

# Certified Athletic Trainers Are Preferred Coordinators in Sports Medicine Clinics: A Patient Survey Study

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**Objectives:** Certified athletic trainers (ATCs) are increasingly used in sports medicine clinics. Patient comfort for ATCs as clinical coordinators has yet to be determined. This study aims to determine patient comfort with ATCs as clinical coordinators compared with registered nurses (RNs).

**Methods:** One hundred patients from a sports medicine clinic at a singular academic institution were recruited for a cross-sectional survey study. Patients completed a 10-question survey measuring patient comfort between ATCs and RNs in clinical tasks on a scale of 1 through 10. Demographic data of patients were collected, and Wilcoxon signed rank tests were used to compare medians of survey responses.

**Results:** The average age of respondents was 45.0 years (standard deviation 17.4), with 53% male patients. Patients were more comfortable with ATCs in performing an initial musculoskeletal (MSK) assessment, answering MSK-related questions, answering questions following orthopedic surgery, and coordinating care for an MSK injury ( $P < 0.01$ ). RNs were preferred by patients for calling in medications ( $P < 0.001$ ).

**Conclusions:** ATCs are preferred as clinical coordinators over nurses in most aspects of MSK care; however, RNs were preferred for calling in medications.

**Key Words:** certified athletic trainers, clinical coordination, musculoskeletal care, patient comfort

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A sports medicine clinic comprises multiple healthcare providers, including physicians, clinical coordinators, and medical assistants (MAs). A team of various healthcare providers in sports medicine are required to deliver exceptional care to patients. Historically, registered nurses (RNs) have been used as clinical coordinators.<sup>1</sup> Recently, sports medicine clinics have employed certified athletic trainers (ATCs) as clinical coordinators due to their specific training in musculoskeletal (MSK) disorders.<sup>2</sup>

The increased prevalence of ATCs as clinical coordinators in MSK care has already proven beneficial.<sup>3</sup> ATCs in comparison to MAs increase daily patient encounters and help generate additional revenue.<sup>2,4</sup> Further investigations is needed to determine the influence of ATCs in MSK care.

The basic roles of RNs are generally understood by patients<sup>5</sup>; however, the roles and scope of ATCs may not be as well known.<sup>6,7</sup> Although using ATCs has been shown to increase efficiency and add economic value, patient comfort with ATCs coordinating clinical care compared with RNs has yet to be determined.<sup>6</sup> These two medical professions require different levels of MSK education, with ATCs undergoing a minimum of 160 hours of immersive clinical training in the prevention, examination, diagnosis, and treatment of neuromusculoskeletal disorders.<sup>1,8</sup> Comparatively, most RNs receive fewer than 10 hours of MSK education.<sup>9</sup> Patients, however, may be unaware of these disparities in MSK education.

The purpose of this study was to evaluate patient comfort with ATCs as clinical coordinators in a sports medicine clinic compared with RNs. The authors hypothesize patients will feel equally comfortable having ATCs versus RNs as their clinical care coordinators.

## METHODS

Following approval from an institutional review board, 100 patients were consented and recruited from a single sports medicine clinic to participate. Inclusion criteria included patients between the ages of 18 and 80 years presenting as new patients. Exclusion criteria were patients who were currently or previously employed as an ATC or RN and patients who did not speak English. Basic demographic data were recorded. Patients read two separate paragraphs describing the education and roles of ATCs and RNs. Patients then completed a 10-question survey evaluating their comfort in ATCs and RNs being clinical coordinators (Appendix, [http://links.lww.com/

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### Key Points

- Patients are comfortable with certified athletic trainers serving as clinical coordinators in a sports medicine clinic.
- Patients are more comfortable with certified athletic trainers performing initial musculoskeletal (MSK) assessment, answering MSK-related questions, answering questions following orthopedic surgery, and coordinating care in the setting of an MSK injury.
- Patients are more comfortable with registered nurses for medication management.

**TABLE 1.** Demographics

	Average ± SD (range)	
Age, y	45.0 ± 17.4 (18.2–75.9)	
Sex	No.	%
Male	47	47
Female	53	53
Race		
White	55	55
Black or African American	39	39
Hispanic or Latino	3	3
Asian	3	3
American Indian or Alaska Native	0	0
Middle Eastern or North African	0	0
Native Hawaiian or Pacific Islander	0	0

SD, standard deviation.

SMJ/A511]). The questions assessed patient comfort regarding the capability to perform an initial MSK assessment, call in medications, answer MSK-related questions, answer questions after orthopedic surgery, and ability to coordinate care in the setting of an MSK injury. Patients rated their comfort on a scale of 1 to 10, with 1 being completely uncomfortable and 10 being completely comfortable.

An a priori power analysis was conducted using G\*Power version 3.1 (Heinrich Heine University, Düsseldorf, Germany), with an effect size of 0.5 and power of 0.95, indicating a minimum sample size of 79. SAS version 9.4 (SAS Institute, Cary, NC) was used for statistical analysis. Wilcoxon signed rank tests were used to compare medians of survey responses. Statistical significance was set at an alpha of 0.01.

**RESULTS**

The mean age of surveyed patients was 45.0 years (standard deviation 17.4), with 53% male patients (Table 1). Survey results demonstrated that patients are significantly more comfortable with ATCs than RNs performing initial MSK assessment ( $P < 0.0001$ ), answering MSK-related questions ( $P < 0.0001$ ), answering questions following orthopedic surgery ( $P = 0.0043$ ), and coordinating care in the setting of an MSK injury ( $P = 0.0059$ ;

Table 2). Patients were significantly more comfortable with RNs calling in medications ( $P < 0.0001$ ).

**DISCUSSION**

The most important finding of this study is that patients demonstrated higher levels of comfort with various clinical tasks in delivering MSK care when performed by ATCs compared with RNs. Patients, however, preferred RNs for medication management.

The responses to four of the five questions asked showed significantly increased comfortability with ATCs. These questions were centered around initial evaluation, answering MSK-related questions, answering postoperative questions, and overall coordination of care. The results from these questions aligned with a previous randomized, double-blinded prospective survey study that examined patient perceptions of ATCs and orthopedic surgery residents.<sup>1</sup> The results of this study demonstrated that even though patients understood these two professions had different levels of education, their perception of orthopedic knowledge and clinical care was the same. Given these findings, orthopedic practices should continue to feel comfortable with designating ATCs as clinical coordinators.

Multiple studies have evaluated the resultant improved efficiency and cost-effectiveness from the utilization of ATCs. Pecha et al in a prospective, cross-sectional study evaluated the number of daily patient encounters and physician collections in comparing ATCs to MAs as clinical coordinators.<sup>4</sup> The results demonstrated that using ATCs increased daily patient encounters and physician collection by 18% to 22% and 10% to 60%, respectively. In high school, university, and military settings, ATC employment has demonstrated capable of providing a positive return on investment of more than 100%.<sup>3,10,11</sup> Overall, ATC utilization appears to be economically advantageous, which may increase future employment in sports medicine clinics. Previous studies have demonstrated that the majority of orthopedic surgeons are willing to make incentivized cost-conscious changes to their practice.<sup>12</sup>

Patients who have greater levels of comfort may have a more positive clinical experience. Determining the patient preference of clinical coordinators is important as positive patient experiences are associated with superior health outcome measures and adherence to recommended treatment plans.<sup>13</sup> Greater compliance with treatment plans in multiple sports

**TABLE 2.** Survey results

Question	Athletic trainer mean score	Registered nurse mean score	P
1. Rate your level of comfortability with an athletic trainer/registered nurse performing your initial musculoskeletal assessment.	10	8.5	<0.0001
2. Rate your level of comfortability with an athletic trainer/registered nurse calling in your medications.	8	9	<0.0001
3. Rate your level of comfortability with an athletic trainer/registered nurse answering your musculoskeletal-related questions.	9	8	<0.0001
4. Rate your level of comfortability with an athletic trainer/registered nurse answering questions after orthopedic surgery.	9	8	0.0043
5. Rate your level of comfortability with an athletic trainer/registered nurse coordinating your overall care in the setting of a musculoskeletal injury.	9	8	0.0059

medicine pathologies has been shown to decrease re-injury rates and even initial injury rates.<sup>14,15</sup> For example, a recent meta-analysis and meta-regression demonstrated that athletes with high physiotherapy adherence in sports involving cutting and pivoting movements had lower anterior cruciate ligament tear rates.<sup>16</sup> Building comfort and trust with a patient is essential to creating a positive clinical experience.<sup>17</sup> Patients from this survey study found greater comfort in ATCs possibly due to their more comprehensive MSK-related education that may lead to longitudinal clinical benefits. In addition to improving outcomes, ATC utilization may improve patient satisfaction metrics that are critical to quality improvement and compensation in many healthcare systems.<sup>18,19</sup>

Patients did show a preference for RNs when managing medications. This is understandable given nurses' well-established role in delivering and managing medication orders. Nurses are extensively trained in medication management, dosage calculation, administration, and patient monitoring for potential side effects or adverse reactions.<sup>20</sup> ATCs in comparison are primarily trained and permitted to administer single-dose over-the-counter medications (OTCs); they are not permitted to dispense multiple doses of OTCs or prescription medications.<sup>21</sup> Similar to RNs, with physician approval and guidance, ATCs can administer multiple doses of OTCs or prescription medications. The differences in specialized training likely contribute to the study results.

This study is not without limitations. The largest limitation is that surveys were administered at a single institution, which may limit the generalizability of findings. Another limitation is that there was no control for patient education status, which may result in differing interpretations of the prompts describing the training of ATCs and RNs. An additional limitation is the lack of follow-up with patients regarding their care.

## CONCLUSIONS

ATCs are preferred as clinical coordinators over nurses in most aspects of MSK care. RNs were preferred for calling in medications, however.

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