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ORIGINAL RESEARCH

Athletic Trainers' Perceived Behavior Changes After Web-Based Continuing Education on Clinical Documentation: A 6-Month Follow-Up Investigation

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Context: Web-based continuing education (CE) is effective for increasing knowledge and confidence related to athletic training clinical documentation, but long-term behavior change is unknown.

Objective: To examine athletic trainers' (ATs') perceived effectiveness of and behavior change from clinical documentation CE modules 6 months after completing them.

Design: Consensual qualitative research.

Setting: Web-based audio interviews.

Patients or Other Participants: Twenty-six ATs averaging 36.8 ± 9.3 years of age, including 15 women and 11 men representing 20 US states and 7 clinical practice settings.

Data Collection and Analysis: We recruited participants who completed a Web-based CE module specific to clinical documentation 6 months before this study. We interviewed participants to obtain updated perspectives of their experiences completing the CE modules and any self-reported behavior change that occurred since the initial learning experience. We used the consensual qualitative research approach to inductively analyze the interviews using 3 internal rotating auditors. In this study, we included data source and multianalyst triangulation to improve trustworthiness.

Results: We identified 4 domains from the data: behavior changes, value of the course, future needs, and ongoing barriers. (1) *Behavior changes* included enhanced electronic medical record (EMR) use, timely and diligent documentation habits, more secure communication procedures, and enhanced consistency and staff onboarding procedures. (2) Participants discussed the *value of the CE activities* in 3 supporting categories, including detailing key content, general benefits, and resources obtained from the modules. (3) Participants identified *future needs* for documentation, including annual refreshers, various formats, and setting-specific examples. (4) O*ngoing barriers* affecting participants' clinical documentation behaviors included lack of time, technology, staff, and financial resources.

Conclusions: Athletic trainers self-reported improved clinical documentation behaviors 6 months after completion of the CE opportunity. Participants discussed increased EMR use and timely and thorough documentation after the CE activities, which suggests CE opportunities may help address profession-wide challenges previously identified in the literature.

Key Words: Professional development, knowledge translation, electronic medical record, health information technology

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KEY POINTS

- Athletic trainers self-report improving their documentation behaviors, including increased electronic medical record use and more thorough, timely, and secure documentation, after completing Web-based continuing education modules.
- Continuing and professional education instructors can increase knowledge translation from educational experiences with interactive, multimodal learning opportunities that reflect a variety of clinical practice settings.
- Athletic trainers can improve documentation practices by prioritizing documentation, following best practice guidelines, using strategies to increase documentation efficiency, and seeking more resources to support their documentation practices.

INTRODUCTION

Thorough, high-quality documentation is an important component of athletic training clinical practice.[1] Despite this importance, athletic trainers (ATs) have described inconsistent and inadequate documentation practices.[2–7] These behaviors have been attributed to insufficient knowledge, lack of time, high patient volume, and prioritizing patient care delivery over clinical documentation.[5,7] Clinicians have described that more resources and education related to documentation may help improve their behaviors, which has prompted the release of educational resources, professional guidelines, and presentations related to improving documentation quality.[8,9] Although ATs in some studies desired more educational resources, ATs in other studies have also admitted that advancing their knowledge in athletic training administration is their lowest priority.[6,10]

Researchers recently developed and examined the effectiveness of different continuing education (CE) modules for athletic training clinical documentation, finding that these modules increased knowledge and confidence in clinical documentation.[11–13] The authors also found that participants were generally satisfied with 2 different options for Web-based CE related to clinical documentation. However, they preferred the more engaging option that included a variety of learning formats (personalized learning pathway [PLP]), rather than just readings (passive reading list [PAS]).[12] Immediately after completing these modules, ATs described being motivated to change their clinical behaviors related to clinical documentation.[13] However, at the time of the initial study, it was too soon to evaluate behavior changes that resulted from the educational modules.

Continuing education has been found to increase ATs' knowledge in several clinical practice areas, including diagnostic ultrasound, emergency skills, documentation, and evidence-based practice.[11,14–16] However, less research has been conducted on knowledge translation, behavior change, and effect on patient care after completing CE.[17] Manspeaker and Hankemeier followed up with ATs who completed a workshop on evidence-based practice 12 months after the initial intervention, finding that, while ATs retained the knowledge gained, their confidence decreased over time, and concepts were not integrated into their clinical practice.[18] Similarly, ATs who completed Web-based modules on evidence-based practice increased their knowledge, but participants did not think the information affected their clinical practice.[19] A Cochrane review examined the effects of CE meetings and workshops on professional practice and health care outcomes and found that educational meetings appear to improve professional practice, but more research is needed to provide more explanation for what contributes to these changes.[20]

While improvements in knowledge and confidence are an important outcome of CE activities, translating knowledge into improved clinical skills and patient outcomes is also important.[21] Understanding knowledge translation and behavior change can help educators and clinicians determine the most effective formats of CE to produce and engage in. The purpose of our study was to examine ATs' perceived behavior changes from and satisfaction with Web-based CE modules specific to clinical documentation 6 months after completing them.

METHODS

Design

We used a consensual qualitative research (CQR) approach to obtain participants' perspectives of their experiences completing the educational modules and subsequent behavior change.[22] The research team included 3 members experienced in CQR methodology and clinical documentation research.

Participants and Setting

Institutional Review Board approval was obtained before recruiting participants. We recruited participants who completed a previous study examining the effectiveness of Web-based CE modules for clinical documentation.[11–13] In the previous study, 29 participants completed 1 of 2 Web-based modules and an interview about their experiences: (1) a PLP that consisted of 8 sections of videos, case studies, documents, quizzes, and reflections (n = 15) or (2) a PAS of several research articles and best practice documents related to clinical documentation (n = 14). Six months after completing the educational modules and the initial research interview, we contacted these 29 individuals requesting a short follow-up interview regarding their experiences. Twenty-six participants (PLP = 14, PAS = 12) agreed to a follow-up interview (Table 1).

Instrumentation

We developed 1 interview guide for both groups of participants. The objective of the interview was to obtain participants' additional reflections on their experiences completing the educational modules and their perceived behavior changes

Table 1. Participant Demographics

Pseudonym	Years Certified	Work Setting
PAS group		
Eleanor	9	Secondary school—administrative[a]
Ross Bob	2	Secondary school
Rebecca	16	College or university
Marie	12	College or university
Liam	19	Clinic
George	21	Hospital
Bella	5	Secondary school
Greg	11	Secondary school
Rinna	7	Secondary school
Janie	15	Club or recreational sports
Mircalla	2	Secondary school
Brooke	11	Industrial or occupational
PLP group		
Austin	21	College or university
Linus	10	College or university
Derek	9	Secondary school
Jazzy	9	College or university
Roger	2	Secondary school
Han	13	College or university
Mark	36	Secondary school
Jenny	6	College or university
Ruthie	31	Clinic
Michelle	6	Secondary school
Hot Gobbler	29	Secondary school
Ari	13	College or university
Pam	7	College or university
Charlie	13	Secondary school

Abbreviations: PAS, passive reading list; PLP, personalized learning pathway.

[a] Changed since time of module completion.

since completing the CE modules (Table 2). The guide was developed based on our expertise and findings from the previous research study.[11–13] We treated the first interview with each participant group as a pilot interview to ensure the guide accurately obtained the information sought. After completing this pilot interview, the research team determined no changes were needed and proceeded with using the guide with the remaining participants. The initial 2 interviews were included in the final analysis.

Procedures

Six months after completing the initial study,[11] participants were e-mailed an invitation and link to schedule the brief interview for the current follow-up study. The principal investigator (SLN) completed all interviews via Zoom with video recordings off. Zoom automatically transcribed interviews and a research assistant reviewed the transcripts for accuracy, corrected errors, and finalized them for analysis.

Data Analysis

We used the CQR approach with internal rotating auditors to inductively analyze interviews.[23] The research team independently coded 4 PLP and 4 PAS transcripts, then met to develop an initial codebook. We used the initial codebook to code an additional 4 transcripts from each group, then met to finalize the codebook. The principal investigator then coded the remaining transcripts along with the initial 8 transcripts. The 2 remaining investigators then audited the transcripts coded by the primary investigator. Coding concluded with a final consensus meeting to resolve any discrepancies and finalize the domain and category structure. Trustworthiness was built into the data collection and analysis process with the use of data source and multianalyst triangulation.[24]

RESULTS

Our inductive analysis identified 4 domains, including behavior changes, value of the course, future needs, and ongoing barriers. Domains, categories, and supporting quotes are described in the following paragraphs, and the frequency of the findings by group are displayed in Table 3.

Self-Reported Behavior Changes

All but 1 participant described changing their behavior because of the educational modules. The only participant (Eleanor; PAS) who did not change her behavior attributed

Table 2. Interview Guide

As a reminder, this is a brief follow-up discussion about your experiences accessing the documentation educational resources back in March/April of this year. Do you recall [completing the personalized learning pathway] [reviewing the documents provided]?
(1) Now that some time has passed, what are your thoughts about the documentation educational resources?
  (a) eg, helpful, useful, inadequate, etc?
  (b) What key takeaways do you have from the materials, if any?
  (c) Have you revisited any materials? Which ones? Why or why not?
(2) Have you changed any of your clinical documentation behaviors since reviewing the resources?
  (a) If so, please describe?
    (i) What did you change and why?
  (b) If not, why haven't you made changes?
(3) Are any barriers preventing you from implementing the information you gained about clinical documentation (from the educational resources)?
(4) Are there any additional resources that you think would be helpful to you regarding clinical documentation?
(5) Do you have any additional thoughts to add regarding the documentation educational resources or clinical documentation in general?

Table 3. Frequency of Each Domain and Category by Group

Theme	Category	Frequency[a]	PLP (n = 14)	PAS (n = 12)
Behavior change		Typical	14	11
Value of course	Key content	Typical	11	7
	Resources	Typical	9	5
	General benefits	Typical	11	8
Future needs		Typical	10	7
Ongoing barriers		Typical	13	8

Abbreviations: PAS, passive reading list; PLP, personalized learning pathway.

[a] *General* would apply to all cases; *typical* applies to half or more cases; *variant* would apply to 2 or 3 but less than half of cases.[15]

this to changing to an administrative-only job since completing the modules. Common behavior changes included increasing electronic medical record (EMR) use, completing more timely documentation at the point of care, being more diligent with documentation, implementing a student login process, documenting more securely, and improving staff onboarding and consistency (Table 4). Ross Bob, a PAS participant, touched on several of the changes she has made:

> *Based on those documents, I was able to make quite a few changes in my documentation system, just like how I was writing documentation. For one, I was on top of putting my documentation into our EMR a lot faster. I would try to get it in within like 48 hours, and then I got a lot better at putting in specific parameters for every treatment that I did or descriptions of the types of taping that I was doing things like that, so that other providers could read it and actually know what I was doing and not just seeing manual therapy somewhere on there.*

Marie, another PAS participant, described that she has implemented changes with her staff based on what she learned from the modules:

> *I've actually incorporated some kind of checks and balances with my staff to make sure that what we have discussed on a year-to-year basis and what our standards are, from a documentation standpoint, are being kept consistent, and that is one of those things that I've been able to use some of that information from those resources that she provided, to make sure that we can really maximize what we're doing with not only our time but also make that efficient and appropriate for everything that we need to include in our documentation.*

Several participants, including Roger, described how the timeliness of their documentation has improved since completing the PLP:

Table 4. Participants' Self-Reported Behavior Changes

More thorough documentation
Increased electronic medical record use
More compliant communication of private health information
Increased documentation efficiency
Improved staff consistency with documentation
Scheduling documentation time
Documenting more quickly or at the point of care
Minimized abbreviation use
Documenting more communication
Reduced use of text messages for patient communication
Improved security of patient records

> *Yes, definitely. I document right after the injury, or I'll always document the day of an injury just so I don't forget anything. And then I—like I said, I always have my notes up so I can reference those as I'm doing my documentation, but I think the biggest 2 things are normally I would wait 1 or 2 days to fully document, but now I document almost immediately and then kind of changed the way I organized my notes. So, it's more in line with what the PLP's guidelines were.*

Lastly, participants spoke about improving the security of communication with patients and other providers. Janie, a PAS participant, provided 1 example of this in her response:

> *I use the secured chat room to have conversations with my athletes instead of via text message. So this way, everything's automatically saved to their file exactly how they wrote it, instead of me hand typing in, which as you know, could potentially lead to something being left out or typed incorrectly, or I've been screenshotting the actual text conversations and then uploading the screenshots. So this way, it's 100% exactly what the athletes said. There's no misinterpretation of anything. So I'm in the process of changing my methods.*

Overall, participants described changes in the documentation practices they have maintained 6 months after the initial study. These self-reported behavior changes did not appear to differ based on the type of module initially completed.

Value of the Course

When following up with participants, we asked about the key information they remember from the educational modules. Participants spoke about 3 aspects of the value of the course, including key content, resources, and general benefits. These categories are described in the following paragraphs.

Key Content. Participants described several content areas of the educational modules that they recalled. For example, Charlie (PLP) spoke about the value of learning how to use his documentation data:

> *I think the course is really beneficial in showing how to utilize it, not just gathering the data to utilize it, but more of the now that I have the data, what do I do with it? And it's actually really helping me out right now with a position improvement in those types of situations. So that was mostly what I remember from the course.*

Greg, a PAS learning participant, thought the strategies for documenting were particularly helpful:

Just that there's a lot more resources out there to help you make documentation an easy part of your everyday. It's not like it's a special task, that there's so many different ways to accomplish it. Like it's not supposed to be really hard, really difficult to implement, so many easy ways to make it easier to do.

Jazzy, a PLP participant, made a similar comment about learning "ways to make documentation easier for you," suggesting that participants learned similar strategies from the different formats of the educational modules.

For several participants, the key content they remembered related to their self-reported behavior change. For example, Janie (PAS) reported that she had made changes to documenting text messages and communication. She also noted these areas as valuable content from the modules:

They were really helpful of clarifying things that I may have not realized that needed to be documented or how to document them properly, like conversations with athletes that were through like text messages and stuff like that of how to properly document those for your records.

Other key content areas included strategies for legal protection (George; PAS) and the benefits of using an EMR (Rinna; PAS).

Resources. As participants reflected on the value of completing the educational modules, another component they described was the resources provided in the modules. For the PLP group, a key resource they valued was the ability to take notes within the module, which were e-mailed to them upon completion of the program. Several PLP participants described using these notes in the months after the module completion. Ruthie described:

One of the things that I really liked was the journaling part and to always have that as a review. You created a platform where I could, on the side, make my own personal notes and then refer back to them.

Roger also described referring back to his notes as he documents patient care:

The notes I took during the PLP were almost verbatim from the slides and everything that were in the PLP, and I literally, whenever I go to type my notes, for any injured athletes, I literally have that open in a separate slide so I can reference it. It gets me more in tune with typing my notes that way so I can—eventually can get used to just typing my notes that way.

In addition to the notes boxes, several participants from both groups discussed the value of being able to download articles and resources provided in the educational modules. The PAS learning module only included documents, so these were the only resources provided to participants. Regarding the resources provided in the PAS module, Rebecca said: "I thought that they were so good that I saved all of them." Liam also downloaded the documents and said: "I do know that they are there in case I have questions." In some cases, like Brooke's, participants shared these resources with colleagues: "I did send some of the information and some of the stuff to my friend as well to just be like, 'Hey, you might want to just check this out again. This is a reminder,' and she appreciated it." Personalized learning pathway participants were also able to download resources, and some mentioned doing so. For example, Derek noted: "Especially for the patient reported outcomes, I did save some of those PDF documents."

General Benefits. As participants reflected on the educational modules, they also described several general benefits of completing the courses. Participants from both groups appreciated that the modules provided a refresher on the importance of documentation. Bella, a PAS participant, stated:

I thought that they were really good. It kind of opened my eyes and reminded me of certain things regarding documentation on how important it is in this day and age especially to make sure that we've got all of our I's dotted and our T's crossed as much as possible when it comes to documenting the services provided, documenting the patients and the demographics, and the actual services that we do so. It reflects on us professionally, and God forbid, in the event of any legal [issue], we have backup there.

Mark, from the PLP group, also described the value of the information provided:

It was a great reminder of things that you should have been doing. And as you get further away from learning these things in college, you kind of let something slide. So it was very helpful in that regard, very helpful and very useful and been able to implement a lot of that information.

In addition to the general refresher and reminder that the educational modules provided, the PLP group also discussed enjoying the format of the modules. Ari said:

I thought it was very easy to use, and I thought the education of it was excellent. I enjoyed seeing a bunch of different speakers. It's always nice to get other people's points of view from personal experience.

Similarly, Hot Gobbler stated: "I really like the way it was set up and how you had us go through each one of those sections and then the refresher at the end just to make sure that you understood as you went through it." Lastly, Ruthie described:

I really enjoyed being in this study and taking part because the modules that you set up where it's so user-friendly, everything was very pleasing to the eye, so to speak, so I could follow along with it. And I think I've retained more information that way. I love the videos. I really did like the journaling. You put together really a robust platform to reinforce the documentation best practices implementation for all of us. So as I said, I really enjoyed it.

Future Needs

When asked about what additional resources would help ATs improve their clinical documentation, participants described several future needs related to CE for documentation. Several participants noted that an annual refresher or brief summary course on documentation practices would be valuable. Jazzy, a PLP participant, said: "A brief annual [CE unit] update on documentation just to keep it fresh and so you don't get too far away from some of those core principles of why we do it and the role that it plays." Similarly, Michelle (PLP) stated: "I think education is always beneficial, like everything is

changing so constantly that I think even like a yearly refresher course or something like that would be really beneficial."

When discussing the need for future CE, several participants described the desired format for future educational opportunities. Notably, it was primarily the PAS participants who desired a variety of formats. Mircalla, a PAS participant, described:

> *Having like lecture style, more visual aids, even infographics, just things that focused on hitting more than one learning style because, if I'm remembering correctly, I was just reading all articles, and that's very difficult for me because I'm an auditory learner. Visual is second for me, but more visual pictures than visual words. . . So it was my biggest comment was just having more learning styles, so it can be accessible and retained by more people.*

Janie, another PAS participant thought a quick reference summary of the documents provided may be helpful:

> *Like a PowerPoint or presentation-condensed information of the newest practices and things for a quicker reference, so then you're not having to go back through each resource that you guys provided, so maybe some kind of like consolidated presentation.*

George (PAS) also suggested that an interactive workshop with live support would be a helpful learning tool:

> *I would love if at [a National Athletic Trainers' Association] meeting . . . to have the [CE unit] course that you could sit down in. You had a live person there, and everybody got out their computers, and you could follow with them. They told you all the things that you could do. I think that that might be helpful.*

Additionally, several participants described the value of having setting-specific examples and resources for clinical documentation. Eleanor (PAS) said:

> *What would be needed or recommended at a private practice or general population patients as opposed to high school students, I think [they] would have different needs, so making sure to include those would be better suited for my patient population.*

Similarly, Pam (PLP) described that she prefers to focus on examples from her own clinical setting when learning:

> *I think it could benefit a clinician to have a setting-specific presentation, like if you had one for secondary schools, if you had one for a clinical setting, if you had one for the college setting, and nontraditional settings. I'm remembering doing the PLP—there were some sections where they were talking specifically about a clinic or working in a high school, and I found myself getting distracted easily during those because I was like, 'Oh, that doesn't apply to me.' It wasn't quite as engaging as hearing about a college [AT] speaking to their experience in the college. I wasn't paying as close attention to the high school [AT] talking about showing their worth using the data they had or documenting in the high school. That's something that I think could be cool and would be beneficial.*

Ongoing Barriers

We also sought to learn if participants experienced any ongoing barriers to completing clinical documentation. Although participants described improvements to their documentation practices after completing the modules, they did mention some barriers to improving their documentation practices. Participants described several barriers, including a lack of time, willingness, resources, and EMR access. Han, a PLP participant, described:

> *I think it becomes a willingness and setting the time aside to ensure that I get it done. So the barrier would just be myself and changing my mindset to make it more of a priority as it should be.*

Michelle (PLP) described that more resources would help her document more:

> *I wish I could [document] a little more extensively, and the barrier would be money and resources. I wish I could have an iPad for kids to sign in, and I wish I could have different EMRs to use and have more licenses to have more people have access to it. So I think money is probably the biggest barrier for me and the ease of being able to sign in electronically and type stuff up electronically versus writing everything down. I just—I think the technology would need to be upgraded in my setting.*

Bella (PAS) also mentioned challenges trying to find the right EMR: "I'm trying to find a good EMR that is effective. So I would say that's a barrier—trying to find the right EMR and just get that up and running and get everybody onboard with doing it." Other PAS participants, including Liam and Brooke, noted that staff shortages and onboarding staff were additional challenges to completing documentation. Although most participants mentioned at least 1 barrier, 3 participants did not describe any ongoing barriers to completing documentation.

DISCUSSION

Behavior Change and Value of the Educational Modules

All participants with patient care responsibilities self-reported that their documentation practices improved in the 6 months after the CE modules. Previous researchers have identified ATs' challenges in documenting patient care, including a lack of accountability, guidelines, and strategies for documenting efficiently.[6,7] Athletic trainers in previous studies have also described that EMR use and point-of-care documentation are effective strategies for completing quality patient care documentation, yet ATs in many settings, particularly secondary school and college or university settings, have limited use of these strategies.[2,3,25,26] Our participants specifically described improving documentation practices in areas previously identified as barriers, including increased EMR use, more timely documentation, and improved staff consistency of documentation. These findings suggest our CE opportunities may help address profession-wide barriers to documenting previously identified in the literature.[12]

Research in which behavior change resulting from CE has been examined is limited in the athletic training profession. However, Welch et al followed up with ATs 6 months after completing a Web-based module focused on evidence-based

practice.[19] Although the educational modules increased knowledge, ATs in this study reported that the modules did not affect their daily clinical practice. Similar findings have emerged from athletic training and studies of other health professions.[18,20] Knowledge translation has been identified as a challenge in athletic training and other health care professions' CE experiences.[20,21] While researchers have found increased knowledge after a CE experience, participants often do not describe changes in their clinical practice.[21] Several frameworks for increasing knowledge translation have been proposed, and many include common elements of clinician buy-in, multimodal delivery of information, and intentional application of knowledge. It is likely that all these factors contributed to the behavior changes reported by our participants.[21,27]

When reflecting on the documentation modules, participants recalled key content they described as most memorable, including strategies for documenting effectively, improving the security of communicating personal health information, and the value of EMR use. These areas also align with participants' self-reported behavior change. Participants also noted these specific key content areas immediately after completing the modules.[11] This suggests that the immediate takeaways of an educational experience affect future behavior. Thus, when obtaining feedback immediately after an educational experience, CE providers and educators can obtain insight into the most valued information and possible implications of the learning experience. If participants' and educators' perceptions of the most meaningful knowledge and skills do not align, educators may consider revising the educational experience to better ensure it meets educational objectives.

Participants expressed their ongoing satisfaction with the educational modules, which may have facilitated their translation of knowledge into clinical practice. Participants in both learning groups appreciated the resources provided during the modules, including document downloads, notes, and links to professional guidelines. They described frequently referencing these materials as they implemented new documentation behaviors. Thus, these resources may have facilitated the application of the information to clinical practice. Participants in other studies have also noted that they like being able to take handouts and other tangible resources away from professional development opportunities.[28] Thus, educators should provide resources to participants to help improve the outcomes of professional development.

Several participants, primarily of the PLP educational module, also described the positive experience of the format of the CE experience. They recalled the engaging, structured nature of the module and described that this helped them apply the information. This finding mirrors previous research findings which emphasized the importance of using engaging, scaffolded experiences with various learning formats to help facilitate learning.[12,21] In a scoping review, Zhang and Thompson identified 5 key enablers of behavior change from continuing interprofessional education, including authentic case examples and evidence-based recommendations, discussion or interaction, timely feedback, self-improvement plans, and step-by-step interactions.[29] Our educational modules included several of these components, including case studies, videos, feedback, knowledge checks, perceptions checks, and evidence, which potentially facilitated behavior changes.[8] While the PLP module included most of these recommended components, the PAS group also included evidence-based recommendations and specific strategies for completing documentation. Educators leading CE and professional education activities should integrate these concepts of adult learning theory and best practices in the literature.[21,27]

In our initial study, we found that PLP participants' knowledge increased significantly more than the PAS and control groups on a quantitative knowledge assessment.[11] In our current qualitative follow-up study with PAS and PLP participants, we did not observe differences in self-reported behavior changes based on the information provided by participants in the interviews. In the follow-up interviews, PLP and PAS participants described similar changes to their documentation practices. This suggests that, although the PLP provided a more engaging learning experience, the PAS reading list still facilitated increased knowledge and translation to clinical practice. It is also possible that participants were highly motivated to change their documentation behaviors, which may have mitigated the influence of the different module formats.[21] Regardless, Web-based CE appears to improve knowledge[11] and self-reported behavior change for athletic training documentation practices. Web-based CE is an accessible, cost-effective form of professional development that can be used for a variety of topics.[16,29,30] Educators and clinicians should consider using this learning format to improve knowledge and positive changes related to patient care.

Ongoing Barriers to and Future Needs for Effective Documentation

Several participants in our study described ongoing barriers to completing effective documentation, including lack of time, resources, EMR access, and willingness to document. Several of these barriers have been identified in previous studies, suggesting that ATs still face challenges when documenting.[5–7] However, previous researchers have found that a common barrier to documentation was not knowing what or how to document.[5,6] No participants in this follow-up study mentioned that as a challenge, suggesting that our educational modules adequately addressed this barrier previously found in the literature. Our participants' ongoing barriers were primarily related to external factors, such as inadequate staff support, having an EMR (or user-friendly EMR), and the technology needed to document. Athletic trainers should continue to seek resources from employers to support high-quality documentation practices, which are important for effective patient care and liability protection.[31,32] Other barriers experienced by our participants included limited time and willingness to document. Time has been noted as the primary barrier to documenting and a barrier to implementing changes after CE.[5,28] Athletic trainers must continue to prioritize documentation and implement effective time management strategies such as scheduling and point-of-care documentation to facilitate documentation completion.[25] Although some barriers to documentation still exist, some participants did not perceive any barriers prohibiting clinical documentation, and others overcame organizational infrastructure-related barriers to improve their documentation.

We asked participants to share their future needs to overcome barriers to documentation. Several participants described the desire to have more setting-specific resources for documentation and felt content that mirrored their employment setting resonated more with them. Our educational modules purposefully reflected a variety of clinical practice settings to demonstrate

that the athletic training profession has the same expectation for completing thorough, legally defensible documentation regardless of clinical practice setting.[33] Clinical documentation should be focused on the patient encounter, not the setting where the care is provided. While setting-specific differences in documentation have been noted in the literature, strategies for effective clinical documentation such as EMR use and point-of-care documentation are useful regardless of practice setting.[2,3,25] Educators should continue to include examples from various practice settings in professional and CE materials to help facilitate learner engagement. Clinicians should be open-minded and engage in CE to address areas of need regardless of the practice setting represented.[10] Additionally, scheduling time to document during the workday, documenting at the point of care, and using templates to document efficiently can address common barriers such as lack of time.[2,25]

Participants also discussed that a key benefit of the documentation modules was the comprehensive, organized collection of materials and guidelines related to documentation. Many ATs expressed the desire to have a briefer summary or annual refresher of the information, which would help them maintain their documentation practices. Annual updates for topics that frequently change, such as concussion or emergency care guidelines, are valuable, but documentation guidelines do not frequently change. Perhaps ATs desire an annual refresher to remind them of the importance of documentation. Documentation tips and reminders could be published in various professional outlets such as magazines, newsletters, blogs, and social media. Alternatively, it may be more valuable for ATs to annually conduct a chart audit on a few randomly selected patient files to identify specific areas to address within their documentation. Conducting peer audits with a coworker would integrate external accountability and may lead to valuable learning outcomes such as observing how another AT documents or conversing about effective strategies used.[25] Regardless of the approach, ATs should put forth effort to maintain high quality, legally compliant documentation at all times.[33]

Limitations and Future Research

Although our findings of improved documentation behaviors were promising, we followed up with participants 6 months after completing the modules. Future researchers should examine longer-term behavior change after CE completion. In our study, we focused on ATs' self-reported clinical documentation behaviors; future researchers should explore if actual documentation behavior changes occur after the completion of CE activities specific to clinical documentation. Despite the different formats of our educational modules, participants reported similar perceptions and behavior changes in this follow-up study. This might suggest that the participants were motivated to improve their documentation behaviors, and the format of the educational modules was not a significant contributor to their behavior change. Lastly, participants finished the educational modules in April, and the follow-up interview occurred in October. Many ATs experience job transitions, lower volume patient care, or both over the summer months, which may have influenced their behavior changes.

CONCLUSIONS

Our findings suggest that Web-based CE led to ATs' self-reported improved documentation behaviors. An interactive learning format with tangible take-home resources appeared to facilitate knowledge translation to clinical practice. Educators should integrate these strategies into professional and CE opportunities. When participants identify key content from an educational experience, both immediately and 6 months after the learning activity, they appear more likely to translate this information to clinical practice. Educators should keep this in mind as they design and assess learning opportunities. Although participants improved their documentation behaviors, barriers to effective documentation remain. While the educational modules addressed barriers related to knowing what and how to document, ATs still lack time, resources, and willingness to document effectively.

Athletic trainers describe that they prioritize CE opportunities specific to their clinical practice setting. Although approaches to documentation appear to vary between athletic training practice settings, documentation expectations are fundamentally the same regardless of the location of clinical practice. Thus, it is important for ATs to be open to learning about documentation strategies from a variety of clinicians. Likewise, educators should include examples and resources representative across practice settings. Although ATs desire annual updates on documentation practices, these may not be necessary when information does not change. Athletic trainers should ensure they are following documentation best practices on an ongoing basis and should seek out professional development in this area when novel information is provided.

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