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Inclusion and perception of hand therapy content in occupational therapy programs: A mixed-method study



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ABSTRACT

Study Design: Mixed-methods with cross-sectional survey and interviews.

Introduction: Hand therapy is a specialty area of practice for occupational (OT) and physical therapists (PT), requiring experience and certification beyond entry-level generalist education. Perspectives and inclusion of content related to hand therapy differs among entry-level OT programs and faculty.

Purpose: Perception and inclusion of hand therapy content in OT programs was examined in this mixed-method study to better understand the trends in academia regarding integration of content related to hand therapy.

Methods: A survey was developed, peer-reviewed, and emailed to all accredited entry-level masters and doctorate OT programs via Survey Monkey (SurveyMonkey, Inc., San Mateo, CA). Respondents were also given the opportunity to participate in an interview ($n = 2$; 5%).

Results: A total of 43 participants responded to the survey, representing a 23% response rate. Quantitative results revealed that 65% of OT programs report including 41+ hours of hand therapy content and 54% report integration of hand therapy content in 2-3 courses. Qualitative trends included the perception of hand content as necessary and beneficial to other areas of practice as well as the perspective that it is too specialized and advanced for generalist curriculum.

Discussion: Educators have a largely positive opinion regarding inclusion and generalizability of hand therapy content within OT curricula with varied content inclusion. While hand therapy related content is valued, increased emphasis on occupation during didactic instruction is recommended for more holistic understanding and occupation-based practice.

Conclusion: While trends of hand therapy content inclusion were revealed in the survey, perceptions of hand therapy within the broad spectrum of OT curricula were diverse, indicating a possible lack of unity within the profession regarding this specialty area of practice.

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Introduction

Hand therapy is defined as “the art and science of rehabilitation of the upper limb, which includes the hand, wrist, elbow and shoulder girdle. It is a merging of occupational and physical therapy theory and practice that combines comprehensive knowledge of the structure of the upper limb with function and activity. Using specialized skills in assessment, planning and treatment, hand therapists provide therapeutic interventions to prevent dysfunction, restore function and/or reverse the progression of pathology of the upper limb in order to enhance an individual’s ability to execute tasks and to participate fully in life situations.”¹ Due to the complexity of hand therapy practice, preparation is

extensive beyond the generalist level of preparation of the prerequisite graduate degree in occupational therapy (OT) or physical therapy (PT). Rigorous requirements to obtain the certified hand therapy credential include the following: (1) 4000 hours of documented direct patient care involving the upper quarter, (2) licensure as an occupational therapist or physical therapist for a minimum of 3 years, and (3) passing the comprehensive Hand Therapy Certification Examination.² This specialized area of practice currently comprises 85% occupational therapists with less than 7% of current certified hand therapists (CHTs) younger than 35 years old, and more than 25% of the current experienced CHTs will be of retirement age within the next 10 years.³ These statistics suggest an imminent need for OT and PT graduates to pursue specialization in hand therapy.⁴

Education for hand therapy practice begins with entry-level education in OT (master’s or doctoral degree) and PT (doctoral

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graduate programs. The Accreditation Council for Occupational Therapy Education (ACOTE) provides guidelines and content requirements for entry-level OT educational programs.⁵ Due to the breadth of ACOTE standards, the foundational knowledge of entry-level clinicians may vary widely among OT programs. Curriculum is supplemented with level 1 and level 2 fieldwork, professional journals, textbooks, and course work within various practice areas across the life span.⁶ The goal of level 1 fieldwork is to introduce students to the fieldwork experience, apply knowledge to practice, and develop understanding of the needs of clients through observation and participation in selected aspects of the OT process.⁵ A more in-depth experience focusing on the development of competent entry-level practitioners is gained through level 2 fieldwork. During this phase of OT education, students work toward clinical autonomy under the supervision of a licensed occupational therapist.

Many OT programs are guided by framework derived from Bloom's taxonomy, which focuses on the progression of knowledge development, application, and synthesis. ACOTE standards incorporate this progressive taxonomy throughout entry-level OT program education by requiring demonstration of skills through application, analysis, evaluation, and creation of content rather than simple recall.⁷ It is the combination of the profession's philosophy and vision, together with the particular institution's mission and vision that fuels curricular design to address particular present and anticipated client needs.⁸ Other approaches to curriculum design prioritize being student centered or subject centered, emphasizing emerging practice areas in OT, and the importance of competency-based content delivery.⁷ Feedback from students and specialty clinicians serves to evaluate efficacy of course content and influence in pedagogical approaches in OT curriculum.⁹ Research suggests that specific curricular content directly influences health care graduates' readiness for clinical practice, specifically development of professional clinical skills.¹⁰ Thus, inclusion of hand therapy, or other specialty content, embedded in OT curricula may have an effect on entry-level OT practice and facilitate new graduate specialization in various areas of practice.

Preparation for entry into the specialty of hand therapy requires thorough competence in didactic coursework before clinical application. However, regardless of acquired student proficiency, recent research posits that it may be academic preparation that is lacking. A recent study suggested that generalist preparation within OT curricula may be insufficient for student success in a hand therapy clinic. A large and nationally representative sample of CHTs identified that prominent barriers to accepting students for level 2 fieldwork rotations were limited clinical time and students' lack of clinical knowledge. Practicing clinicians suggested a need for additional content added to didactic coursework to more adequately prepare students for the fast-paced and content-heavy environment of a hand therapy setting.⁴ The possible disconnect between academic preparation and clinical expectations is further supported through the findings of Schofield¹¹ in which one-third of current clinicians reported that entry-level practitioners demonstrated a lack of proficiency in anatomy for optimal clinical application in the field of OT. These findings suggest the need for further preparation during didactic coursework for student success in specialty hand settings.

A recent study of PT education revealed that entry-level clinicians in hand therapy settings should have anatomy, biomechanics, kinesiology, and movement analysis content in detail as well as hand-related pathologies and interventions covered extensively in program curricula.¹² The themes that emerged from a recent study of OT practitioners' perspectives on academic content inclusion for clinical success were as follows: (1) competence in application of upper limb anatomy and biomechanics, (2) competence in evaluating body

position and posture, and (3) mastery in applying anatomic concepts to prevent pain and promote client safety.¹¹ Although certainly a priority when practicing from the biomechanical perspective, a strong understanding of anatomy is beneficial across the spectrum of practice to master the physical aspect of occupation.

A vast majority of research pertaining to anatomy education and curricular content recommendations is related specifically to medical education.¹¹ However, there is a paucity of research regarding OT curriculum and the specific frameworks for anatomy education despite clinicians having rated anatomy knowledge as being used all the time when biomechanical and rehabilitative frames of reference were used in the care of patients.¹¹ Detailed knowledge and understanding of upper extremity anatomy and the effects of injury, disease, and other conditions on function is essential for all practicing occupational therapists.¹¹ It is presumed that the inclusion of anatomy related to hand therapy content in OT curricula may impact the development of generalist clinicians' competence.

OT faculty members have the ability to design and shape the didactic background students receive in conjunction with level 1 and level 2 fieldwork for preparation to entry-level practice within parameters of ACOTE standards.⁶ Therefore, OT education for a clinical doctorate (Doctorate of Occupational Therapy), now mandated by 2027,¹³ is dependent on the unique clinical skill set and experience that shapes the content in curriculum. Recognizing that individual faculty contribute to the diverse curricular offerings of each unique OT program, to understand preparation in any area of practice, it is critical to investigate the perceptions and delivery of content by current faculty members. The purpose of this mixed-method research study is to examine entry-level OT programs' perceptions and inclusion of hand therapy specialty content within the general curriculum.

Methods

Design

The study used a mixed-methods design to provide both quantitative data regarding curricular offerings and perceptions of faculty delivering the specific content to provide a more holistic perspective of hand therapy content inclusion. Quantitative study designs are well established in the literature, and more recently, qualitative research has been advocated to address critical inquiry related to meaning, context, and perception.¹⁴ Mixed-methods design was used to examine trends in hand therapy content inclusion through quantitative survey with supplemental qualitative data to provide perspective on underlying perceptions and meaning of hand therapy within the broader context of OT education. The researchers distributed a survey to OT programs at the master's and doctoral level selected through the accredited entry-level OT programs list of AOTA. Participants were given the opportunity to participate in an optional follow-up phone interview and were contacted by the researchers after the survey closed.

Instrumentation

The survey, titled "OTD Program Survey," was developed by the researchers and focused on hand therapy course content of OT program curricula. A definition of hand therapy was provided to give context to participants for the questions related to hand therapy perception and inclusion. The initial survey questions focused on demographic information, which included respondents' faculty position(s), degree level of teaching, certifications or credentials, and years of clinical and academic experience. The survey followed with inquiry regarding hand therapy course content inclusion related to the respondents' respective institution. Open-

ended questions followed regarding perceived necessary qualifications for teaching hand therapy content and perceptions of hand therapy. Finally, the survey ended with an electronic mail (e-mail) contact to the research team and a request to schedule an optional phone interview. The survey was compiled of single-answer multiple-choice questions with the exception of 3 free-text inquiries.

The optional semistructured interview was developed by the researchers to delve further into survey content. The interview contained predetermined open-ended questions to facilitate freedom of responses and permit follow-up questions by the interviewer. Both the survey and interview questions underwent several revisions with external peer review and certified hand therapy faculty advisor input to enhance instrument clarity as well as content and face validity.

Procedure

After university institutional review board approval, the survey was finalized within SurveyMonkey through the university information technology department. On completion, the survey was distributed by the information technology department to all entry-level OT programs ($n = 183$) via e-mail containing a link to the survey. The e-mail requested that the program directors disperse the e-mail to the faculty member(s) teaching hand and upper extremity content at their respective institution. Several e-mails were sent to the general inquiry e-mail address for the program as the direct e-mail address to the program director was not posted publicly on the program Web site. No e-mails were returned with out of the office or similar automatic responses. The initial survey e-mails were distributed on November 27, 2017. Reminder e-mails were sent twice per week until the survey closed on January 15, 2018. Optional phone interviews were scheduled by the researchers within this time frame. The survey and phone interview were incentivized through optional participation in a randomized drawing for a \$50.00 gift card. Results from the survey and interviews were stored in password-protected computers accessible only to the researchers, and the results were also password protected within SurveyMonkey to maintain confidentiality. In addition, all phone interviews were conducted by the researchers and took place in a designated locked room at the university to ensure privacy. Before interviews, all voluntary participants were provided an electronic consent form to allow for recording of dialog and maintenance of anonymity.

Descriptive data analysis was completed using data formatted directly from SurveyMonkey represented by sample size and percentages once final data were obtained. Qualitative feedback received through voluntary interviews was recorded, transcribed, and coded by researchers for triangulation of data and theme development.¹⁵

Results

Demographics

Of the 183 e-mails sent to accredited OT programs within the United States, a total of 43 participants responded the survey, representing a 23% response rate. Sample demographics including faculty position, experience, and credentialing are represented in Table 1.

Hand therapy content

Table 2 outlines specifics on hand therapy content, based on the definition provided, students receive during the didactic portion of the OT program, whereas Table 3 represents trends in foundational anatomy education.

Table 1
Sample demographics

	<i>n</i>	%
Formal position title		
Guest lecturer	0	0
Part-time faculty	0	0
Full-time faculty	13	30.2
Program director	30	69.7
Level of teaching		
Masters level	34	79.0
Doctoral level	4	9.3
Both	5	11.6
CHT credential		
Yes	6	14
No	37	86.0
Years of clinical experience		
6-10	6	13.9
11-15	9	20.9
16-20	5	11.6
21+	23	53.4
Years of academic experience		
1-5	5	11.6
6-10	6	13.9
11-15	9	20.9
16-20	10	23.2
21+	13	30.2
	<i>n = 43</i>	

CHT = certified hand therapist.

Perceptions of clinical preparation

Most respondents, ($n = 37$; 86%) reported that the current level of hand therapy content in their respective program is sufficient for success as level 2 fieldwork student in a hand therapy setting, whereas 14% ($n = 6$) do not. In addition, 63% ($n = 27$) of respondents indicated that the didactic curriculum supports student success in a hand therapy setting as an entry-level clinician. Furthermore, many respondents ($n = 24$; 57%) indicated that their program offered extracurricular opportunities to assist students with supplemental knowledge and experience in hand therapy.

Qualitative data analyses (written survey responses)

Respondents were given the opportunity to provide further input regarding the necessary qualifications to teach hand therapy

Table 2
Hand therapy content inclusion

	<i>n</i>	%
Hours of hand therapy content students receive during didactic portion of program		
0-10	3	6.9
11-20	6	14
21-30	4	9.3
31-40	2	4.7
41+	28	65.1
How many courses include hand therapy content?		
0-1	4	9.3
2-3	23	53.4
4-5	11	25.5
6+	5	11.6
Use of guest lecturers and/or adjunct faculty whom possess CHT credential		
Yes	33	76.7
No	10	23.2
Point in didactic curriculum that hand therapy is introduced		
First 25%	16	37.2
Second 25%	9	20.9
Third 25%	15	34.9
Final 25%	3	7
	<i>n = 43</i>	

CHT = certified hand therapist.

Table 3
Cadaver and anatomy instruction

	n	%
Programs that include cadaver laboratory		
Yes	28	65.1
No	15	34.8
Level of student engagement in cadaver laboratory (if applicable)		
Students perform full cadaver dissection	12	41.4
Students perform partial cadaver dissection	2	6.9
Hands on learning with prosected cadavers	13	44.8
Minimal exposure to cadavers	3	10.3
Estimated clock hours of cadaver laboratory participation (if applicable)		
1-10	7	25.0
11-20	3	10.7
21-30	4	14.2
31-40	4	14.2
41+	10	35.7
Alternative methods to meet ACOTE standard B.1.1 (select all that apply)		
Anatomic models	19	95
Virtual anatomy	14	70
Cadaver photos	10	50
Anatomy textbook	19	95
Other	8	40

ACOTE = Accreditation Council for Occupational Therapy Education.

content. Eighty-six percent ($n = 37$) of respondents provided qualitative responses that were analyzed through coding and triangulation to identify novel themes. The novel themes that emerged in order of prevalence indicated that clinical experience, knowledge, certified hand therapist, and teaching experience were the considered qualifications to teach hand therapy content.

Eighty-six percent ($n = 37$) also provided responses regarding personal perceptions of hand therapy within OT theory, education, and practice. Although trends of content inclusion were revealed in the survey, perceptions of hand therapy within the broad spectrum of OT practice were diverse, indicating a lack of unity within the profession regarding this specialty area of practice. The following responses illustrate the spectrum of perceptions represented:

- Occupational therapists make up the largest number of therapists working with people's hands. In that most occupations are completed using our hands, it needs to be valued and promoted within our educational institutions.
- Irrelevant in most cases—this is a specialty that practitioners can aspire to but in education as so much of it is not occupation-based therapy and requires specialty knowledge in most instances, and therefore its content in entry level education is overemphasized.

Qualitative data analysis (interview)

Supplemental to the survey, respondents were also given the opportunity to participate in a more in-depth interview regarding perceptions of hand therapy content within OT academic programs. Of the 43 survey respondents, 2 agreed to provide further qualitative responses. Although few in number, both participants were seasoned OT academics, one a credentialed CHT and the other a nonhand therapist. Interviews were transcribed and then analyzed for novel themes, which are listed herewith with representative quotes:

- Hand therapy is predominantly biomechanical and should be more holistic.
 - Some [in] the occupational therapy professions are worried that it is too biomechanical ... upper extremities are how you interact

with the world ... there might be something missing from the definition ... it could be a little more holistic

- Hand therapy is generalizable to all areas of practice and serves as a foundation for OT education.
 - I always like to see ... that [hand] content upfront [in the curriculum] ... because it kind of introduces the student to the process. And then you can add some more anticipated outcomes.
 - I usually like to see u [hand content] upfront [in the curriculum] because you learn the basics. ... I also like to see it at the end when it gets really more specific with those really ... difficult, complex hand injury cases
 - People have multiple conditions ..., if someone thinks they're going to work for neuro, you know, [physical disabilities], people come with plenty of things.
- The CHT credential is considered the most preferred quality to teach hand therapy content next to clinical experience in hand therapy.
 - I don't think a general practitioner can come in and teach that content ... I always call in a CHT
- Workshops and observation are common methods to supplement hand therapy content.
 - I help them connect with ... hand therapy clinics ... a field trip occasionally to a hand clinic

Discussion

The purpose of this mixed-method study was to examine the perceptions and inclusion of hand therapy content in entry-level OT curricula. Of the 183 surveys sent to accredited OT programs, the sample size ($n = 43$) produced a response rate of 23%, lending validity and generalizability to the results. The demographics of the sample represented predominantly program directors at the master's level without a CHT credential (Table 1), which accurately represents the current academic composition in the realm of OT.¹⁶ Most respondents were program directors and full-time faculty possessing extensive clinical and academic experience exceeding 16-20 years in both categories, which further strengthens the perspective provided by the study sample.

The reported inclusion of hand therapy content was high with most respondents reporting 41+ hours of content within OT curricula; however, the range of courses including hand therapy content was broad. Although many respondents stated that 2-3 courses in their program provided relevant material, results suggest that there is great variability in hand therapy content integration with nearly the same number of programs offering 0-1 courses or 6+ courses including hand therapy content. Although hours dedicated to the material were similar across graduate programs, it is interesting to note how differently the content is incorporated throughout the didactic portion of program curricula nationally. In addition to differences in number of courses including hand therapy content across programs, the variability of anatomy integration was noted. ACOTE standard B.1.1. mandates provision of "knowledge and understanding of the structure and function of the human body."⁵ Although most programs reported using a cadaver laboratory for anatomy training, it is noteworthy to mention that more than a third did not. Furthermore, the number of student clock hours and level of engagement in cadaver laboratory were greatly varied. Of those programs that did not have a cadaver laboratory, most reported using anatomic models and anatomy textbooks, with the second highest being virtual anatomy.

The lack of uniformity among content relating to hand therapy may be partially attributable to the broad nature of ACOTE standards for master's and doctorate level programs. Although section B outlines the content requirements for all accredited programs, interpretation of standards is left to the discretion of individual institutions. In addition to formal guidelines, academic resources

vary significantly from institution to institution, which may contribute to the differences noted in hand therapy content inclusion. Although programs differ in emphasis and perspective, foundational understanding of anatomy as the physical aspect of occupation is integral to the hand specialty and also prioritized within the broader spectrum of OT practice.¹⁷ More standardized training provided through the use of cadaveric specimens may lend to greater preparation for specialty practice.¹¹

Most respondents reported that didactic curriculum is sufficient to support student's success in an entry-level clinical hand therapy setting, whereas 37% held a contrary opinion. In addition, qualitative responses revealed a perception that hand therapy content is generalizable to various settings and therefore a vital component of OT education. The opposing sentiment suggested that hand content should not be overemphasized due to the specialized nature of hand therapy. The conflicting perceptions of the respondents suggest a possible lack of unity within the profession of OT regarding the role of hand therapy content within OT curricula. Although the generalist nature of entry-level OT education may limit specialty content inclusion, extracurricular opportunities may provide an avenue to explore advanced practice. Nearly half of the respondents stated that the program had the resources to offer students the ability to participate in extracurricular activities that provide students with supplemental knowledge of hand therapy. Of the programs that did provide extracurricular activities, the most common forms were in elective courses or optional workshops on hand therapy content, independent studies or research, observation in hand clinics, and pro bono clinics and/or bringing real patients into the laboratory portion of courses.

Most respondents reported that the amount of hand therapy content is sufficient enough for students to be successful in level 2 rotation in a hand therapy setting. However, a recent study identified a lack of student knowledge and preparation for successful clinical rotations in a hand therapy setting based on the responses of CHTs in the clinic.⁴ Contradicting perceptions of adequate preparation for students may represent a disconnect between OT education and clinical expectations. A general lack of representation of CHTs within OT faculty may lead to a lower priority being placed on the practical knowledge specific to favorable student outcomes in a hand therapy setting.³ In addition, fewer academics within hand therapy professional organizations may also result in less tempered expectations of entry-level student knowledge and skills.

Among recommendations for qualifications necessary to teach hand therapy, clinical experience and advanced knowledge were indicated as most important followed by possession of the CHT credential and teaching experience. These findings were strengthened by qualitative responses stating that possession of the CHT credential is ideal for instruction if possible, but access to occupational therapists with the credential for commitment to full-time or adjunct faculty positions may be limited. With clinical experience being the utmost priority for teaching qualification, the current demographics of practicing hand therapists may provide an excellent resource for graduate programs seeking seasoned instructors. However, a reported 6% of CHTs have obtained a master's degree and an even fewer percentage have earned a doctorate degree (2.7%).³ ACOTE standard A.2.9. requires that all full-time teaching faculty members hold a doctoral degree to maintain program accreditation. Due to the limited number of doctoral-prepared CHTs, a lack of representation among full-time faculty appointees making decisions related to curriculum is apparent.

More than 25% of occupational therapists possessing the CHT credential are approaching retirement age in the next 10 years, and this may increase the pool of clinically experienced candidates.⁴ These seasoned clinicians are highly valued based on respondent feedback:

- ... a CHT is a valuable asset to any program.
- CHT or years working in hand therapy/upper quarter.
- Sound knowledge of anatomy and physiology, experience in hand therapy practice, helpful to have CHT, which is why we bring in CHTs as guest speakers and adjuncts.
- Significant time spent in clinical orthopedic practice.

Perceptions of hand therapy within OT theory, education, and practice were overall positive with a relatively small portion of responses indicating a negative viewpoint. Approximately one-third of the respondents identified hand therapy as a critical or important component of OT, but nearly half emphasized the importance of using an occupation-based model in hand therapy. Although the use of occupations in hand therapy education and clinical practice was considered integral to the perceived place of hand therapy in the OT realm, a smaller but broad spectrum of respondents felt that focus on occupation may be lacking in hand therapy for true accordance with the OT profession:

- It is a vital part, but practitioners need to think beyond the bones, muscles, and nerves and look at occupational performance.
- Integral part of OT when occupation based model also used; the upper extremity and hands allow us to function in the world!
- Hand therapy continues to be reductionist in most practice settings, and practice hasn't yet caught up to the research in terms of using occupation-based practice.

This information may be valuable for programs to consider when implementing hand therapy content. As a third of the programs introduce the content during the first 25% of the curricular progression, it is plausible to consider that foundational courses (anatomy, kinesiology, and neurology) are perceived as directly associated with hand therapy. Due to the complexity of these topics and their placement as primary endeavors in OT programs, there may be a lack of intentional focus on occupational performance of the upper extremity during instruction. The complexity and challenging nature of the content may create barriers for drawing meaningful and strong connections to occupation. Although this may seem natural to instructors, explicit coupling of hand therapy foundational knowledge and occupation may be useful for carry-over into occupation-based practice. Such connections may be addressed during foundational content course or throughout advanced coursework dedicated to occupational performance and/or clinical preparation. Although it is valid to view hand therapy from a biomechanical frame of reference, respondent perceptions suggest that targeting occupations for hand therapy content instruction may be fundamental for alignment with OT theory, education, and practice.

Qualitative data offered valuable insight into the potential challenges and solutions to holistic integration of hand therapy content into OT curricula. Although the current demographics of practicing CHTs and seasoned occupational therapists in similar settings may not qualify for full time at the graduate school level, guest lectureship may be an excellent means of advanced knowledge translation. The value of occupations in hand therapy content is noteworthy for current and future integration of material into didactic curriculum. Beyond integration into foundational knowledge of anatomy and kinesiology, hand-related content should be woven into OT curriculum with a focus on promoting occupation. The holistic nature of practice compels respect for the biomechanical, environmental, and psychosocial factors of occupation during the educational process to truly promote occupational engagement. For as Mary C. Reilly¹⁸ reminds us, "Man through the use of his hands, as they are energized by mind and will, can influence the state of his health."

Limitations

Of the 43 survey responses, most respondents were program directors, not necessarily teaching hand-related content. Although this provided a broad perspective on OT academia, it may have limited the perspective of practical content integration. The qualitative portion of the study was robust in terms of open-ended survey responses; however, only 2 respondents participated in individual interview, limiting the qualitative perspective. Furthermore, response and nonresponse bias may have been a factor as participants with strong feelings on the topic may have been more likely to respond to the survey, potentially polarizing results.

Conclusion

OT educators have a largely positive opinion regarding inclusion and generalizability of hand therapy content within OT curricula with varied content inclusion. Although hand therapy–related content is valued, increased emphasis on occupation during didactic instruction is recommended for more holistic understanding and occupation-based practice. However, due to broad accreditation standards and the level of complexity associated with hand therapy, holistic and uniform content inclusion may prove difficult. Contrasting findings of the present study with previous research indicates that dissonance may exist between the expectations of educators and entry-level OT curriculum, thus encouraging further dialog between clinicians and OT academics to clarify and remedy misconceptions.

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Quiz: # 662

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- #1. The study addressed the
- need for all OTs to be proficient in basic hand therapy concepts
 - need for both OTs and PTs to be proficient in basic hand therapy concepts
 - inclusion of hand therapy topics in OT school curricula
 - inclusion of hand therapy topics in PT school curricula
- #2. Data were gathered through
- survey
 - interviews of academics
 - classroom observation
 - studying written curricula
- #3. Results showed that approximately _____ % of programs included significant instruction in hand therapy related content
- 85
 - 50
 - 35
 - 65
- #4. Broadly speaking it can be said that educators
- are remarkably ambivalent about teaching hand therapy content
 - have a strongly negative view of the teaching of specialty courses, including hand therapy
 - have a generally positive view of the teaching of hand therapy content
 - are remarkably unenthusiastic about the teaching of hand therapy content
- #5. The authors concluded there is a lack of uniformity in the teaching of hand therapy topics in today's universities
- not true
 - true

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