Survey of the Low Vision Rehabilitation Curricula in Occupational Therapy and Occupational Therapy Assistant Programs

Robin M. Deacy, Hon K. Yuen, Elizabeth A. Barstow, Mary Warren, Laura K. Vogtle

OBJECTIVE. We examined the preclinical curricular content pertaining to low vision rehabilitation (LVR) included in occupational therapy (OT) and occupational therapy assistant (OTA) programs.

METHOD. An e-mail survey containing questions about program structure and the extent of course material related to LVR in the curriculum was sent to directors of all accredited OT and OTA programs in the United States.

RESULTS. One hundred nineteen programs responded. The curricula of all but 1 program included LVR content. Twenty-four programs included a required course with a primary emphasis on LVR. Forty-four programs had faculty with advanced training in LVR or experience working in a LVR clinic.

CONCLUSION. Given that almost all respondent programs integrate LVR content into their required pre-clinical coursework, we recommend that LVR be incorporated into the Accreditation Council for Occupational Therapy Education standards so as to ensure knowledge of LVR within existing programs and enhance the quality of education in LVR.

The Centers for Disease Control and Prevention (CDC; n.d.) have identified vision impairment as one of the top 10 disabilities among American adults. Vision impairment is strongly associated with limitations in activities of daily living (ADLs) and appears to act synergistically with other comorbidities to increase disability levels among older adults (Crews, Jones, & Kim, 2006). According to the CDC (n.d.), an estimated 3.4 million Americans older than age 40 currently report blindness or significant vision impairment. This number is expected to double by 2030 as baby boomers begin to experience the age-related eye diseases that cause low vision.

Occupational therapy (OT) practitioners have been providing low vision rehabilitation (LVR) services for nearly 2 decades (Warren, 1995). A cornerstone of LVR service provision was laid when Medicare formally established coverage criteria for LVR services provided by OT practitioners in May 2002 (Stelmack, 2005). Since then, acknowledgment of OT practitioners as primary providers of LVR services has been growing. For example, a recent survey of LVR services in the United States reported that OT practitioners provided 15% of LVR services overall and 70% of the low vision services provided through rehabilitation hospitals and outpatient clinics (Owsley, McGwin, Lee, Wasserman, & Searcey, 2009). The two major professional organizations of eye care specialists—the American Academy of Ophthalmology (2012) and the American Optometric Association (n.d.)—list occupational therapists as one of the primary LVR professionals on their Web sites, as does Medline Plus (2012), the consumer Web site of the National Library of Medicine and National Institutes of Health.
In response to the demand for LVR services since the establishment of Medicare coverage for those services by OT practitioners, OT academic programs (both OT and occupational therapy assistant [OTA] programs) across the country have begun to add specialized training in LVR to prepare entry-level graduates to work with clients with low vision (Mogk & Goodrich, 2004). In a pilot survey of low vision practitioners in 2004, 20% of the respondents indicated that they received formal education in LVR as part of their entry-level OT preparation (Copolillo, Warren, & Teitelman, 2007). Copolillo and Teitelman (2005) advocated for topics related to LVR to be incorporated into entry-level OT education to prepare graduates to provide this type of service.

To date, no published data have described the extent to which LVR is included in OT academic curricula in the United States. A telephone interview survey was conducted to gather information on the extent of low vision education in entry-level OT programs in the United Kingdom (Campion, Awang, & Ward, 2010). Results showed that all 19 of the respondent programs (of 31 programs in the United Kingdom) included some materials on vision loss and impairment in their curricula. However, only 3 respondent programs reported involvement of service users or guest speakers with expertise or experience with low vision. Moreover, 63% of the faculty respondents assigned a low priority score to the importance of vision loss in OT curricula.

The health care systems of the United States and United Kingdom, however, are very different, as is the structure of their OT academic education as well. Thus, in this study we examined the preclinical curriculum content pertaining to LVR education included in OT and OTA programs across the United States. Such data may assist OT educators in becoming more aware of the type and extent of LVR education provided to entry-level OT and OTA students and offering initial educational guidelines for assessing and restructuring academic curricula to increase students’ exposure to LVR.

Method
On the basis of a review of existing literature (Bäckman, 2005; Campion et al., 2010; Warren & Barstow, 2007), a short questionnaire (10 closed-ended items and 1 open-ended item) was specifically designed to examine the type and extent of LVR content offered in OT and OTA programs. The closed-ended items asked specific questions about the background of the academic program and the extent of course structure and topics related to LVR in the curriculum. Questions included whether the curriculum offered courses with content having a primary emphasis on LVR, the number of lecture and lab hours on LVR, specific topics covered in relation to LVR, who taught the LVR course, whether the academic program had access to LVR services in a nearby clinic where students could observe or obtain hands-on experience during the didactic (non-fieldwork) portion of the curriculum, and whether the LVR content involved interacting directly with people with low vision or organizations that represent them.

Questionnaire content was developed by an occupational therapist who had 7 yr of LVR work experience and two experienced OT academicians who had taught a certificate program in LVR since 2002. The questionnaire was deliberately kept short to encourage responses and posted on SurveyMonkey, an online survey Web site engine, which provided a URL for the survey. The survey instrument’s URL and a cover letter explaining the purpose of the survey were e-mailed to the directors of all 314 accredited OT and OTA programs in the United States (155 OT programs 159 OTA programs).

Two follow-up e-mails with the URL link to the survey were sent to those program directors who did not respond. Data were collected between the beginning of April and May 2011 and in mid-September 2011. Of the 314 e-mails sent to program directors, 13 were undeliverable even after multiple attempts (9 OT program directors 4 OTA program directors). Of the 301 program directors or their delegated faculty members who received the e-mails, 119 (69 OT program directors, 50 OTA program directors) responded to the online survey, for a response rate of 39.5% (47.3% OT program directors, 32.3% OTA program directors).

Data were analyzed using descriptive statistical methods as well as cross-tabulation and Fisher’s exact test of association with α set at the .05 level for statistical significance. The study was approved by the institutional review board of the University of Alabama at Birmingham.

Results
Of the 119 programs that responded to the online survey, 24 (20.2%) indicated that their curriculum included a required course with a primary emphasis on LVR. One OT program offered a required LVR course only in the postprofessional master’s-level curriculum. Of the respondent programs that did not currently offer a required course specific to LVR, all except one OT program included content areas or topics related to LVR in other required courses in their preclinical curricula. Of the respondent programs without a required course with a primary emphasis on LVR, the number of lecture and lab hours on LVR content ranged from 1 to 17 (mean = 6.1 hr, standard deviation = 3.5).

The three main topics taught in the required LVR courses were occupational performance intervention, environmental adaptation, and adaptive devices (95%); eye anatomy and pathology (72.3%); and low vision evaluation (68.1%). Table 1 shows the proportion of OT and OTA programs that covered each of the LVR topics listed in the questionnaire. In addition, several programs reported including content related to eccentric viewing evaluation training, sighted guide training, the role of OT practitioners in the LVR team, and low vision in children and adults with traumatic brain injury.

Forty-four respondent programs (37.0%) had faculty with advanced training, experience working in LVR, or both. Of the 24 respondent programs with a required LVR course, 14 (58.3%) indicated they had faculty with advanced training or clinical experience in LVR. The association between the proportion of respondent programs with a required
Table 1. Characteristics of the Respondent Occupational Therapy and Occupational Therapy Assistant Programs on Low Vision Rehabilitation (LVR)

<table>
<thead>
<tr>
<th>Variable</th>
<th>All Programs (N = 119)</th>
<th>Occupational Therapy Programs (n = 69)</th>
<th>Occupational Therapy Assistant Programs (n = 50)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curriculum includes a course with primary content on LVR.</td>
<td>24 (20.2)</td>
<td>18 (26.1)</td>
<td>6 (12.0)</td>
<td>0.067</td>
</tr>
<tr>
<td>LVR content is included in other occupational therapy core course or in the curriculum.</td>
<td>106 (89.1)</td>
<td>62 (89.9)</td>
<td>44 (88.0)</td>
<td>0.486</td>
</tr>
<tr>
<td>Students interact directly with people with low vision or organizations that represent them.</td>
<td>48 (40.3)</td>
<td>35 (50.7)</td>
<td>13 (26.0)</td>
<td>0.008</td>
</tr>
<tr>
<td>Local clinic provides LVR services and offers students observation or hands-on experience.</td>
<td>64 (53.8)</td>
<td>47 (68.1)</td>
<td>17 (34.0)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Faculty have experience working with older adults but no direct experience in low vision rehabilitation.</td>
<td>76 (63.9)</td>
<td>35 (50.7)</td>
<td>41 (82.0)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

Topics Related to LVR in the Curriculum

- Occupational performance intervention, environmental adaptation, and adaptive devices: 113 (95.0) All Programs, 64 (92.8) Occupational Therapy Programs, 49 (98.0) Occupational Therapy Assistant Programs, p = 0.399
- Eye anatomy and pathology: 86 (72.3) All Programs, 59 (85.5) Occupational Therapy Programs, 27 (54.0) Occupational Therapy Assistant Programs, p < 0.0001
- Low vision evaluation: 81 (68.1) All Programs, 58 (84.1) Occupational Therapy Programs, 23 (46.0) Occupational Therapy Assistant Programs, p < 0.0001
- Psychosocial adaptation: 77 (64.7) All Programs, 47 (68.1) Occupational Therapy Programs, 30 (60.0) Occupational Therapy Assistant Programs, p = 0.438
- Resources and service providers: 75 (63.0) All Programs, 56 (81.2) Occupational Therapy Programs, 19 (38.0) Occupational Therapy Assistant Programs, p < 0.0001
- Optical devices: 68 (57.1) All Programs, 48 (69.6) Occupational Therapy Programs, 20 (40.0) Occupational Therapy Assistant Programs, p = 0.002
- Health promotion including diabetes self-management: 47 (39.5) All Programs, 34 (49.3) Occupational Therapy Programs, 13 (26.0) Occupational Therapy Assistant Programs, p = 0.013
- Models of practice: 43 (36.1) All Programs, 33 (47.8) Occupational Therapy Programs, 10 (20.0) Occupational Therapy Assistant Programs, p = 0.002

Discussion

Results indicated that the preclinical education curricula of nearly all professional entry-level OT and OTA programs in the United States that responded to the study did include LVR content in their curricula. However, the number of hours devoted to this content varied quite a bit between programs, and the quality of the content is not known. For example, 4 programs (3 OT programs, 1 OTA program) indicated that they included LVR content in their curricula but did not cover low vision evaluation or occupational performance intervention, environmental adaptation, and adaptive devices. Because almost all respondent programs included LVR content in their curricula, indicating that the topic is important, the American Occupational Therapy Association (AOTA) should consider including LVR in the accreditation standards for OT and OTA educational programs. This inclusion will ensure that all entry-level graduates possess the education and training necessary to address low vision, which can affect various aspects of basic and instrumental ADLs.

The respondent academic programs strive to provide beginning-level exposure to the subject area of LVR, as well as opportunities for students to learn about LVR in the classroom and lab, in clinic visitations, or during Level 1 fieldwork experiences that include didactic and experiential learning. Academic programs...
with access to LVR services in nearby clinics have taken advantage of this resource by providing students with experiential learning related to LVR. Even the one respondent program that did not include LVR content in its curriculum was considering how much material could be included. Another OT program indicated that it is developing an elective course with LVR content. Further research is needed to establish the best means of incorporating LVR into OT academic curricula.

These findings are encouraging because students graduating from these programs are equipped with at least some coursework or experience related to LVR. These skills should create a foundation for graduates to acquire further exposure and competence through continuing education and initiatives to pursue advanced training in LVR, such as specialty certification in low vision (Warren & Barstow, 2007). It is certainly understandable that not all OT practitioners will specialize in LVR, nor is it possible for every program to devote an entire course specific to LVR. However, the integration of LVR into several different courses will help prepare students to meet the needs of the growing number of older adults, people with disabilities such as traumatic brain injury, and children with low vision problems.

Some of the challenges encountered by educators may include an already crowded curriculum as well as limited resources (time and faculty expertise). The biggest challenge appears to be having faculty with the expertise to teach the content, as indicated by only 37% of respondents having existing faculty with advanced training, clinical experience in LVR, or both. Programs that offer more comprehensive or in-depth education on LVR in their curriculum seem to have existing faculty with expertise in this practice area. However, 13 of the respondents reported that they are likely to include more LVR content in their curriculum in the next 2 yr, indicating that they have room to expand LVR content in their curriculum.

This study provided evidence that many OT and OTA programs consider LVR to be an important component of their students’ educational preparation. AOTA recognized LVR as an important emerging practice area in the 1990s and devoted a special issue of the American Journal of Occupational Therapy to LVR (Warren, 1995). Since then, AOTA has made concerted efforts to ensure the competence of OT practitioners in addressing the needs of clients with low vision. AOTA produced a self-paced clinical course in LVR for practitioners in 2000 and 2008 (Warren, 2000, 2008), followed by a textbook titled Occupational Therapy Interventions for Adults With Low Vision (Warren & Barstow, 2011). It also offers an online introductory continuing education course in LVR (Cole, Rovins, & Schonfeld, 2005). Specialty certification in LVR was established in 2006 for OT practitioners. According to the competencies established for specialty certification by AOTA, no distinction is made between educational preparation of registered occupational therapists and certified occupational therapy assistants because the knowledge base required for practice is nearly identical (AOTA, n.d.).

In addition, AOTA recently included Critically Appraised Topics on the effectiveness of LVR for older adults as part of its Evidence-Based Literature Review Project (AOTA, 2011). AOTA also acknowledged the need for vision to be included in entry-level education, citing it as a key concept under person-centered factors in the Blueprint for Entry-Level Education (AOTA, 2010).

Limitations

One of the limitations of this study is that we do not know whether the programs that did not respond actually offer content related to LVR. Detailed information regarding the scope of LVR experience in clinical settings was not available. Moreover, the study’s results do not allow us to determine the details and quality of course content or the depth and breadth of exposure and training in LVR.

Implications for Occupational Therapy Practice

The results of this survey, combined with AOTA’s efforts to ensure the professional competence of OT practitioners, provide strong support for adding a standard on LVR to the Accreditation Council for Occupational Therapy Education standards to ensure that OT practitioners are prepared to assume their acknowledged role in this area of practice.

Acknowledgments

We thank all the OT and OTA program directors and their delegates who completed the survey.

References


