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ORIGINAL RESEARCH

Comparing Immersive and Nonimmersive Clinical Experiences in Athletic Training Education: Effects on Student Engagement and Confidence

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Context: With the shift to a graduate-level professional degree in athletic training, it was hypothesized that immersive clinical experiences (ICEs) would be more effectively integrated into curricula than non-ICEs (N-ICEs) and better prepare students for practice.

Objective: To longitudinally compare clinical engagement opportunities in ICEs versus N-ICEs and assess if these opportunities are associated with changes in student confidence in performing related tasks.

Design: Prospective, longitudinal, time-diary study using a Web-based survey.

Patients or Other Participants: Fifty-three first-year, master's-level athletic training students from 21 programs.

Main Outcome Measure(s): Participants reported their type of clinical experience (ICE, N-ICE, or none), the setting, and hours spent at clinical each day. They quantified the percentage of time spent on 8 categories of athletic training and patient care tasks and rated their confidence in performing these tasks. Independent samples *t* tests ($P < .05$) were used to compare confidence ratings and time spent on activities across all students, and the analysis was repeated within students who participated in both ICEs and N-ICEs.

Results: Most clinical experiences occurred in traditional athletic training settings. Immersive clinical experiences led to more time spent on administrative tasks, waiting, and therapeutic interventions, while N-ICEs involved more time in practice coverage, skills practice, diagnostic labs or tests, and applying protective devices. Within students, N-ICEs showed more time on skills practice, but other outcomes were not significant. Immersive clinical experiences resulted in higher confidence in integrating business practices and communicating with health providers and administrators.

Conclusions: Immersive clinical experiences may offer more engagement opportunities and increase confidence in specific tasks, while engagement opportunities are influenced more by the student than the type of clinical experience. Both ICEs and N-ICEs have valuable roles in clinical education; each providing different types of engagement opportunities.

Key Words: Patient care, autonomous practice, preceptors, clinical hours

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KEY POINTS

- Immersive clinical experiences may increase students' opportunities to engage in administrative and facilities management tasks and implement therapeutic interventions when providing patient care. However, the influence of the individual student's initiative appears to significantly affect how different immersive and nonimmersive clinical experiences are relative to opportunities for engagement.
- Time spent on different patient care–associated tasks varied between clinical experience types, suggesting that a combination of immersive and nonimmersive clinical experience opportunities might benefit student opportunities for skill progression across dissimilar patient care skills.
- Immersive clinical experiences lead to higher confidence in business practices and communication with administrators and other health care providers, most likely through the increased proportion of time spent performing administrative tasks.

INTRODUCTION

In health care education, clinical education is the aspect of a student's educational progression that amalgamates didactically provided theory, knowledge, and instructed skills into the supervised provision of patient care.[1] In athletic training, clinical education encompasses athletic training clinical experiences that provide students the opportunity to practice athletic training while under the supervision of an athletic trainer (AT) or a physician, high- or low-fidelity simulation methods, and supplemental clinical experiences that allow students to engage in patient care while supervised by interprofessional health care providers.[2]

Historically, when athletic training was taught at the undergraduate level, many athletic training clinical experiences were integrated alongside a student's in-person didactic coursework.[1,3] Integrated clinical experiences typically resulted in the student attending didactic coursework in the mornings or for portions of the day and then participating in clinical experience in the afternoons or around the didactic requirements.[3] Before the move to the graduate-level preparation for entry into athletic training, it was postulated that integrated clinical experiences were a limiting factor in the undergraduate entry-level education of athletic training students, whereby the general education requirements of such a degree inhibited students from fully engaging in a clinical environment which in turn decreased their readiness for autonomous practice upon program completion.[4] With the move to graduate entry-level preparation, the Commission on Accreditation of Athletic Training Education (CAATE) incorporated immersive clinical experiences (ICEs) requirements within the 2020 Standards for master's-level professional athletic training programs.[2]

The CAATE defines ICEs as "a practice-intensive experience that allows the student to experience the totality of care provided by [ATs]."[2] The standard associated with the requirement for ICEs details that the program administrators may define the length of the experience but that the students must minimally have 1 continuous 4-week period within their educational progression that constitutes an ICE.[2] This requirement notably allows program administrators the autonomy to use both ICEs and integrated, or nonimmersive, clinical experiences (N-ICEs) at their discretion within their respective curricula.[2] This has resulted in significant variability between programs regarding how and when ICEs are incorporated into a student's clinical education.[5]

Although it was projected that ICEs would provide students with more opportunities for patient care and administrative responsibilities that would more effectively prepare them to transition to practice, it remains unknown whether that intention has led to differences in students' preparation.[6] Therefore, the purpose of this study was to longitudinally examine athletic training student opportunities to engage in patient care and other tasks throughout the totality of their graduate-level professional preparation and, more specifically, to compare opportunities that occurred in ICEs with those in N-ICEs to ascertain if ICEs are providing the intended increased engagement of students. Secondarily, we aimed to determine if opportunities to engage in patient care and other tasks were linked to changes in student confidence in performing those respective tasks.

METHODS

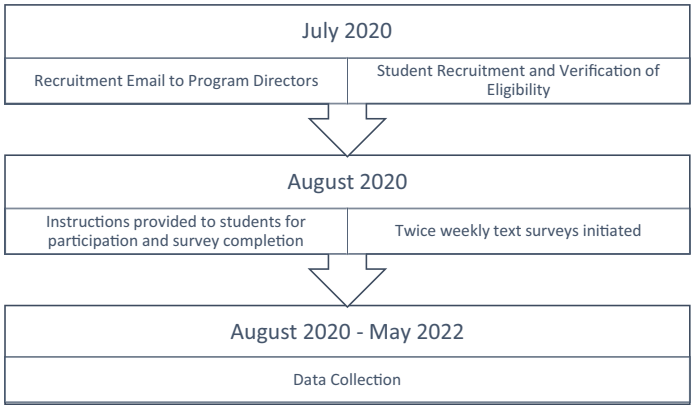
We employed a prospective, longitudinal, online survey time-diary design to capture athletic training student opportunities at clinical experiences throughout the duration of their professional education (Figure 1). We selected a time-diary design to overcome the within-person affectation of self-reported behaviors that can occur with traditional single-submission survey designs. Time-diary designs capture the variability of behaviors that occur over time.[7,8] The Old Dominion University College of Health Science Human Subjects Review Committee determined this study to be exempt.

Participants

We conducted an a priori power analysis (G*Power3) to determine an acceptable sample size using a 2-tailed test with a small effect size ($f = 0.25$), an α of .05, and a conservative response rate of 20 survey responses per participant. The power analysis indicated that a minimum sample size of 14 participants was necessary to achieve a power of 0.96.

We employed snowball sampling by e-mailing all CAATE-accredited graduate professional athletic training program directors ($N = 213$; e-mail list obtained through CAATE) in June 2020. We asked them to forward a recruitment e-mail to all incoming first-year athletic training students. The recruitment e-mail verified inclusion eligibility and collected basic demographic information. Inclusion criteria required participants to be enrolled in their first year of a 2-year, CAATE-accredited, professional, master's-level athletic training program and a willingness to provide a personal cell phone number to the research team to receive

Figure 1. Study procedures.



text-messaged survey links. Students already in the second year of their respective programs and those unwilling to provide personal cell phone numbers were excluded from participating in this study.

A total of 76 potential participants accessed the survey, with a final group of 53 athletic training students (70% completion or enrollment rate) across 21 different athletic training programs enrolling in the study.

Instrumentation

In the absence of an existing survey to measure the desired outcome variables, 2 members of the research team (JMC, SEW) developed an original survey, incorporating aspects of the CAATE curricular content standards and the Board of Certification (BOC) Practice Analysis to achieve the aims of the study.[2,9]

After initial development, 2 expert and 2 novice clinicians reviewed the survey for content validity.[10] After review, changes were made to clarify the language of the Likert survey statements and to add the option of *waiting* to the lists of general daily tasks that students may have spent time performing. The survey was then pilot tested among noneligible athletic training students (n = 27) to assess question clarity further and ascertain completion time. Completion time was tracked by the survey platform software, and an additional question was added to the pilot form of the survey to allow pilot participants to identify if any questions were confusing or warranted further explanation. Pilot data were not used in the final analyses, no additional edits were made to the survey instrument, and the average survey time to complete was approximately 2 minutes. We asked participants which type of clinical experience they had attended (ICE, N-ICE, or none), the setting where the experience occurred, and the number of hours they spent at clinical that day. Participants were asked to quantify the percentage of total time (summing 100%) spent performing (1) patient care, (2) administrative tasks, (3) facility management, (4) communication with stakeholders, (5) practice or event coverage, (6) skills practice, (7) waiting, and (8) other. Then of the total time spent providing patient care, participants were asked to identify what percentage (summing to 100%) was spent (1) performing evaluations, (2) performing diagnostic or laboratory testing, (3) facilitating diagnostic or laboratory testing, (4) providing patient education, (5) implementing therapeutic interventions, (6) applying or fabricating protective or assistive devices, (7) promoting wellness and health or preventing injury, and (8) other. On a 5-point Likert scale (1 = *not at all confident* to 5 = *extremely confident*), participants were then asked to rate their confidence for that day in performing subtasks associated with patient care, administrative tasks, facility management, and communication. The final survey questions and available Likert-scale rating options are available in Table 1.

Procedures

Within time-diary designs, questionnaires can be distributed repetitively on the same day or time (interval contingent) or on random dates or times (signal contingent); we used signal-contingent survey procedures to accommodate potential variability in the day-to-day experiences of athletic training students attending a clinical experience.[7] Using an online random sample generator, we plotted a twice-weekly schedule for survey distribution from August 2020 through May 2022. The frequency of survey distribution per day of the week is presented in Figure 2. Evidence suggests that text message surveys and financial participation incentives are exceptional motivators for survey participation among college-age participants.[11,12] Thus, 196 surveys were distributed via text message using Qualtrics online survey platform for the duration of the study. Participants received an incentive of $1 per completed survey, paid monthly, to promote study retention and maximize response rates.[13]

Data Analysis

Data were analyzed using IBM SPSS (version 28) statistical software. We calculated descriptive statistics to characterize the data. We examined time spent on activities in immersive and nonimmersive environments using an independent samples *t* test with 2 kinds of samples. First, we compared the percentage of time spent on activities or performing tasks for any student who entered a record. Then we limited the analyses to students who had experienced both immersive and nonimmersive experiences and aggregated the means within students. Lastly, independent samples *t* tests were used to determine differences in Likert scale confidence items. Statistical significance was set a priori at $P \leq .05$.

RESULTS

Descriptive Data

The 53 participants (40 female, 13 male) across 21 different graduate professional athletic training programs submitted a total of 6054 surveys. For each survey submission, students indicated if they attended an ICE (n = 762, 12.6%), an N-ICE (n = 1265, 20.9%), or if they did not attend clinical that day (n = 4027, 66.5%). For the remainder of the results, we will reference the 2027 surveys that represented days that students attended a clinical experience.

Of the days spent in clinical experiences, most entries (62.4%, n = 1265) were completed in N-ICEs. Collectively, students spent an average of 5.4 ± 2.6 (range, 1–15) hours at their clinical experiences per day. Most (72.3%) ICE days were conducted within the college or university setting (n = 400, 52.5%) or the secondary or high school setting (n = 151, 19.8%), and students spent an average of 6.8 ± 2.7 (range, 1–15) hours at their ICE per day. Most (92.9%) N-ICE days were reported to occur within the college or university setting (n = 858, 67.8%) or the secondary or high school setting (n = 317, 25.1%), and students spent an average of 4.6 ± 2.3 (range, 1–14) hours at their N-ICE per day.

Table 1. Survey Questions

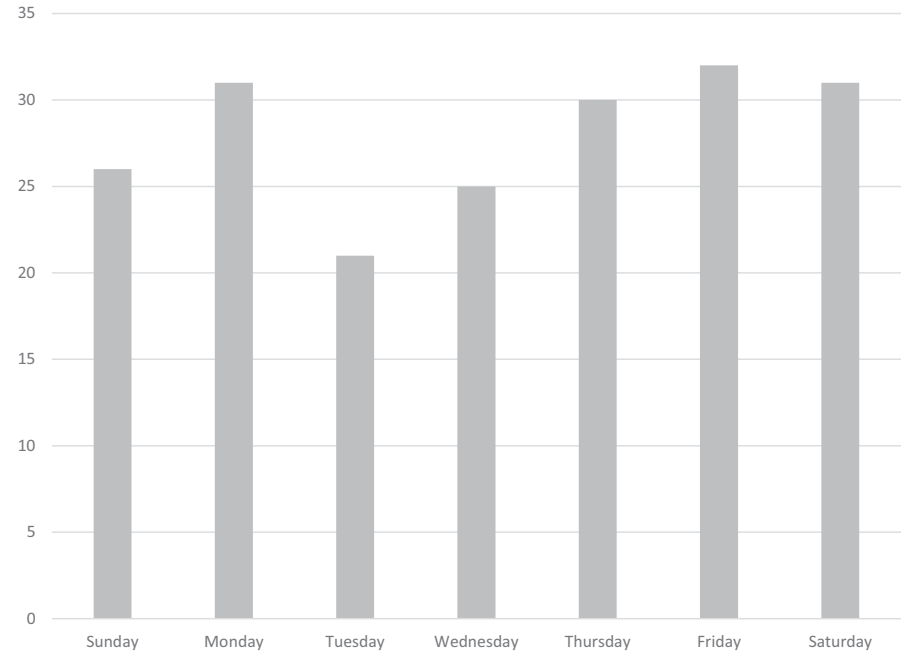
Question	Answer Options
Was the clinical experience you participated in today an immersive clinical experience or a nonimmersive clinical experience?	Immersive clinical experience Nonimmersive clinical experience I did not attend a clinical experience today
In which setting was your clinical experience today?	College or university Secondary or high school Elementary or middle school Rehabilitation center or clinic Physician's office Hospital Industrial or occupational health Performing arts Military Professional sports Other
How many hours did you spend at your clinical experience today?	1–15 (drop down menu) 15+
Please identify the percentage of time spent performing the following tasks during your clinical experience today. (Total percentage must equal 100%)	(1) Providing patient care (for example, completing examinations, providing therapeutic interventions, applying protective devices, conducting preparticipation screenings) (2) Administrative tasks (for example, referrals, EMR/EHR or written documentation, insurance claims, meetings) (3) Facility management (for example, inventory, stocking, cleaning of facilities or equipment) (4) Communication with stakeholders (for example, coaches, parents, other health care providers) (5) Practice or event coverage (for example, time spent at event or practice when NOT interacting with a patient) (6) Skills practice or practice scenarios (not with an actual patient) (7) Waiting (not engaged in any health care operations or not in line of sight of practice or event) (8) Other (text box)
Of the time you spent providing patient care, please identify the percentage of that time spent performing the following categories of patient care. (Total percentage must equal 100%)	(1) Evaluation or reevaluation and diagnosis (2) Performing diagnostic or laboratory tests (eg, performing urinalysis, completing a rapid stress test) (3) Facilitating diagnostic or laboratory test (eg, transporting a patient for radiograph or MRI, arranging referrals) (4) Patient education (eg, explaining self or home care programs, describing different treatment options) (5) Therapeutic Intervention (eg, rehabilitative exercise, soft tissue techniques, modalities) (6) Applying, fabricating, or customizing protective or assistive devices (eg, taping, splinting, padding, casting, wrapping) (7) Wellness and health promotion or injury prevention (eg, completing preparticipation screening or physical exams, promoting health lifestyle behaviors) (8) Other (text box)
Based on your clinical experience, please rate how confident you feel today in performing the following facilities management tasks in an autonomous (independent of supervision) manner. 17 tasks, see Table 2	Not at all confident = 1 Slightly confident = 2 Moderately confident = 3 Very confident = 4 Extremely confident = 5

Abbreviations: EMR/EHR, electronic medical record or electronic health record; MRI, magnetic resonance imaging.

Overall, students indicated an average of 44.3 ± 33.5% of their daily time at clinical experiences performing patient care, 26.9 ± 31.2% providing practice or event coverage, 8.4 ± 17.3% conducting facility management, 7.3 ± 17.4% waiting, 6.4 ± 15.8% completing administrative tasks, 2.8 ± 12.1% participating in skills practice, 2.2 ± 8.5% communicating with stakeholders, and 1.8 ± 11.8% completing other tasks. A breakout of the mean percentage of time spent performing tasks in each of these categories by clinical experience type is provided in Figure 3.

Of the time spent performing patient care, the average percentage of time spent completing categorical types of patient care was as follows: providing therapeutic interventions, 39.7 ± 38.7%; evaluation or reevaluation and diagnosis, 18.1 ± 29.2%;

Figure 2. Frequency of survey distribution by day of the week.



N = 196

applying, fabricating, or customizing protective or assistive devices, 15.0 ± 27.9%; other patient care skills, 8.2 ± 27.1%; providing patient education, 8.2 ± 17.6%; implementing wellness and health promotion or injury prevention, 4.4 ± 16.7%; performing diagnostic or laboratory tests, 3.8 ± 17.0%; and facilitating diagnostic or laboratory tests, 2.6 ± 12.5%. A breakdown of the mean percentage of time spent performing patient care tasks by clinical experience type is provided in Figure 4.

Students also rated their associated confidence level with performing tasks within the categories of patient care, administration, facilities management, and communication. The frequency of confidence ratings per task is presented in Table 2.

Time Spent on Tasks

We examined the proportion of time spent on activities in ICEs and N-ICEs. When considering all students, including those who

Figure 3. Mean percentage of time spent performing tasks by clinical experience type.

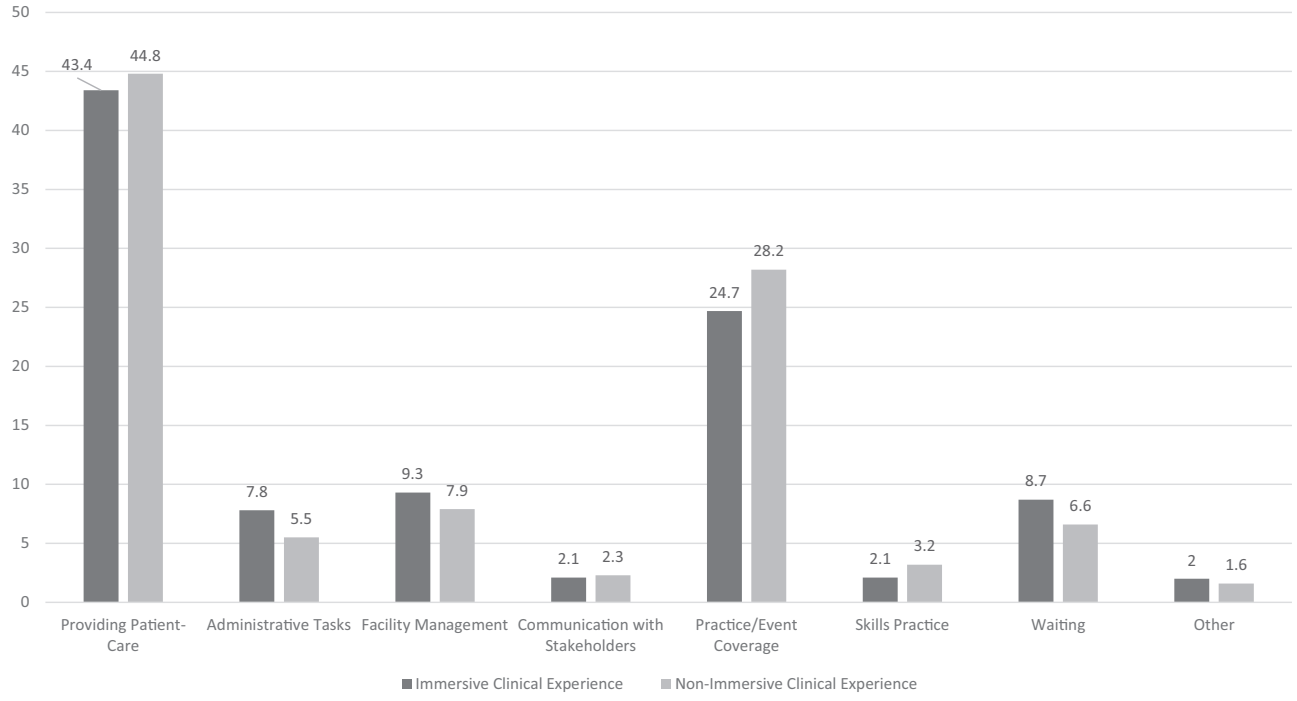
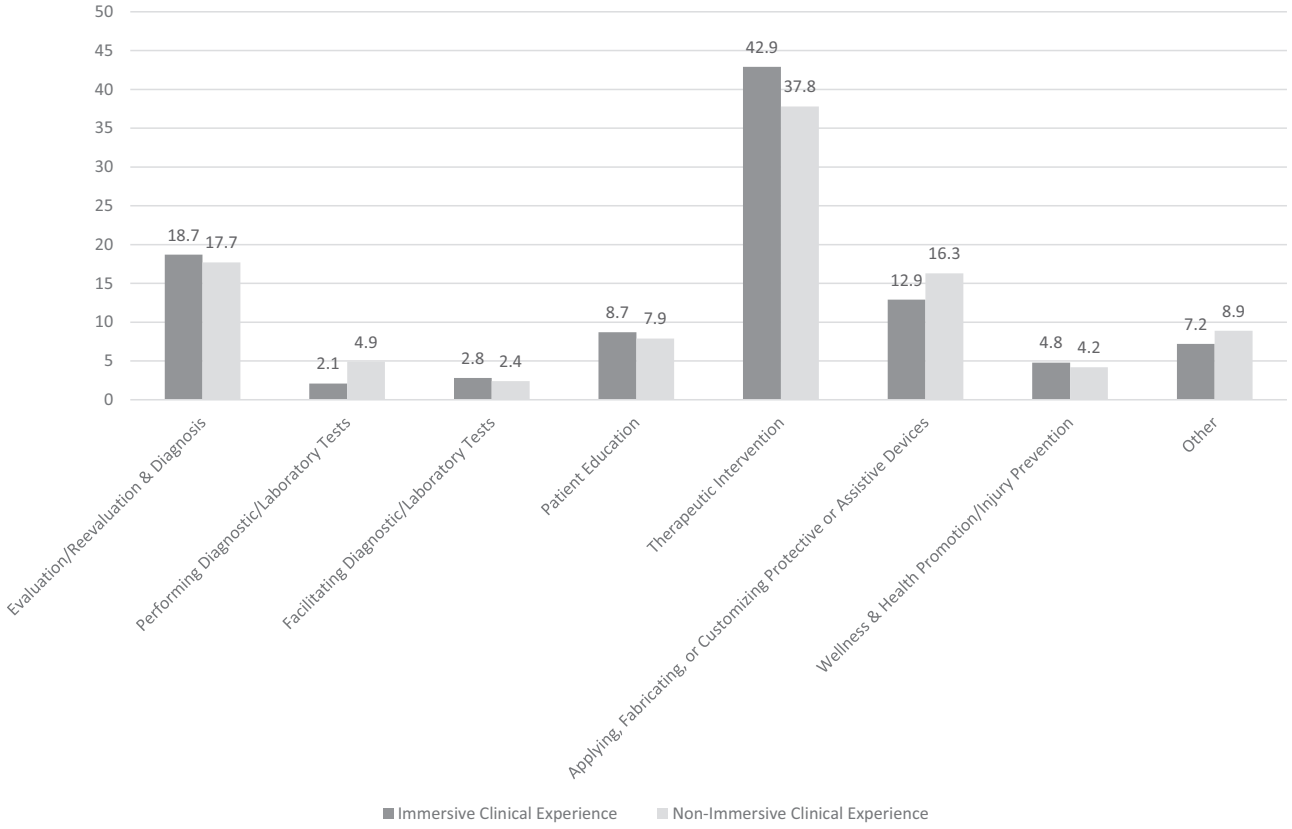


Figure 4. Mean percentage of time spent daily performing patient care tasks by clinical experience type.



did not submit surveys for both types of clinical experiences, we determined that ICEs and N-ICEs varied across 5 areas. Students reported a significantly higher proportion of time spent performing administrative tasks ($P = .001$), facility management ($P = .039$), and waiting ($P = .004$) when in an ICE. They spent more time on practice or event coverage ($P = .007$) and skills practice ($P = .012$) when in a nonimmersive environment.

Next, we only included students (n = 39 students) who submitted surveys for both ICEs and N-ICEs in the comparison of the proportion of time spent on activities. We determined that the percentage of time spent on skills practice was the only area that significantly differed between experience types. When those students were in a N-ICE, they spent a greater proportion of time on skills practice ($P = .010$) than when they were in an ICE.

We then examined the percentage of time spent providing patient care on specific subtasks in ICEs and N-ICEs. When we examined the entire sample, we found 3 subtasks with significant differences between the ICE and N-ICE groups. A significant difference was found in means for performing diagnostic labs or tests ($P < .001$) and applying, fabricating, or customizing protective or assistive devices ($P = .003$), with students in N-ICEs spending more time on these tasks. Students in ICEs spent a higher portion of time implementing therapeutic interventions ($P = .002$) than those in N-ICEs.

Finally, we limited the analyses to students who submitted surveys on both ICEs and N-ICEs and aggregated the means within the student. This more restrictive analysis showed no statistically significant differences in time spent on subtasks.

Student Confidence

We examined the perceived confidence for tasks necessary to transition to autonomous clinical practice for students who submitted surveys for both ICEs and N-ICEs. Specifically, we examined 17 tasks (Table 2) with a response scale that ranged from 1 = *not at all confident* to 5 = *extremely confident*. Immersive clinical experiences contributed to statistically higher confidence in integrating best business practices ($P = .037$), providing appropriate communication with other health providers ($P = .049$), and communicating with administrators ($P = .021$).

DISCUSSION

The inclusion of requisite ICEs in graduate-level professional athletic training programs was projected to resolve concerns over athletic training student readiness to practice autonomously. The findings in our study suggest that, while some aspects of ICEs benefit student opportunities and confidence, ICEs and N-ICEs may not be implemented in a way that genuinely demonstrates differences in opportunities for student engagement.

Characteristics of ICEs and N-ICEs

One notable finding from the descriptive data was the practice settings where both ICEs and N-ICEs occurred. Data from the BOC's 2022–2023 Certified AT Demographics report indicate that just 40.7% of ATs practice at college or university or secondary or high school settings, 16.15% and 24.56%, respectively.[14] Our findings align with those of other researchers that have examined the settings in which patient encounters (PEs) occurred during clinical experiences.[15,16] Welch Bacon et al

Table 2. Frequency of Confidence Ratings by Task (n = 2027). All values are No. (%)

	Extremely Confident (5)	Very Confident (4)	Moderately Confident (3)	Slightly Confident (2)	Not at All Confident (1)
Patient care tasks					
Educate patients on healthy lifestyle behaviors to enhance wellness and minimize the risk of injury ($\bar{x} = 3.48$)	299 (14.8)	689 (34.0)	825 (40.7)	154 (7.6)	12 (0.6)
Perform systematic examinations to formulate clinical diagnoses ($\bar{x} = 3.35$)	254 (12.5)	652 (32.2)	818 (40.4)	206 (10.2)	49 (2.4)
Use findings from examination to develop and implement a patient's plan of care ($\bar{x} = 3.38$)	261 (12.9)	667 (32.9)	809 (39.9)	203 (10.0)	39 (1.9)
Implement best practices in immediate and emergency care ($\bar{x} = 3.40$)	296 (14.6)	637 (31.4)	807 (39.8)	206 (10.2)	32 (1.6)
Rehabilitating and reconditioning injuries and illnesses to the point of return to activity and patient discharge ($\bar{x} = 3.37$)	252 (12.4)	683 (33.7)	780 (38.4)	230 (11.3)	34 (1.7)
Administrative tasks					
Integrating best practices in policy construction ($\bar{x} = 3.19$)	257 (12.7)	476 (23.5)	838 (41.3)	348 (17.2)	59 (2.9)
Integrating best practices in policy Implementation ($\bar{x} = 3.29$)	240 (11.8)	620 (30.6)	815 (40.2)	246 (12.1)	57 (2.8)
Integrating best practices in documentation ($\bar{x} = 3.21$)	264 (13.0)	498 (24.6)	844 (41.6)	291 (14.4)	81 (4.0)
Integrating best practices in basic business practice ($\bar{x} = 2.97$)	208 (10.3)	391 (19.3)	847 (41.8)	342 (16.9)	190 (9.4)
Facilities management tasks					
Manage inventory of supplies necessary for an athletic training facility ($\bar{x} = 3.48$)	380 (18.7)	613 (30.2)	767 (37.8)	188 (9.3)	28 (1.4)
Implement best practices for the maintenance and sanitation of modalities, treatment surfaces and equipment used by patients or clients ($\bar{x} = 3.72$)	526 (25.9)	708 (34.9)	608 (30.0)	119 (5.9)	15 (0.7)
Implement appropriate processes for the storage and disposal of potentially hazardous materials or waste ($\bar{x} = 3.56$)	428 (21.1)	658 (32.5)	692 (34.1)	168 (8.3)	29 (1.4)
Facilitate event setup appropriate for the number and type of participants ($\bar{x} = 3.46$)	348 (17.2)	652 (32.2)	753 (37.1)	191 (9.4)	31 (1.5)
Communication tasks					
Providing appropriate communication (oral or written) with coaching staff or administrative personnel regarding patient status while protecting patient privacy ($\bar{x} = 3.37$)	303 (14.9)	606 (29.9)	788 (38.9)	255 (12.6)	23 (1.1)
Providing appropriate communication to the family of a minor patient regarding the patient's injury or illness and plan of care ($\bar{x} = 3.32$)	270 (13.3)	579 (28.6)	847 (41.8)	240 (11.8)	39 (1.9)
Providing effective communication with other health care providers about a patient's status, plan of care, or both ($\bar{x} = 3.36$)	278 (13.7)	645 (31.8)	779 (38.4)	232 (11.4)	41 (2.0)
Provide effective communication with administrative personnel regarding policy decisions relative to athletic training services ($\bar{x} = 3.27$)	255 (12.6)	541 (26.7)	882 (43.5)	253 (12.5)	42 (2.1)

determined that, across all clinical experience types, 80% of PEs were reported to occur at either college or university or secondary or high school settings.[15] Jones et al established that 64% and 67.2% of PEs were recorded at the college or university setting for ICEs and N-ICEs, respectively.[16] In the secondary or high school setting, 29.8% and 24.4% of PEs occurred in ICEs and N-ICEs, respectively. The current evidence suggests that students are not provided clinical experience opportunities within a variety of clinical practice settings representative of the profession of athletic training, which likely decreases their readiness to practice in those less traditional practice settings. Researchers have established that clinical education coordinators often select clinical experience opportunities that are convenient to the program, either geographically or due to existing relationships with the program, in favor of focusing on attaining compliance with accreditation requirements.[17] Athletic training students value diversity in clinical experience settings and feel that such diversity contributes to their readiness to practice autonomously upon program completion.[18] Athletic training program administrators should actively pursue clinical experience sites that represent the totality of practice opportunities within the profession. Alternatively, the CAATE might consider revising accreditation requirements relative to clinical experience settings to ensure students from all programs graduate with clinical experience opportunities representative of their professional career opportunities.

In addition to settings, another key descriptive factor that emerged from our data was the high frequency of students indicating they did not attend clinical experiences. Several factors likely contributed to this outcome. The most substantial of these was the timing of data collection. Data collection began in August 2020. As the CAATE did not alter the requirements of athletic training education programs relative to the standards and expectations of programs to provide clinical education to students, we elected to proceed with data collection as well.[19] However, the coronavirus pandemic did result in the shutdown of many athletics programs and health care facilities in the fall of 2020, which likely led programs to rely more heavily on simulation to achieve the required clinical education outcomes at that time, which likely contributed to the higher-than-expected rate of students indicating not attending a clinical experience on the day they received a survey.

Time Spent on Tasks

Our findings regarding time spent on generalized athletic training practice tasks varied based on the sample analyzed. Generally, ICEs did provide an increased proportion of time spent on administrative and facilities management tasks, although students in ICEs also reported higher proportions of time spent waiting. In research conducted when the requisite entry-level degree was at the undergraduate level, newly credentialed ATs had noted deficiencies in their administrative skills.[20] The finding that ICEs may offer more time to complete administrative and facilities management tasks indicates that ICEs may be starting to address previously identified challenges that newly credentialed ATs face. Interestingly, ICEs provided more time spent waiting, while N-ICEs provided more time for skills practice. Time spent unengaged while at clinical experience has been previously identified as contributing to athletic training program attrition.[21] Students within ICEs should be encouraged by their program administrators and preceptors to use the time that may otherwise be spent waiting to initiate skill practice to improve skill competency and decrease time spent unengaged while at their clinical experience.

Specific to patient care tasks, ICEs allowed for more time spent implementing therapeutic interventions, while N-ICEs resulted in increased time performing diagnostic tests or labs and applying, fabricating, or customizing protective or assistive devices. Athletic training students previously identified that ICEs provided increased exposure to patient care opportunities and improved preparation for autonomous practice.[6] Our findings do not fully support this perception, as the increased exposure varied across experience types. While ICEs offered more time spent implementing therapeutic interventions, this finding should be interpreted with caution, as evidence suggests that nearly a quarter of procedures performed by athletic training students during clinical experiences are the application of therapeutic modalities.[15] Thus, this finding does not necessarily indicate that students are inherently more involved in developing and applying the manual therapy or physical rehabilitation aspects of therapeutic interventions. Considering that all 3 of the significant patient care categories are individual required curricular content areas within the CAATE standards for professional programs, this finding suggests that a combination of ICEs and N-ICEs within a student's clinical education progression may benefit the student's development across the breadth of patient care skills.[2]

The reduction of significant findings when we examined only students who submitted responses for both ICEs and N-ICEs to the lone differences of N-ICEs allowing more time skills practice highlights the effect of the individual student. Considering the limited differences in this sample of participants, students who engage in time spent on tasks at 1 type of clinical experience do the same at the other type of experience. This finding can likely be attributed to student self-advocacy and initiative in seeking opportunities to complete tasks while at clinical experience, regardless of the type of experience. Researchers have previously identified that the perceived teachable and engaging moments between athletic training students and their clinical supervisors are incongruent more than three-fourths of the time.[22] This means that students must take control over their educational opportunities while at clinical experiences, taking initiative to perform tasks or voicing a desire to be taught how to perform tasks, instead of relying on a preceptor to recognize those opportunities on their behalf. In fact, most preceptors believe it is the student's responsibility to take initiative while at a clinical experience.[22] Program administrators should attempt to foster self-advocacy and confidence in taking initiative to ensure students capitalize on all clinical experience opportunities, regardless of experience type. One quality improvement study completed on nursing students identified that providing a single self-advocacy training session, electronic affirmations, and space for group debriefing resulted in improved self-confidence in advocating for opportunities with their preceptors, improved students' assertive communication skills, and even resulted in increased resiliency and emotional intelligence among participants.[23] Athletic training educators could embed such concepts into clinical courses to facilitate student success in clinical experience, regardless of experience type.

Conversely, the reliance on student initiative to achieve engagement in all aspects of clinical practice will likely result in inequitable experiences and assessment for minoritized and underrepresented populations.[24,25] Inequities in clinical assessment and mentorship have been identified in medical, nursing, and athletic training literature, and those inequities have been attributed to the gender of both the student and supervisor.[26–28] While administrators can encourage students to take initiative and advocate for opportunities at clinical education, it is imperative that program faculty recognize that some students, based on gender, race, and other factors that draw implicit bias, may not be able to effectively advocate for themselves. Program administrators should be encouraged to incorporate training into their preceptor development that addresses equity in the supervision, mentorship, and assessment of students.[25] Workshops that address equity and implicit bias have shown to be effective at improving clinical supervisor's awareness of concerns that could affect a student's experience.[24,25] Programs that use PE tracking could also review data across multiple student placements to identify preceptors who might specifically benefit from education as to how to ensure equitable experiences across students at their site.

Confidence

Our findings relative to confidence ratings associated with tasks performed by students suggest that student confidence is improved across 3 areas after ICE participation. Students felt more confident implementing best business practices after participating in an ICE. Notably, this task had the highest associated frequency of not-at-all-confident ratings among all 17 rated tasks. Given that more than 90% of N-ICEs were conducted at college or university and secondary or high school settings, which have limited need for business practices from the athletic training staff, and ICEs appeared to have slightly more variety in setting type, this finding may also be tied to experience setting rather than experience type alone. Students also identified increased confidence in communicating with administrators and other health care providers. Both prospective employers and employees have previously recognized communication as a deficiency that newly credentialed ATs possess that negatively affects their transition to autonomous practice.[20,29] It is likely that the increased confidence across all 3 of these tasks is linked with the higher proportion of time spent performing administrative tasks, which could include interacting with payors or other administrators. This finding corroborates evidence that students perceive ICEs to provide increased learning opportunities with administrative tasks and communication with other personnel.[4] This finding supports the projected benefit of including

ICEs in graduate-level professional preparation for ATs that incorporates immersive clinical placements.[4]

Limitations and Future Research

As with all research, our study is not without limitations. As identified above, the timing of data collection during a global pandemic likely affected the number of returned surveys indicating not attending a clinical experience on a given day. However, the study was still adequately powered for the analysis contained herein. As with all survey research, in this study, we relied upon participants providing honest and accurate responses. We did not collect or consider the individual program characteristics or clinical education structure of the respective education programs in which our participants were enrolled. Future researchers should aim to determine the ideal proportion of ICEs and N-ICEs offered to athletic training students to achieve the benefits that both types of experiences provide. Additional research is needed to determine the role that clinical experience setting has on athletic training student engagement and practice opportunities. Further research should be conducted to establish the role of student self-advocacy and initiative in achieving increased engagement and confidence in clinical experience-related tasks, regardless of experience type.

CONCLUSIONS

Our findings suggest that, regardless of experience type, athletic training program administrators need to address the lack of diversity of clinical settings being used by athletic training programs to conduct clinical experiences, as this likely affects opportunities for engagement in specific types of clinical skills. Immersive clinical experiences and N-ICEs vary in the opportunities for task performance, with ICEs providing more opportunities for administrative and facilities management tasks and implementing therapeutic interventions when providing patient care. However, our findings suggest that the individual student highly influences this. Program administrators may need to implement strategies that foster initiative taking and self-advocacy among students to promote their abilities to reap benefits from clinical experiences, regardless of type. Lastly, ICEs provided increased confidence development in business practices and communication skills, which might address some previously identified deficiencies of newly credentialed athletic training. A combination of ICEs and N-ICEs within a graduate-level professional athletic training program would likely benefit athletic training students' engagement in various professional tasks.

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