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Assessments Used by Athletic Trainers to Decide Return-to-Activity Readiness in Patients With an Ankle Sprain

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Context: Athletic trainers (ATs) often care for patients with ankle sprains. Expert consensus has been established for rehabilitation-oriented assessments (ROASTs) that should be included in ankle-sprain evaluations. However, the methods ATs use to determine return-to-activity readiness after an ankle sprain are unknown.

Objectives: To identify ATs' methods for determining patients' return-to-activity readiness after an ankle sprain and demographic characteristics of the ATs and their methods.

Setting: Online survey.

Design: Cross-sectional study.

Patients or Other Participants: We recruited 10 000 clinically practicing ATs. A total of 676 accessed the survey, 574 submitted responses (85% completion rate), and 541 respondents met the inclusion criteria.

Main Outcome Measure(s): We distributed an online survey to ATs that asked about their assessment of pain, swelling, range of motion, arthrokinematics, strength, balance, gait, functional capacity, physical activity level, and patient-reported outcomes in deciding return to activity. Descriptive statistics were used to characterize participant demographics and frequencies of the assessment measures used by ATs. Chi-square analysis was conducted to identify relationships between the demographics and assessment selection.

Results: Pain, swelling, range of motion, strength, balance, gait, and functional capacity were assessed by 76.2% to 96.7% of ATs. Arthrokinematics, physical activity level, and patient-reported outcomes were assessed by 25.3% to 35.1% of participants. When selecting specific assessment methods, ATs often did not use recommended ROASTs. Athletic trainers with higher degrees, completion of more advanced educational programs, employment in nontraditional settings, more clinical experience, and familiarity with expert consensus recommendations were more likely to use ROASTs.

Conclusions: Before approving return to activity for patients with ankle sprains, ATs did not use some recommended outcomes and assessment methods. Practice in nontraditional settings, more advanced degrees, more clinical experience, and familiarity with expert consensus guidelines appeared to facilitate the use of ROASTs.

Key Words: rehabilitation-oriented assessment, clinician-rated assessment, functional assessment, patient-rated outcomes

Key Points

- Many athletic trainers can continue to improve their return-to-activity decisions for patients with ankle sprains by adopting expert-recommended assessment methods.
- Athletic trainers in nontraditional settings and with more education, more clinical experience, and familiarity with expert consensus guidelines were more likely to use recommended assessments to determine the return-to-activity readiness of patients with ankle sprains.

Ankle sprains are a continuous source of concern among physically active individuals. Acute ankle sprains are one of the most commonly occurring injuries, and long-term consequences such as chronic ankle instability (CAI) and posttraumatic osteoarthritis are frequent sequelae.[1] Athletic trainers (ATs) are often involved in the evaluation, care, and return-to-activity decisions of patients with ankle sprains.[2–4] Services provided by ATs such as therapeutic exercise and manual therapies effectively improve outcomes and prevent recurrent ankle sprains in these patients.[5] Return to activity is a time point at which patients are reintroduced to functional activities and reexposed to a heightened risk for recurrent injury. Thus, appropriate timing of the return to activity is critical to protecting patients.

Researchers have suggested that ATs' return-to-activity decisions are likely relevant to the long-term consequences of ankle sprains. When under an AT's care, high school athletes with a first-time ankle sprain had a median time loss of 3 days, whereas those with a recurrent ankle sprain had a median time loss of 1 day.[6] These time frames are well short

of the 4 to 12 weeks needed for ligament healing and restoring balance and range of motion (ROM) after an ankle sprain.[7–9] Investigators have noted that patients with an ankle sprain are often cleared for return to activity with ongoing ankle-joint laxity, reduced dorsiflexion ROM, impaired balance, and deficient patient-reported outcome (PRO) instrument scores.[10,11] Increased ankle-joint laxity and decreased PRO scores, balance performance, and ankle-joint power have exhibited predictive value for recurrent ankle sprains.[12] Additionally, persistent deficits in balance and self-reported function after an ankle sprain have been identified as risk factors for developing CAI.[13]

Comprehensive evaluations of patients with ankle sprain are crucial to detecting and resolving impairments, but inconsistent return-to-activity guidelines in various reports might confound ATs' assessment choices.[14] The International Ankle Consortium (IAC) established expert consensus for rehabilitation-oriented assessments (ROASTs) recommended for inclusion in ankle-sprain evaluations.[15] The IAC endorsed specific assessments in the outcome domains of ankle-joint pain, ankle-joint swelling, ankle-joint ROM, ankle-joint arthrokinematics, ankle-joint strength, static balance, dynamic balance, gait, physical activity level, and PROs.[15] In a subsequent qualitative research study, ATs varied in which outcomes they evaluated to determine patients' readiness for return to activity after an ankle sprain.[16] They also differed in which specific assessment methods they used, many of which deviated from the recommended ROASTs.[16] Although the qualitative findings of McCann et al[16] provided a valuable preliminary understanding of ATs' use of ROASTs and non-ROASTs, the inherent nature of qualitative research may limit the generalizability of those findings to the entire AT population. Further research is necessary to more broadly understand the types of assessments ATs rely on to determine return-to-activity readiness.

The purpose of our study was to examine how ATs determine patients' readiness for return to activity after an ankle sprain. In addition to ROASTs, we also sought to determine which non-ROASTs ATs use for return-to-activity clearance. Furthermore, we aimed to identify demographic determinants of their assessment choices. Characterizing which assessments are typically included in ATs' evaluations will establish the strengths and deficiencies of current return-to-activity protocols relative to the most evidence-informed approaches, such as the IAC consensus statement.[15] In addition, our results might elucidate which outcomes are commonly not addressed that may contribute to persistent dysfunction. Exploring the demographic influences of assessment choices will explain how return-to-activity decisions can be improved in subpopulations of ATs.

METHODS

We used a cross-sectional, web-based survey to identify which types of outcomes ATs measure to determine that a patient recovering from an ankle sprain is ready for return to activity. Survey logic was applied to then explore which specific assessments were chosen and why. Moreover, if ROASTs were not used, we explored the underlying reasons. This study was approved as exempt research by the Old Dominion University Human Subjects Review Committee.

Participants

We recruited ATs who were (1) certified members of the National Athletic Trainers' Association (NATA), (2) in good standing with the Board of Certification, and (3) practicing clinically at the time of the study. The inclusion criteria also required that participants had treated $\geq$1 patient with an ankle sprain that resulted in activity time loss in the year before the study.

Instrument Design

Given the lack of an existing instrument to achieve our study aims, we developed a web-based survey, which was hosted in the Qualtrics XM platform, with items and answer choices derived from previous research on ROASTs used by ATs.[14,15] The survey contained 12 demographic items, 2 primary filter questions, 1 Likert-scale question to rate familiarity with the IAC ROAST consensus statement,[15] and 1 select-all-that-apply question asking which outcomes were typically evaluated to determine readiness to return to activity (ankle-joint pain, ankle-joint swelling, ankle-joint ROM, ankle-joint arthrokinematics, ankle-joint strength, balance, gait, functional capacity, physical activity level, PRO instruments). For each outcome selected, a series of select-all-that-apply follow-up questions asked which assessment measure(s) was (were) used to assess the outcome. For example, if participants identified measuring swelling as an outcome for return to activity, they were asked how they assessed swelling (*figure-of-8 girth measurement*, *visual inspection*, or *other*). Three members of the research team (R.S.M., C.E.W.B., and J.M.C.) created and refined the initial instrument.

Content Validity Assessment

After survey development, 3 nonauthor content experts in ankle injury and CAI reviewed the instrument to determine content validity.[17] The panel evaluated questions for relevance, clarity, and contribution to the identified research aims on a scale ranging from 1 to 4, with 4 indicating *ideal and relevant*. Any score $<$3 required comment from the expert regarding revisions that would result in the survey item having an ideal score. Two members of the research team (R.S.M. and J.M.C.) reviewed the expert scores and revised according to the feedback. Revisions were primarily made to address the clarity of questions and ensure sufficient answer choices. The minimum mean score of all questions measured for content validity was 3.52 (of 4), and the final item-level content validity index of the instrument was 0.95. The final survey instrument contained a maximum of 61 items, including demographic and filter questions.

Procedures

When the survey instrument was deemed valid, it was pilot tested to ensure all survey logic functioned appropriately to maximize participant engagement and minimize potential respondent fatigue. The survey, which took participants approximately 25 minutes to complete, was distributed in April 2021 to 10 000 ATs who were randomly selected via the NATA's survey service. Weekly reminders were sent for 6 weeks of data collection that concluded in May 2021.

Data Analysis

All participant responses, including partial responses, were included for data analysis. To align with best practices for survey research and maintain voluntary participation rights in exempt research, we did not require participants to answer every item of the survey. Descriptive statistics were used to characterize participant demographics and frequency of outcome and assessment measure use. Chi-square analyses were performed to determine relationships among demographic variables and outcome or assessment selection. The α level was set a priori at .05. Survey data were analyzed using SPSS (version 27; IBM Corp).

RESULTS

Respondent Demographics and Outcome Domains

A total of 676 ATs accessed the survey, with 574 submitting responses (85% completion rate). A total of 33 respondents did not meet the inclusion criteria and were eliminated from the analyses, bringing our total sample to 541. Respondent demographics are reported in Table 1. Most outcomes were used by >75% of ATs to determine patients' readiness for return to activity after ankle sprain, but arthrokinematics, physical activity level, and PROs were each assessed by <36% of respondents (Figure). Chi-square analyses revealed that the outcomes assessed by respondents varied depending on their age ($\chi^2 = 578.997$, $P = .03$), highest degree earned ($\chi^2 = 35.470$, $P = .02$), educational programs completed ($\chi^2 = 101.706$, $P = .01$), years of clinical practice ($\chi^2 = 94.297$, $P < .001$), current clinical practice setting ($\chi^2 = 50.720$, $P = .01$), and familiarity with the IAC ROAST guidelines ($\chi^2 = 32.770$, $P < .001$). Distributions of outcome domains evaluated across demographic variables are presented in Table 2. Regarding clinical practice settings, *nontraditional* included industrial or occupational medicine, rehabilitation clinics, physicians' practices, hospitals, and military settings.

Assessment Methods

For respondents who indicated they assessed a given outcome, frequencies of specific evaluation methods are provided in Table 3.

Ankle-Joint Pain. Specific methods of ankle-joint pain evaluation varied based on ATs' educational programs completed ($\chi^2 = 44.766$, $P = .002$), current practice setting ($\chi^2 = 31.406$, $P < .001$), and familiarity with the IAC ROAST guidelines ($\chi^2 = 18.746$, $P < .001$). Distributions of pain assessments selected across demographic variables are shown in Appendix Table 1.

Ankle-Joint Swelling. Methods selected for ankle-joint swelling differed based on ATs' age ($\chi^2 = 22.089$, $P = .04$), years of clinical practice ($\chi^2 = 42.758$, $P < .001$), current practice setting ($\chi^2 = 23.232$, $P = .01$), and familiarity with the IAC ROAST guidelines ($\chi^2 = 8.470$, $P = .04$). Distributions of ankle-joint swelling assessments selected across demographic variables are given in Appendix Table 2.

Ankle-Joint ROM. Athletic trainers' choices of ankle-joint ROM tests were influenced by their highest degree earned ($\chi^2 = 17.880$, $P = .02$), educational programs completed ($\chi^2 = 49.400$, $P = .01$), years of clinical practice ($\chi^2 = 38.683$, $P = .01$), current practice setting ($\chi^2 = 35.938$, $P < .001$), and familiarity with the IAC ROAST guidelines ($\chi^2 = 26.515$, $P < .001$). Distributions of ankle-joint ROM assessments selected across demographic variables are presented in Appendix Table 3.

Ankle-Joint Arthrokinematics. Influences on ankle-joint arthrokinematics tests used by ATs' included age ($\chi^2 = 16.086$, $P = .04$), educational programs completed ($\chi^2 = 29.657$, $P <$

Table 1. Patient Characteristics (N = 541)

Variable	No. (%)[a]
Gender	
Female	340 (62.8)
Male	199 (36.8)
Other	2 (0.4)
Age, y	
20–29	276 (51.0)
30–39	155 (28.7)
40–49	63 (11.6)
50–59	34 (6.3)
≥60	13 (2.4)
Highest degree earned[b]	
Bachelor's	82 (15.2)
Master's	430 (79.5)
Terminal degree	28 (5.2)
Educational programs completed[c]	
Professional undergraduate	398 (73.6)
Professional master's	131 (24.2)
Postprofessional master's	113 (20.9)
Doctorate in athletic training	14 (2.6)
Athletic training residency	11 (2.0)
Professional internship	43 (7.9)
Postprofessional internship or fellowship	28 (5.2)
Years of clinical athletic training practice	
0–5	239 (44.2)
6–10	126 (23.3)
11–15	71 (13.1)
16–20	45 (8.3)
21–29	36 (6.7)
≥30	24 (4.4)
Current practice setting	
Professional athletics	23 (4.3)
Collegiate athletics	292 (54.0)
K–12 athletics	157 (29.0)
Nontraditional[d]	69 (12.8)
Patients with ankle sprain treated in past year, No.	
1–5	249 (46.0)
6–10	163 (30.1)
11–15	65 (12.0)
16–20	41 (7.6)
≥21	23 (4.3)
Served as preceptor to athletic training student in past year	
Yes	192 (35.5)
No	349 (64.5)
Familiar with International Ankle Consortium Rehabilitation-Oriented Assessment Guidelines[e]	
Yes	250 (46.5)
No	287 (53.5)

Abbreviation: K–12, kindergarten to 12th grade.

[a] Percentages were rounded, so the sum for each variable may not be 100%.

[b] A total of 540 participants responded, but percentages were calculated based on 541.

[c] Participants could choose >1 answer, so the sum of percentages is not 100%.

[d] *Nontraditional* included industrial or occupational medicine, rehabilitation clinics, physicians' practices, hospitals, and military settings.

[e] Percentages were calculated based on 537 responses.

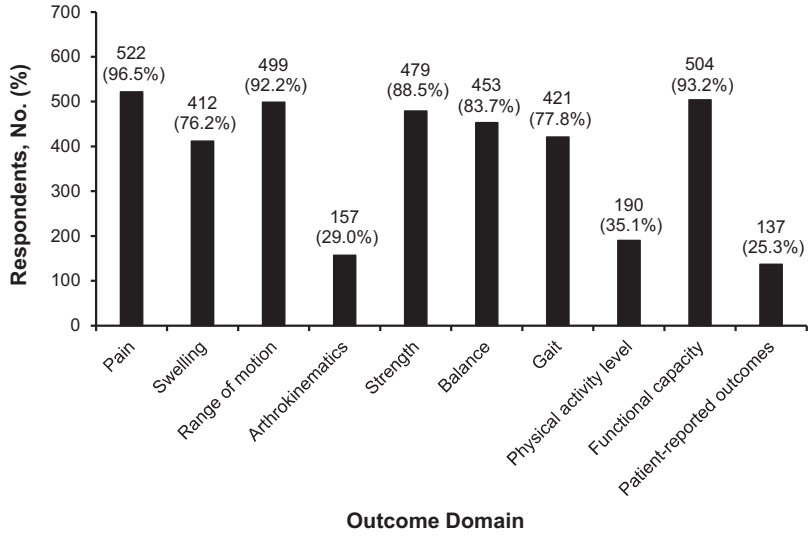

Figure. Rates of outcomes evaluated for return to activity (N = 541).

.001), and years of clinical practice ($\chi^2 = 25.584$, $P = .03$). Distributions of ankle-joint arthrokinematic assessments selected across demographic variables are reported in Appendix Table 4.

Ankle-Joint Strength. Selection of ankle-joint strength assessment methods was affected by ATs' age ($\chi^2 = 23.721$, $P = .02$) and current practice setting ($\chi^2 = 20.348$, $P = .02$). Distributions of ankle-joint strength assessments selected across demographic variables are shown in Appendix Table 5.

Balance. Specific methods of balance assessment varied based on ATs' age ($\chi^2 = 45.449$, $P < .001$), highest degree earned ($\chi^2 = 32.495$, $P < .001$), educational programs completed ($\chi^2 = 60.799$, $P = .003$), years of clinical practice ($\chi^2 = 38.119$, $P = .01$), current practice setting ($\chi^2 = 29.542$, $P = .003$), whether they acted as an athletic training student preceptor ($\chi^2 = 10.514$, $P = .03$), and familiarity with the IAC ROAST guidelines ($\chi^2 = 15.716$, $P = .003$). Distributions of balance assessments selected across demographic variables are presented in Appendix Table 6.

Gait. Athletic trainers' methods of gait evaluation differed by current practice setting ($\chi^2 = 23.239$, $P < .001$). Distributions of gait assessments selected across demographic variables are illustrated in Appendix Table 7.

Physical Activity Level. Athletic trainers' methods of evaluating physical activity level varied depending on their highest degree earned ($\chi^2 = 25.092$, $P < .001$) and familiarity with the IAC ROAST guidelines ($\chi^2 = 8.403$, $P = .02$). Distributions of physical activity level assessments selected across demographic variables are provided in Appendix Table 8.

Functional Capacity. Methods of testing functional capacity were influenced by ATs' familiarity with the IAC ROAST guidelines ($\chi^2 = 13.450$, $P = .01$). Distributions of functional capacity assessments selected across demographic variables are shown in Appendix Table 9.

Patient-Reported Outcomes. Selection of PROs was influenced by ATs' age ($\chi^2 = 49.294$, $P = .01$), highest degree earned ($\chi^2 = 32.840$, $P = .003$), educational programs completed ($\chi^2 = 88.720$, $P < .001$), and familiarity with the IAC ROAST guidelines ($\chi^2 = 27.288$, $P < .001$). Distributions of PROs selected across demographic variables are depicted in Appendix Table 10.

DISCUSSION

To our knowledge, this is the first large-scale study to identify which outcomes ATs use for determining the return-to-activity readiness of patients with ankle sprains. Seven of the 10 studied outcomes (pain, swelling, ROM, strength, balance, gait, and functional capacity) were assessed by most (75.2%–96.5%) ATs, but the remaining 3 outcomes (arthrokinematics, physical activity level, and PROs) were evaluated by smaller proportions (25.3%–35.1%) of ATs. Although 9 of 10 of these outcomes are recommended for evaluation under the IAC ROAST guidelines,[15] our data suggested that many ATs neglected to assess arthrokinematics, physical activity level, and PROs before clearing patients for return to activity. These findings support our preliminary study,[16] in which ATs varied in their assessment of recommended outcomes. The low frequency of PRO use further agrees with the results of a recent report[18] in which 78% of ATs did not include PROs in patient evaluations. Similar to ATs, physicians often did not evaluate all relevant outcomes when making return-to-activity decisions for patients with ankle sprains.[19] This trend across professional disciplines should be further studied as a potential contributor to persistent impairments and CAI arising after an ankle sprain.

For ATs who evaluated a given outcome domain, we further inquired about their selection of specific assessment methods, including ROASTs and non-ROASTs. For pain assessment, ATs preferred a numeric rating scale vastly more than the Foot and Ankle Disability Index (FADI) and other methods. Both options are recommended for pain assessment,[15] but the single-item numeric rating scale might be more attractive than the FADI, which is a multi-item questionnaire with a broader scope focusing on pain and self-reported function. When asked about PRO assessments, only 24% of ATs reported using the highly similar FADI and Foot and Ankle Ability Measure (FAAM) instruments. As we expected, athletes who return to activity after an ankle sprain have exhibited self-reported function consistent with individuals with CAI.[10,11] Despite low rates of FAAM and FADI use, some ATs selected other generic (Patient-Specific Functional Scale), region-specific (Lower Extremity Functional Scale), or single-item (Global Rate of Change) PROs, all of which can be used to

Table 2. Demographic Influences of Selected Outcomes Continued on Next Page

Variable	No. (%)									
	Pain	Swelling	Range of Motion	Arthrokinematics	Strength	Balance	Gait	Physical Activity	Functional Capacity	Patient-Reported Outcomes
Gender										
Female	326 (95.9)	264 (77.6)	313 (92.1)	98 (28.8)	303 (89.1)	282 (82.9)	261 (76.8)	112 (32.9)	318 (93.5)	92 (27.1)
Male	194 (97.5)	147 (73.9)	184 (92.5)	59 (29.6)	174 (87.4)	169 (84.9)	158 (79.4)	77 (38.7)	184 (92.5)	45 (22.6)
Other	2 (100)	1 (50.0)	2 (100)	0 (0.0)	2 (100)	2 (100)	2 (100)	1 (50)	2 (100)	0 (0.0)
Age, y										
20–29	268 (97.1)	206 (74.6)	251 (90.9)	63 (22.8)[a]	241 (87.3)	220 (79.7)	214 (77.5)	86 (31.2)	253 (91.7)	74 (26.8)
30–39	149 (96.1)	124 (80.0)	145 (93.5)	47 (30.3)[a]	140 (90.3)	130 (83.9)	120 (77.4)	57 (36.8)	145 (93.5)	39 (25.2)
40–49	60 (95.2)	46 (73.0)	58 (92.1)	22 (34.9)	57 (90.5)	58 (92.1)	47 (74.6)	22 (34.9)	60 (95.2)	11 (17.5)
50–59	32 (94.1)	28 (82.4)	33 (97.1)	19 (55.9)	29 (85.3)	33 (97.1)	29 (85.3)	18 (52.9)	33 (97.1)	10 (29.4)
≥60	13 (100)	8 (61.5)	12 (92.3)	6 (46.2)	12 (92.3)	12 (92.3)	11 (84.6)	7 (53.8)	13 (100)	3 (23.1)
Highest degree earned										
Bachelor's	78 (95.1)	56 (68.3)	78 (95.1)	19 (23.2)	73 (89.0)	69 (84.1)	61 (74.4)	26 (31.7)	75 (91.5)	12 (14.6)[b]
Master's	416 (96.7)	334 (77.7)	392 (91.2)	125 (29.1)	382 (88.8)	358 (83.3)	336 (78.1)	153 (35.6)	402 (93.5)	109 (25.3)[b]
Terminal degree	27 (96.4)	21 (75.0)	28 (100)	12 (42.9)	24 (85.7)	25 (89.3)	24 (85.7)	11 (39.3)	26 (92.9)	16 (57.1)
Educational programs completed										
Professional undergraduate	386 (97.0)	302 (75.9)	372 (93.5)	111 (27.9)	356 (89.4)	337 (84.7)	317 (79.6)	138 (34.7)	372 (93.5)	100 (25.1)[c]
Professional master's	125 (95.4)	103 (78.6)	118 (90.1)	38 (29.0)	117 (89.3)	104 (79.4)	92 (70.2)	48 (36.6)	121 (92.4)	33 (25.2)[c]
Postprofessional master's	108 (95.6)	86 (76.1)	106 (93.8)	39 (34.5)	103 (91.2)	94 (83.2)	92 (81.4)	27 (23.9)[d]	108 (95.6)	35 (31.0)[c]
Doctorate in athletic training	14 (100)	11 (78.6)	14 (100)	7 (50.0)	12 (85.7)	12 (85.7)	13 (92.9)	4 (28.6)	14 (100)	10 (71.4)
Athletic training residency	11 (100)	6 (54.5)	10 (90.9)	5 (45.5)	9 (81.8)	10 (90.9)	8 (72.7)	2 (18.2)	11 (100)	6 (54.5)
Professional internship	41 (95.3)	32 (74.4)	38 (88.4)	18 (41.9)	35 (81.4)	39 (90.7)	32 (74.4)	18 (41.9)	41 (95.3)	8 (18.6)[c]
Postprofessional internship or fellowship	27 (96.4)	22 (78.6)	26 (92.9)	6 (21.4)	24 (85.7)	21 (75.0)	20 (71.4)	15 (53.6)	23 (82.1)	8 (28.6)
Years of clinical athletic training practice										
0–5	231 (96.7)	172 (72.0)	216 (90.4)	57 (23.8)[e]	210 (87.9)	185 (77.4)	180 (75.3)	73 (30.5)	221 (92.5)	59 (24.7)
6–10	124 (98.4)	105 (83.3)	117 (92.9)	31 (24.6)[e]	108 (85.7)	107 (84.9)	103 (81.7)	42 (33.3)	116 (92.1)	36 (28.6)
11–15	67 (94.4)	58 (81.7)	69 (97.2)	27 (38.0)	68 (95.8)	64 (90.1)	56 (78.9)	32 (45.1)	65 (91.5)	18 (25.4)
16–20	43 (95.6)	31 (68.9)	40 (88.9)	12 (26.7)	38 (84.4)	38 (84.4)	29 (64.4)	16 (35.6)	44 (97.8)	6 (13.3)
21–29	34 (94.4)	29 (80.6)	35 (97.2)	15 (41.7)	34 (94.4)	35 (97.2)	32 (88.9)	15 (41.7)	34 (94.4)	11 (30.6)
≥30	23 (95.8)	17 (70.8)	22 (91.7)	15 (62.5)	21 (87.5)	24 (100)	21 (87.5)	12 (50.0)	24 (100)	7 (29.2)
Current practice setting										
Professional athletics	22 (95.7)	18 (78.3)	20 (87.0)	9 (39.1)	17 (73.9)	19 (82.6)	18 (78.3)	12 (52.2)	22 (95.7)	8 (34.8)
Collegiate athletics	282 (96.6)	219 (75.0)	274 (93.8)	79 (27.1)	260 (89.0)	238 (81.5)	224 (76.7)	103 (35.3)	275 (94.2)	74 (25.3)
K–12 athletics	150 (95.5)	120 (76.4)	144 (91.7)	41 (26.1)	141 (89.8)	132 (84.1)	124 (79.0)	43 (27.4)[f]	144 (91.7)	27 (17.2)[f]
Nontraditional[g]	68 (98.6)	55 (79.7)	61 (88.4)	28 (40.6)	61 (88.4)	64 (92.8)	55 (79.7)	32 (46.4)	63 (91.3)	28 (40.6)
Patients with ankle sprain treated in past year, No.										
1–5	241 (96.8)	180 (72.3)	230 (92.4)	59 (23.7)	219 (88.0)	203 (81.5)	193 (77.5)	81 (32.5)	235 (94.4)	64 (25.7)
6–10	158 (96.9)	130 (79.8)	151 (92.6)	54 (33.1)	148 (90.8)	143 (87.7)	131 (80.4)	60 (36.8)	151 (92.6)	45 (27.6)
11–15	61 (93.8)	52 (80.0)	60 (92.3)	20 (30.8)	56 (86.2)	55 (84.6)	48 (73.8)	28 (43.1)	60 (92.3)	16 (24.6)
16–20	39 (95.1)	31 (75.6)	37 (90.2)	16 (39.0)	35 (85.4)	36 (87.8)	31 (75.6)	14 (34.1)	38 (92.7)	9 (22.0)
≥21	23 (100)	19 (82.6)	21 (91.3)	8 (34.8)	21 (91.3)	16 (69.6)	18 (78.3)	7 (30.4)	20 (87.0)	3 (13.0)
Served as preceptor to athletic training student in past year										
Yes	188 (97.9)	151 (78.6)	177 (92.2)	56 (29.2)	169 (88.0)	162 (84.4)	156 (81.3)	63 (32.8)	183 (95.3)	53 (27.6)
No	334 (95.7)	261 (74.8)	322 (92.3)	101 (28.9)	310 (88.8)	291 (83.4)	265 (75.9)	127 (36.4)	321 (92.0)	84 (24.1)

Table 2. Continued From Previous Page

Variable	No. (%)									
	Pain	Swelling	Range of Motion	Arthrokinematics	Strength	Balance	Gait	Physical Activity	Functional Capacity	Patient-Reported Outcomes
Familiar with International Ankle Consortium; ROAST, rehabilitation-oriented assessment guidelines										
Yes	244 (97.6)	187 (74.8)	237 (94.8)	87 (34.8)[h]	224 (89.6)	222 (88.8)[h]	206 (82.4)[h]	93 (37.2)	238 (95.2)	77 (30.8)[h]
No	274 (95.5)	225 (78.4)	262 (91.3)	70 (24.4)	255 (88.9)	231 (80.5)	215 (74.9)	97 (33.8)	266 (92.7)	60 (20.9)

Abbreviation: K–12, kindergaten to 12th grade.
[a] Different from respondents aged 50–59 years.
[b] Different from respondents with a terminal degree.
[c] Different from respondents who completed a doctorate in athletic training program.
[d] Different from respondents who completed a postprofessional athletic training internship or fellowship program.
[e] Different from respondents with ≥30 years of clinical athletic training experience.
[f] Different from respondents employed in nontraditional settings.
[g] *Nontraditional* included industrial or occupational medicine, rehabilitation clinics, physicians' practices, hospitals, and military settings.
[h] Different from respondents who were unfamiliar with the guidelines.

Table 3. Rates of Assessment Method Selection for Each Outcome

Outcome	No. (%)
Ankle-joint pain (n = 406)	
Numeric Pain Scale	388 (95.6)
Foot and Ankle Disability Index	34 (8.4)
Other	38 (9.4)
Ankle-joint swelling (n = 396)	
Figure-of-8	116 (29.3)
Visual inspection	385 (97.2)
Other	21 (5.3)
Ankle-joint range of motion (n = 472)	
Goniometry	208 (44.1)
Weight-bearing lunge test	277 (58.7)
Visual inspection	399 (84.5)
Other	17 (3.6)
Ankle-joint arthrokinematics (n = 144)	
Posterior talar glide test	130 (90.3)
Other	23 (16.0)
Ankle-joint strength (n = 450)	
Handheld dynamometry	14 (3.1)
Manual muscle testing	444 (98.7)
Other	34 (7.6)
Balance (n = 416)	
Balance Error Scoring System	299 (71.9)
Star Excursion Balance Test	184 (44.2)
Foot-lift test	55 (13.2)
Other	72 (17.3)
Gait (n = 383)	
Visual inspection	382 (99.7)
Other	13 (3.4)
Physical activity level (n = 153)	
Tegner Activity Scale	24 (15.7)
Other	129 (84.3)
Functional capacity (n = 458)	
Jumping/hopping progressions	441 (96.3)
Agility progressions	418 (91.3)
Sport-specific progressions	447 (97.6)
Other	9 (2.0)
Patient-reported outcome (n = 114)	
Foot and Ankle Ability Measure	27 (23.7)
Foot and Ankle Disability Index	27 (23.7)
Global Rate of Change	16 (14.0)
Lower Extremity Functional Scale	40 (35.1)
Patient-Specific Functional Scale	38 (33.3)
General conversation	84 (73.7)
Other	5 (4.4)

effectively gauge patient perceptions regarding recovery from an ankle sprain.[18]

Along with PROs, arthrokinematics and physical activity level were the least often assessed outcomes by ATs. Of the few who did evaluate arthrokinematics, most selected the posterior talar glide test to detect restricted posterior translation and, possibly, anterior positional faults of the talus.[20,21] Conversely, most ATs gauging physical activity level deviated from the recommended Tegner Activity Scale, which is a valuable method for establishing a patient's preinjury activity level and setting goals for rehabilitation. Instead, ATs favored other methods, some of which were objective measures of preinjury and postinjury exercise loads and intensity. Spikes in the acute workload relative to chronic workload were related to an increased risk for injury,[22] and thus, objective measurements of physical activity level might be needed throughout rehabilitation to ensure that patients progressively increase physical activity

and experience a lower risk for recurrent injury on return to activity.

A large majority of ATs who assessed ankle-joint swelling and ROM used visual inspection. Visual assessment of these outcomes is generally not favorable to ROASTs because of a lack of established validity and reliability and increased measurement error compared with quantifiable assessments.[16,23] The figure-of-8 girth measurement is a simple, valid, and reliable circumferential measurement of the subtalar and midtarsal regions, but it was used by <30% of ATs who evaluated swelling.[24,25] A larger proportion of ATs assessed dorsiflexion ROM using the weight-bearing lunge test (WBLT), recommended for its ability to quantify dorsiflexion ROM in a closed kinetic chain position.[15] Although not a recommended ROAST, goniometry is also a valid, reliable ROM assessment that was used by nearly half of ATs.[26] In addition to being viable, goniometry is clearly a popular alternative to the WBLT and has the added benefit of measuring motions beyond dorsiflexion.

Ankle-joint strength evaluations were conducted almost entirely via manual muscle testing, a non-ROAST technique. Manual muscle testing remains a valuable tool for rapidly identifying gross motor deficits during the acute and subacute stages of recovery. However, manual muscle testing lacks the sensitivity to detect subtle strength deficits that are captured using a quantifiable strength measurement.[27,28] Aiken et al[27] demonstrated that 30 days after an acute lateral ankle sprain, patients exhibited 5 of 5 on manual muscle testing but quantifiable strength deficits remained. Handheld dynamometry is the simplest method by which ATs can quantify isometric muscular strength and is thus recommended by experts.[15] Isokinetic dynamometers are also a viable option for quantifying muscular strength, but their feasibility is limited by large relative size and high cost.

Most ATs who assessed balance performance used at least 1 of the 3 recommended ROASTs. Balance deficiencies are typical after an acute ankle sprain and often persist for weeks or longer.[7] Although the Balance Error Scoring System and foot-lift test differ from the Star Excursion Balance Test by evaluating static as opposed to dynamic balance, all 3 tests have exhibited the ability to discriminate between individuals with and those without a previous ankle sprain.[29] Despite a tendency to choose recommended balance assessments, 16% of ATs reported they did not gauge balance. This might explain why athletes with an ankle sprain often exhibit residual balance deficits at return to activity.[10]

Aside from balance, we surveyed ATs about their use of other dynamic weight-bearing tests. Most ATs characterized gait via visual inspection, a technique recommended by the IAC ROAST guidelines. However, the specific aspects of gait that ATs evaluated remains unclear. Functional capacity was the outcome most used by ATs, although it was not a domain included in the ROAST guidelines. Nearly all ATs observed their patients performing progressive jumping, agility, or sport-specific tasks, but, as with gait, we did not obtain specific details about the evaluation methods.

We conducted further analyses to identify demographic determinants of the outcome domains and specific assessment methods used by ATs. Generally, ATs with more advanced degrees, practicing in nontraditional settings, with more years of clinical experience, and familiar with the IAC ROAST guidelines were most likely to evaluate the recommended outcome domains. Others have reported that ATs with doctorates, more clinical experience, and employment in nontraditional settings placed greater emphasis on educating patients with ankle sprains.[30] In our study, these subpopulations of ATs were particularly more apt to use PROs. Familiarity with the ROAST guidelines facilitated use of the recommended FAAM and FADI. Specific PROs selected by ATs were also influenced by the degree earned, educational programs completed, and age, but these factors affected only non-ROASTs such as the Global Rate of Change. Regardless, identifying factors that facilitate PRO use is highly important because most ATs reportedly did not use PROs.[18]

Familiarity with the IAC ROAST guidelines affected the choice of assessment methods in 7 of 10 outcome domains (pain, swelling, ROM, balance, physical activity level, functional capacity, and PROs). Although exposure to the IAC ROAST guidelines appeared to positively influence selected measures, fewer than half of ATs were familiar with the publication.[15] Similarly, nearly 40% of ATs described being unaware of the NATA position statement on ankle sprains.[2,30] Practice setting also affected ATs' evaluations of 6 of 10 outcomes (pain, swelling, ROM, strength, balance, and gait). Of note, employment in nontraditional settings was associated with greater use of the ROASTs for pain and balance assessment and reduced use of non-ROAST assessments such as visual inspection of swelling. Highest degree earned influenced several assessment choices (ROM, balance, physical activity level, and PROs), but a higher degree did not always equate to closer agreement with the ROAST guidelines. Similarly, ATs with greater clinical experience were less likely to use visual determination of swelling but also less likely to use the WBLT to characterize ROM. Completion of more advanced educational programs was associated with a greater likelihood of selecting ROASTs, particularly for pain and balance, as well as non-ROAST PROs.

LIMITATIONS AND FUTURE DIRECTIONS

This study was not without limitations. First, we invited only members of the NATA to participate, which restricted the study's representation of ATs who are nonmembers. Second, although we surveyed participants about their use of ROASTs, the IAC guidelines were not explicitly intended to be return-to-activity criteria.[15] Given the absence of clear return-to-activity guidelines for patients with ankle sprains at the time of this study,[14] we opted to model our survey on expert consensus recommendations for lateral ankle-sprain evaluation.[15] Since our survey was initiated, an international multidisciplinary consensus of assessments that should and should not be considered for return-to-activity decisions for athletes with a lateral ankle sprain has been published.[31] In this new PAASS (pain, ankle impairments, athlete perception, sensorimotor control, sport and functional performance) framework, several items that should be included in return-to-activity decisions align with the ROAST guidelines (pain, ankle ROM, ankle strength, perceived confidence, and balance), but others that should not be included in return-to-activity decisions were also in the ROAST guidelines (ankle-joint arthrokinematics, physical activity level represented by aerobic and anaerobic fitness and acute-to-chronic workload ratio).[15,31] Thus, some of the return-to-activity decisions that we identified as deficiencies among ATs actually agree with other experts' consensus for best practices. Lastly, we obtained valuable information regarding which assessment methods are used by ATs but did not ask ATs how they interpreted test scores to

determine return-to-activity readiness. Tassignon et al[32] recently published a systematic review aimed at summarizing previously published criteria-based return-to-sport decisions used for patients with lateral ankle sprains. However, the authors found criteria-based evaluations had been used in only 1 study and therefore were unable to provide aggregate criteria-based return-to-sport guidelines.[32] Future researchers should examine ATs' rationale behind assessment-measure selection and the assessment criteria that ATs consider necessary for return to activity.

CONCLUSIONS

Athletic trainers often do not evaluate the full complement of recommended outcomes before determining if patients with ankle sprains are ready for return to activity. The recommended outcomes that ATs most commonly neglected were ankle-joint arthrokinematics, physical activity level, and PROs. When evaluating a given outcome domain, ATs varied in their selection of recommended and nonrecommended assessment methods. Practice in nontraditional settings, completion of more advanced degrees, possession of more clinical experience, and familiarity with expert consensus guidelines appeared to facilitate evaluation of the recommended outcomes and use of the recommended assessment methods for return to activity after an ankle sprain.

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Appendix

Appendix Table 1. Demographic Influences of Evaluation Methods for Ankle-Joint Pain

Variable	Total	Evaluation Method, No. (%)		
		Numeric Pain Scale	Foot and Ankle Disability Index	Other
Gender				
Female	251	240 (95.6)	18 (7.2)	22 (8.8)
Male	154	147 (95.5)	16 (10.4)	16 (10.4)
Other	1	1 (100)	0 (0.0)	0 (0.0)
Age, y				
20–29	200	191 (95.5)	16 (8.0)	17 (8.5)
30–39	118	112 (94.9)	11 (9.3)	12 (10.2)
40–49	52	50 (96.2)	4 (7.7)	4 (7.7)
50–59	25	25 (100)	2 (8.0)	3 (12.0)
≥60	11	10 (90.9)	1 (9.1)	2 (18.2)
Highest degree earned				
Bachelor's	58	55 (94.8)	3 (5.2)	7 (12.1)
Master's	324	310 (95.7)	25 (7.7)	28 (8.6)
Terminal degree	24	23 (95.8)	6 (25.0)	3 (12.5)
Educational programs completed				
Professional undergraduate	291	281 (96.6)	28 (9.6)	31 (10.7)
Professional master's	101	98 (97.0)	4 (4.0)	7 (6.9)
Postprofessional master's	81	76 (93.8)	10 (12.3)	9 (11.1)
Doctorate in athletic training	12	11 (91.7)	4 (33.3)[a]	2 (16.7)
Athletic training residency	7	7 (100)	3 (42.9)[a,b]	1 (14.3)
Professional internship	34	34 (100)	0 (0.0)	2 (5.9)
Postprofessional internship or fellowship	19	18 (94.7)	0 (0.0)	3 (15.8)
Years of athletic training practice				
0–5	173	165 (95.4)	12 (6.9)	15 (8.7)
6–10	96	90 (93.8)	9 (9.4)	8 (8.3)
11–15	51	49 (96.1)	6 (11.8)	8 (15.7)
16–20	39	38 (97.4)	3 (7.7)	1 (2.6)
21–29	31	31 (100)	2 (6.5)	2 (6.5)
≥30	16	15 (93.8)	2 (12.5)	4 (25.0)
Current practice setting				
Professional athletics	19	19 (100)	1 (5.3)	4 (21.1)
Collegiate athletics	224	213 (95.1)	16 (7.1)[c]	22 (9.8)
K–12 athletics	117	117 (100)	4 (3.4)[c]	7 (6.0)
Nontraditional[d]	71	64 (90.1)	13 (18.3)	5 (7.0)
Patients with ankle sprain treated in past year, No.				
1–5	185	179 (96.8)	15 (8.1)	16 (8.6)
6–10	129	121 (93.8)	12 (9.3)	14 (10.9)
11–15	49	48 (98.0)	5 (10.2)	3 (6.1)
16–20	24	23 (95.8)	1 (4.2)	0 (0.0)
≥21	19	17 (89.5)	1 (5.3)	5 (26.3)
Served as preceptor to athletic training student in past year				
Yes	158	150 (94.9)	13 (8.2)	13 (8.2)
No	248	238 (96.0)	21 (8.5)	25 (10.1)
Familiar with International Ankle Consortium Rehabilitation-Oriented Assessment Guidelines				
Yes	195	180 (92.3)[e]	25 (12.8)[e]	20 (10.3)
No	207	204 (98.6)	9 (4.3)	18 (8.7)

Abbreviation: K–12, kindergarten to 12th grade.

[a] Different from respondents who completed a professional undergraduate program.

[b] Different from respondents who completed a professional master's program.

[c] Different from respondents employed in nontraditional settings.

[d] *Nontraditional* included industrial or occupational medicine, rehabilitation clinics, physicians' practices, hospitals, and military settings.

[e] Different from respondents who were unfamiliar with the guidelines.

Appendix Table 2. Demographic Influences of Evaluation Methods for Ankle-Joint Swelling

Variable	Total	Evaluation Method, No. (%)		
		Figure-of-8	Visual Inspection	Other
Gender				
Female	253	72 (28.5)	248 (98.0)	8 (3.2)
Male	142	43 (30.3)	136 (95.8)	12 (8.5)
Other	1	1 (100)	1 (100)	1 (100)
Age, y				
20–29	202	54 (26.7)	199 (98.5)	9 (4.5)[a]
30–39	121	41 (33.9)	118 (97.5)	4 (3.3)[a]
40–49	40	13 (32.5)	37 (92.5)	3 (7.5)
50–59	26	7 (26.9)	24 (92.3)	5 (19.2)
≥60	7	1 (14.3)	7 (100)	0 (0.0)
Highest degree earned				
Bachelor's	52	16 (30.8)	49 (94.2)	4 (7.7)
Master's	324	92 (28.4)	316 (97.5)	16 (4.9)
Terminal degree	19	8 (42.1)	19 (100)	1 (5.3)
Educational programs completed				
Professional undergraduate	294	93 (31.6)	287 (97.6)	15 (5.1)
Professional master's	98	26 (26.5)	94 (95.9)	2 (2.0)
Postprofessional master's	85	25 (29.4)	83 (97.6)	3 (3.5)
Doctorate in athletic training	11	4 (36.4)	11 (100)	1 (9.1)
Athletic training residency	6	1 (16.7)	6 (100)	1 (16.7)
Professional internship	29	5 (17.2)	27 (93.1)	4 (13.8)
Postprofessional internship or fellowship	21	7 (33.3)	21 (100)	3 (14.3)
Years of athletic training practice				
0–5	169	46 (27.2)	166 (98.2)[b]	9 (5.3)
6–10	102	32 (31.4)	100 (98.0)[b]	2 (2.0)[b]
11–15	57	16 (28.1)	57 (100)	4 (7.0)
16–20	27	8 (29.6)	26 (96.3)	0 (0.0)
21–29	27	10 (37.0)	22 (81.5)	5 (18.5)
≥30	14	4 (28.6)	14 (100)	1 (7.1)
Current practice setting				
Professional athletics	14	8 (57.1)	12 (85.7)[c]	1 (7.1)
Collegiate athletics	212	57 (26.9)	210 (99.1)	10 (4.7)
K–12 athletics	119	34 (28.6)	116 (97.5)	5 (4.2)
Nontraditional[d]	51	17 (33.3)	47 (92.2)[c]	5 (9.8)
Patients with ankle sprain treated in past year, No.				
1–5	170	49 (28.8)	166 (97.6)	10 (5.9)
6–10	127	37 (29.1)	124 (97.6)	6 (4.7)
11–15	52	14 (26.9)	51 (98.1)	1 (1.9)
16–20	28	10 (35.7)	26 (92.9)	2 (7.1)
≥21	19	6 (31.6)	18 (94.7)	2 (10.5)
Served as preceptor to athletic training student in past year				
Yes	146	44 (30.1)	143 (97.9)	8 (5.5)
No	250	72 (28.8)	242 (96.8)	13 (5.2)
Familiar with International Ankle Consortium Rehabilitation-Oriented Assessment Guidelines				
Yes	179	62 (34.6)[e]	176 (98.3)	13 (7.3)
No	217	54 (24.9)	209 (96.3)	8 (3.7)

Abbreviation: K–12, kindergarten to 12th grade.
[a] Different from respondents aged 50–59 years.
[b] Different from respondents with 21–29 years of clinical athletic training experience.
[c] Different from respondents employed in collegiate athletics.
[d] *Nontraditional* included industrial or occupational medicine, rehabilitation clinics, physicians' practices, hospitals, and military settings.
[e] Different from respondents who were unfamiliar with the guidelines.

Appendix Table 3. Demographic Influences of Evaluation Methods for Ankle-Joint Range of Motion

Variable	Total	Evaluation Method, No. (%)			
		Goniometry	Weight-Bearing Lunge Test	Visual Inspection	Other
Gender					
Female	296	126 (42.6)	176 (59.5)	248 (83.8)	9 (3.0)
Male	174	82 (47.1)	99 (56.9)	149 (85.6)	8 (4.6)
Other	2	0 (0.0)	2 (100)	2 (100)	0 (0.0)
Age, y					
20–29	240	93 (38.8)	148 (61.7)	207 (86.3)	10 (4.2)
30–39	139	63 (45.3)	83 (59.7)	117 (84.2)	2 (1.4)
40–49	52	28 (53.8)	26 (50.0)	43 (82.7)	2 (3.8)
50–59	31	18 (58.1)	13 (41.9)	23 (74.2)	2 (6.5)
≥60	10	6 (60.0)	7 (70.0)	9 (90.0)	1 (10.0)
Highest degree earned					
Bachelor's	72	42 (58.3)[a]	32 (44.4)[a]	58 (80.6)	3 (4.2)
Master's	373	154 (41.3)	227 (60.9)	321 (86.1)	13 (3.5)
Terminal degree	26	11 (42.3)	18 (69.2)	20 (76.9)	1 (3.8)
Educational programs completed					
Professional undergraduate	358	166 (46.4)	211 (58.9)	301 (84.1)	9 (2.5)
Professional master's	109	39 (35.8)	66 (60.6)	96 (88.1)	8 (7.3)
Postprofessional master's	105	37 (35.2)	73 (69.5)	86 (81.9)	2 (1.9)
Doctorate in athletic training	14	5 (35.7)	11 (78.6)	10 (71.4)	1 (7.1)
Athletic training residency	10	3 (30.0)	7 (70.0)	9 (90.0)	0 (0.0)
Professional internship	34	13 (38.2)	14 (41.2)	29 (85.3)	1 (2.9)
Postprofessional internship or fellowship	25	10 (40.0)	19 (76.0)	20 (80.0)	1 (4.0)
Years of athletic training practice					
0–5	207	89 (43.0)	126 (60.9)	178 (86.0)	11 (5.3)
6–10	111	43 (38.7)	73 (65.8)[b]	96 (86.5)	2 (1.8)
11–15	67	29 (43.3)	36 (53.7)	55 (82.1)	0 (0.0)
16–20	35	17 (48.6)	17 (48.6)	29 (82.9)	0 (0.0)
21–29	33	16 (48.5)	12 (36.4)	28 (84.8)	3 (9.1)
≥30	19	14 (73.7)	13 (68.4)	12 (63.2)	1 (5.3)
Current practice setting					
Professional athletics	16	12 (75.0)	13 (81.3)[c]	13 (81.3)	2 (12.5)
Collegiate athletics	263	112 (42.6)	167 (63.5)[c]	214 (81.4)[c]	8 (3.0)
K–12 athletics	140	58 (41.4)	63 (45.0)	128 (91.4)	5 (3.6)
Nontraditional[d]	53	26 (49.1)	34 (64.2)	44 (83.0)	2 (3.8)
Patients with ankle sprain treated in past year, No.					
1–5	217	92 (42.4)	127 (58.5)	179 (82.5)	9 (4.1)
6–10	143	70 (49.0)	93 (65.0)	117 (81.8)	6 (4.2)
11–15	58	24 (41.4)	30 (51.7)	54 (93.1)	2 (3.4)
16–20	34	14 (41.2)	18 (52.9)	30 (88.2)	0 (0.0)
≥21	20	8 (40.0)	9 (45.0)	19 (95.0)	0 (0.0)
Served as preceptor to athletic training student in past year					
Yes	166	72 (43.4)	111 (66.9)	135 (81.3)	6 (3.6)
No	306	136 (44.4)	166 (54.2)	264 (86.3)	11 (3.6)
Familiar with International Ankle Consortium Rehabilitation-Oriented Assessment Guidelines					
Yes	226	107 (47.3)	149 (65.9)[e]	178 (78.8)[e]	4 (1.8)
No	246	101 (41.1)	128 (52.0)	221 (89.8)	13 (5.3)

Abbreviation: K–12, kindergarten to 12th grade.

[a] Different from respondents with a master's degree.

[b] Different from respondents with 21–29 years of clinical athletic training experience.

[c] Different from respondents employed in K–12 athletics.

[d] *Nontraditional* included industrial or occupational medicine, rehabilitation clinics, physicians' practices, hospitals, and military settings.

[e] Different from respondents who were unfamiliar with the guidelines.

Appendix Table 4. Demographic Influences of Evaluation Methods for Ankle-Joint Arthrokinematics

Variable	Total	Evaluation Method, No. (%)	
		Posterior Talar Glide Test	Other
Gender			
Female	89	80 (89.9)	13 (14.6)
Male	55	50 (90.9)	10 (18.2)
Other	0	0 (0.0)	0 (0.0)
Age, y			
20–29	56	52 (92.9)	5 (8.9)
30–39	45	42 (93.3)	5 (11.1)
40–49	20	18 (90.0)	5 (25.0)
50–59	17	14 (82.4)	6 (35.3)
≥60	6	4 (66.7)	2 (33.3)
Highest degree earned			
Bachelor's	18	16 (88.9)	3 (16.7)
Master's	116	104 (89.7)	20 (17.2)
Terminal degree	10	10 (100)	0 (0.0)
Educational programs completed			
Professional undergraduate	104	93 (89.4)	16 (15.4)
Professional master's	34	30 (88.2)	6 (17.6)
Postprofessional master's	37	36 (97.3)	1 (2.7)
Doctorate in athletic training	7	7 (100)	0 (0.0)
Athletic training residency	5	3 (60.0)[a]	2 (40.0)[a]
Professional internship	16	14 (87.5)	5 (31.3)[a]
Postprofessional internship or fellowship	4	4 (100)	0 (0.0)
Years of athletic training practice			
0–5	51	47 (92.2)[b]	5 (9.8)[b]
6–10	30	28 (93.3)	2 (6.7)[b]
11–15	25	24 (96.0)	4 (16.0)
16–20	11	9 (81.8)	3 (27.3)
21–29	14	14 (100)	3 (21.4)
≥30	13	8 (61.5)	6 (46.2)
Current practice setting			
Professional athletics	7	7 (100)	2 (28.6)
Collegiate athletics	71	65 (91.5)	7 (9.9)
K–12 athletics	39	35 (89.7)	7 (17.9)
Nontraditional[c]	27	23 (85.2)	7 (25.9)
Patients with ankle sprain treated in past year, No.			
1–5	50	47 (94.0)	6 (12.0)
6–10	51	43 (84.3)	10 (19.6)
11–15	20	18 (90.0)	3 (15.0)
16–20	15	15 (100)	2 (13.3)
≥21	8	7 (87.5)	2 (25.0)
Served as preceptor to athletic training student in past year			
Yes	49	43 (87.8)	9 (18.4)
No	95	87 (91.6)	14 (14.7)
Familiar with International Ankle Consortium Rehabilitation-Oriented Assessment Guidelines			
Yes	81	75 (92.6)	12 (14.8)
No	63	55 (87.3)	11 (17.5)

Abbreviation: K–12, kindergarten to 12th grade.

[a] Different from respondents who completed a postprofessional master's program.

[b] Different from respondents with ≥30 years of clinical athletic training experience.

[c] *Nontraditional* included industrial or occupational medicine, rehabilitation clinics, physicians' practices, hospitals, and military settings.

Appendix Table 5. Demographic Influences of Evaluation Methods for Ankle-Joint Strength Continued on Next Page

Variable	Total	Evaluation Method, No. (%)		
		Handheld Dynamometry	Manual Muscle Testing	Other
Gender				
Female	286	8 (2.8)	283 (99.0)	18 (6.3)
Male	162	6 (3.7)	159 (98.1)	16 (9.9)
Other	2	0 (0.0)	2 (100)	0 (0.0)
Age, y				
20–29	227	3 (1.3)	226 (99.6)	16 (7.0)
30–39	136	7 (5.1)	132 (97.1)	8 (5.9)
40–49	49	3 (6.1)	49 (100)	2 (4.1)
50–59	27	1 (3.7)	26 (96.3)	6 (22.2)
≥60	11	0 (0.0)	11 (100)	2 (18.2)
Highest degree earned				
Bachelor's	68	4 (5.9)	68 (100)	1 (1.5)
Master's	361	9 (2.5)	355 (98.3)	32 (8.9)
Terminal degree	21	1 (4.8)	21 (100)	1 (4.8)
Educational programs completed				
Professional undergraduate	341	11 (3.2)	338 (99.1)	24 (7.0)
Professional master's	107	2 (1.9)	105 (98.1)	11 (10.3)
Postprofessional master's	100	3 (3.0)	97 (97.0)	7 (7.0)
Doctorate in athletic training	11	0 (0.0)	11 (100)	1 (9.1)
Athletic training residency	9	0 (0.0)	9 (100)	0 (0.0)
Professional internship	31	0 (0.0)	31 (100)	3 (9.7)
Postprofessional internship or fellowship	22	0 (0.0)	22 (100)	2 (9.1)
Years of athletic training practice				
0–5	198	2 (1.0)	197 (99.5)	15 (7.6)
6–10	104	5 (4.8)	101 (97.1)	5 (4.8)
11–15	66	3 (4.5)	65 (98.5)	5 (7.6)
16–20	32	2 (6.3)	32 (100)	1 (3.1)
21–29	30	1 (3.3)	30 (100)	2 (6.7)
≥30	20	1 (5.0)	19 (95.0)	6 (30.0)
Current practice setting				
Professional athletics	15	1 (6.7)	14 (93.3)	4 (26.7)
Collegiate athletics	244	11 (4.5)	241 (98.8)	16 (6.6)[a]
K–12 athletics	136	2 (1.5)	135 (99.3)	7 (5.1)[a]
Nontraditional[b]	55	0 (0.0)	54 (98.2)	7 (12.7)
Patients with ankle sprain treated in past year, No.				
1–5	201	6 (3.0)	199 (99.0)	12 (6.0)
6–10	141	5 (3.5)	139 (98.6)	14 (9.9)
11–15	55	2 (3.6)	54 (98.2)	4 (7.3)
16–20	33	0 (0.0)	32 (97.0)	3 (9.1)
≥21	20	1 (5.0)	20 (100)	1 (5.0)
Served as preceptor to athletic training student in past year				
Yes	157	4 (2.5)	156 (99.4)	14 (8.9)
No	293	10 (3.4)	288 (98.3)	20 (6.8)
Familiar with International Ankle Consortium Rehabilitation-Oriented Assessment Guidelines				
Yes	213	10 (4.7)	210 (98.6)	18 (8.5)
No	237	4 (1.7)	234 (98.7)	16 (6.8)

Abbreviation: K–12, kindergarten to 12th grade.

[a] Different from respondents employed in professional athletics.

[b] *Nontraditional* included industrial or occupational medicine, rehabilitation clinics, physicians' practices, hospitals, and military settings.

Appendix Table 6. Demographic Influences of Evaluation Methods for Balance

Variable	Total	Evaluation Method, No. (%)			
		Balance Error Scoring System	Star Excursion Balance Test	Foot-Lift Test	Other
Gender					
Female	257	195 (75.9)	115 (44.7)	31 (12.1)	38 (14.8)
Male	157	103 (65.6)	68 (43.3)	23 (14.6)	34 (21.7)
Other	2	1 (50.0)	1 (50.0)	1 (50.0)	0 (0.0)
Age, y					
20–29	202	157 (77.7)	95 (47.0)	18 (8.9)	26 (12.9)
30–39	123	88 (71.5)	55 (44.7)	24 (19.5)	21 (17.1)
40–49	51	34 (66.7)	19 (37.3)	5 (9.8)	10 (19.6)
50–59	30	15 (50.0)[a]	12 (40.0)	4 (13.3)	12 (40.0)
≥60	10	5 (50.0)	3 (30.0)	4 (40.0)[a]	3 (30.0)
Highest degree earned					
Bachelor's	64	54 (84.4)[b]	29 (45.3)	14 (21.9)	4 (6.3)
Master's	331	237 (71.6)[b]	145 (43.8)	37 (11.2)	61 (18.4)[c]
Terminal degree	21	8 (38.1)	10 (47.6)	4 (19.0)	7 (33.3)[c]
Educational programs completed					
Professional undergraduate	318	231 (72.6)	142 (44.7)[d]	38 (11.9)	50 (15.7)
Professional master's	91	63 (69.2)	32 (35.2)[d]	16 (17.6)	20 (22.0)
Postprofessional master's	90	61 (67.8)	56 (62.2)	6 (6.7)	17 (18.9)
Doctorate in athletic training	10	5 (50.0)	6 (60.0)	3 (30.0)	2 (20.0)
Athletic training residency	9	5 (55.6)	2 (22.2)	0 (0.0)	4 (44.4)
Professional internship	35	20 (57.1)	14 (40.0)	5 (14.3)	10 (28.6)
Postprofessional internship or fellowship	19	10 (52.6)	9 (47.4)	3 (15.8)	4 (21.1)
Years of athletic training practice					
0–5	171	132 (77.2)	82 (48.0)	20 (11.7)	24 (14.0)
6–10	98	75 (76.5)	42 (42.9)	8 (8.2)	17 (17.3)
11–15	62	40 (64.5)	27 (43.5)	15 (24.2)	11 (17.7)
16–20	33	22 (66.7)	10 (30.3)	1 (3.0)	7 (21.2)
21–29	31	20 (64.5)	13 (41.9)	8 (25.8)	6 (19.4)
≥30	21	10 (47.6)	10 (47.6)	3 (14.3)	7 (33.3)
Current practice setting					
Professional athletics	15	10 (66.7)	5 (33.3)	4 (26.7)	5 (33.3)
Collegiate athletics	220	153 (69.5)	104 (47.3)	16 (7.3)	40 (18.2)
K–12 athletics	125	92 (73.6)	49 (39.2)	22 (17.6)[e]	17 (13.6)
Nontraditional[f]	56	33 (58.9)	26 (46.4)	13 (23.2)[e]	10 (17.9)
Patients with ankle sprain treated in past year, No.					
1–5	184	134 (72.8)	84 (45.7)	23 (12.5)	31 (16.8)
6–10	134	92 (68.7)	65 (48.5)	15 (11.2)	20 (14.9)
11–15	50	35 (70.0)	18 (36.0)	10 (20.0)	10 (20.0)
16–20	33	29 (87.9)	11 (33.3)	5 (15.2)	4 (12.1)
≥21	15	9 (60.0)	6 (40.0)	2 (13.3)	7 (46.7)
Served as preceptor to athletic training student in past year					
Yes	144	111 (77.1)	72 (50.0)	12 (8.3)[g]	25 (17.4)
No	272	188 (69.1)	112 (41.2)	43 (15.8)	47 (17.3)
Familiar with International Ankle Consortium Rehabilitation-Oriented Assessment Guidelines					
Yes	207	152 (73.4)	109 (52.7)[h]	32 (15.5)	31 (15.0)
No	209	147 (70.3)	75 (35.9)	23 (11.0)	41 (19.6)

Abbreviation: K–12, kindergarten to 12th grade.
[a] Different from respondents aged 20–29 years.
[b] Different from respondents with a terminal degree.
[c] Different from respondents with a bachelor's degree.
[d] Different from respondents who completed a postprofessional master's program.
[e] Different from respondents employed in collegiate athletics.
[f] *Nontraditional* included industrial or occupational medicine, rehabilitation clinics, physicians' practices, hospitals, and military settings.
[g] Different from respondents who did not serve as a preceptor.
[h] Different from respondents who were unfamiliar with the guidelines.

Appendix Table 7. Demographic Influences of Evaluation Methods for Gait

Variable	Total	Evaluation Method, No. (%)	
		Visual Inspection	Other
Gender			
Female	236	236 (100)	6 (2.5)
Male	145	144 (99.3)	7 (4.8)
Other	2	2 (100)	0 (0.0)
Age, y			
20–29	194	194 (100)	4 (2.1)
30–39	111	110 (99.1)	4 (3.6)
40–49	42	42 (100)	4 (9.5)
50–59	26	26 (100)	1 (3.8)
≥60	10	10 (100)	0 (0.0)
Highest degree earned			
Bachelor's	55	55 (100)	1 (1.8)
Master's	308	307 (99.7)	11 (3.6)
Terminal degree	20	20 (100)	1 (5.0)
Educational programs completed			
Professional undergraduate	296	295 (99.7)	10 (3.4)
Professional master's	80	80 (100)	2 (2.5)
Postprofessional master's	89	88 (98.9)	5 (5.6)
Doctorate in athletic training	11	11 (100)	1 (9.1)
Athletic training residency	7	7 (100)	1 (14.3)
Professional internship	29	29 (100)	2 (6.9)
Postprofessional internship or fellowship	18	18 (100)	1 (5.6)
Years of athletic training practice			
0–5	163	163 (100)	4 (2.5)
6–10	93	93 (100)	2 (2.2)
11–15	54	53 (98.1)	2 (3.7)
16–20	27	27 (100)	3 (11.1)
21–29	28	28 (100)	2 (7.1)
≥30	18	18 (100)	0 (0.0)
Current practice setting			
Professional athletics	14	14 (100)	3 (21.4)
Collegiate athletics	205	205 (100)	7 (3.4)[a]
K–12 athletics	116	116 (100)	1 (0.9)[a]
Nontraditional[b]	48	47 (97.9)	2 (4.2)
Patients with ankle sprain treated in past year, No.			
1–5	171	171 (100)	4 (2.3)
6–10	122	121 (99.2)	8 (6.6)
11–15	44	44 (100)	1 (2.3)
16–20	28	28 (100)	0 (0.0)
≥21	18	18 (100)	0 (0.0)
Served as preceptor to athletic training student in past year			
Yes	138	138 (100)	3 (2.2)
No	245	244 (99.6)	10 (4.1)
Familiar with International Ankle Consortium Rehabilitation-Oriented Assessment Guidelines			
Yes	189	189 (100)	7 (3.7)
No	194	193 (99.5)	6 (3.1)

Abbreviation: K–12, kindergarten to 12th grade.
[a] Different from respondents employed in professional athletics.
[b] *Nontraditional* included industrial or occupational medicine, rehabilitation clinics, physicians' practices, hospitals, and military settings.

Appendix Table 8. Demographic Influences of Evaluation Methods for Physical Activity Level

Variable	Total	Evaluation Method, No. (%)	
		Tegner Activity Scale	Other
Gender			
Female	93	15 (16.1)	78 (83.9)
Male	59	9 (15.3)	50 (84.7)
Other	1	0 (0.0)	1 (100)
Age, y			
20–29	71	11 (15.5)	60 (84.5)
30–39	49	10 (20.4)	39 (79.6)
40–49	16	2 (12.5)	14 (87.5)
50–59	14	1 (7.1)	13 (92.9)
≥60	3	0 (0.0)	3 (100)
Highest degree earned			
Bachelor's	19	8 (42.1)[a]	11 (57.9)[a]
Master's	126	14 (11.1)	112 (88.9)
Terminal degree	8	2 (25.0)	6 (75.0)
Educational programs completed			
Professional undergraduate	118	21 (17.8)	97 (82.2)
Professional master's	36	4 (11.1)	32 (88.9)
Postprofessional master's	26	4 (15.4)	22 (84.6)
Doctorate in athletic training	3	2 (66.7)	1 (33.3)
Athletic training residency	2	0 (0.0)	2 (100)
Professional internship	10	1 (10.0)	9 (90.0)
Postprofessional internship or fellowship	13	0 (0.0)	13 (100)
Years of athletic training practice			
0–5	59	8 (13.6)	51 (86.4)
6–10	37	7 (18.9)	30 (81.1)
11–15	28	5 (17.9)	23 (82.1)
16–20	11	1 (9.1)	10 (90.9)
21–29	11	2 (18.2)	9 (81.8)
≥30	7	1 (14.3)	6 (85.7)
Current practice setting			
Professional athletics	9	2 (22.2)	7 (77.8)
Collegiate athletics	85	11 (12.9)	74 (87.1)
K–12 athletics	32	6 (18.8)	26 (81.3)
Nontraditional[b]	27	5 (18.5)	21 (77.8)
Patients with ankle sprain treated in past year, No.			
1–5	65	8 (12.3)	57 (87.7)
6–10	48	7 (14.6)	41 (85.4)
11–15	22	6 (27.3)	16 (72.7)
16–20	12	2 (16.7)	10 (83.3)
≥21	6	1 (16.7)	5 (83.3)
Served as preceptor to athletic training student in past year			
Yes	52	9 (17.3)	43 (82.7)
No	101	15 (14.9)	86 (85.1)
Familiar with International Ankle Consortium Rehabilitation-Oriented Assessment Guidelines			
Yes	79	17 (21.5)[c]	62 (78.5)[c]
No	74	7 (9.5)	67 (90.5)

Abbreviation: K–12, kindergarten to 12th grade.
[a] Different from respondents with a master's degree.
[b] *Nontraditional* included industrial or occupational medicine, rehabilitation clinics, physicians' practices, hospitals, and military settings.
[c] Different from respondents who were unfamiliar with the guidelines.

Appendix Table 9. Demographic Influences of Evaluation Methods for Functional Capacity Continued on Next Page

Variable	Total	Evaluation Method, No. (%)			
		Jumping/Hopping Progressions	Agility Progressions	Sport-Specific Progressions	Other
Gender					
Female	286	275 (96.2)	263 (92.0)	280 (97.9)	6 (2.1)
Male	170	164 (96.5)	153 (90.0)	165 (97.1)	3 (1.8)
Other	2	2 (100)	2 (100)	2 (100)	0 (0.0)
Age, y					
20–29	231	223 (96.5)	206 (89.2)	228 (98.7)	6 (2.6)
30–39	134	127 (94.8)	122 (91.0)	128 (95.5)	1 (0.7)
40–49	51	49 (96.1)	48 (94.1)	50 (98.0)	0 (0.0)
50–59	31	31 (100)	31 (100)	31 (100)	2 (6.5)
≥60	11	11 (100)	11 (100)	10 (90.9)	0 (0.0)
Highest degree earned					
Bachelor's	66	66 (100)	60 (90.9)	66 (100)	1 (1.5)
Master's	370	354 (95.7)	338 (91.4)	360 (97.3)	8 (2.2)
Terminal degree	22	21 (95.5)	20 (90.9)	21 (95.5)	0 (0.0)
Educational programs completed					
Professional undergraduate	343	329 (95.9)	312 (91.0)	338 (98.5)	5 (1.5)
Professional master's	108	103 (95.4)	98 (90.7)	103 (95.4)	3 (2.8)
Postprofessional master's	103	98 (95.1)	97 (94.2)	101 (98.1)	3 (2.9)
Doctorate in athletic training	12	11 (91.7)	10 (83.3)	11 (91.7)	0 (0.0)
Athletic training residency	10	10 (100)	7 (70.0)	9 (90.0)	0 (0.0)
Professional internship	37	36 (97.3)	35 (94.6)	36 (97.3)	0 (0.0)
Postprofessional internship or fellowship	20	20 (100)	18 (90.0)	20 (100)	2 (10.0)
Years of athletic training practice					
0–5	202	197 (97.5)	181 (89.6)	198 (98.0)	6 (3.0)
6–10	105	99 (94.3)	94 (89.5)	103 (98.1)	0 (0.0)
11–15	62	58 (93.5)	57 (91.9)	60 (96.8)	1 (1.6)
16–20	37	35 (94.6)	34 (91.9)	36 (97.3)	0 (0.0)
21–29	31	31 (100)	31 (100)	29 (93.5)	0 (0.0)
≥30	21	21 (100)	21 (100)	21 (100)	2 (9.5)
Current practice setting					
Professional athletics	17	17 (100)	15 (88.2)	17 (100)	0 (0.0)
Collegiate athletics	253	244 (96.4)	230 (90.9)	248 (98.0)	6 (2.4)
K–12 athletics	134	127 (94.8)	123 (91.8)	130 (97.0)	3 (2.2)
Nontraditional[a]	54	53 (98.1)	50 (92.6)	52 (96.3)	0 (0.0)
Patients with ankle sprain treated in past year, No.					
1–5	209	203 (97.1)	190 (90.9)	206 (98.6)	3 (1.4)
6–10	138	133 (96.4)	130 (94.2)	134 (97.1)	5 (3.6)
11–15	56	52 (92.9)	47 (83.9)	55 (98.2)	0 (0.0)
16–20	36	35 (97.2)	34 (94.4)	34 (94.4)	1 (2.8)
≥21	19	18 (94.7)	17 (89.5)	18 (94.7)	0 (0.0)
Served as preceptor to athletic training student in past year					
Yes	165	160 (97.0)	152 (92.1)	161 (97.6)	2 (1.2)
No	293	281 (95.9)	266 (90.8)	286 (97.6)	7 (2.4)
Familiar with International Ankle Consortium Rehabilitation-Oriented Assessment Guidelines					
Yes	219	214 (97.7)	204 (93.2)	218 (99.5)[b]	2 (0.9)
No	239	227 (95.0)	214 (89.5)	229 (95.8)	7 (2.9)

Abbreviation: K–12, kindergarten to 12th grade.

[a] *Nontraditional* included industrial or occupational medicine, rehabilitation clinics, physicians' practices, hospitals, and military settings.

[b] Different from respondents who were unfamiliar with the guidelines.

Appendix Table 10. Demographic Influences of Evaluation Methods for Patient-Reported Outcomes Continued on Next Page

Variable	Total	Evaluation Method, No. (%)						
		Foot and Ankle Ability Measure	Foot and Ankle Disability Index	Global Rate of Change	Lower Extremity Functional Scale	Patient-Specific Functional Scale	General Conversation	Other
Gender								
Female	75	15 (20.0)	15 (20.0)	9 (12.0)	28 (37.3)	24 (32.0)	55 (73.3)	3 (4.0)
Male	39	12 (30.8)	12 (30.8)	7 (17.9)	12 (30.8)	14 (35.9)	29 (74.4)	2 (5.1)
Other	0	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Age, y								
20–29	64	15 (23.4)	11 (17.2)	7 (10.9)	19 (29.7)	23 (35.9)	53 (82.8)	1 (1.6)[a]
30–39	30	8 (26.7)	10 (33.3)	6 (20.0)	13 (43.3)	9 (30.0)	19 (63.3)	0 (0.0)
40–49	8	2 (25.0)	3 (37.5)	1 (12.5)	5 (62.5)	5 (65.2)	5 (62.5)	1 (12.5)
50–59	9	2 (22.2)	3 (33.3)	2 (22.2)	3 (33.3)	2 (22.2)	4 (44.4)	3 (33.3)
≥60	3	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (66.7)	3 (100)	0 (0.0)
Highest degree earned								
Bachelor's	11	1 (9.1)	2 (18.2)	0 (0.0)	2 (18.2)	2 (18.2)	10 (90.9)	0 (0.0)
Master's	90	22 (24.4)	20 (22.2)	9 (10.0)[b]	32 (35.6)	32 (35.6)	67 (74.4)	5 (5.6)
Terminal degree	13	4 (30.8)	5 (38.5)	7 (53.8)	6 (46.2)	4 (30.8)	7 (53.8)	0 (0.0)
Educational programs completed								
Professional undergraduate	84	20 (23.8)	21 (25.0)	13 (15.5)	30 (35.7)	29 (34.5)	64 (76.2)	3 (3.6)
Professional master's	25	6 (24.0)	5 (20.0)	1 (4.0)	7 (28.0)	7 (28.0)	17 (68.0)	1 (4.0)
Postprofessional master's	32	11 (34.4)	7 (21.9)	8 (25.0)	12 (37.5)	12 (37.5)	22 (68.8)	1 (3.1)
Doctorate in athletic training	8	3 (37.5)	3 (37.9)	6 (75.0)[c,d]	5 (62.5)	3 (37.5)	4 (50.0)	0 (0.0)
Athletic training residency	5	1 (20.0)	1 (20.0)	3 (60.0)[d]	0 (0.0)	3 (60.0)	4 (80.0)	0 (0.0)
Professional internship	8	0 (0.0)	1 (12.5)	0 (0.0)	2 (25.0)	2 (25.0)	6 (75.0)	2 (25.0)
Postprofessional internship or fellowship	7	1 (14.3)	0 (0.0)	0 (0.0)	0 (0.0)	4 (57.1)	6 (85.7)	0 (0.0)
Years of athletic training practice								
0–5	51	13 (25.5)	8 (15.7)	5 (9.8)	15 (29.4)	17 (33.3)	44 (86.3)	1 (2.0)
6–10	30	7 (23.3)	7 (23.3)	7 (23.3)	11 (36.7)	13 (43.3)	18 (60.0)	0 (0.0)
11–15	14	3 (21.4)	6 (42.9)	1 (7.1)	6 (42.9)	3 (21.4)	11 (78.6)	0 (0.0)
16–20	4	0 (0.0)	1 (25.0)	0 (0.0)	2 (50.0)	0 (0.0)	3 (75.0)	1 (25.0)
21–29	9	2 (22.2)	2 (22.2)	1 (11.1)	4 (44.4)	3 (33.3)	6 (66.7)	2 (22.2)
≥30	6	2 (33.3)	3 (50.0)	2 (33.3)	2 (33.3)	2 (33.3)	2 (33.3)	1 (16.7)
Current practice setting								
Professional athletics	7	0 (0.0)	2 (28.6)	1 (14.3)	2 (28.6)	2 (28.6)	6 (85.7)	0 (0.0)
Collegiate athletics	63	13 (20.6)	11 (17.5)	9 (14.3)	15 (23.8)	21 (33.3)	48 (76.2)	4 (6.3)
K–12 athletics	19	6 (31.6)	4 (21.1)	3 (15.8)	7 (36.8)	6 (31.6)	13 (68.4)	0 (0.0)
Nontraditional[e]	25	8 (32.0)	10 (40.0)	3 (12.0)	16 (64.0)	9 (36.0)	17 (68.0)	1 (4.0)
Patients with ankle sprain treated in past year, No.								
1–5	52	10 (19.2)	14 (26.9)	6 (11.5)	22 (42.3)	16 (30.8)	38 (73.1)	3 (5.8)
6–10	42	11 (26.2)	7 (16.7)	6 (14.3)	10 (23.8)	16 (38.1)	30 (71.4)	2 (4.8)
11–15	12	3 (25.0)	5 (41.7)	3 (25.0)	5 (41.7)	4 (33.3)	9 (75.0)	0 (0.0)
16–20	6	2 (33.3)	1 (16.7)	1 (16.7)	2 (33.3)	1 (16.7)	5 (83.3)	0 (0.0)
≥21	2	1 (50.0)	0 (0.0)	0 (0.0)	1 (50.0)	1 (50.0)	2 (100)	0 (0.0)
Served as preceptor to athletic training student in past year	45	8 (17.8)	9 (20.0)	5 (11.1)	12 (26.7)	13 (28.9)	30 (66.7)	4 (8.9)
Yes	69	19 (27.5)	18 (26.1)	11 (15.9)	28 (40.6)	25 (36.2)	54 (78.3)	1 (1.4)
No								

Appendix Table 10. Continued From Previous Page

Variable	Total	Evaluation Method, No. (%)						
		Foot and Ankle Ability Measure	Foot and Ankle Disability Index	Global Rate of Change	Lower Extremity Functional Scale	Patient-Specific Functional Scale	General Conversation	Other
Familiar with International Ankle Consortium Rehabilitation-Oriented Assessment Guidelines								
Yes	65	22 (33.8)[f]	23 (35.4)[f]	11 (16.9)	28 (43.1)[f]	19 (29.2)	47 (72.3)	2 (3.1)
No	49	5 (10.2)	4 (8.2)	5 (10.2)	12 (24.5)	19 (38.8)	37 (75.5)	3 (6.1)

Abbreviation: K–12, kindergarten to 12th grade.
[a] Different from respondents aged 50–59 years.
[b] Different from respondents with a terminal degree.
[c] Different from respondents who completed a professional undergraduate program.
[d] Different from respondents who completed a professional master's program.
[e] *Nontraditional* included industrial or occupational medicine, rehabilitation clinics, physicians' practices, hospitals, and military settings.
[f] Different from respondents who were unfamiliar with the guidelines.