combined graduated 67 students in 2000 (see Table 2). These numbers are predicted to increase over the next ten years, with at least one of the university programs increasing its enrolment. Graduates from these programs will fill some of the speech-language pathology positions available in Ontario. However, not all of these graduates will choose to work in Ontario. In addition, new graduates and experienced clinicians will continue to come to Ontario from other provinces and countries.

CASLPO indicated that from 1998 to 1999, the number of registered SLPs in Ontario increased by 100;

Table 1
Calculation of Speech-Language Pathologist FTEs

SLPs registered in ON	SLPs not working	Part-time SLPs (0.5 FTE)	SLP FTEs
2035	(2035 x 7%) -	(2035 x 21% x .5) =	1679

from 1999 to 2000, the number of registered SLPs increased by 108; from 2000 to 2001, the number of registered SLPs increased by 43. The increase in CASLPO members was higher than the number of new graduates for 1999 and 2000, but lower for 2001.

Information is not currently available regarding either the number of new Ontario-trained graduates who chose not to work as SLPs in Ontario or the number of SLPs trained outside of Ontario who chose to work in this province. The information available regarding the number of registered SLPs indicates a clear trend in increasing numbers of members, but these increases are not consistently greater than the number of new graduates. For the purposes of this discussion, the number of new graduates will be used as a basis for estimating the number of new SLPs in Ontario for each year. Therefore, the numbers provided in Table 2 of total graduates for each year will be used in the estimates for future supply of SLPs.

The number of working SLPs within Ontario also is affected by losses within the workforce each year. Retirement, death, people leaving the province, and people leaving the profession are all potential sources of loss to the profession. There is no information currently available in Ontario or in Canada regarding the workforce losses in speech-language pathology. Data provided by ASHA over a 10-year period (1988 to 1998) indicate a consistent loss of 0.7% of the workforce annually (American Speech-Language-Hearing Association, 1999). For the purposes of this discussion, an annual workforce loss of 0.7% will be used to project future supply of SLPs. Again, this number may be somewhat conservative. Over the next 10 years, it is anticipated that there will be the first large cohort of retirees from the profession. If this is true, the attrition rate will be much higher than in previous years.

Future supply of SLPs was calculated for each year using the following formula:

$$\# \text{ SLPs} + \# \text{ new graduates} - 0.7\%(\# \text{ SLPs}) = \# \text{ SLPs for the following year}$$

Supply and Demand Ratios for SLPs in Ontario

Quantitative information regarding the demand for speech-language pathology services is virtually nonexistent in Ontario. Prevalence data regarding speech and language disorders indicated that 1 in 10 Canadians might be affected in any given area of pathology and age range (Canadian Association of Speech-Language Pathologists and Audiologists, 2001). Even if the number of individuals requiring services can be quantified,

the amount and type of service required is so varied that it is difficult to analyze formulaically.

This study focuses on population numbers as an indicator of the demand for speech-language pathology services. The ratios provided in the ASHA Workforce Study (1999) are used as a guideline to establish an adequate level of service. Population projections are used to consider the future demand for service (Ontario Ministry of Health and Long-Term Care, 2001).

Current Ratios

According to the Provincial Health Planning Database, in 2000, the population of Ontario was 11,665,169 (Ontario Ministry of Health and Long-Term Care, 2001). The number of registered SLPs in Ontario was 2,035. This number was estimated to represent 1,679 FTEs of SLPs. The number of registered SLPs per 100,000 in 2000 was 17.45; the number of FTEs of SLPs per 100,000 was 14.39 (see Table 3). In other words, in Ontario, there were 17.45 SLPs (or the equivalent of 14.39 FTEs) for every 100,000 people residing in the province.

According to CASLPO data, 78% of the registered SLPs in Ontario work with children ages 0-17 years (College of Audiologists and Speech-Language Pathologists of Ontario, 2001). Using this figure, the number of speech-language pathologist FTEs serving the 0-17 population was 43.10 per 100,000. Twenty-two percent of the registered SLPs in Ontario work primarily with adults. The number of speech-language pathologist FTEs serving the adult (18+ years) population was 4.28 per 100,000.

Future Ratios

Workforce and population projections were considered over the next ten years. The ratio of speech-language pathologist per 100,000 population will increase between 2000 and 2010, given that there will be a larger increase in workforce relative to the overall

Table 2
Recent and Projected Graduates from Ontario University Speech-Language Pathology Programs^a

University Program	2000	2001	2002	2003	2004	2005	2010
University of Ottawa ^b	17	17	20	20	20	20	20
University of Toronto	20	16	26	32	36	40	40
University of Western Ontario	30	29	30	30	30	30	30
Total	67	62	76	82	86	90	90

a. Numbers provided by the university programs

b. French-language program

Table 3
Workforce Projections for 2000, 2003, 2005, and 2010

	2000	2003	2005	2010
# Registered SLPs ^a	2,035	2,196	2,333	2,696
Workforce Gains ^b	67	82	90	90
Workforce Losses ^c	14.25	15.37	16.33	18.87
Net Gain/Loss	52.75	66.63	73.67	71.13
Total Population ^d	11,665,169	12,112,162	12,389,209	13,065,611
# Reg. SLPs/100,000	17.45	18.13	18.83	20.64
# FTEs ^e	1,678.88	1,811.86	1,924.71	2,224.37
# FTEs/100,000	14.39	14.96	15.54	17.02
Children (0-17 years)				
Population ^d	3,038,153	3,064,802	3,065,919	3,044,355
% SLPs serving children ^a	78%	78%	78%	78%
# FTEs serving children ^e	1,309.52	1,413.25	1,501.27	1,735.01
# FTEs/100,000	43.10	46.11	48.97	56.99
Adults (18 years +)				
Population ^d	8,627,016	9,047,360	9,323,290	10,021,256
% SLPs serving adults ^a	22%	22%	22%	22%
# FTEs serving adults ^e	369.36	398.61	423.44	489.36
# FTEs/100,000	4.28	4.41	4.54	4.88

a. based on information provided by the College of Audiologists and Speech-Language Pathologists of Ontario, 2001

b. based on number of new graduates (see Table 2)

c. based on an attrition rate of 0.7% per annum

d. based on information provided in the Provincial Health Planning Database Ontario Ministry of Health and Long Term Care, 2001

e. see Table 1 for calculation formula

population increases (see Table 3). The pattern of workforce per population is consistent among the interim years as well.

Discussion

When the figures presented in the ASHA Workforce Study (American Speech-Language-Hearing Association, 1999) are used as a benchmark, the number of SLPs employed in Ontario is well below the number required for a "balanced supply-demand situation." Within the United States, the ratio of speech-language pathologist per 100,000 ranged from 17.72 to 42.82 for the individual states, with a national average of 28.92 certified SLPs per 100,000 (S. Slater-ASHA, personal communication, 2001). Interestingly, this number is in line with the recommendations of Enderby and Davis (1989), who recommended a ratio of approximately 26 SLPs per 100,000 of the general population in the United

Kingdom. The current ratio of SLPs per 100,000 in Ontario is 17.45. By the year 2010, this ratio will increase to 20.64 SLPs per 100,000, which is still well below the benchmark quotas.

Services to Children

The majority of SLPs employed in Ontario work with children (CASLPO, 2001), thus the ratio of speech-language pathologist per 100,000 is much higher for this portion of the population (43.10 FTEs per 100,000). There is no clear indication of what portion of this 78% of SLPs work with preschoolers versus school-aged children.

The Ontario government made significant changes to the services available to preschool-aged children several years ago with the introduction of the Preschool Speech and Language Initiative. These changes resulted in an increase in the number of SLPs to serve preschool children. A review of the employment advertisements listed through OSLA between January 2000 and December 2001 indicated frequent vacancies within these programs across the province. There continue to be waiting lists for preschool speech-language pathology services. For example, the York Region Preschool Speech and Language Program, which serves the area just north of metro Toronto, indicated in its most recent newsletter that the wait time for an assessment with that program was four months (York Region Preschool Speech and Language Program, 2002).

School-based SLPs within Ontario continue to face daunting caseloads. The most recent OSLA school SLP survey indicated that the average ratio of SLP to student population was 1:5,120 (or 19.53 SLPs per 100,000 students) for the 60 school boards participating in the study (Ontario Association of Speech-Language Pathologists and Audiologists, 2001b). The average annual caseload for the SLPs was 174 students. Guidelines for maximum caseload size for school-aged children at any given time is 40 students, or less, depending upon the age of the child and the severity of the disorder (American Speech-Language-Hearing Association, 1993). The ASHA 2000 Omnibus Survey indicated that the average monthly caseload for school-based SLPs in the United States was 48 students (American Speech-Language-Hearing Association, 2000a).

Services to Adults

According to the CASLPO data, 22% of the registered SLPs in Ontario work with adult populations

(CASLPO, 2001). This compares with 37% of SLPs in the United States (American Speech-Language-Hearing Association, 2000). Using the formula presented earlier, the ratio of speech-language pathology FTEs is 4.28 per 100,000. This figure is much lower than the ratio of SLPs per population, and lower than the ratio of SLPs per population of children. This is an area of concern, as the proportion of older adults and the elderly is expected to increase over the next ten years, relative to the general population (Ontario Ministry of Health and Long-Term Care, 2001). Those offering services to adults must consider this fact when looking at requirements for service provision.

Limitations of the Study

The purpose of this study was to investigate the current and future state of the workforce of SLPs in Ontario. A workforce analysis has been presented based on the current and projected population for the province and the current and projected supply of SLPs. As a means of quantifying service levels currently available and projected future service levels, the ratio of SLPs to the general population was calculated and compared against benchmarks provided by ASHA. In order to get an exact picture of the status of speech-language pathology services, more information is required regarding the demographics of the workforce (e.g., age, educational level, years of service, etc.), employment of new graduates, attrition from the workforce, and demographics of the individual with speech, language, voice, and swallowing disorders in Ontario.

Immigration into and emigration out of the province of Ontario by SLPs within the province of Ontario have implications for the workforce as does the status of new graduates from programs within Ontario and elsewhere. There is a growing multi-cultural population in the province, and the make-up of the workforce of SLPs must take into consideration the diversity of Ontario's population.

An assumption was made in the calculations used to determine the ratio of SLPs to the general population that the number of new Ontario-trained graduates who chose not to work as SLPs in Ontario would be approximately the same as the number of SLPs trained outside of Ontario who chose to work in this province. Trends in membership with the provincial college indicate variation in the number of new members each year (e.g., 100 in 1999; 108 in 2000; 43 in 2001). As a result of the fluctuations in these trends, this assumption may be a limitation to the interpretation of the findings of this study.

For the purpose of this study, the ratio of SLPs working full-time versus part-time was estimated using

a formula derived from the ASHA Workforce Study (American Speech-Language-Hearing Association, 1999). Data specific to the workforce in Ontario are required to verify the accuracy of this estimation.

A further issue with respect to the demographics of the workforce relates to the graduates of the speech-language pathology program at the University of Ottawa. This is Ontario's only French-language program and, as a result, the graduates of this program may meet the needs of a specific segment of the population of Ontario.

An additional limitation of this study is that caseload size and waitlists for services were not considered in depth with respect to the current level of service provision. Again, in order to gain a more complete picture of service provision within the province, it is necessary to examine caseload size and waitlists for each sector of the population.

Conclusions

The findings of this report indicate that there is currently a shortage in the number of SLPs available to serve the population of Ontario. Increases to the graduate training programs in the province will increase the number of SLPs available for employment. However, the data presented in this report indicate that even with these increases to the workforce, the ratio of SLPs to the population will remain well below documented benchmarks for service provision.

In investigating service provision, two issues need to be addressed. First is the issue of the number of SLPs available for current positions available in the province. Concern regarding the ongoing shortage of SLPs has been discussed in other reports (Ontario Association of Speech-Language Pathologists and Audiologists, 2001a). A review of the employment advertisements posted through OSLA (Web site and mailings), indicates that between January 2000 and December 2001, there were an average of 19.7 speech-language pathology vacancies advertised per month (range 11-32). This includes a combination of part-time, full-time, permanent, temporary, and contract positions. Many agencies advertise repeatedly over several months for a specific position or for multiple positions at a single time. These numbers reflect only those agencies that chose to advertise with OSLA, and is not representative of all vacancies in the province at any given time. However, the ongoing search for SLPs to fill positions would point to a shortage of qualified professionals.

A second issue for consideration is whether the current number of positions available is adequate for the population. The Ontario Association of Families with Children with Communication Disorders (OAFCCD)

has taken up this issue. They have directed their resources towards lobbying the government to mandate the ratio of speech-language pathology positions to the population of children (Morse - OAFCCD, personal communication, 2001).

Of particular concern, based on the results of this study, is the state of services available for adults. The percentage of SLPs in Ontario employed in adult services is well below that in the United States. As noted earlier, the need for increased service provision in this area in particular is essential because of the increasing proportion of older adults in the general population.

Future Directions

This report indicates that there exists a shortage of SLPs within the province. This issue has been recognized by other agencies within the province and across Canada (e.g., CASLPA, CASLPO, Ontario Hospitals Association). It is recommended that all interested parties work collaboratively in collecting information that will provide a clearer picture of the service needs and workforce availability. Increased data collection regarding workforce and specific population demographics will help to answer some of these questions. In addition, data collection should be completed in such a manner that the information can easily be reconciled with other available data.

This study did not consider the use of communication disorders assistants to determine the amount of additional resources provided by this group as well as the demand for speech-language pathology resources required for the supervision of these personnel. It should be noted that the information that was provided in other studies also did not consider the use of assistive personnel (American Speech-Language-Hearing Association, 1999; Enderby & Davies, 1989). Future studies should consider the impact of this portion of the workforce in addition to SLPs. Finally, technological advances may impact service provision in the future. Medical advances may influence the needs of clients in the future and the availability of additional technology (e.g., telehealth, computer assisted therapy provisions) may well affect the issue of supply and demand for speech-language pathology services.

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