The Effect of the Model of Organizational Infrastructure on Collegiate Athletic Trainer Job Satisfaction: A Critically Appraised Topic

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Clinical Question: Does the medical model of organizational structure compared to either the academic or traditional models have a greater influence on job satisfaction and quality of life in collegiate athletic trainers? **Clinical Bottom Line:** Based on the quality of the person-oriented evidence available, the recommendation to adopt the medical model for athletic training staff would receive a Strength of Recommendation Taxonomy (SORT) grade of B.

Keywords: academic model, athletics model, medical model, role strain, work-life balance

Clinical Scenario

Several studies¹⁻⁴ have examined collegiate athletic trainer job satisfaction from various angles. In addition, advocating for patient-centered medicine has been a prevalent topic in the health-care community at large. However, research examining the organizational hierarchy of collegiate athletic training is limited. There are currently three models of organizational infrastructure in the collegiate athletic training setting: the traditional athletics model, the academic model, and the medical model.⁵ The traditional model is defined as having the athletic training staff as part of the athletics department and the head athletic trainer (AT) reports to the athletics director. The academic model is where ATs and athletic training educators are part of the athletic training education program. The medical model is defined as having the athletic training staff aligned with the campus health services; specifically, the head AT reports to another healthcare professional.⁵ The organizational infrastructure that employs collegiate athletic trainers may have an effect on athletic trainer job satisfaction and quality of life.⁵⁻¹⁰ Coaches at the collegiate level often have a substantial amount of power and influence over almost every decision involving their teams, including medical decisions.^{6,7,9,10} Research into the organizational model of collegiate athletic training staffs has shown that at some institutions coaches have taken advantage of their athletics director to attempt to influence medical decision making and the hiring and firing of athletic trainers.^{5,7,9,10} In addition, many athletic trainers have cited issues related to their organizational infrastructure that have negatively impacted their professional commitment and satisfaction.^{5,7,9,10} Changing the reporting structure could alleviate the coaches' control over the athletic trainer's clinical practice and medical decisions. This Critically Appraised Topic (CAT) will determine if the medical model provides the collegiate athletic trainer with the best job satisfaction and quality of life compared to the traditional and academic models based on the current research.

Focused Clinical Question

Does the medical model of organizational structure compared to either the academic or traditional models have a greater influence on job satisfaction and quality of life in collegiate athletic trainers?

Search Strategy

A computerized search was performed in September 2018 through November 2019. The search terms used were:

- Patient/client group: collegiate athletic trainer, sports medicine staff
- Intervention/assessment: medical model of organizational infrastructure
- Comparison: academic model OR traditional athletics model
- Outcome: athletic trainer job satisfaction OR quality of life OR work-life balance

Other search term combinations included: "traditional model in collegiate athletic training"; "medical model in collegiate athletic training"; "academic model in collegiate athletic training"; "models of collegiate athletic training";

Sources of Evidence Searched

- PubMed
- Google Scholar
- Web of Science
- Reference lists of related articles

Inclusion Criteria

- Studies that assessed the relationship between the model of organizational infrastructure and athletic trainer job satisfaction, quality of life, or work-life balance
- Answers of "yes" to 75% of the applicable questions on the Mixed Methods Appraisal Tool (MMAT)¹¹
- Limited to English language studies

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- Limited to peer-reviewed articles published between 2008–2019

reviewed in this CAT were deemed high quality if the studies met all applicable criteria on the MMAT.

Exclusion Criteria

- Studies that did not examine a model of organizational infrastructure as it relates to athletic trainer job satisfaction, quality of life, or work-life balance
- Studies that focused on other healthcare professions
- Studies published prior to 2008

Evidence Quality Assessment

The MMAT¹¹ was used to assess the quality of evidence for the studies included in this CAT. The MMAT has sections for qualitative, randomized controlled, nonrandomized controlled, observational, and mixed-methods studies, and has demonstrated a high internal consistency as well as interrater reliability.¹² Studies

Results of Search

The initial search of the literature returned 11 possible articles related to the clinical question. Five studies^{5,6,8,9,13} met the inclusion criteria and were selected for this CAT. Of the six articles not selected, one was a consensus statement and five did not examine a model of organizational infrastructure as the main intervention. The design of the selected studies included were: three qualitative studies, one mixed-methods study, and one cross-sectional study. Research into the model of organizational infrastructure of collegiate athletic trainers is a fairly recent trend, and thus the available literature is limited. The five studies selected were all published from 2015–2018. The results from the studies included in this CAT can likely be generalized to all collegiate athletic trainers as the participants in each study were all employed by a National

Table 1 Studies Included

Characteristics	Study				
	Mazerolle et al. ⁵	Goodman et al. ⁹	Eason et al. ⁸	Baker and Wilkerson ⁶	Mazerolle et al. ¹³
Article title	Organizational Infrastructure in the Collegiate Athletic Training Setting, Part I: Quality-of-Life Comparisons and Commonalities Among the Models	Organizational Infrastructure in the Collegiate Athletic Training Setting, Part II: Benefits of and Barriers in the Athletics Model	Organizational Infrastructure in the Collegiate Athletic Training Setting, Part III: Benefits of and Barriers in the Medical and Academic Models	Comparison of Athletic Trainer Stress and Job Satisfaction with Different Models of Care Delivery	Exploring the Effect of the Medical Model Organizational Structure on Collegiate Athletic Trainers' Quality of Life: A Case Study
Participants	59 collegiate ATs	8 collegiate ATs	16 collegiate ATs	44 collegiate ATs	13 collegiate ATs
Study design	Mixed-methods (cross-sectional and qualitative study)	Qualitative study	Qualitative study	Cross-sectional study	Qualitative study
Results	Commonalities included communication and effective work-life balance strategies. TM worked more hours, were less satisfied with pay, and received less support from superiors.	Benefits reported were role identity and role congruence. Barriers reported were role strain, staffing concerns, and work-life balance.	Benefits of MM: Role congruency and work-life balance. Barriers of MM: role conflict. Benefits of AM: Role congruency. Barriers of AM: Role strain and work-life balance.	ATs in TM had significantly greater stress scores, lower salary ranges, worked more hours, and reported more job dissatisfaction than ATs in the MM.	Role congruity: 92% of participants were aware of their role within the organization. Work time control: 77% identified the positive influence this model has on their work experience. Collegial relationships: 100% agreed the relationships within the staff supports the patient-centered model.
Conclusion	Organizational infrastructure may play a role in mediating various sources of conflict but, regardless, ATs need to be effective communicators, have support networks in place, and possess time-management skills.	Participants express positives such as relationships and identity, but work-life balance and misaligning values with other athletics staff remain issues.	MM provides better alignment of patient care and wellbeing for ATs. AM removes athletics staff conflict, but faculty responsibilities bring role incongruence.	MM provides AT best environment for high job satisfaction, lower stress, higher salaries, and ability to offer patient-centered care.	MM creates an environment that is conducive to work-life balance due to clear role identify, flexible work schedules, and supportive staff.
Support for the question	Yes	Yes	Yes	Yes	Yes

Abbreviations: AM = academic model; AT = athletic trainer; MM = medical model; RTP = return to play; TM = traditional model.

Collegiate Athletic Association (NCAA) institution. It is important to note that there was participant overlap in three of the studies,^{5,8,9} but they were all included based on the different purposes of each study.

Results of Evidence Quality Assessment

All of the studies^{5,6,8,9,13} included in this review (Table 1) examined how the model of organizational infrastructure can impact collegiate athletic trainer job satisfaction and the level of care that they provide to their patients. Each study answered “yes” (Table 2) to all of the questions of the applicable study design. Thus, we believe the studies are valid and the results are applicable.

Clinical Bottom Line

Strength of Recommendation

Based on the quality of the person-oriented evidence available,^{5,6,8,9,13} the recommendation to adopt the medical model for athletic training staff would receive a Strength of Recommendation Taxonomy (SORT) grade of B. Evidence is needed based on the exploration of patient satisfaction and quality of life on the organizational infrastructure models currently used. There is a need to further explore the effect of adopting the medical model on these outcomes for ATs, patients, and other stakeholders to ensure that our profession can provide the best patient-centered care possible.

Implications for Practice, Education, and Future Research

The studies^{5,6,9} reviewed in this CAT identified issues with the traditional athletics model of organizational infrastructure that have the potential to have a significant negative impact on the job satisfaction of collegiate ATs and the level of care that they are able to provide to their patients. The most glaring issue with the traditional athletics model is the reality of perceived pressure from coaches and athletics department administrators on ATs, which can negatively affect the medical decision-making process.^{5–7,9,10} In a

study that surveyed 900 NCAA clinicians, comprised of ATs and physicians, more than half reported being pressured by a coach to prematurely return an athlete to play after sustaining a concussion.¹⁰ The same study revealed that female clinicians reported experiencing greater pressure when compared to their male counterparts, and that clinicians at schools under the traditional athletics model experienced greater pressure from coaches than those at a school under the medical model.¹⁰ This pressure affects role incongruity, defined as the misalignment of expectations, and role conflict, which is defined as incompatible expectations.⁵ In the traditional athletics model, athletic trainers are in the same organizational hierarchy as coaches, often with the athletic director at the top.^{5,9} This reality can lead to increased role strain in collegiate athletic trainers, as they may fear for their job status if perceived to be going against a coach’s wishes.^{5–7,9}

In addition to attempting to influence medical decision making, coaches have the potential to negatively influence the work-life balance of ATs working in the traditional athletics model.^{5–7,9} Commonly-reported work-life balance issues in collegiate ATs include inconsistent practice and workout scheduling, long hours, a severe lack of vacation or sick days, and a lack of administrative support.^{3,5,9} In contrast, ATs employed in the medical model of organizational infrastructure report better role congruity and decreased work-related stress.^{5,8,13} ATs in the medical model, on average, work fewer hours and report higher salaries than those in the traditional athletics model.^{5,6} Unlike in the traditional athletics model, where an athletic director often serves as the highest ranking member of an athletic training staffs’ organizational hierarchy, ATs employed in the medical model report to a physician or other healthcare professional.^{5–7,10,13} Placing ATs in a separate organizational hierarchy makes it more difficult for coaches to negatively infringe on the medical decision-making process.^{7,8,10} ATs working in the medical model also report increased opportunities for interprofessional and collaborative practice.¹⁴ This multi-disciplinary approach, such as a chiropractor and AT working together on a patient with low back pain, has been shown to result in improved patient care.¹⁴ In addition to decreasing potential role conflict in ATs, the medical model increases a student-athlete’s ability to receive patient-centered care.^{6–8,10} ATs and their supervisors in the medical model are able to hold the long-term health of their patients as a central treatment goal.^{6–8}

Table 2 Questions of the Applicable Study Design

Category	Question	Mazerolle et al. ⁵	Goodman et al. ⁹	Eason et al. ⁸	Baker and Wilkerson ⁶	Mazerolle et al. ¹³
1. Qualitative	1.1 Is the qualitative approach appropriate to answer the research question?	N/A	Yes	Yes	N/A	Yes
	1.2 Are the qualitative data collection methods adequate to address the research question?	N/A	Yes; examined role congruence, role strain, and work-life conflict	Yes; examined role congruence, role conflict, work-life balance, and patient care	N/A	Yes
	1.3 Are the findings adequately derived from the data?	N/A	Yes	Yes	N/A	Yes
	1.4 Is the interpretation of results sufficiently substantiated by data?	N/A	Yes	Yes	N/A	Yes
	1.5 Is there coherence between qualitative data sources, collection, analysis and interpretation?	N/A	Yes	Yes	N/A	Yes

(continued)

Table 2 (continued)

Category	Question	Mazerolle et al. ⁵	Goodman et al. ⁹	Eason et al. ⁸	Baker and Wilkerson ⁶	Mazerolle et al. ¹³
2. Quantitative randomized controlled trials	2.1 Is randomization appropriately performed?	N/A	N/A	N/A	N/A	N/A
	2.2 Are the groups comparable at baseline?	N/A	N/A	N/A	N/A	N/A
	2.3 Are there complete outcome data?	N/A	N/A	N/A	N/A	N/A
	2.4 Are outcome assessors blinded to the intervention provided?	N/A	N/A	N/A	N/A	N/A
	2.5 Did the participants adhere to the assigned intervention?	N/A	N/A	N/A	N/A	N/A
3. Quantitative nonrandomized	3.1 Are the participant's representative of the target population?	N/A	N/A	N/A	N/A	N/A
	3.2 Are measurements appropriate regarding both the outcome and intervention (or exposure)?	N/A	N/A	N/A	N/A	N/A
	3.3 Are there complete outcome data?	N/A	N/A	N/A	N/A	N/A
	3.4 Are the confounders accounted for in the design and analysis?	N/A	N/A	N/A	N/A	N/A
	3.5 During the study period, is the intervention administered (or exposure occurred) as intended?	N/A	N/A	N/A	N/A	N/A
4. Quantitative descriptive	4.1 Is the sampling strategy relevant to address the research question?	N/A	N/A	N/A	N/A	N/A
	4.2 Is the sample representative of the target population?	N/A	N/A	N/A	N/A	N/A
	4.3 Are the measurements appropriate?	N/A	N/A	N/A	N/A	N/A
	4.4 Is the risk of nonresponse bias low?	N/A	N/A	N/A	N/A	N/A
	4.5 Is the statistical analysis appropriate to answer the research question?	N/A	N/A	N/A	N/A	N/A
5. Mixed methods	5.1 Is there an adequate rationale for using a mixed-methods design to address the research question?	Yes	N/A	N/A	Yes	N/A
	5.2 Are the different components of the study effectively integrated to answer the research question?	Yes	N/A	N/A	Yes, quantitative stress scores and qualitative interview responses	N/A
	5.3 Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	Yes	N/A	N/A	Yes	N/A
	5.4 Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	Yes	N/A	N/A	Yes	N/A
	5.5 Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	Yes, both components are of high quality	N/A	N/A	Yes, both components are of high quality	N/A

The final model of organizational infrastructure, the academic model employs ATs as a part of an academic program within a university system, requiring ATs to teach classes.⁸ In the academic model, the top of the AT's organizational hierarchy is an academic dean or department chair.⁸ Similarly to the medical model, the academic model addresses potential coach influence in medical decision making by housing ATs in a separate organizational hierarchy.⁸ While some ATs employed in the academic model expressed enjoying the mixture of teaching and clinical practice, some ATs experienced an increase in role conflict and felt they were being pulled in two different directions. This role conflicts resulted in clinicians struggling to maintain a high quality of work in their various responsibilities.⁸ Overall, the academic model provides better opportunity for patient-centered care when compared to the traditional athletics model, but this model may add work-life balance issues to the AT with the additional responsibilities associated with teaching.⁸

Based on the appraisal of the existing research in this area, it appears that the medical model resulted in higher job satisfaction and quality of life compared to the traditional athletics model and academic model. However, the research in this area lacks high-quality evidence. Future research opportunities related to this topic should include patient perspectives and further investigation of AT compensation and work-life balance implications. This CAT should be reviewed in 2 years or whenever additional information is published that may prove to bolster or weaken the clinical bottom line.

CAT Kill Date: July 2022

CATs have limited life and should be revisited approximately 2 years after publication (see <https://doi.org/10.1123/ijatt.2018-0093>).

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