Occupational Therapy Workforce Needs: A Model for Demand-Based Studies

Janet M. Powell,
Sonya L. Griffith,
Elizabeth M. Kanny

PURPOSE. To provide a model for assessing occupational therapy workforce needs by using a demand-based approach to determine current workforce status in the Northwest region. Regional information may have implications for addressing national occupational therapy service needs.

METHOD. A questionnaire was sent to a proportional random sample of 234 facilities that hire occupational therapy practitioners. Data were collected in July–August 2003 using structured mailing and follow-up procedures.

RESULTS. Response rate was 79%. Twenty-four percent reported occupational therapy vacancies and 11% occupational therapy assistant vacancies; 48% predicted an increase in occupational therapy positions in the next 2 years and 41% an increase in occupational therapy assistant positions. Sixty-three percent of respondents reported difficulty in hiring.

DISCUSSION. This study identifies an occupational therapy workforce shortage in the Northwest. Management of a shortage is critical, for even short-term adjustments could lead to permanent changes in service provision. This study demonstrates the importance of current information on the status of the national workforce and serves as a model for future studies.


Currently, there is speculation that a workforce shortage exists in the field of occupational therapy. However, no regional or national studies have systematically examined the shifts or changes in the occupational therapy workforce for more than 15 years. This regional study uses a demand-based approach to determine actual budgeted and vacant positions and serves as a model for further assessment at either the regional or national level. Furthermore, data from this study may have implications for addressing occupational therapy service needs nationally and serve as a resource for educators, administrators, employers, and practitioners relative to gauging and planning for current marketplace demands.

Literature Review

Multiple parties have an interest in accurate, up-to-date knowledge of the status of the occupational therapy workforce. Certainly, the public at large has an interest as the status of the workforce has direct bearing on how well service needs can be met. However, other groups could be interested for a variety of different reasons. For example, this information could help working clinicians assess the stability of a current job, negotiate compensation, or evaluate the potential for a successful job change. It could help practitioners who are entering, or reentering, the field predict how successful their job search might be, how long it might last, and help
determine how selective they can be in accepting a job offer. It could be useful to employers in assessing the likelihood of finding an applicant who meets specific employment qualifications and, therefore, in determining how selective they can be in making a job offer. Educators could be interested as the perceived demand, or lack of demand, for occupational therapy practitioners directly influences enrollment in occupational therapy programs and, in turn, program planning, budgets, and staffing.

There are no recent regional or national studies, however, that specifically examine the status of the occupational therapy workforce. The American Occupational Therapy Association (AOTA) published the last comprehensive report in 1985. This report used multiple sources to conclude that the demands of the U.S. population were not being met by the supply of occupational therapy personnel. In 1988, a regional study of occupational and physical therapy manpower needs in a four-state area of the Northwest region (Alaska, Idaho, Montana, and Washington) found a vacancy rate of 10% for facilities in urban settings and 8% for those in rural settings (Rollinger, 1988). In addition, 47% of facilities in rural settings and 54% in urban locations reported having difficulty in hiring in the previous year. Smith, Schiller, Grant, and Sachs (1995) noted a 1989 study by the American Hospital Association that estimated the vacancy rate for full-time occupational therapists at 15%. A report from the National Academy of Sciences, also in 1989, stated that occupational therapy educators reported their graduates easily found jobs while, at the same time, employers reported increasing problems filling vacancies.

There are anecdotal accounts that this shortage of occupational therapy personnel shifted to an over-supply in the late 1990s with the introduction of prospective payment systems for therapy services provided in skilled nursing facilities (SNFs) and home health. To our knowledge, however, there are no published studies documenting this change. Discontinuation in the early 1990s of AOTA Member Data Surveys that had been conducted every 2 to 3 years further limits information for this time period.

More recent information is restricted to descriptions of available personnel and jobs, but not the balance between them. In 2002, according to the Bureau of Labor Statistics, occupational therapists held 82,000 jobs (U.S. Department of Labor, 2004a) and occupational therapy assistants held 18,000 jobs (U.S. Department of Labor, 2004b). In 2003, the National Board for Certification in Occupational Therapy (NBCOT) reported that they certified close to 105,000 occupational therapists and 43,000 occupational therapy assistants. It should be noted that the actual number of occupational therapists and occupational therapy assistants is undoubtedly higher as not all occupational therapy personnel are choosing to continue certification at this time.

Unfortunately, this knowledge is not sufficient to inform us of the current state of the workforce. The discrepancy described above with relatively few occupational therapy positions in relationship to the number of certified practitioners would imply that there is an excess of occupational therapy personnel with many occupational therapists and occupational therapy assistants out of work. Knowing that 1 in 10 occupational therapists held more than one job in 2002 (U.S. Department of Labor, 2004a) further strengthens that conclusion. On the other hand, if many of these practitioners are not actively seeking employment, there may be a relatively even balance between personnel and jobs. Yet again, there may be forces currently operating that are generating more positions than available personnel. This last conclusion is supported by the recent report that occupational therapy had one of the highest jumps (26%) in job postings since January 1, 2003 (CNN Money, 2003).

In the absence of current information about the balance of jobs and personnel in the occupational therapy workforce, we are forced to rely on employment projections. Such projections are typically made by examining future job opportunities that result from the relationship between population, labor force, and the demand for goods and services (U.S. Department of Labor, 2004c). For example, in 1996, Health Policy Alternatives, Inc. prepared a report for AOTA on workforce implications for occupational therapy. In this report, substitution of lower-cost personnel for more highly-trained and higher paid personnel is discussed, along with multiskilling and cross-training of personnel. Based on the rapid and continued increase in numbers of occupational therapy educational programs and graduates, it was forecast that, by 2005, the supply of practitioners could be even larger than expected. Thus, workforce shortages in occupational therapy were seen to end by 2006 or sooner, with a balance of overall supply and demand of practitioners.

More recently, the Bureau of Labor Statistics predicted there will be an increased need for more occupational therapy practitioners (U.S. Department of Labor, 2004a) in conjunction with an overall increase of 4.4 million jobs in health services from 2002 to 2012 (U.S. Department of Labor, 2004c). This is in keeping with an earlier projection that occupational therapy positions will increase by 34% to 105,000 and occupational therapy assistant positions by 40% to 23,000 from 2000 to 2010 (Hecker, 2001). If this last prediction proves accurate, it would result in occupational therapy assistants being among the 30 fastest growing occupations in the 2000 to 2010 time period (Hecker).
The usefulness of such projections, however, is tempered by the multiple competing factors influencing the occupational therapy workforce. These factors interact in complex ways that make their overall effect difficult to foresee. The change in the demographic make-up of the United States is a prime example. The number of older adults in the United States is expected to increase dramatically over the next 25 years as the baby boomers enter late adulthood (Campbell, 1997). It seems likely that an aging population would create more need for occupational therapy services as older adults have tended to have more activity limitations as a result of one or more chronic conditions. For example, a study by the Administration on Aging (2002) found that, in 2000, 26% of persons 65 to 74 years old and 45% of those 75 years and older reported a limitation due to a chronic condition. Although the effect of an aging population on the demand for occupational therapy services appears uncomplicated at first glance, it may not be as straightforward as it seems. It is very possible that the cohort of baby boomers nearing late adulthood will have fewer functional limitations if they embrace the “successful aging” movement that emphasizes the prevention of chronic conditions through measures such as exercise and diet. If that turns out to be the case, there would be fewer new jobs created than anticipated.

The influence of demographic factors on the availability of occupational therapy personnel is also very difficult to determine. It is not clear how the number of occupational therapy practitioners entering the workforce in the near future will balance with the baby-boomer cohort leaving the workforce as they reach retirement age. It is also not clear how many of the newest generation of occupational therapists will choose to leave the workforce for a time to focus on child rearing as is being seen in other professional fields (U.S. Department of Labor, 2004d; Wallis, 2004). We do know that enrollment in occupational therapy programs has fallen in recent years with a decrease from a high of 25,568 occupational therapy and occupational therapy assistant students in 1999 to 14,300 students in 2003, a loss of 44% (American Occupational Therapy Association [AOTA], 2003). The drop in enrollment appears to be reflected in the decrease in the number of candidates for certification examinations in 2002 with an 11% decline in first-time registered occupational therapist (OTR) test candidates and a 37% decline of first-time occupational therapy assistant candidates (National Board for Certification in Occupational Therapy, 2003).

Other current demographic changes that add to the complexity of workforce projections are declining birth rate, increasing immigration, and the changing ethnic make-up of the United States. Demographics, however, are just one factor that can impact the occupational therapy workforce. There are undoubtedly other factors (e.g., reimbursement policies, medical advances) that influence the number of occupational therapy jobs or the availability of occupational therapy personnel in ways that are difficult to predict. The possibility that the distribution of occupational therapists and occupational therapy assistants filling occupational therapy positions could change in response to other workforce factors further complicates the situation (Hecker, 2001; U.S. Department of Labor, 2004a, 2004b).

Due to the lengthy gap since the last study of the occupational therapy workforce and the substantial limitations of workforce predictions, a study of the current status of the workforce is useful. There are two primary methods that can be employed in such a study (Jacoby, 1995). One, a need-based estimate, represents the upper boundary, or highest estimate, of personnel required. The second method, a demand-based estimate, reflects the lower boundary, or least amount, of personnel needed.

Need-based estimates give the “ideal” number of occupational therapy practitioners that should be available to provide services. They are most often expressed as a ratio of manpower to population. The target or ideal ratio is determined by “experts” and is based primarily on population size. However, the ratio of occupational therapists to population size tends to vary greatly in the United States. For example, in 1995, there was a low of four occupational therapists per 100,000 people in West Virginia and a high of 28.1 occupational therapists per 100,000 people in North Dakota (AOTA, 1995). Such a wide range makes it difficult to determine an ideal number.

Demand-based estimates, in contrast, are based on the numbers of personnel that employers are actually employing including the number of budgeted, but vacant, positions. Demand-based estimates are thought to reflect the relationship of outside influences.

We used a demand-based approach to determine the current status of the occupational therapy workforce in the Northwest region (i.e., Alaska, Montana, Oregon, Washington, and Wyoming). We determined the number of budgeted vacancies in a variety of facilities that hire occupational therapy practitioners. We gathered information to allow a comparison of the current number of budgeted occupational therapy practitioners to the previous year and to estimate future needs. We also investigated hiring difficulties experienced by administrators. This regional study may serve as a model to assess workforce needs in other regions of the United States, as well as nationally.
Method

Sample

We used proportional random sampling to select 234 facilities from a list of 497 reported as hiring occupational therapy practitioners, obtained from state occupational therapy organizations in Alaska, Montana, Oregon, Washington, and Wyoming. This sampling method provides a more accurate representation of the population.

Instrumentation

We developed a questionnaire specifically for this study to gather information such as the number of occupational therapy and occupational therapy assistant positions that were currently budgeted, how this number had changed in the past year, and any difficulties in hiring therapists. We pretested the questionnaire by giving a preliminary version to three occupational therapy managers at facilities similar to those in the study. We used that feedback to refine the content and clarity of the questionnaire.

Procedure

Data were collected in July–August 2003. We used a modification of Dillman’s Tailored Design Method (Dillman, 2000) to maximize response rate. This consists of three contacts: an initial mailing with second and third follow-up mailings sent to nonrespondents at 2 1/2 weeks and 4 weeks afterward. Each contact includes a cover letter, a questionnaire, and a self-addressed stamped envelope. Recipients are given the option not to participate and not to receive any follow up mailings by checking a box and returning the questionnaire in the envelope provided. Questionnaires were coded to allow for follow-up mailings only to those participants who had not already responded. The University of Washington Human Subjects Review Board reviewed and approved the study procedures.

Data Analysis

Microsoft Excel XP was used to analyze the data. Descriptive statistics were used to analyze the responses to the close-ended questions. Open-ended questions were analyzed using textual-analysis methods that included indexing, comparing, and contrasting written answers (Miles & Huberman, 1994). Data are reported as aggregate numbers and percentages and do not identify any specific respondents.

Results

Of the 234 surveys sent, 172 were completed and returned. Sixteen of those were eliminated due to reasons that includ ed no occupational therapist employed at that facility, the recipient was in private practice, or the survey was undeliverable. The response rate of 79% was calculated after removing the noneligible and nondeliverable questionnaires (Dillman, 2000).

Thirty-eight (22%) of the 172 respondents identified their work facility as being in multiple categories. Thirty-seven (22%) reported their work facility as an SNF, 36 (21%) as a school district, 23 (13%) as a hospital, 14 (8%) as a free-standing outpatient clinic, 13 (8%) as “other,” 9 (5%) as a home health agency, and one (<1%) as a mental health agency. One respondent did not classify the facility.

Table 1 shows the number of budgeted occupational therapy and occupational therapy assistant positions at the respondent facilities. Of these, the majority, 65%, had up to three full-time equivalent (FTE) occupational therapy positions and 92% had up to three FTE occupational therapy assistant positions.

Table 2 shows the changes and vacancies in occupational therapy and occupational therapy assistant positions. Twenty-nine percent of respondents reported an increase in FTEs for occupational therapists and 15% reported an increase for occupational therapy assistants. Of 164 responding facilities with occupational therapy positions, 24% reported having vacant positions. Of the 154 responding facilities with occupational therapy assistant positions, 11% reported having vacant positions. Of these, 26% of respondents reported that vacant occupational therapy positions were open more than 6 months.

Forty-eight percent of respondents predicted an increase of occupational therapy positions and 41% an increase of occupational therapy assistant positions in the next 2 years. Analyzing the results for occupational therapy positions by facility type, we found that SNFs accounted for 22% of the total respondents and represented 23% of

| Table 1. Number of Budgeted Occupational Therapy and Occupational Therapy Assistant Positions |
|-----------------------------------------|---|---|
| FTE Positions | OT | OTA |
| n = 162 | n = 155 |
| 1 | 19 (12%) | 77 (50%) |
| 2 | 56 (36%) | 53 (34%) |
| 3 | 27 (17%) | 12 (8%) |
| 4 | 13 (8%) | 4 (3%) |
| 5 | 10 (6%) | 5 (3%) |
| 6 | 6 (4%) | 2 (1%) |
| 7 | 5 (3%) | 0 (0%) |
| 8 | 3 (2%) | 1 (1%) |
| 9 | 4 (2%) | 0 (0%) |
| 10 | 3 (2%) | 0 (0%) |
| 11 | 3 (2%) | 1 (1%) |
| >11 | 11 (7%) | 0 (0%) |

FTE = full-time equivalent; OT = occupational therapy; OTA = occupational therapy assistant.
facilities predicting an increase in FTE in the next 2 years. Hospitals represented 13% of the respondents and accounted for 17% of the facilities predicting an increase in FTE. Home health agencies represented 5% of the respondents, but accounted for 10% of those facilities predicting an increase in FTE occupational therapy positions. For occupational therapy assistants, SNFs represented 22% of all respondents, but accounted for 35% of the facilities predicting an increase in FTE occupational therapy assistant positions. Hospitals represented 13% of the total respondents, but accounted for 9% of the predicted occupational therapy assistant increases.

Table 3 shows the amount of difficulty respondents reported in hiring for vacant occupational therapy and occupational therapy assistant positions, as well as the number of applicants compared to 2 years ago. Of the 70 (63%) respondents who reported having difficulty hiring occupational therapists, 38% were from SNFs. Schools accounted for 21% of total respondents, yet 27% of those who reported difficulty finding qualified occupational therapy applicants were in school settings.

The majority of respondents reported not using any per diem or contract occupational therapy or occupational therapy assistant hours. Only 21% of the facilities (n = 163) reported using per diem occupational therapy for 1 to 20 hours per month, whereas 15% of facilities (n = 155) reported using per diem occupational therapy assistants for 1 to 20 hours per month. A smaller percentage of facilities used per diem occupational therapists (18%) and occupational therapy assistants (10%) more than 20 hours per month.

Table 4 illustrates responses to turnover rates and issues impacting the hiring for occupational therapy and occupational therapy assistant vacancies. Eighty-four percent of respondents indicated low turnover rates of occupational therapy practitioners. On a scale of 1 to 5 with 5 being a significant problem, 55% of respondents rated “lack of qualified occupational therapy applicant” as a 4 or 5 and 54% rated “lack of any occupational therapy applicants” as a 4 or 5. For occupational therapy assistant positions, 54% rated “lack of qualified applicants” and 56% “lack of any applicants” as a 4 or 5. An analysis of the data by facility type revealed that 27% of respondents reporting a lack of occupational therapy applicants and 30% of those reporting lack of occupational therapy assistant applicants were from SNFs.
Noncompetitive salaries were reported as a problem (rated 4 or 5) for hiring occupational therapists (22%) and occupational therapy assistants (26%). Facility respondents indicated that applicants not wanting part-time hours was a problem (rated 4 or 5) in hiring of occupational therapists (21%) and occupational therapy assistants (23%).

Emergent Themes

In addition to the close-ended questions, respondents were given the opportunity to express opinions through several open-ended questions. They commented on issues of hiring, reasons for turnover, reasons for converting occupational therapy to occupational therapy assistant positions, and future workforce needs. Of the total 172 respondents, the number of responses to each open-ended question varied from 7 to 43 responses.

When describing issues in hiring for occupational therapy positions (15 responses), two recurrent concerns were expressed. Respondents reported difficulty locating a therapist with a particular skill set that matched the needs of the facility. Respondents from rural settings also reported that location was a limiting factor in hiring. Only 7% of respondents reported conversion of occupational therapy positions to occupational therapy assistant positions in the close-ended questions. The most frequent reason (65%) for conversion given in the open-ended questions was the availability and experience of an occupational therapy assistant when an occupational therapist was not available. The other reason given was cost containment.

Discussion

This study identifies a current workforce shortage of occupational therapy practitioners in the Northwest region of the United States. A high number of facilities had vacant positions and there was a relatively long duration for some of those vacancies. These results contradict recent reports predicting a balance in the supply/demand ratio for occupational therapy practitioners over the years 1996 to 2003 (Health Policy Alternatives, Inc., 1996), but are in keeping with recent reports of high numbers of advertised job openings.

These results substantiate the impact of decreased enrollment in occupational therapy and occupational therapy assistant programs over the last 4 years. Decreased enrollment may be an effect of the current transition to entry-level master’s degrees; recent political and financial climates favoring other professions such as business, technology, or finance; or other factors. Without knowing more, it is not possible to identify this as a short-term or a long-term trend. However, at the very least, we can anticipate that there will be fewer than usual available personnel for several more years until programs reach full enrollment and those students complete their studies and join the workforce.

It appears that this decrease in the available workforce is, and will be, compounded by an increase in the number of occupational therapy positions, especially in skilled nursing and long-term care facilities. At the same time, we do not see evidence that occupational therapy assistants are being hired to replace OTRs as has been predicted. This may be due to decreased length of stay in hospitals and SNFs resulting in the need for practitioners with more advanced skills. Patients may not be staying long enough for development of treatment plans that can be implemented by occupational therapy assistants. There is also the efficiency factor of having one person, the occupational therapist, conduct evaluation, treatment interventions, and discharge planning when time is short.

It appears that occupational therapy practitioners have adjusted to the demands of new reimbursement systems and documentation requirements. There is not much evidence of job turnover that would result from burn-out or job dissatisfaction. It is interesting that even with lower personnel turnover rates, there are still high numbers of open positions.

National Implications

Although a decreased number of occupational therapy practitioners with an increased number of occupational therapy positions could be advantageous to clinicians currently looking for jobs and educational programs hoping to fill classes, at the same time, these findings may also raise serious questions for the future of occupational therapy. How are occupational therapy clinicians currently meeting the needs of their clients and, perhaps more importantly, how will they continue to do so if there is an extended period of workforce shortage? Occupational therapy’s management of a workforce shortage is especially critical in this time of changing practice for other rehabilitation professionals. Even short-term adjustments could lead to permanent changes in service provision with occupational therapy jobs vulnerable to takeover by other disciplines.

Solutions for a workforce shortage would need to be developed and put into place quickly. One possible strategy would be to provide incentives that would keep therapists considering retirement in the work force, either on a part-time or full-time basis. A similar approach could be taken to those therapists at the other end of the spectrum—those with young children. Incentives might be financial in nature and/or address a desire for increased flexibility in the
workplace. It would be of primary importance to identify the incentives with the best potential for being effective prior to implementing such strategies. Targeted continuing education might help bring back practitioners who have left the field either voluntarily or through layoffs. In addition to strategies for expanding the pool of working clinicians, there may be innovative ways of boosting productivity through the use of volunteers.

At the same time, we could consider delaying efforts to expand into new practice areas. In our opinion, an emphasis on developing new occupational therapy jobs in arenas such as community-based practice may not be in our best interest at this time. A more important priority may be to protect jobs in traditional practice arenas. Moreover, discussion of further changes in educational policies, such as a move to an entry-level clinical doctorate, should include careful consideration of the potential impact on the workforce.

The importance of frequent studies during this critical time cannot be underplayed. The techniques and survey instrument used in this study could be adopted by the national or state professional organizations or individual researchers as a model for national or regional studies or both. In addition, the survey could be used to develop a Web-based instrument that could allow for more frequent assessment at a lower cost. Annual studies may be needed to determine if a workforce shortage is a short-term or long-term trend and also to determine the effect of any measures taken to ameliorate the situation. Frequent and consistent studies on an ongoing basis would allow for a more proactive approach to meeting the needs of the marketplace and minimize the possibility of under- or over-staffing.

Strengths and Limitations of Study

This study had several strengths. Use of a proportional random sample assures that various types of facilities are included in a representative fashion from all five states. This makes for more generalizable results. In addition, although many workforce studies limit their participants to hospitals, by using state association lists of facilities where occupational therapy practitioners worked, we were able to include the full range of practice arenas except for private practice. The use of Dillman's (2000) design method, a user-friendly survey instrument, and extensive follow-up procedures resulted in an excellent response rate of 79%. Furthermore, our demand-based data approach yields information about the actual status of the workforce. This information is a more accurate reflection of the current situation than the predictive studies typically conducted by consulting companies or government agencies.

One limitation of the study is the use of ranges to collect staffing information. Knowing the exact number of positions at all staffing levels, including those at the high end, would have provided a more complete picture of the workforce and allowed calculation of vacancy rates. In addition, this study targets five states in the Northwest region. Although it is unlikely that there are substantial differences between the Northwest and the rest of the country, a national survey would clarify the overall status of the U.S. occupational therapy workforce while identifying any regional differences. Also, a study such as this only describes the current situation at a specific point in time. Although we can conjecture about implications for the future, more frequent studies on a consistent basis are needed to establish trends and directions of workforce needs.

Conclusion

In summary, this study identifies a workforce shortage in the Northwest region. The findings raise important issues for addressing occupational therapy needs on a national level. Study methodologies that would provide efficient and more frequent tracking of the national occupational therapy workforce are critical for planning in practice and educational arenas. This study provides a model for obtaining current, comprehensive objective workforce data that could prove crucial in making occupational therapy policy and practice decisions.

Acknowledgments

This study was conducted in partial fulfillment of the second author's requirements for a master of science degree in the Department of Rehabilitation Medicine, University of Washington, Seattle, Washington.

References


The American Journal of Occupational Therapy


