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National Collegiate Athletic Association Division I Certified Athletic Trainers' Perceptions of the Benefits of Sport Psychology Services

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Context: Certified athletic trainers (ATs) are responsible for integrating relevant professionals into the rehabilitation team to assist with the holistic care of injured athletes.

Objective: To explore National Collegiate Athletic Association Division I (DI) ATs' experience with sport psychology consultants (SPCs), willingness to encourage athletes to use SPCs for injury rehabilitation, and perceptions of the benefits of sport psychology services.

Design: Quantitative study.

Setting: A Web-based survey was administered to a national sample of DI ATs.

Patients or Other Participants: A total of 659 (341 men, 318 women) ATs completed the survey.

Main Outcome Measure(s): Athletic trainers' experience with SPCs, willingness to encourage athletes to seek sport psychology services, and perceptions of the benefits of those services in injury-rehabilitation settings were self-reported using a rating scale that ranged from 1 (*never* or *not at all*) to 5 (*definitely* or *extremely*).

Results: Logistic regression revealed that the availability of SPCs, previous encouragement to athletes to seek sport psychology services, and previous positive interactions with SPCs predicted the ATs' willingness to encourage athletes to use these services ($P < .0001$). The services ATs rated the highest for injury rehabilitation were managing anxiety and emotion, improving coping techniques, and building confidence (ie, confidence in returning to sport and building confidence). Chi-square analyses indicated that female ATs' ratings of perceived benefits were higher ($P \leq .001$) than those of male ATs, and the ratings of ATs who were likely to encourage the use of SPCs were higher ($P \leq .001$) than those who were unlikely to encourage SPC service use.

Conclusions: Athletic trainers in our study who had previous positive SPC experiences were most likely to use SPCs and their services during the injury-rehabilitation process. Possible implications are offered for how ATs interested in sport psychology services might call on SPCs to complement their work with injured athletes.

Key Words: sport psychology consulting, psychological skills, athletic injury, injury rehabilitation

Key Points

- National Collegiate Athletic Association Division I athletic trainers' willingness to encourage injured student-athletes to use sport psychology services was influenced by on-campus availability and, perhaps more importantly, the quality of the experiences and interactions athletic trainers had with sport psychology consultants and their services.
- Athletic trainers appeared to be most interested in sport psychology consultant services that help athletes manage anxiety, improve coping skills, build confidence, deal with pressure, and minimize concerns about returning to sport.

Sports medicine professionals around the world, such as athletic trainers (ATs) in the United States and chartered physiotherapists in the United Kingdom, recognize the importance of psychological factors in injury rehabilitation and acknowledge the influence of these factors on athletes' physical and psychological recovery.[1–5] In the United States, particularly at the collegiate level, certified ATs are usually responsible for managing the care and recovery of student-athletes during the injury-rehabilitation process. Because of the strong personal bonds ATs develop with athletes during this experience, it has been argued that ATs are in a unique position to provide psychological assistance or psychological skills training as a part of athletes' holistic care.[5–7] However, some ATs have reported feeling less than qualified or uncomfortable incorporating psychological skills in their work with athletes.[3,6,7] This perceived inadequacy may be due, at least in part, to the relatively limited training ATs have traditionally received in the application of psychological techniques.[3,7] Also, it is reasonable to presume that ATs at the collegiate level might find it difficult to provide adequate psychological services in addition to all the other forms of assistance they are required to deliver during the rehabilitation process.

A possible solution to this dilemma might be to incorporate the skills of a multidisciplinary team of professionals working in concert and capable of providing athletes with the various forms of specialized assistance they need during rehabilitation.[7] As the person likely responsible for creating and managing such a team, the AT would decide how to incorporate the services of team members as needed.[7] Arguably the most qualified professional for providing psychological assistance for enhancing athletes' performance during injury rehabilitation is a

competent sport psychology consultant (SPC).[5] A qualified SPC has completed formal undergraduate and graduate coursework in the sport sciences, psychological sciences, and sport psychology, in addition to having undertaken supervised practical experiences that involved the implementation of psychological skills with athletes or nonsport performers.[8] In the remainder of this paper, the term *SPC* will be used to refer only to those individuals presumed to possess proper training and applied experience in sport psychology. An important factor for ATs to consider when looking for an expert to assist them in meeting the psychological needs of injured athletes is the difference between an SPC and other professionals such as licensed mental health professionals (ie, psychologists, counselors, social workers). For additional discussion, see the position paper, "How to Choose a Sport Psychology Consultant."[9] Sport psychology consultants are trained to assist athletes with psychological preparation for competition and the mental and emotional demands of their sport. This assistance includes the ability to teach a variety of psychological skills (eg, building confidence, improving focus, dealing with pressure). In contrast, licensed mental health professionals are trained to assist individuals in dealing with personal and emotional problems (eg, eating disorders, depression, substance abuse).[8] Although both types of professionals could be members of a multidisciplinary sports medicine team,[7] we emphasize the role of SPCs in the current study, which is consistent with previous research examining collegiate athletes', coaches', and administrators' perceptions of and receptivity toward SPCs and sport psychology services.[10–12]

Prior studies suggested that ATs may differ with respect to their willingness to employ the services of SPCs.[4,7] One explanation for this difference might be the relative availability of the SPC.[3] It is also possible that some ATs may not be aware of what SPCs do, the services they provide, or the potential benefits of these services during the rehabilitation process. Regardless, little is currently known about ATs' perceptions of SPCs and their services, particularly at the collegiate level. Therefore, the primary purpose of our study was to survey National Collegiate Athletic Association (NCAA) Division I (DI) ATs to determine their experience with SPCs, their willingness to encourage athletes to use sport psychology services, and their perceptions of the potential benefits of a number of different services in the rehabilitation setting. We purposefully chose this sample for 2 reasons. First, the NCAA DI athletic environment appears to be receptive to the delivery of sport psychology services,[10–12] which recent research[13] suggests may be increasing in visibility and importance. Second, the current athletic training literature suggests the potential benefit of a number of psychological skills and strategies for injured student-athletes,[7] particularly those who feel pressured to recover quickly or to sometimes ignore their injuries for the good of the team.[14] Moreover, psychological assistance would likely be beneficial for athletes who have a fear of reinjury. For example, previous research[15] revealed that athletes who did not return to the same level of competition after anterior cruciate ligament reconstruction had higher levels of kinesiophobia or fear of reinjury than those who experienced a successful return. Sport psychology consultants can provide specific services that could benefit athletes during injury rehabilitation and return to sport. These services include assistance in managing emotions,[16] improving focus,[17] building confidence,[18] coping with anxiety,[19] dealing with pain,[20] and enhancing adherence to the rehabilitation process.[21]

Based on the results of previous investigations of ATs and other NCAA DI populations (eg, student-athletes, coaches, administrators), we expected that our participants' willingness to use SPCs would be predicted by the availability of an SPC,[3] as well as by the AT's gender,[10,11] work experience,[22] formal educational exposure to sport psychology,[23,24] and previous sport psychology experience.[10,11] In addition, we hypothesized that ATs' ratings of the benefits of specific sport psychology services would be influenced by SPC availability,[3] the AT's gender,[11] and his or her willingness to encourage athletes to seek assistance from an SPC.[12]

METHODS

Participants

A total of 659 NCAA DI ATs (341 men, 318 women), ranging in age from 22 to 66 years (mean = 33.08 ± 9.86 years), participated in our study. Participants identified themselves as white (n = 561), African American (n = 31), Hispanic or Latino (n = 25), Asian/Pacific Islander (n = 17), 2 or more races (not Hispanic or Latino; n = 11), American Indian (n = 1), or other (n = 4). A total of 146 participants (22.2%) held bachelor degrees; 502 (76.2%), master's degrees; and 11 (1.7%), doctoral degrees. They reported working primarily with 1 or more of the following sports: American football (n = 176), baseball (n = 78), basketball (n = 160), cheer and dance (n = 21), cross-country (n = 81), golf (n = 79), lacrosse (n = 60), soccer (n = 135), softball (n = 60), swimming (n = 61), tennis (n = 104), track and field—indoor (n = 105), track and field—outdoor (n = 108), volleyball (n = 95), and other (n = 12). Their professional classifications were director or head AT (n = 115; 91 men, 24 women), associate or assistant AT (n = 416; 204 men, 212 women), and graduate student or intern AT (n = 128; 46 men, 82 women). Their years of athletic training experience (mean = 10.42 ± 9.42) and experience at NCAA DI schools (mean = 8.46 ± 8.33) both ranged from 0 to 44 years.

Survey

The survey we used was based on one employed in previous research with NCAA DI athletes, coaches, and administrators[10–12] and adapted for use with ATs. (This study was part of a larger investigation that also examined ATs' perceptions of the benefits of SPCs and their services for dealing with the performance demands of practice and competition.) The survey consisted of 29 items designed to assess ATs' willingness to encourage athletes to seek sport psychology services and their perceptions of the benefits of these services in injury-rehabilitation settings. Consistent with previous authors,[10–12] we defined *SPCs* as persons with formal training in sport psychology who are capable of providing student-athletes with the psychological and emotional skills necessary for achieving peak performance and enhancing life quality.[8]

Demographic items included participants' gender, age, ethnicity, highest academic degree, professional title, years of athletic training experience, formal sport psychology

Table 1. Low, Moderate, and High Ratings of the Benefits of Sport Psychology Services for Injury Rehabilitation (N = 659)

Benefit	Rating, % (n)[a]		
	Low	Moderate	High
Managing anxiety	5.01 (33)	17.75 (117)	77.24 (509)
Improving coping techniques	8.04 (53)	23.52 (155)	68.43 (451)
Dealing with personal issues	7.28 (48)	20.03 (132)	72.69 (479)
Managing emotions	14.42 (95)	26.70 (176)	58.88 (388)
Confidence in returning to sport	12.29 (81)	27.92 (184)	59.79 (394)
Building confidence	13.51 (89)	28.07 (185)	58.42 (385)
Dealing with pressure	14.72 (97)	31.56 (208)	53.72 (354)
Improving focus	16.24 (107)	34.75 (229)	49.01 (323)
Improving motivation during rehabilitation	21.40 (141)	34.14 (225)	44.46 (293)
Preventing burnout	20.64 (136)	36.72 (242)	42.64 (281)
Communicating with coaches	24.43 (161)	33.38 (220)	42.19 (278)
Maintaining interactions with team members	22.46 (148)	37.94 (250)	39.60 (261)
Enhancing adherence	27.31 (180)	35.66 (235)	37.03 (244)
Communicating with teammates	28.98 (191)	34.90 (230)	36.12 (238)
Communicating with athletic trainers	31.41 (207)	36.12 (238)	32.47 (214)
Enhancing performance in rehabilitation	28.53 (188)	39.45 (260)	32.02 (211)
Managing pain	46.58 (307)	30.96 (204)	22.46 (148)

[a] Percentages are rounded.

educational experience(s) (eg, undergraduate or graduate college or university courses and degree emphasis), previous encouragement of use or referral of athletes to SPCs (ie, if the AT had encouraged or referred a student-athlete for sport psychology services), perceptions of previous experiences with SPCs (positive, negative, or mixed), professional interactions with SPCs (ie, if the AT had professionally interacted with SPCs), perceptions of such interactions (positive, negative, or mixed), availability of a SPC at the AT's institution (yes, no, or unknown), and, for those with an SPC available, perceptions of sport psychology services (positive, negative, or mixed).

After completing the demographic items, participants were instructed to rate their current willingness to encourage athletes to consult an SPC for injury-related and rehabilitation-related concerns on a 5-point scale ranging from 1 (*never*) to 5 (*definitely*). They were then asked to rate their perceptions of the possible benefit of each of 17 sport psychology services (Table 1) on a scale ranging from 1 (*not at all*) to 5 (*extremely*). The list of services was compiled from recent studies of NCAA DI athletes, coaches, and administrators,[10–12] the athletic training literature,[1–5,17] and the sport psychology literature.[10,11,18,25] The primary research team members (ie, 2 sport psychology faculty members and 5 graduate students at the first author's university) reviewed the aforementioned literature individually and identified the services each felt could be beneficial for injury rehabilitation. They then met to discuss their respective lists until they achieved consensus on the final list. Additional content for and face validity of the final list of services were achieved by obtaining the unanimous consensus of several external reviewers (ie, faculty members in athletic training [n = 1] and sport psychology [n = 2] from another NCAA DI university), who felt the list represented a comprehensive array of potential sport psychology services for injury rehabilitation.

Procedures

Upon obtaining institutional review board approval, we uploaded the online survey (Qualtrics, Provo, UT) to the university server. Access to the survey was limited to research team members and study participants. Participation criteria were current employment at the NCAA DI level and certification through the Board of Certification. We obtained e-mail addresses of NCAA DI ATs from athletic department Web sites. An inspection of these sites revealed a total of 2301 NCAA DI ATs with readily available e-mail addresses; however, contact information was not provided for all ATs on staff. Therefore, we sent 2 e-mails to participants: 1 to the ATs with available contact information encouraging their participation and providing the Internet link to the survey and 1 to head ATs only, encouraging their participation and requesting that they forward the e-mail to all other members of their staff, including graduate assistants. The e-mail message included a brief description of the purpose of the study, assurance of confidentiality, and a statement indicating that participation was voluntary and that completion and submission of the survey would constitute the participant's informed consent. We e-mailed a second invitation to all participants 1 week after the initial e-mail encouraging them to complete the survey if they had not already done so. The time to complete the survey was approximately 10 minutes.

Statistical Analysis

Logistic regression analysis was used to examine which demographic variables predicted ATs' willingness to encourage the use of SPC services during injury rehabilitation in the future. Multivariate analysis of variance was used to assess ordinal-scaled dependent variables; however, the Box M test revealed that the equality-of-variance assumption was not met ($P < .001$). In general, ratings of sport psychology services were nonnormally distributed and skewed toward the highest value of the 5-point scale. However, inspection of the data suggested that ATs' perceptions of services represented 3 general categories rather than 5. Therefore, to capture this tendency and create more balanced cell sizes for analytic purposes, we combined the scale ratings to create 3 rating categories of high (ie, *extremely* and *highly*), moderate (ie, *moderately*),

Table 2. Variables Predicting Athletic Trainers' Willingness to Encourage Athletes to Seek Sport Psychology Consultant (SPC) Services During Injury Rehabilitation

Variable	B	Standard Error	Wald	Degrees of Freedom	*P* Value	Exp(B)	95% Confidence Interval
Gender	0.31	0.24	1.62	1	.20	1.36	0.85, 2.17
Position/experience	−0.23	0.36	0.41	1	.52	0.80	0.39, 1.60
Educational exposure to sport psychology	−0.10	0.25	0.16	1	.69	0.91	0.55, 1.48
Availability of SPC	−0.91	0.34	7.23	1	.007	0.40	0.21, 0.78
Previously encouraged use of SPC service	1.05	0.38	7.52	1	.006	2.86	1.35, 6.06
Previous experience with SPC	0.38	0.28	1.76	1	.18	1.46	0.84, 2.54
Previous positive interactions with SPC	0.73	0.32	5.12	1	.02	2.08	1.10, 3.93
Constant	−3.03	1.06	8.24	1	.004	0.05	

and low (ie, *slightly* and *not at all*). Similarly, we combined ATs' ratings of willingness to encourage the use of an SPC into 2 categories: those who would be less likely to encourage use (ie, *never*, *doubtful*, and *maybe*) and those who would encourage use (ie, *probably* and *definitely*). Nonparametric χ^2 tests were then conducted to analyze the dependence between ordinal-scaled variables, such as ATs' willingness to encourage athletes to seek assistance from an SPC and their perceptions of the benefits of the various sport psychology services. In addition, χ^2 tests were used to analyze the dependence between ATs' ratings and categorical variables (eg, availability of SPC and gender). The latter procedure was consistent with that used in previous NCAA DI studies examining the receptivity of athletes, coaches, and administrators to SPCs and their services.[10–12]

RESULTS

A total of 663 surveys were completed and returned. Four individuals did not meet 1 of the criteria for participation (ie, Board of Certification certification), so their surveys were not used in the subsequent analyses. This left a total of 659 surveys after the first (n = 465) and second (n = 194) e-mail postings that met the participation criteria. Although this total represented 28.6% of the sample of 2301 ATs contacted, we could not determine the exact return rate because there was no way of knowing how many head ATs forwarded the e-mail and Web site link to staff member(s) for whom contact information was not available. Nevertheless, our approximate return rate was higher than that obtained in previous research[10] on NCAA DI coaches (17.4%). Separate χ^2 analyses on the datasets obtained after the 2 e-mail invitations revealed a similar pattern of responding. Therefore, these data were combined for all subsequent analyses. The Cronbach α was calculated to establish the internal reliability of the list of 17 sport psychology services for injury rehabilitation, and the resulting value (.96) was similar to those values reported in previous studies of athletes ($\alpha = .91$),[11] coaches ($\alpha = .95$),[10] and administrators ($\alpha = .95$).[12]

Previous Experience With Sport Psychology and SPCs

A total of 452 (68.6%) participants had completed undergraduate or graduate course(s) in sport psychology. In addition, 472 (71.6%) had encouraged or referred an athlete for sport psychology services; of these, 318 (67.4%) reported a positive experience and 154 (32.6%), a negative or mixed experience with the services. A total of 402 ATs (61%) had professionally interacted with an SPC; of these, 317 (78.9%) had positive interactions and 85 (21.1%) had negative or mixed interactions. Overall, 416 (63.1%) participants had an SPC available at their NCAA DI institution, 181 (27.5%) did not have an SPC available, and 62 (9.4%) did not know whether an SPC was available. The majority of those with an SPC available had positive perceptions of the services provided (n = 282; 67.8%), whereas 134 (32.2%) reported negative or mixed perceptions.

Willingness to Use SPCs

Logistic regression analysis indicated that several predictor variables distinguished ATs who were or were not willing to encourage the use of SPC services during injury rehabilitation: χ^2_7 (n = 659) = 33.351, $P < .0001$ (Table 2). Although these variables accounted for a relatively small amount of variance in performance status (Nagelkerke $R^2 = 0.12$), they correctly classified 67% of all ATs. The regression coefficient, Wald test statistic, odds ratio or Exp(B), and 95% confidence interval for each variable revealed that ATs with an SPC available ($P = .007$), those who had previously encouraged athletes to seek mental health services ($P = .006$), and those who had previous positive interactions with SPCs ($P = .02$) were more willing to encourage athletes to use SPC services during injury rehabilitation in the future. In addition, χ^2 analyses demonstrated that the availability of an SPC at the AT's institution was significantly associated with both the ATs' interactions with the SPC and their encouragement of athletes' use of sport psychology services ($P < .0001$). Of those who reported knowing that an SPC was available at their institution (n = 416), 329 (79%) indicated they had interacted with the SPC. This percentage was higher (χ^{2a} [adjusted χ^2] = 155.104, $P < .0001$) than that of ATs who interacted with off-campus consultants due to the lack of on-campus SPC availability (30%, n = 73/243). Finally, 360 (76.27%) of the ATs with on-campus availability reported having previously encouraged athletes to seek the SPC's services compared with 112 (23.73%) who referred athletes to an off-campus consultant ($\chi^{2a} = 123.479$, $P < .0001$).

Perceived Benefits of Sport Psychology Services for Injury Rehabilitation

Overall, the services ATs perceived to be the most beneficial for athletes rehabilitating an injury (ie, ratings of 3.50 or higher) were managing anxiety (mean = 4.02 ± 0.85), dealing with personal issues (mean = 3.93 ± 0.92),

Table 3. High Ratings of the Benefits of Sport Psychology Services for Rehabilitation by Athletic Trainers' Gender and Whether They Would or Likely Would Not Encourage Athletes to Seek Services

Benefit	Gender			Sport Psychology Consultant Services			Total Sample (N = 659)
	Female (n = 318), % (No.)	Male (n = 341), % (No.)	χ^{2a}	Encourage (n = 367), % (No.)	Likely Not to Encourage (n = 292), % (No.)	χ^{2a}	
Managing anxiety	81.4 (259)	73.3 (250)	11.755	89.9 (330)[a]	61.3 (179)[b]	81.683[c]	77.2 (509)
Improving coping techniques	75.5 (240)[a]	61.9 (211)[b]	18.872[c]	84.7 (311)[a]	47.9 (140)[b]	108.944[c]	68.4 (451)
Dealing with personal issues	78.9 (251)[a]	66.9 (228)[b]	12.218	83.9 (308)[a]	58.6 (171)[b]	57.906[c]	72.7 (479)
Managing emotions	67.6 (215)[a]	50.7 (173)[b]	20.453[c]	78.7 (289)[a]	33.9 (99)[b]	152.600[c]	58.9 (388)
Confidence in returning to sport	63.8 (203)	56.0 (191)	10.153	78.2 (287)[a]	36.6 (107)[b]	149.976[c]	59.8 (394)
Building confidence	62.3 (198)	54.8 (187)	4.008	77.4 (284)[a]	34.6 (101)[b]	137.699[c]	58.4 (385)
Dealing with pressure	59.7 (190)	48.1 (164)	11.714	72.8 (267)[a]	29.8 (87)[b]	137.998[c]	53.7 (354)
Improving focus	48.1 (153)	49.9 (170)	0.555	65.9 (242)[a]	27.7 (81)[b]	112.577[c]	49.0 (323)
Improving motivation during rehabilitation	50.9 (162)[a]	38.4 (131)[b]	13.487[c]	60.5 (222)[a]	24.3 (71)[b]	117.448[c]	44.5 (293)
Preventing burnout	47.5 (151)	38.1 (130)	6.633	56.7 (208)[a]	25.0 (73)[b]	91.775[c]	42.6 (281)
Communicating with coaches	47.8 (152)	37.0 (126)	35.182[c]	55.6 (204)[a]	25.3 (74)[b]	73.405[c]	42.2 (278)
Maintaining interactions with team members	48.4 (154)[a]	31.4 (107)[b]	23.475[c]	55.0 (202)[a]	20.2 (59)[b]	102.382[c]	39.6 (261)
Enhancing adherence	37.4 (119)	36.7 (125)	7.005	52.6 (193)[a]	17.5 (51)[b]	118.261[c]	37.0 (244)
Communicating with teammates	45.3 (144)[a]	27.6 (94)[b]	28.814[c]	50.4 (185)[a]	18.2 (53)[b]	93.125[c]	36.1 (238)
Communicating with athletic trainers	38.1 (121)	27.3 (93)	9.495	48.0 (176)[a]	13.0 (38)[b]	137.584[c]	32.5 (214)
Enhancing performance in rehabilitation	35.5 (113)	28.7 (98)	4.419	47.4 (174)[a]	12.7 (37)[b]	158.813[c]	32.0 (211)
Managing pain	28.0 (89)[a]	17.3 (59)[b]	13.194[c]	32.2 (118)[a]	10.3 (30)[b]	75.649[c]	22.5 (148)

[a] $P < .001$.
[b] Adjusted residuals > 3.0.
[c] Adjusted residuals < −3.0.

improving coping techniques (mean = 3.80 ± 0.88), achieving confidence in returning to their sport (mean = 3.65 ± 0.97), managing emotions (mean = 3.59 ± 0.98), building confidence (mean = 3.58 ± 0.94), and dealing with pressure (mean = 3.51 ± 0.93). The percentages of ATs who reported low, moderate, and high ratings for the benefits of each of the 17 sport psychology services are shown in Table 1. Although participants' ratings did not depend on the availability of an on-campus SPC for any of the services ($P > .001$), their perceptions of the benefits of several services were significantly dependent on both gender and willingness to encourage athletes' use of an SPC (Table 3). With respect to gender, a higher percentage ($P \leq .001$) of female ATs than male ATs rated as high the benefits of communicating with coaches, communicating with teammates, managing emotions during rehabilitation, maintaining interactions with team members, improving coping techniques, improving motivation during rehabilitation, and pain management. With regard to willingness to encourage the use of an SPC, a higher percentage ($P < .001$) of ATs who indicated they would likely encourage SPC use rated as high the benefits of all 17 sport psychology services compared with ATs who indicated they were unlikely to do so.

DISCUSSION

The purpose of our investigation was to explore NCAA DI ATs' experiences with SPCs, their willingness to encourage athletes to use sport psychology services, and their perceptions of the potential benefits of a number of different sport psychology services for student-athletes rehabilitating an injury. Previous authors[3–5] had focused primarily on ATs' perceptions of the psychological challenges athletes face during injury rehabilitation or their personal use of mental skills with athletes. However, before our study, little was known regarding ATs' willingness to use SPCs during injury rehabilitation or their perceptions of the benefits of sport psychology services. During psychological and emotional rehabilitation, Wiese et al argued that, "it is neither necessary nor feasible for athletic trainers to have the knowledge and skill to employ all of these (psychological) techniques themselves, particularly the more specialized psychological skills such as relaxation and imagery."[5(p22)] Nevertheless, as gatekeepers to the rehabilitation process, ATs must decide which individuals and services to include in their work with injured athletes.[5,7] Thus, it is reasonable to presume that ATs' willingness to use SPCs and sport psychology services would be an important factor dictating that decision. Based on previous research[10–12] with ATs and other collegiate sport populations, we expected that NCAA DI ATs' willingness to use SPCs would be predicted by the availability of an SPC at their institutions, as well as their work experiences, educational exposure to sport psychology, and previous sport psychology experiences. We also expected that ATs' ratings of the benefits of specific sport psychology services would be related to SPC availability, in addition to the AT's gender and willingness to encourage athletes to seek assistance from an SPC.

The most important finding of our study was that ATs' willingness to encourage athletes to use SPCs was predicted not only by SPC availability but also by experiences and positive interactions with SPCs. Moreover, χ^2 analyses revealed significant dependence between on-campus SPC availability and both previous interactions with consultants and encouragement of athletes to use sport psychology services. Researchers[3] have suggested that availability of SPCs increases the likelihood that ATs will use the services. However, our results suggest that ATs' openness to using SPC services extended beyond mere availability to the quality of the experiences they had with SPCs. These findings are consistent with previous investigations[10,11] demonstrating that collegiate athletes' and coaches' openness to SPCs and sport psychology services was higher if they had positive experiences and perceived the services to be highly effective compared with moderately effective or ineffective. It could also be argued that positive interactions with SPCs might encourage ATs' support of sport psychology services even when financial resources are limited at their university.[12]

Contrary to expectation, our results revealed no significant effect of work experience or educational exposure to sport psychology on ATs' willingness to use SPCs. Although no previous authors appear to have explored the influence of work experience on ATs' openness to and use of SPCs, some research[22] has shown that more experienced coaches are more open to SPC services than are their less experienced counterparts. The absence of differences in our study may have been due to the possibility that more experienced ATs were being exposed to an increased amount of sport psychology information at conferences and workshops, whereas less experienced ATs (ie, more recent graduates) were expected to demonstrate increased competence in the use of psychological strategies and referrals as a part of their more recent training.[26] Although we did not examine the exact nature of ATs' experiences with sport psychology, previous research[23,24,27] has indicated that learning how to apply psychological strategies and refer athletes can positively influence an AT's future behavior.

Consistent with the findings of previous studies of collegiate athletes[11] and coaches,[10] female ATs in our study had more positive perceptions of the benefits of sport psychology services than males. Such differences are likely due in some respect to differences in the gender role socialization of males and females, which has been shown to play an important role in the development of peoples' perceptions and attitudes.[28–31] Regarding the competitive sport experience, the ways males and females learn and internalize cultural values, norms, and expectations regarding what it means to be a man or a woman might also influence their openness to receiving help or seeking assistance from others.[30] Given the macho dimension of sport participation in Western culture (especially in physical contact sports), it is possible that male ATs' ratings of the benefits of psychological services were influenced by cultural messages suggesting that men must accept or deal with pain[29] or that seeking outside assistance is a sign of weakness.[28,30,31] However, it is also possible that the gender differences we observed were based to some extent on the gender of the athletes with whom the AT worked. If so, the AT's perceptions may have been based on cultural expectations of the needs of female and male athletes or perhaps on the AT's knowledge of the preferences of each athlete for seeking assistance or establishing communication with others.[11,30] Support for the latter interpretation is suggested by the higher ratings of females ATs compared with males for the perceived benefits of sport psychology services that involved communicating with coaches and teammates, managing emotions, coping, and managing pain, which in some studies have been shown to be more important to female than to male athletes.[11]

The results of our study also revealed that a higher percentage of ATs who indicated a willingness to encourage athletes to use SPC services rated as high the benefits of all 17 sport psychology services compared with ATs who were unlikely to encourage service use. Similar findings were obtained in an earlier study[12] with NCAA DI administrators. However, more research is needed to understand why ATs who are supportive or unsupportive of SPCs feel the way they do about the benefits of sport psychology services. As mentioned earlier, experience and positive interactions with SPCs influenced ATs' willingness to use sport psychology services. Thus, a greater understanding of the nature of those experiences would shed further light on the necessary prerequisites for ATs' support of SPCs and their services in the rehabilitation setting.

Practical Applications for AT

As mentioned previously, ATs are the gatekeepers to athletes' rehabilitation experiences. In our study, ATs who had an SPC available at their institution and enjoyed a more positive experience working or interacting with the SPC were more open to using sport psychology services, more likely to recognize the beneficial role of SPCs in rehabilitation, and more willing to encourage athletes to use the services. Clement and Arvinen-Barrow[7] suggested that the psychological aspects of injury rehabilitation at the collegiate level could be more effectively addressed by positive and ongoing interactions between ATs and SPCs. Our findings appear to support the potential benefits of such interactions. Therefore, we offer the following suggestions for ATs interested in fostering professional relationships with SPCs. A good starting point might be for the AT to schedule informal meetings (eg, lunches) with the SPC, which would allow them to develop open, 2-way communication and share their respective training and work experiences, goals, aspirations, and job-related challenges. Eventually, they might begin to explore possible strategies for using their respective skill sets to provide comprehensive assistance for injured student-athletes during rehabilitation and the return to sport or, if necessary, in transitioning out of sport. Athletic trainers might also invite SPCs to deliver in-service presentations that highlight their services or provide ATs with strategies for dealing with the psychosocial challenges of injury (or both).

Our results also suggest that ATs are more interested in some SPC services than others. These include managing anxiety, improving athletes' coping skills, building confidence, dealing with pressure, and minimizing athletes' concerns about returning to their sport. In previous studies,[3,4] ATs reported that many athletes they worked with experienced high levels of stress and anxiety during

the injury-rehabilitation process. Prior research has also indicated that ATs do not regularly use psychological techniques or strategies (eg, progressive relaxation, emotional control) to address such problems[3,4] or they feel that they lack the necessary training for providing psychological assistance.[3,6,7] The latter finding might explain why the ATs in our study rated managing anxiety to be the most beneficial service SPCs could provide for injured athletes. The other services ATs rated more highly (eg, improving coping skills, achieving confidence in returning to sport) might also be considered ones they feel SPCs could provide that would complement, rather than duplicate, their own work with athletes. Regardless, our results suggest that if ATs are able to develop good working relationships with SPCs, they might gain a valuable resource for assisting injured athletes in dealing with a number of psychological challenges associated with rehabilitation.

Limitations and Recommendations for Further Research

Several aspects of our study should be considered when interpreting the results. First, the findings may not necessarily be generalizable to all NCAA DI ATs, those working at other collegiate levels (eg, NCAA DIII), ATs working in other environments (eg, sports medicine clinics), or professionals working in different countries (eg, chartered physiotherapists in the United Kingdom). More research is needed to compare the perceptions different groups of sports medicine professionals (eg, ATs, physical therapists, physiotherapists, sports medicine physicians) have toward SPCs and the services they offer. Second, it would be beneficial for researchers to directly assess differences in the perceptions of ATs who work with male athletes versus female athletes. In addition, although we attempted to reach all NCAA DI ATs, contact information was limited for some staff members (eg, graduate assistants). This prevented us from calculating an exact response rate, which was likely less than 30%, but the fact that we observed no significant differences between ATs' ratings after the first and second e-mail invitations, suggests our participants' responses were generally representative of ATs at the NCAA DI level. Nonetheless, future researchers may consider additional techniques to enhance ATs' response rate for online surveys (eg, providing ATs with advance notice that they will receive an online survey to complete, offering incentives that may be relevant to them). Lastly, the information obtained in our study was primarily gathered through survey scale items. This format offered a general sense of ATs' perceptions regarding SPCs and their services, yet we recommend that future qualitative investigation be conducted to gain greater insight into ATs' thoughts and feelings about the potential role of SPCs in the rehabilitation process. Even though most of the participants in our study who had an SPC available reported positive experiences, a sizeable percentage (>30%) reported mixed or negative experiences. Thus, it would be worthwhile to explore the possible factors contributing to the latter types of experience (eg, interacting with qualified SPCs versus those with less sport psychology training), particularly if the concept of a multidisciplinary team of professionals for assisting athletes[7] continues to gain traction at the NCAA DI level.

CONCLUSIONS

Based on our results, it might be concluded that (a) collegiate ATs' willingness to encourage athletes to use sport psychology services is influenced not only by on-campus SPC availability but also by the quality of the AT's experiences with SPCs and their services; (b) female ATs value sport psychology services dealing with communication issues, managing emotions and pain during rehabilitation, and improving coping skills to a greater extent than do male ATs; and (c) ATs who are willing to encourage athletes to seek the assistance of SPCs value the potential benefits of sport psychology services more than ATs who are unwilling to offer such encouragement.

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REFERENCES

1. Arvinen-Barrow M, Hemmings B, Weigand D, Becker C, Booth L. Views of chartered physiotherapists on the psychological content of their practice: a follow-up survey in the UK. *J Sport Rehabil*. 2007; 16(2):111–121.
2. Arvinen-Barrow M, Penny G, Hemmings B, Corr S. UK chartered physiotherapists' personal experiences in using psychological interventions with injured athletes: an interpretive phenomenological analysis. *Psychol Sport Exerc*. 2010;11(1):58–66.
3. Clement D, Granquist MD, Arvinen-Barrow MM. Psychological aspects of athletic injuries as perceived by athletic trainers. *J Athl Train*. 2013;48(4):512–521.
4. Larson G, Starkey C, Zaichkowsky L. Psychological aspects of athletic injuries as perceived by athletic trainers. *Sport Psychol*. 1996;10(1):37–47.
5. Wiese D, Weiss M, Yukelson D. Sport psychology in the training room: a survey of athletic trainers. *Sport Psychol*. 1991;5(1):15–24.
6. Moulton MA, Molstad S, Turner A. The role of athletic trainers in counseling collegiate athletes. *J Athl Train*. 1997;32(2):148–150.
7. Clement D, Arvinen-Barrow M. Sport medicine team influences in psychological rehabilitation: a multidisciplinary approach. In: Arvinen-Barrow M, Walker N, eds. *The Psychology of Sport Injury and Rehabilitation*. New York, NY: Routledge; 2013:156–170.
8. Weinberg RS, Williams JM. Integrating and implementing a psychological skills training program. In: Williams JM, Krane V, eds. *Applied Sport Psychology: Personal Growth to Peak Performance*. 7th ed. New York, NY: McGraw Hill; 2014:329–358.
9. How to choose a sport psychology consultant. Association for Applied Sport Psychology Web site. http://www.appliedsportpsych.org/site/assets/documents/HowToChooseASportPsychConsultant.pdf. Updated March 28, 2012. Accessed July 16, 2015.
10. Wrisberg CA, Loberg L, Simpson D, Withycombe JL, Reed A. An exploratory investigation of NCAA Division-I coaches' support of sport psychology consultants and willingness to seek mental training services. *Sport Psychol*. 2010;24(4):489–503.
11. Wrisberg CA, Simpson D, Loberg L, Withycombe JL, Reed A. NCAA Division-I student-athletes' receptivity to mental skills training by sport psychology consultants. *Sport Psychol*. 2009; 23(4):470–486.
12. Wrisberg CA, Withycombe JL, Simpson D, Loberg LA, Reed A. NCAA Division-I administrators' perceptions of the benefits of sport psychology services and possible roles for a consultant. *Sport Psychol*. 2012;26(1):16–28.
13. Connole IJ, Watson JC, Shannon VR, Wrisberg C, Etzel E, Schimmel C. NCAA athletic administrators' preferred characteristics for sport

psychology positions: a consumer market analysis. *Sport Psychol*. 2014;28(4):406–417.
14. Wrisberg CA, Johnson MS. Quality of life. In: Kellmann M, ed. *Enhancing Recovery: Preventing Underperformance in Athletes*. Champaign, IL: Human Kinetics; 2002:253–267.
15. Chmielewski TL, Jones D, Day T, Tillman SM, Lentz TA, George SZ. The association of pain and fear of movement/reinjury with function during anterior cruciate ligament reconstruction rehabilitation. *J Orthop Sports Phys Ther*. 2008;38(12):746–753.
16. Tracey J. The emotional response to the injury and rehabilitation process. *J Appl Sport Psychol*. 2003;15(4):279–293.
17. Taylor J, Taylor S. *Psychological Approaches to Sports Injury Rehabilitation*. Gaithersburg, MD: Aspen Publishers; 1997.
18. Magyar TM, Duda JL. Confidence restoration following athletic injury. *Sport Psychol*. 2000;14(4):372–390.
19. Monsma E, Mensch J, Farroll J. Keeping your head in the game: sport-specific imagery and anxiety among injured athletes. *J Athl Train*. 2009;44(4):410–417.
20. Cupal DD, Brewer BW. Effects of relaxation and guided imagery on knee strength, reinjury anxiety, and pain following anterior cruciate ligament reconstruction. *Rehabil Psychol*. 2001;46(1):28–43.
21. Scherzer CB, Brewer BW, Cornelius AE, et al. Psychological skills and adherence to rehabilitation after reconstruction of the anterior cruciate ligament. *J Sport Rehabil*. 2001;10(3):165–172.
22. Zakrajsek RA, Martin SB, Zizzi SJ. American high school football coaches' attitudes toward sport psychology consultation and intentions to use sport psychology services. *Int J Sport Sci Coaching*. 2011;6(3):461–478.
23. Hamson-Utley J, Martin S, Walters J. Athletic trainers' and physical therapists' perceptions of the effectiveness of psychological skills within sport injury rehabilitation programs. *J Athl Train*. 2008;43(3):258–264.
24. Jevon SM, Johnston LH. The perceived knowledge and attitudes of governing body chartered physiotherapists towards the psychological aspects of rehabilitation. *Phys Ther Sport*. 2003;4(2):74–81.
25. Williams JM, ed. *Applied Sport Psychology: Personal Growth to Peak Performance*. 6th ed. New York, NY: McGraw Hill; 2010.
26. National Athletic Trainers' Association. *Athletic Training Educational Competencies*. 5th ed. Dallas, TX: National Athletic Trainers' Association; 2011.
27. Clement D, Shannon V. The impact of a workshop on athletic training students' sport psychology behaviors. *Sport Psychol*. 2009;23(4):504–522.
28. Good GE, Wood PK. Male gender role conflict, depression, and help seeking: do college men face double jeopardy? *J Counsel Dev*. 1995;74(1):70–75.
29. Messner MA. *Power at Play: Sports and the Problem of Masculinity*. Boston, MA: Beacon Press; 1992
30. Yambor J, Connelly D. Issues confronting female sport psychology consultants working with male student-athletes. *Sport Psychol*. 1991;5(4):304–312.
31. Martin SB, Wrisberg CA, Beitel PA, Lounsbury J. NCAA Division I athletes' attitudes toward seeking sport psychology consultation: the development of an objective instrument. *Sport Psychol*. 1997;11(2):201–218.

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