

International survey of vestibular rehabilitation therapists by the Barany Society Ad Hoc Committee on Vestibular Rehabilitation Therapy

Helen S. Cohen^{a,*}, Kim R. Gottshall^b, Mariella Graziano^c, Eva-Maj Malmstrom^d and Margaret H. Sharpe^e

^a*Bobby R. Alford Department of Otolaryngology – Head and Neck Surgery, Baylor College of Medicine, Houston, TX 77030, USA*

^b*Department of Defense Spatial Orientation Center, Naval Medical Center, San Diego, CA 92134, USA*

^c*L-4038 Esch-sur-Alzette, Luxembourg*

^d*Departments of Otorhinolaryngology – Head and Neck Surgery and Rehabilitation Medicine, Clinical Sciences, Lund University Hospital, Lund, Sweden*

^e*Dizziness & Balance Disorders Centre, Unley, South Australia 5061, Australia*

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Abstract. The goal of this study was to determine how occupational and physical therapists learn about vestibular rehabilitation therapy, their educational backgrounds, referral patterns, and their ideas about entry-level and advanced continuing education in vestibular rehabilitation therapy. The Barany Society Ad Hoc Committee for Vestibular Rehabilitation Therapy invited therapists around the world to complete an E-mail survey. Participants were either known to committee members or other Barany Society members, known to other participants, identified from their self-listings on the Internet, or volunteered after reading notices published in publications read by therapists. Responses were received from 133 therapists in 19 countries. They had a range of educational backgrounds, practice settings, and referral patterns. Few respondents had had any training about vestibular rehabilitation during their professional entry-level education. Most respondents learned about vestibular rehabilitation from continuing education courses, interactions with their colleagues, and reading. All of them endorsed the concept of developing standards and educating therapists about vestibular anatomy and physiology, vestibular diagnostic testing, vestibular disorders and current intervention strategies. Therefore, the Committee recommends the development of international standards for education and practice in vestibular rehabilitation therapy.

Keywords: Vestibular disorders, physical therapy, occupational therapy, standards of care

1. Introduction

Since Cawthorne and Cooksey first described their exercises for head-injured soldiers with vertigo [1,2,4,

5] the use of physical and occupational therapy to treat the symptoms of some vestibular disorders has gradually gained worldwide acceptance. Vestibular rehabilitation therapy (VRT) is now the standard of care for some disorders that cannot be treated with medication or surgery, such as benign paroxysmal positional vertigo, chronic labyrinthitis or vestibular neuronitis, and related balance impairments. In 1997 and 2007 the American Academy of Otolaryngology adopted the

*Corresponding author: Helen S. Cohen, Department of Otolaryngology, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA. Tel.: +1 713 798 6336; Fax: +1 713 798 8658; E-mail: hcohen@bcm.tmc.edu.

statement that VRT is valid for the treatment of persistent dizziness and balance disorders caused by vestibular impairments [6].

The practice of VRT seems to vary widely. In some countries, such as Australia and Sweden, VRT is provided by therapists with specialized training, so the practice of VRT is quite advanced. In other countries therapists do not do VRT, at all, or their practice is restricted, e.g., in Japan, at this time, only physicians may administer treatments for vertigo (M. Asanuma, PT, personal communication). Even in countries where VRT practice is advanced, such as the United States, practice patterns vary: in some places trained therapists develop individualized programs for each patient and provide follow-up care; in other places physicians merely hand out printed pages of standard exercises. The lack of standards of care may be related to limited information about practice patterns or limited training of physicians and therapists. The only published professional standards for therapists practicing VRT are in the Knowledge and Skills paper published by the American Occupational Therapy Association (AOTA) [3]. Those standards apply only to American occupational therapists, who are represented by AOTA. We are unaware of any other professional organization that has published standards of practice or education for therapists who provide VRT.

At the 2006 Barany Society meeting in Uppsala, Sweden a group of therapists and physicians informally discussed their concerns about the lack of standards for education and training in VRT and formed an ad hoc committee of Barany Society members and interested therapists. Eventually, this committee plans to recommend international guidelines for development of national standards, with the understanding that standards may vary by the unique needs of each country and the local physical and occupational therapy professions. To develop international guidelines we first needed to learn about current practice around the world. The goal of this study was to learn about the practice patterns and training of therapists around the world who provide VRT. Therefore, we developed a survey for those therapists.

2. Methods

2.1. Subjects

To acquire the names and contact information for therapists, we asked current members of the Barany

Society and other physicians of our acquaintance for names of therapists who practice VRT. Only three names were obtained that way. Physicians in Germany, Hungary, Iceland, and Mexico informed us that they knew of no therapists who provide VRT in their respective countries although we subsequently learned of one German physical therapist.

All therapist members of the committee participated in e-mailing the survey to therapists in their home countries and other countries for which they had contacts or spoke the language. Therapist members of the committee all contacted therapists known to them, personally. In the United States we placed notices in OT Practice and PT Bulletin, which are publications of the AOTA and American Physical Therapy Association (APTA), respectively. Also, we sent surveys to a random sample of American occupational therapists and physical therapists, and all non-American therapists, who had listed their E-mail addresses with the Vestibular Disorders Association's website. In Australia and New Zealand therapists were invited to participate through the Australian and New Zealand Physiotherapy Associations, respectively. Some therapists were identified from a search of the World Wide Web for therapists who listed themselves as providing VRT. Using that method, therapists in Greece, Turkey, Saudi Arabia and India were sent E-mail requesting their participation, but they did not respond. All participants were asked to provide names and E-mail addresses of other therapists they knew, so some recruiting was done by word-of-mouth.

2.2. Procedure

The survey was developed during a meeting of the therapist members of the Ad Hoc Committee on Vestibular Rehabilitation Therapy at the 2006 meeting of the Barany Society. The survey, shown in the Appendix, had 32 questions that were either yes/no or short answers. The survey was subsequently translated into French, Spanish, and German by native speakers of those languages. The survey was e-mailed to participants, who responded via E-mail.

This study was approved by the Institutional Review Board for Human Subject Research for Baylor College of Medicine and Affiliated Hospitals.

3. Results

Responses were received from 133 allied health professionals, including one audiologist, 15 occupational

Table 1
Descriptive details about respondents

Country	Sample size	Profession	Physician referral required?
Australia	24	1 OT, 23 PT	7 yes, 17 no
Belgium	1	PT	Yes
Brazil	1	PT	No
Canada	2	PT	1 yes, 1 no
China	1	OT	Yes
Czech Republic	1	PT	Yes
Denmark	1	PT	No
France	11	PT	Yes
Germany	1	PT	No
Ireland	3	PT	1 yes, 2 no
Japan	1	PT	Yes
Luxembourg	1	PT	Yes
New Zealand	7	PT	2 yes, 5 no
Norway	2	PT	1 yes, 1 no
Portugal	1	PT	Yes
Singapore	3	PT	1 yes, 2 no
Sweden	14	PT	7 yes, 7 no
United Kingdom	3	1 audiologist, 2 PT	2 yes, 1 no
United States	55	13 OT, 42 PT	43 yes, 12 no

therapists (OT) and 117 physical therapists (PT), from 19 countries. (For brevity all respondents will be called therapists.) Respondents included 29 males and 104 females, mean age 43.7 yrs, SD 9.8 yrs, range 24 to 66. See Table 1 for details.

All therapists held at least entry-level academic credentials in their professions, i.e. the credentials necessary to begin practicing their professions in their respective countries. The nature of the entry-level degree is not uniform among countries. Qualifications varied by year of graduation and country, and degrees included diplomas, bachelors, entry-level masters, and entry-level clinical doctorates. In some countries the diploma has been and remains the entry-level credential for allied health professions. By contrast in the United States the entry-level credentials for therapists have changed from entry-level certificates to bachelors degrees to graduate degrees. As of April 2009 according to the AOTA and APTA, respectively, 144 institutions support 142 entry-level masters and 5 entry-level clinical doctorates in occupational therapy and 204 institutions support 12 entry-level masters programs and 205 entry-level clinical doctorates in physical therapy. (Two occupational therapy programs and 1 physical therapy program support more than one degree program.) The World Federation of Occupational Therapy and the World Confederation for Physical Therapy do not discriminate among the various entry-level degrees. Therefore, even within one country, the entry-level educational degree for one of the therapy professions does not indicate the therapist's level of competency.

Many therapists held additional post-professional educational degrees beyond their entry-level creden-

tials, including 14 post-graduate diplomas, 36 post-graduate masters degrees (Master of Arts (MA)/Master of Science (MS)/Master of Business Administration (MBA)), 7 candidates for professional doctoral degrees in their clinical fields, 17 clinical doctorates ((Doctorate of Philosophy (PhD), Doctor of Physical Therapy (DPT), Occupational Therapy Doctorate (OTD)) in their clinical fields, and 8 post-graduate scientific doctorates outside of their clinical fields (PhD/ Doctor of Education (EdD)). Forty-seven participants indicated no additional degrees. Some people listed more than one degree. A surprisingly large percentage of respondents, 28%, said that their jobs included doing research, and those individuals said they spend a mean of 30% of their time (SD 25.5%) in research – related activities. Of the individuals doing research, approximately 43% had public or private grant funding to support their research activities.

Respondents had additional certifications or specialty practices in a wide range of additional treatment specialties, and some respondents had more than one additional certification or specialty. The most common additional specialties were neurorehabilitation ($n = 25$), pain relief and massage techniques ($n = 13$), and orthopedic and sports rehabilitation ($n = 9$). Other additional specialties were driving rehabilitation, dysphagia therapy, ergonomics, geriatric rehabilitation, hand therapy, lip reading, motor learning, stress and relaxation management and women's health.

Most participants were experienced clinicians. Participants were almost all experienced therapists before starting to do VRT and most participants were experi-

Table 2
Practice details of respondents

Question	Mean percent time (SD): Range
Total years in practice	18.8 (9.5): 1.5 to 45
Years in practice when began doing VRT	8.6 (10.1): 0 to 35
Years in practice doing VRT	8.2 (5.3): 1 to 23
Percent time doing VRT	39.8 (31.7): 1 to 100
Percent VRT time doing treatments for vertigo	51.1 (24.5): 0 to 100
Percent VRT time doing balance therapy	38.8 (23.6): 0 to 100

enced VRT practitioners. Most therapists provide VRT part time, but the percentage of time varies. Within the time they provide VRT, the percentage of their time they use to treat vertigo varies, including treatments for benign paroxysmal positional vertigo, vestibular hypofunction, and vestibular neuronitis/labyrinthitis. Some therapists reported that they never do those treatments. Other therapists said they spend all of their time doing them. In general, though, therapists spend somewhat more time treating vertigo than balance problems. See Table 2.

Respondents had little or no training in VRT in their entry-level education: 107 (80%) said they had had no training in VRT at the entry level and 7 (5%) said they had had only a little training in school. Instead, respondents learned about VRT during continuing education courses (69%), at work (26%), professional reading (14%), personal experience at work (14%), word of mouth (10%), graduate school or formal post-graduate education (6%), national conferences in their own disciplines at which a lecture was given (6%), local professional meetings in their own disciplines (1.5% ($n = 2$)) and a few from direct apprenticeships (1.5% ($n = 2$)). The numbers add up to more than 100% because some respondents said they had learned about VRT in more than one way.

Participants reported that they obtain their continuing education in VRT from several sources, including reading journals and attending national or international professional meetings in their fields (96%) information on the internet (63%), local single discipline meetings (57%), hospital in-service education lectures (50%), multidisciplinary national or international meetings (46%), local study groups (41%), and other efforts such as specific continuing education courses, self-study, going on rounds with physicians (37%). The percentages add up to more than 100 because most participants listed more than one method of continued education.

Respondents practice in a variety of settings, including out-patient clinics (62%), in-patient hospital clinics (26%), home health care (11%), residential facili-

ties (2%) and private therapy practices (34%). Some respondents practice in more than one setting. Access to results from objective diagnostic tests also varied; 37% of respondents said that they had a diagnostic suite available in their facilities. Although some therapists reported that tests were done by audiologists and not in their clinics, those diagnostic data were available to them upon request. Most respondents, 60%, reported that no diagnostic suite was available; two respondents said they have computerized dynamic posturography. Access to objective diagnostic tests was not related to the practice setting.

Many, but not all, participants reported that they require a referral from a physician. This requirement varied by the country or region and the practice setting, as summarized in Table 1. Respondents from some countries disagreed, which may indicate that they could legally see the patient without referral but could not bill their patients' insurance companies, they could do the evaluation but not the treatment without referral, specific institutions required referral, or the regulations varied by region within the country. For example some Swedish therapists reported that physician referral is not required but most patients are referred by their physicians. Where physician referral is not legally required many hospital-based therapists are required by their institutions to have physician referrals, or out-patient based therapists must still have physician referrals to be reimbursed by national or private health insurance. In large countries, such as the United States, regulations vary by state.

Respondents indicated that their most common sources of referral were from neurologists (24%), otolaryngologists (24%) and primary care physicians (23%), with fewer referrals from physical medicine specialists (12%), subspecialty internists (11%) and, to a lesser degree, from other medical specialists. Where referrals by non-physician clinicians are allowed most referrals come mostly from nurse practitioners (28%) and dentists (15%). Only therapists in the United States reported receiving referrals from physician assistants; 16% ($n = 9$) of American therapists had re-

ceived referrals from physician assistants. A few therapists said they received referrals from other therapists, chiropractors, social workers, psychologists, and alternative medicine practitioners. Referral patterns from non-physician clinicians depended on national and local regulations. Many therapists said that people who are not health care providers advised patients to obtain VRT. The most common sources were family and friends.

4. Discussion

The sample in this study may not be representative of therapists world-wide due to the difficulty in locating therapists; hence we had only a few respondents in many of the sampled countries. The therapists who responded to our survey were active enough professionally to have been known to the committee members, to have read and responded to material posted in publications by their professional organizations, or to have paid the fee to have posted their contact information on a web site of a patient advocacy group. We were not able to reach therapists in many countries. Nevertheless, despite these limitations, we now have some information about therapists who say they practice VRT and who were interested enough and willing to communicate with us. To date we have no information about the number, curricula, instructors or locations of continuing education courses given around the world but we are aware that such courses are being offered in many countries, in some instances by the same team of instructors.

As a practice specialty for therapists, VRT is most often provided by experienced therapists. Previous practice experience is desirable because many patients have multifactorial problems. The skill of the therapist in addressing vestibular disorders is likely to be greater when the therapist has the experience to consider other health conditions during treatment planning and intervention.

Not surprisingly, most physician referrals come from physicians who see patients with vertigo, i.e., neurologists and otolaryngologists, with many referrals also coming directly from primary care physicians. Therefore, we recommend that physicians in residency training in neurology, otolaryngology and primary care should be exposed to VRT and to therapists who practice VRT if that service is available in their countries.

VRT is not a significant component of entry-level education for therapists. Therefore, a therapist who

wishes to specialize in VRT must attend continuing education courses in the specialty. Likewise, physicians seeking to augment their practices must find therapists who have had such training. The limited availability of such training and the paucity of official standards for education, however, present a problem. Therefore future work by our committee will include developing recommendations for educational standards in VRT.

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Appendix

- 1) Please tell us your age (years).
- 2) Are you male/ female?
- 3) Are you a physical therapist (PT) or occupational therapist (OT)?
- 4) What entry-level university degree or certification do you hold in PT or in OT ?
- 5) In what year did you receive your degree?
- 6) Was vestibular rehabilitation therapy part of the curriculum?
- 7) If vestibular rehabilitation therapy was not part of the curriculum, how did you learn about vestibular rehabilitation therapy?
- 8) What other university degrees do you hold and in which fields of study?
- 9) What other certifications/ qualifications do you hold?
- 10) How long have you been in clinical practice?
- 11) How long have you been practicing vestibular rehabilitation therapy?
- 12) What is your practice setting: e.g., in-patient acute care, in-patient rehabilitation, residential geriatric/ nursing home/ assistive living, out-patient hospital-based rehabilitation, private physician's office, private practice, etc?
- 13) Does your practice setting include a diagnostic testing suite for ENG or objective diagnostic tests of the vestibular system?
- 14) What percentage of your time do you spend doing vestibular rehabilitation therapy?
- 15) Of the time you spend doing vestibular rehabilitation therapy, what percentage of your time is spend

doing vestibular/ vertigo rehabilitation exercises and programs?

16) What percentage of your time is spent doing balance therapy?

17) Are you required to have a referral from a physician to see patients? Yes/ No

18) If yes, where do your referrals come from?

Otolaryngologists (ENT)

Neurologists,

Primary care physicians (internists, family practice physicians),

Specialty internists (e.g., cardiologists, geriatricians)

Physical medicine physicians

Psychiatrists

Others – please list

19) Which two of those referral sources send you the most patients?

20) Are you allowed to receive referrals from health care providers who are not physicians? Yes/ No

21) If yes, where do your referrals come from?

Dentists

Chiropractors

Nurses

Psychologists

Social workers

Others – please list

22) Please list other sources of referrals, e.g., patient self-referral, teacher, minister, family member

23) Does your job include doing research? Yes/ No

24) If yes, what percentage of your time is involved in research?

25) If you are doing research, what type of research do you do?

26) Do you have grant funding? Yes/ No

27) If you have grant funding, what agencies or groups support your research?

28) Please put a star or asterisk (*) by the activities in which you participate for continuing education:

Read journal articles

Attend national or international conferences/ congresses/ meetings in occupational therapy or physical therapy

Attend national or international intra-professional or multidisciplinary meetings/ conferences/ congresses

Attend local professional organization meetings

Participate in a study group in the place where you practice

Attend department in-service education lectures

Read things on the Internet

What other continuing education activities do you do?

29) Would you attend a meeting of the Barany Society if the program included a Section on vestibular rehabilitation therapy?

30) Does your practice have a World Wide Web site?

31) Do you have recommendations about educational standards or information that physical and occupational therapists should know to be qualified to do vestibular rehabilitation therapy? If so, please tell us what topics or issues should be included.

32) Would you be willing to comment on recommendations that we will develop?

Please tell us if you know other physical therapists or occupational therapists who do vestibular rehabilitation. What are their names and E-mail addresses?

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