

Competency Revalidation Study: A Description of Advanced Clinical Practice in Sports Physical Therapy

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The sports physical therapist is a professional who works with athletes regarding the care and prevention of physiological, biomechanical, psychological, pathological, and performance problems associated with athletics. The sports physical therapist designs and implements individualized therapeutic programs based upon a thorough examination of the athlete and determination of specific functional goals. Education of the athlete (as well as coaches, administrators, parents, etc.) concerning appropriate measures to prevent injury and performance-related problems is also a critical component of the sports physical therapist's duties.

In 1978, the American Physical Therapy Association (APTA) identified a process by which physical therapists who possess advanced knowledge in identified clinical specialty areas could be recognized (1). The administration and development of this process was originally the responsibility of the Board for Certification of Advanced Clinical Competence (BCACC). The BCACC was replaced by the American Board of Physical Therapy Specialties (ABPTS) in 1985. The American

The first board-certified sports clinical specialists (SCSs) obtained their specialty credentials in 1986. A history of the development process is provided. The Sports Specialty Council and American Board of Physical Therapy Specialties are responsible for maintaining currency in the examination. Therefore, a review of current practice standards was conducted in 1992. The purpose of this article is to present an overview of the methodology and results of the survey. Complete details are found in the document entitled "Description of Advanced Clinical Practice: Sports Physical Therapy" (DACP), which is available through the Sports Physical Therapy Section. A random sample of 2,000 members of the Sports Physical Therapy Section and all clinical specialists certified at the time ($N = 49$) were surveyed. A total of 507 members (25.3%) and 49 SCSs (100%) returned the questionnaire. The domain of knowledge required by the SCS was divided into nine different areas, with multiple competency statements in each area. Respondents rated each competency statement on three scales: importance, entry-level preparation, and frequency of use. A panel of content area experts then reviewed the results to develop the final competencies and examination blueprint. These competency statements will form the basis of the SCS examination and be implemented in 1995. Competency and examination revision is a constantly evolving process, and this document should serve as a guide for further revisions.

Key Words: sports clinical specialist, board certification, competency

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Board of Physical Therapy Specialties currently has responsibility for the certification of clinical specialists in physical therapy.

The Sports Physical Therapy Section began work on the clinical specialization process through the

development of advanced clinical competencies in the mid-1970s. A competency committee performed a task analysis in 1978–1979 in order to 1) identify the clinical task(s) in which competency is essential to practice sports physical therapy ef-

fectively and 2) determine to what extent Sports Physical Therapy Section members were practicing those clinical tasks. The results of the initial task analysis were published by Skovly et al in 1980 (4). From this study, 18 advanced competency statements were developed. Fifteen of the statements were concerned with clinical skills; the other three concerned administration, education, and research.

The Sports Physical Therapy Section initially petitioned the BCACC for recognition as a specialty area in 1981. The APTA House of Delegates approved sports physical therapy as an area of specialization that same year (2).

Following approval as an area of specialization, a second major study was conducted to clarify initial task analysis results. The purpose of this second study was to validate the original competency statements. The validation study completed by Krugh (3) determined the physical therapist's educational preparation at entry level to perform the advanced competencies and the level of importance of each of these statements to the practice of sports physical therapy. These statements, detailed in Table 1, guided development and implementation of the examination used to identify clinical specialists in sports physical therapy from 1986–1994. The first board-certified sports clinical specialists (SCS) obtained their specialty credentials in 1986.

The American Board of Physical Therapy Specialties requires that each specialty area revalidate its competencies at least every 10 years to assess if there is any change in the scope of practice. In 1991, a revalidation study was initiated by the Sports Specialty Council. Completed in 1992, the study identified 30 different competency statements in nine different areas (Table 2). These competency statements will be utilized to guide the development and implementation of the sports clinical

1. Perform an on-the-field examination of an injured athlete.
2. Recognize dermatologic, infectious, and medical problems of the athlete.
3. Administer a preparticipation physical examination.
4. Test and make recommendations on weight gain/loss as implicated in athletics.
5. Administer acute emergency care to the athlete.
6. Apply external bandages, dressings, and supports.
7. Select, fit, and maintain athletic equipment.
8. Conduct preventive conditioning programs for the athlete.
9. Present recommendations concerning the return of an athlete to activity.
10. Demonstrate an understanding of arthrology as applied to the athlete.
11. Demonstrate an understanding and recognize causative factors in macro- and microtrauma in sports medicine.
12. Recommend modifications to playing environment.
13. Recommend activity limitations based on environmental conditions.
14. Provide health status information and recommendations to coaches, parents, and physicians.
15. Counsel athletes on the use of ergogenic aids.
16. Demonstrate sports physical therapy practice management skills.
17. Demonstrate sports physical therapy educational skills.
18. Identify, investigate, report, and/or publish on current problems in sports physical therapy and related health care issues.

TABLE 1. Sports physical therapy competency statements, 1984–1994.

specialist certification examination beginning in 1995.

The validated competency statements are written in a format that allows their evaluation by prospective applicants for the board certification process. It is the expectation of the Sports Specialty Council that physical therapists who choose to take the specialist examination will review these competencies and their components thoroughly. This review will allow applicants to determine their level of knowledge and preparation concerning the practice of sports physical therapy and the certification examination. These compe-

tency statements will continue to be assessed and modified in accordance with the standards of the American Board of Physical Therapy Specialties and the evolution of the practice of sports physical therapy.

The purpose of this article is to present the results of the revalidation survey. A full description of each competency can be found in the document titled "A Description of Advanced Clinical Practice: Sports Physical Therapy" (DACP), which has been developed by the Sports Specialty Council. This document provides a thorough description of each competency statement; the standards to which the clinical specialist should be held accountable; and the tasks required to meet each competency, given specific conditions.

The validated competency statements are written in a format that allows their evaluation by prospective applicants for the board certification process.

METHOD

An expert panel of board-certified sports clinical specialists reviewed the competency statements originally identified by Krugh in 1984 (3). The panel of experts determined that the competency statements should be divided into nine different categories or areas. The competency statements were placed

in the nine areas identified and reworded for clarity. New competency statements were developed as appropriate for each category. Demographic data were also surveyed on each respondent. A random sample of 2,000 members of the Sports Physical Therapy Section and all individuals who had attained board certification by 1992 ($N = 49$) was surveyed.

Competency statements were rated on three Likert scales, each with five categories. Each competency statement was rated on the following: *Scale 1*) Importance Scale—the importance of the competency to the practice of sports physical therapy, *Scale 2*) Entry-Level Preparation Scale—the degree of “entry”-level preparation attained in their physical therapy education program relative to that competency statement, and *Scale 3*) Frequency of Use Scale—how often that competency is performed. A mean and standard

Specialists tended to be employed more often in a sports setting than in the general outpatient arena.

deviation for each scale was determined. This was the same evaluative scale used by Krugh in 1984 (3).

Respondents were divided into three groups: *Group 1*) all respondents, *Group 2*) board-certified sports clinical specialists, and *Group 3*) respondents who graduated after 1988. Group 3 represented new graduates who were not yet eligible to sit for the examination based upon their number of years in practice.

Clinical competencies with a mean of 3.5 and above on the Importance Scale were considered to be important to the area of sports physical therapy. Clinical competencies with a mean of 3.5 and above on the Frequency Scale were considered to be used frequently and to be required knowledge of the board certified sports clinical specialist. Clinical competencies with a mean of 2.5 or below on the Entry-Level Preparation Scale indicated a need for preparation beyond that received in an entry-level physical therapy education program. A mean of 2.51–3.49 was considered to be a “neutral mean.” Neutral means were defined as indecisive values and required clarification.

Clarification of “neutral means” was accomplished by a panel of experts ($N = 13$) who were board-certified sports clinical specialists. A neutral mean for any of the competency statements in the all respondents

A. Rehabilitation/Return to Activity

1. Prescribe an appropriate rehabilitation program based upon knowledge of the physiologic condition of the individual, type and stage of injury, repair/recovery process, and specific sport requirements which allow the athlete to return to his or her chosen sport or activity in the shortest time possible without suffering reinjury or exacerbation of complaint.
2. Develop and implement functional tests to determine athlete's ability and readiness to return to desired activity.
3. Perform appropriate objective measurement of the muscular and cardiovascular systems to determine athlete's status, progress, and required modifications in rehabilitative program.
4. Determine sport-specific criteria and recommendations regarding athlete's readiness to return to participation, counsel coaches, parents, and administrators regarding same.
5. Select and apply appropriate external bandages, dressings, supports, and braces to minimize acuity of injury and facilitate recovery and return to competition.

B. Injury Prevention and Epidemiology

1. Plan, coordinate, and administer or assist in the administration of preparticipation physical examinations for the purpose of screening for and recognizing medical conditions or injuries that might affect or preclude the athlete's participation.
2. Prescribe and conduct preventive conditioning programs (in season and off season) based upon the individual athlete's needs and sport.
3. Demonstrate an awareness and thorough understanding of sport-specific epidemiologic injury characteristic (incidence, mechanism, technique, resolution, age-related changes, etc.).
4. Select, fit, and maintain appropriate sport-specific athletic equipment in recognition and acceptance of National Operating Committee on Standards for Athletic Equipment (NOCSAE) recommendations.

C. Emergency Care

1. Recognize injuries and illnesses that require emergency medical intervention and provide emergency care, management, transport, and referral as appropriate.
2. Determine the extent of injury and possible sequela to appropriately determine whether the athlete has the ability to continue participation without incurring further injury.

D. Diagnosis/Evaluation

1. Select and perform an appropriate subjective evaluation and physical examination to provide an accurate physical diagnosis of a musculoskeletal injury suffered by an injured athlete.
2. Determine the severity of the athlete's complaint and type of illness, based upon knowledge of signs and symptoms of common medical conditions suffered by athletes, in order to allow the therapist to refer to appropriate medical practitioners.
3. Demonstrate an understanding of appropriate radiological and laboratory tests for the injured athlete; order appropriate tests in consultation with other health care professionals; understand normal limitations, indications, and contraindications of these tests; and interpret these tests in consultation with other health care professionals.

Table continued on next page

TABLE 2. Sports physical therapy competency statements—1995.

E. Applied Science and Human Performance

- Understand, discuss, and apply knowledge of the anatomy, physiology, pathophysiology, biochemistry, biomechanics, and pathomechanics of the musculoskeletal system as related to stress/strain characteristics; mechanisms of injury; and the process of inflammation, repair, and recovery of injuries commonly sustained by athletes.
- Understand, discuss, and apply knowledge of normal human physiology (cardiovascular, muscular, renal, etc.) and the appropriate or pathophysiologic changes that occur with high-level human performance and training for various athletic activities.
- Provide dietary guidelines and basic nutritional knowledge to athletes involved in a variety of sports. Knowledge and guidelines are inclusive of, but not limited to, weight requirements, sport, gender, eating disorders, and individual athlete's needs.
- Recognize environmental factors that affect human performance and provide recommendations to coaches, athletes, parents, and administrators regarding restrictions and limitations on participation.
- Understand and discuss the physiologic effect and mechanism of action of ergogenic aids and provide counsel to appropriate parties regarding their use or misuse.
- Understand and discuss the physiologic effect and mechanism of action of pharmaceutical agents commonly used and abused in athletics; provide counsel to appropriate parties regarding their use or misuse.

F. Medical/Surgical Considerations

- Understand and recognize the metabolic and physiologic consequences associated with the medical conditions commonly suffered by the athlete (infectious conditions—bacteriologic and viral, gastrointestinal, cardiovascular, dermatologic, gender-specific, etc.).
- Understand and recognize the goals, principles, and surgical techniques used for common athletic injuries, recognize the indications and contraindications associated with these techniques as they relate to the development of an appropriate physical therapy program.

G. Research

- Read and critique current research studies and clinical reports in a manner that allows the sports physical therapist to develop, modify, and continually improve his/her clinical skills.
- Design and implement research studies related to sports physical therapy.

H. Counseling/Education

- Educate and provide recommendations to coaches, athletes, parents, and administrators regarding appropriate training principles, participation, physical limitations, equipment, or other areas that impact the health and well-being of athletes.
- Educate peers and other health care professionals regarding the role of the sports physical therapist in relation to the care and management of the injured athlete.
- Educate the public regarding the role of the sports physical therapist.

I. Administration

- Demonstrate knowledge of the legal limitations of the scope of practice, restrictions of licensure, certification, and specialization of sports physical therapists in relation to other health care providers involved with athletes (athletic trainers, exercise physiologists, chiropractors, physicians, etc.).
- Manage a sports physical therapy clinic through the development and implementation of policies and procedures, staff development and counseling, marketing techniques, and other skills associated with health care management systems.
- Develop and implement marketing and public relations strategies specific to the sports physical therapy clinic.

TABLE 2. Continued from previous page.

group (Group 1) was reexamined by the panel of experts by comparing it with the mean of the same competency statement from the board-certified sports clinical specialists (Group 2). The mean score from Group 2 was used as the "gold standard." Based upon all of this information, the panel of experts determined which competency statements were to be included or excluded if they possessed a neutral mean value.

The panel of experts was then asked to determine what percentage of the examination should be devoted to each of the nine competency areas. The mean value for each competency area was then determined and used to develop a blueprint for the examination.

RESULTS

Response

Five hundred-seven (25.3%) questionnaires were returned by the membership at large. There was a 100% return rate by the certified specialists who were surveyed.

Demographics

Group 1 represents all respondents to the survey, Group 2 represents the specialists, and Group 3 represents respondents with less than 5 years of experience. Tables 3 and 4 detail the age and gender of the survey respondents. The mean ages of Groups 1 and 2 were quite simi-

lar, while the mean age of Group 3 was younger, as would be expected since this group possessed less than 5 years of experience at the time of the survey.

Data on the degree that respondents obtained as their entry-level degree into physical therapy are presented in Table 4. The bachelor's degree was the initial entry-level degree for most of the respondents, regardless of group. Group 3 reflected the highest number of therapists entering the profession with a master's degree. Nearly 25% of all specialists who answered the survey entered the profession with a certificate in physical therapy compared with only 2% of the new graduates surveyed in Group 3. Clinical specialists pos-

	All Respondents		Specialists		Entry Level	
	Number	Percent	Number	Percent	Number	Percent
Gender						
Male	322	63.90	37	75.50	45	49.50
Female	182	36.10	12	24.50	46	50.50
Missing Data	3	0	0	0	0	0
Total	507	100.00	49	100.00	91	100.00
	Range	\bar{X}	Range	\bar{X}	Range	\bar{X}
Age in years	22-68	35.60	27-48	36.20	23-42	28.20

TABLE 3. Gender and age.

	All Respondents		Specialists		Entry Level	
	Number	Percent	Number	Percent	Number	Percent
Degree						
Bachelor's	346	69.50	29	59.20	54	60.00
Master's	72	14.40	8	16.30	34	37.80
Certificate	80	16.10	12	24.50	2	2.20
Missing Data	9	0	0	0	1	1.10
Total	507	100.00	49	100.00	91	100.00
Average experience	11.9 years		13.5 years		2.5 years	

TABLE 4. Entry-level education.

sessed the highest average number of years of experience compared with new graduates or the entire respondent pool.

Seventy-three percent of all specialists possessed degrees beyond the bachelor's level compared with only 42.6% of the entire respondent pool (Table 5). The percentage of new graduates who possessed master's degrees (43.3%) was very similar to those who obtained a master's degree as their first professional degree (37.8%).

Slightly over 50% of each group responded that they worked in the private practice setting (Table 6). Specialists tended to be employed more often in a sports setting than in the general outpatient arena. Employment in general outpatient services or a sports clinic in the hospital/HMO setting ranged between 18 and 25% for all three groups surveyed. Employment in general outpatient services vs. the sports clinic was more common in this setting. Over 90% of all respondents in each

group were employed full time. Despite explicit instructions to only respond to the single category that best described their employment setting, a few respondents in each group marked more than one category.

The percent of time devoted to clinical care varied among the groups (Table 7). Over 85% of all care rendered by the respondents

The time spent in consultation, teaching, and research by the sports clinical specialist requires further study in order to develop an accurate practice profile.

concerned clinical rehabilitation. Involvement in on-field emergency care varied from 8 to 13%. Despite survey instructions to make sure field emergency care and clinical rehabilitation added up to 100%, Groups 1 and 3 had difficulty completing the instrument correctly.

Competency Statements

The results of the competency statements are found in Table 8. Based upon the responses of the membership survey, the expert panel determined that in the rehabilitation/return to activity area, competency statements 1 and 2 should be combined because of their similarity. It was also decided that statement number 6 in this same area would be dropped as it was determined to be "entry-level."

Blueprint

The blueprint of the specialist examination is detailed in Table 9. This blueprint determines the weight of each competency area on the examination.

DISCUSSION

From the data presented, it is possible to develop a demographic work profile of the sports clinical specialist. This profile must be discussed with caution, however, because of the small number of therapists certified as specialists at the time the survey was conducted. At the time of this survey, sports clinical specialists tended to have a significant number of years of experience (13.5) in their chosen area of practice. A higher percentage of sports clinical specialists tended to have degrees beyond the bachelor's level than the general membership surveyed. Specialists, like most members of the section who responded to the survey, tended to be employed in the private setting compared with the hospital/HMO setting. Specialists,

	All Respondents		Specialists		Entry Level	
	Number	Percent	Number	Percent	Number	Percent
Degree						
Bachelor's	284	57.40	13	26.50	51	56.70
Master's	188	38.00	30	61.30	39	43.30
Doctoral	23	4.60	6	12.20	0	0
Missing Data	12	0	0	0	1	0
Total	507	100.00	49	100.00	91	100.00

TABLE 5. Highest degree earned.

	All Respondents		Specialists		Entry Level	
	Number	Percent	Number	Percent	Number	Percent
Work Setting						
Private—Sports	137	26.25	21	40.38	29	30.53
Private—General Outpatient	159	30.46	6	11.54	24	25.26
Hospital/HMO Sports	37	7.09	4	7.69	7	7.37
Hospital/HMO General Outpatient	59	11.30	6	11.54	17	17.89
Hospital/HMO—Other	19	3.64	1	1.92	6	6.32
University—Team/clinic	19	3.64	4	7.69	1	1.05
University—Teach/administration	21	4.02	5	9.62	0	0.00
Professional team	2	0.38	0	0.00	1	1.05
Home health	10	1.92	1	1.92	1	1.05
Other	59	11.30	4	7.69	9	9.47
Total	522	100.00	52	100.00	95	100.00
Employment status						
Full-time	454	92.70	45	92.70	82	94.25
Part-time	36	7.30	3	7.30	5	5.75
Missing data	17	0	1	0	4	0
Total	507	100.00	49	100.00	91	100.00

TABLE 6. Primary work setting.

	All Respondents		Specialists		Entry Level	
	Number	Percent	Number	Percent	Number	Percent
Percentage of time devoted to clinical care						
76-100	350	70.40	29	59.20	76	84.40
51-75	85	17.10	12	24.50	11	12.20
26-50	18	3.60	2	4.10	1	1.10
0-25	44	8.90	6	12.20	2	2.30
Missing Data	10	0	0	0	1	0
Total	507	100.00	49	100.00	91	100.00
	\bar{X} (%)	SD (%)	\bar{X} (%)	SD (%)	\bar{X} (%)	SD (%)
Percent type of care						
On-field emergency care	8.60	14.80	12.80	12.80	9.50	15.90
Clinical rehabilitation	86.50	24.40	87.20	12.80	87.00	22.80
Total	95.10	0	100.00	0	96.50	0

TABLE 7. Clinical care time and type of care.

however, appeared to be employed in private settings which they considered to be sports clinics rather than general outpatient physical therapy practices. Group 1 (all respondents)

and Group 3 (new graduates) tended to be divided equally between sports settings and general outpatient practice. More than 90% of all specialists were employed full time; however,

the percentage of their time devoted to clinical care was less than in the other groups. Only 60% of the specialists devoted 30 hours or more per week to direct patient care. The types of activities that comprised the remainder of their week were not surveyed. However, comments were received from many individuals stating that sports clinical specialists were also busy with administrative duties, teaching, consulting, and research. This area requires further clarification to fully understand the difference in the practice profile of the clinical specialist. The percentage of time devoted to on-field emergency care by the sports clinical specialist was only slightly greater than that of other respondents. It was difficult to get a completely accurate profile concerning Group 1 (all respondents) and Group 3 (new graduates), however, because the percentage of time spent in a specific area of care (on-field emergency care vs. clinical care) did not add up to 100%. We feel that the percentage of care rendered and time devoted to clinical rehabilitation compared with on-field emergencies is reflected in these numbers.

Some of the results of the demographic data from the survey may be reflective of the individuals who have taken the examination to date and the small number of clinical specialists at the time of the survey. When the certification process and examination were first developed, only individuals with a significant number of years of experience took part in the certification process. This would tend to impact and potentially skew the number of years of experience. Throughout the course of a professional's career, duties and responsibilities may also shift. Many times this shift is to increase responsibility related to administrative duties. These duties may affect the percentage of time devoted to direct patient care. The time spent in consultation, teaching, and research by the sports clinical specialist re-

Competency Statements	Entry Level Preparation Scale*			Importance Scale†			Frequency of Use Scale‡		
	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)
A. Rehabilitation/Return to Activity									
1. Prescribe an appropriate rehabilitation program to allow the athlete to return to his or her chosen activity in the shortest time possible without suffering reinjury or exacerbation of complaint.	3.18 (1.11)	2.92 (0.86)	4.00 (1.05)	4.86 (0.41)	4.84 (0.37)	4.93 (0.25)	4.45 (0.99)	4.69 (0.87)	4.61 (0.75)
2. Prescribe appropriate rehabilitation program based upon knowledge of physiologic condition of the individual, stage of injury repair/recovery process, and specific sport requirements.	3.24 (1.08)	2.96 (1.02)	4.01 (1.10)	4.85 (0.43)	4.92 (0.28)	4.92 (0.31)	4.46 (0.98)	4.79 (0.65)	4.66 (0.74)
3. Develop and implement functional tests to determine athlete's ability and readiness to return to desired activity.	2.68 (1.16)	2.37 (1.09)	3.49 (1.16)	4.74 (0.55)	4.86 (0.35)	4.88 (0.36)	4.19 (1.11)	4.55 (0.87)	4.44 (0.89)
4. Perform appropriate objective measurement of the muscular and cardiovascular systems to determine athlete's status, progress, and required modifications in rehabilitative program.	3.13 (1.09)	2.88 (1.18)	3.75 (1.03)	4.63 (0.65)	4.63 (0.67)	4.64 (0.57)	4.11 (1.14)	4.39 (1.02)	4.22 (1.06)
5. Determine sport-specific criteria and recommendations regarding athlete's readiness to return to participation; counsel coaches, parents, and administrators regarding same.	2.31 (1.13)	1.82 (0.88)	2.91 (1.26)	4.50 (0.74)	4.59 (0.57)	4.54 (0.67)	3.64 (1.34)	3.53 (1.31)	4.18 (1.34)

Table continued on next page

PT = Physical therapist.

SCS = Sports clinical specialist.

*Entry-level preparation scale—Rated as 1–5; 1 = None, 3 = Acceptable, 5 = Advanced.

†Importance scale—Rated as 1–5; 1 = Not important, 3 = Important, 5 = Essential.

‡Frequency of use scale—Rated as 1–5; 1 = Rarely, 3 = Sometimes, 5 = Frequently.

TABLE 8. Sports physical therapy competency revalidation survey. Values listed are means. Standard deviations appear in parentheses below each mean.

Competency Statements	Entry-Level Preparation Scale*			Importance Scale†			Frequency of Use Scale‡		
	What physical therapy entry-level preparation did you receive for each competency listed?			How important is this competency to sports physical therapy?			How often do you perform this competency?		
	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)
6. Utilize appropriate modalities for the acute care and rehabilitative management of the injured athlete; recognize parameters of optimal utilization of modalities to facilitate physiologic recovery of injured tissues and compromised systems.	3.64 (0.99)	3.53 (0.82)	4.18 (0.91)	4.59 (0.65)	4.37 (0.78)	4.62 (0.63)	4.39 (0.97)	4.45 (0.74)	4.50 (0.84)
7. Select and apply appropriate external bandages, dressings, supports, and braces to minimize acuity of injury and facilitate recovery and return to competition.	2.44 (1.08)	2.04 (0.96)	2.99 (1.24)	4.47 (0.74)	4.41 (0.64)	4.56 (0.69)	3.64 (1.27)	3.94 (1.14)	3.57 (1.21)
B. Injury Prevention and Epidemiology									
1. Plan, coordinate, and administer (or assist in the administration) of preparticipation physical examinations for the purpose of screening for and recognizing medical conditions or injuries that might affect or preclude the athlete's participation.	2.24 (1.16)	1.86 (1.06)	2.55 (1.11)	4.18 (0.89)	4.33 (0.83)	4.39 (0.72)	2.84 (1.34)	3.30 (1.14)	2.67 (1.36)
2. Prescribe and conduct preventive conditioning programs (in season and off season) based upon the individual athlete's needs and specific sport.	2.24 (1.11)	1.86 (0.89)	2.73 (1.15)	4.27 (0.84)	4.35 (0.69)	4.46 (0.77)	3.09 (1.27)	3.57 (1.17)	3.09 (1.33)
3. Have an awareness and thorough understanding of sport-specific epidemiologic injury characteristics (incidence, mechanism, technique, resolution, age-related changes, etc.).	2.50 (1.13)	2.16 (1.05)	2.96 (1.18)	4.41 (0.79)	4.35 (0.65)	4.53 (0.64)	3.63 (1.26)	4.18 (1.13)	3.59 (1.27)

Table continued on next page

TABLE 8. Continued from previous page.

Competency Statements	Entry-Level Preparation Scale*			Importance Scale†			Frequency of Use Scale‡		
	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)
4. Select, fit, and maintain appropriate sport-specific athletic equipment in recognition and acceptance of NOCSAE recommendations.	1.34 (0.75)	1.27 (0.57)	1.45 (0.84)	3.64 (1.08)	3.80 (0.98)	3.80 (0.97)	2.04 (1.23)	2.63 (1.17)	1.85 (1.16)
C. Emergency Care									
1. Recognize injuries and illnesses that require emergency medical intervention and provide emergency care, management, transport, and referral as appropriate.	2.22 (1.06)	1.81 (0.97)	2.36 (1.05)	4.33 (0.95)	4.59 (0.79)	4.43 (0.90)	2.28 (1.31)	2.73 (1.25)	2.13 (1.26)
2. Determine the extent of injury and possible sequelae in order to provide an appropriate determination of whether or not the athlete has the ability to continue participation without incurring further injury.	2.17 (1.10)	1.73 (0.97)	2.31 (1.05)	4.49 (0.86)	4.75 (0.63)	4.53 (0.94)	2.93 (1.38)	3.51 (1.26)	2.63 (1.43)
D. Diagnosis/Evaluation									
1. Select and perform appropriate subjective evaluation and physical examination to provide an accurate physical diagnosis of a musculoskeletal injury suffered by an injured athlete.	3.65 (1.09)	3.41 (1.15)	4.21 (0.83)	4.86 (0.41)	4.96 (0.20)	4.90 (0.34)	4.50 (0.90)	4.82 (0.44)	4.54 (0.86)
2. Determine the severity of the athlete's complaint and type of illness, based upon knowledge of signs and symptoms of common medical conditions suffered by athletes, in order to allow the therapist to refer to appropriate medical practitioners.	3.06 (1.16)	2.80 (1.19)	3.55 (0.97)	4.66 (0.64)	4.71 (0.68)	4.78 (0.53)	3.94 (1.20)	4.31 (0.92)	4.00 (1.13)

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TABLE 8. Continued from previous page.

Competency Statements	Entry-Level Preparation Scale*			Importance Scale†			Frequency of Use Scale‡		
	What physical therapy entry-level preparation did you receive for each competency listed?			How important is this competency to sports physical therapy?			How often do you perform this competency?		
	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)
3. Demonstrate an understanding of appropriate radiologic and laboratory tests for the injured athlete; order appropriate tests in consultation with other health care professionals; understand normal limitations, indications, and contraindications of these tests; and interpret these tests in consultation with other health care professionals.	2.23 (1.10)	1.94 (0.99)	2.66 (1.11)	3.67 (1.03)	3.76 (1.01)	3.69 (0.98)	2.83 (1.35)	3.27 (1.30)	2.72 (1.29)
E. Applied Science and Human Performance									
1. Understand, discuss, and apply knowledge of the anatomy, physiology, biochemistry, and biomechanics of the musculoskeletal system as related to stress/strain characteristics; mechanisms of injury; and the process of inflammation, repair, and recovery of injuries commonly suffered by athletes. Through this, the sports physical therapist shall be able to assist the athlete in the prevention, care, and rehabilitation of athletic injuries and in maximization of human performance.	3.60 (0.98)	3.18 (0.99)	4.01 (0.77)	4.69 (0.59)	4.78 (0.51)	4.78 (0.52)	4.38 (0.96)	4.76 (0.48)	4.43 (0.78)

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TABLE 8. Continued from previous page.

Competency Statements	Entry-Level Preparation Scale*			Importance Scale†			Frequency of Use Scale‡		
	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)
2. Understand, discuss, and apply knowledge of normal human physiology (cardiovascular, muscular, renal, etc.) and the appropriate or pathophysiologic changes that occur with high-level human performance and training for various athletic activities.	3.24 (1.05)	3.04 (1.04)	3.56 (0.99)	4.27 (0.82)	4.37 (0.76)	4.35 (0.76)	3.65 (1.13)	3.98 (0.80)	3.57 (1.19)
3. Provide dietary guidelines and basic nutritional knowledge to athletes involved in a variety of sports. Knowledge and guidelines are inclusive of, but not limited to, weight requirements, sport, gender, eating disorders, and individual athlete's needs.	1.88 (1.01)	1.78 (0.87)	2.25 (1.09)	3.58 (0.98)	3.78 (0.90)	3.67 (0.95)	2.48 (1.24)	2.98 (1.01)	2.44 (1.29)
4. Recognize environmental factors that affect human performance and provide recommendations to coaches, athletes, parents, and administrators regarding restrictions and limitations on participation.	2.00 (1.03)	1.73 (0.78)	2.09 (1.05)	3.95 (0.94)	4.08 (0.81)	4.04 (0.92)	2.67 (1.30)	3.32 (1.14)	2.44 (1.30)
5. Understand and discuss the physiologic effect and mechanism of action of ergogenic aids and provide counsel to appropriate parties regarding their use or misuse.	1.88 (1.03)	1.65 (0.86)	2.12 (1.04)	3.75 (0.96)	3.88 (0.81)	3.82 (0.95)	2.50 (1.28)	3.00 (1.15)	2.25 (1.18)

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TABLE 8. Continued from previous page.

Competency Statements	Entry-Level Preparation Scale*			Importance Scale†			Frequency of Use Scale‡		
	What physical therapy entry-level preparation did you receive for each competency listed?			How important is this competency to sports physical therapy?			How often do you perform this competency?		
	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)
6. Understand and discuss the physiologic effect and mechanism of action of pharmaceutical agents commonly used and abused in athletics; provide counsel to appropriate parties regarding their use or misuse.	1.92 (0.97)	1.67 (0.77)	2.25 (0.98)	3.76 (0.94)	3.76 (0.85)	3.78 (0.93)	2.40 (1.18)	2.90 (1.07)	2.06 (1.00)
F. Medical/Surgical Considerations									
1. Understand and recognize the metabolic and physiologic consequences associated with the medical conditions commonly suffered by the athlete (infectious—bacteriologic and viral, gastrointestinal, cardiovascular, dermatological, gender specific, etc.).	2.36 (1.00)	1.96 (1.04)	2.69 (0.94)	3.74 (0.92)	3.69 (0.82)	3.72 (0.84)	2.67 (1.22)	3.06 (0.99)	2.47 (1.20)
2. Understand and recognize the goals, principles, and surgical techniques used for common athletic injuries; recognize the indications and contraindications associated with these techniques as they relate to the development of an appropriate physical therapy program.	3.13 (1.04)	2.90 (1.05)	3.44 (0.98)	4.56 (0.69)	4.59 (0.61)	4.59 (0.69)	4.15 (1.11)	4.53 (0.65)	4.22 (1.04)
G. Research									
1. Read and critically critique current research studies and clinical reports in a manner that allows the sports physical therapist to develop, modify, and continually improve his/her clinical skills.	2.90 (1.21)	2.79 (1.09)	3.57 (1.19)	4.14 (0.93)	4.27 (0.87)	4.23 (0.87)	3.62 (1.31)	4.15 (1.09)	3.63 (1.28)

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TABLE 8. Continued from previous page.

Competency Statements	Entry-Level Preparation Scale*			Importance Scale†			Frequency of Use Scale‡		
	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)
2. Design and implement research studies related to sports physical therapy.	2.54 (1.26)	2.66 (1.11)	3.31 (1.25)	3.70 (1.03)	3.71 (0.99)	3.91 (1.03)	2.13 (1.32)	2.44 (1.41)	2.08 (1.28)
H. Counseling/Education									
1. Educate and provide recommendations to coaches, athletes, parents, and administrators regarding appropriate training principles, participation, physical limitations, equipment, or other areas that impact the health and well-being of athletes.	2.20 (1.05)	1.84 (0.85)	2.81 (1.17)	4.22 (0.84)	4.62 (0.85)	4.27 (0.89)	3.29 (1.32)	3.47 (1.28)	3.26 (1.33)
2. Educate peers and other health care professionals regarding the role of the sports physical therapist in relation to the care and management of the injured athlete.	2.11 (1.10)	1.67 (0.83)	2.67 (1.29)	4.07 (0.94)	3.90 (1.01)	4.22 (0.91)	3.12 (1.30)	3.41 (1.21)	3.13 (1.26)
3. Educate the public regarding the role of the sports physical therapist.	1.92 (1.06)	1.51 (0.77)	2.45 (1.23)	4.05 (1.00)	4.24 (0.95)	4.28 (0.90)	3.00 (1.34)	3.49 (1.17)	2.98 (1.33)
I. Administration									
1. Demonstrate knowledge of the legal limitations of the scope of practice, restrictions of licensure, certification, and specialization of sports physical therapists in relation to other health care providers involved with athletes (athletic trainers, exercise physiologists, chiropractors, physicians, etc.).	2.18 (1.11)	1.96 (0.92)	2.82 (1.27)	4.06 (0.94)	4.06 (1.01)	4.12 (1.00)	3.30 (1.35)	3.62 (1.24)	3.42 (1.43)

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TABLE 8. Continued from previous page.

Competency Statements	Entry-Level Preparation Scale*			Importance Scale†			Frequency of Use Scale‡		
	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)	All Respondents (N = 507)	PT, SCS (N = 49)	New Graduates (N = 91)
2. Manage a sports physical therapy clinic through the development and implementation of policies and procedures, staff development and counseling, marketing techniques, and other skills associated with health care management systems.	1.90 (0.98)	1.63 (0.64)	2.38 (1.09)	3.70 (1.09)	3.72 (1.12)	3.61 (1.14)	3.25 (1.56)	3.87 (1.42)	2.85 (1.66)
3. Marketing and public relations strategies specific to the sports physical therapy clinic.	1.59 (0.87)	1.35 (0.53)	2.02 (1.00)	3.60 (1.11)	3.54 (1.09)	3.73 (1.04)	3.02 (1.52)	3.52 (1.40)	2.88 (1.06)

TABLE 8. Continued from previous page.

Content Area	Percentage of Exam	Approximate Number of Questions
Rehabilitation/Return to activity	16.3	33
Injury prevention and epidemiology	13.6	27
Emergency care	13.5	27
Diagnosis/Evaluation	13.5	27
Applied science and human performance	12.6	25
Medical/Surgical considerations	11.3	23
Research	6.8	14
Counseling and education	6.7	13
Administration	5.7	11
	100.0	200

TABLE 9. Examination blueprint.

quires further study in order to develop an accurate practice profile. As the certification process continues and more therapists meet the practice criteria required to take the specialist examination (a minimum of 5 years), we would expect these values to change and possibly decrease. Specialists with less experience may not have yet reached the point in their professional development that

requires a shift in focus away from predominant involvement in direct patient care.

The competency statements used between 1984–1994 have undergone significant change. The competency statements presented in the document "A Description of Advanced Clinical Practice: Sports Physical Therapy" reflect nine major areas. Competencies concerning re-

habilitation and return to activity are reflected in the current competency validation. Competency statements similar to these were not present in the original document; therefore, this area was not included as part of the specialist examination between 1986 and 1994. The rehabilitation/return to activity competency area will comprise the largest portion of the specialist examination beginning in 1995. The competency area of diagnosis and evaluation not only encompasses physical examination, but also requires that the sports clinical specialist be able to work collegially with physician colleagues to determine the most appropriate radiologic and laboratory tests to establish a definitive diagnosis. This type of competency statement reflects advancement of physical therapist's knowledge, responsibility, and scope of practice.

The original competency statements have been expanded in scope and depth by the current competen-

cies. The current statements reflect the growth and depth of knowledge required of the sports clinical specialist and sophistication of the process of identification and certification of clinical specialists. The competencies required of a clinical specialist are constantly changing. It is the challenge and responsibility of all specialists and our profession to keep informed of and in pace with these changes.

DESCRIPTION OF ADVANCED CLINICAL PRACTICE

The document titled "Description of Advanced Clinical Practice:

"Sports Physical Therapy" developed by the Sports Specialty Council provides a complete explanation of the competencies, including the standards and tasks required to meet a specific competency, given a specific situation. A description of the optimal practice environment and experience to gain/maintain competence as a sports clinical specialist is also detailed. The document may be obtained through the Sports Physical Therapy Section office. The Sports Specialty Council feels that this document will assist physical therapists interested in pursuing certification as a board-certified sports clinical specialist.

JOSPT

REFERENCES

1. American Physical Therapy Association (APTA): *Essentials for Certification of Physical Therapy Specialists*, House of Delegates Policy 06-78-20-51. Alexandria, VA: APTA, 1978
2. American Physical Therapy Association (APTA): *Sports Physical Therapy Specialization*, House of Delegates Policy 06-81-15-54. Alexandria, VA: APTA, 1981
3. Krugh J: *Advanced clinical competencies for the sports physical therapist*. Unpublished master's thesis, University of North Carolina, Chapel Hill, NC, 1984
4. Skovly R, Davies G, Mangine R, Mansell R, Wallace L: Results of the task analysis study, Sports Physical Therapy Section. *J Orthop Sports Phys Ther* 1:229-238, 1980