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## ***Athletic Training Alumni Perceptions on Levels of Preparedness for the BOC Examination, Athletic Training Profession, and Graduate Studies***

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### ***OBJECTIVE***

The purpose of this study was to evaluate athletic training alumni perceptions on how well their undergraduate program prepared them for the BOC exam, athletic training career, and graduate school.

### ***DESIGN AND SETTING***

This survey (utilized via SurveyMonkey) research used a quantitative study on an undergraduate athletic training program in Ohio. The independent variable in this study consisted of athletic training alumni who graduated from a four year athletic training program within the last 11 years (2010-2020), gender, educational/career pathways, and attempts on the BOC examination. The dependent variable consisted of the alumni perceptions on their educational experience in the program.

### ***PARTICIPANTS***

A survey link was sent out via email to 102 alumni with a 43% (N=44) return rate. 61% (n=27) percent were females, leaving 39% (n=17) males. 45% (n=20) directly entered the athletic training profession after graduating from their undergraduate program, 18% (n=8) enrolled in graduate school studying athletic training, 18% (n=8) enrolled in graduate school studying other allied health/medical fields, 14% (n=6) directly entered the athletic training profession while enrolling in graduate school, and 5% (n=2) are no longer affiliated with athletic training or allied health. 7% (n=3) of participants graduated in the class of 2020, 16% (n=7) in 2019, 7% (n=3) in 2018, 5% (n=2) in 2017, 7% (n=3) in 2016, 9% (n=4) in 2015, 9% (n=4) in 2014, 11% (n=5) in 2013, 2% (n=1) in 2012, 16% (n=7) in 2011, and 11% (n=5) in 2010.

### ***INTERVENTIONS***

This survey contained 23 questions. 22 collected quantitative data, while 1 question collected qualitative data. The first question asked participants how many tries they have taken on the BOC exam. Question 2 asked how confident participants felt on the BOC. Questions 3-7 asked participants confidence levels in each five domains of athletic training; Injury/Illness prevention, clinical evaluations, emergency care, treatment/rehabilitation, and organization & administration (in respective order). In respective order, questions 8-13 asked for confidence levels in the following skills; Injury evaluations, clinically diagnostic skills, motion analysis appraisal, evaluate general medical conditions, treat/refer general medical conditions, and clinical experiences. Question 14 asked the confidence levels as performed as an athletic trainer. Question 15 asked participants if they have enrolled in graduate studies. If not, the participant skipped questions 16-18. If so, they were asked about their perceptions of their research background, understanding of interprofessional relations, and general confidence levels in graduate studies (through questions 16-18 respectively). Question 19 asked participants what their weakest domain was at the time, and question 20 allowed them to explain their reasoning of why this was their weakest domain, qualitatively. Questions 21-23 allowed participants to select their graduation year, career path upon graduation, and gender (in respective order). Face validity and content validity was obtained by a panel of experts and utilization of the ToS, respectively. IRB approval was obtained, for exempted review, prior to conducting this study. Descriptive statistics (frequency counts and percentages), were

calculated for each question. 2 tests were utilized to determine inferential statistics. A Chi Squared test was utilized to compare participants who are in an allied health/medical profession versus those who are not affiliated with allied health/ medical professions. The Chi Square test was also utilized to compare confidence levels of males versus females. A Kruskal Wallis test was utilized to assess athletic training alumni who entered the profession, those who enrolled in graduate studies, and those who fit in both categories. The Kruskal Wallis test was also utilized to compare career paths and the number of BOC examination attempts. The alpha level was set at  $p=0.05$  *a priori*. SPSS version 24.0 was utilized to analyze statistics for this study. This survey contained a qualitative question (question 20) that was thematically coded.

### **MAIN OUTCOME MEASUREMENT**

Likert scales were utilized for all quantitative questions. Ordinal data was collected through questions 1-19 which used a Likert scale. Nominal data was collected through questions 21-23 from demographics. For the first question, the 5 point Likert scale presented the options as the following: 1 attempt<sup>5</sup>, 2 attempts<sup>4</sup>, 3 attempts<sup>3</sup>, 4+ attempts<sup>2</sup>, I did not take the BOC<sup>1</sup>. More commonly, the 5 point Likert scale represented responses for questions 2-13 and 16-18 as the following: Strongly agree<sup>5</sup>, Somewhat agree<sup>4</sup>, Neutral<sup>3</sup>, Somewhat disagree<sup>2</sup>, Strongly disagree<sup>1</sup>. For question 14 the questions listed a 6 point Likert scale as Strongly agree<sup>6</sup>, Somewhat agree<sup>5</sup>, Neutral<sup>4</sup>, Somewhat disagree<sup>3</sup>, Strongly disagree<sup>2</sup>, and N/A<sup>1</sup>. Question 15 simply used a 2 point Likert scale asking Yes<sup>2</sup> and No<sup>1</sup>. Usage of a 5 point Likert scale, question 19 listed the domains of athletic training Injury/illness prevention<sup>5</sup>, Clinical evaluation<sup>4</sup>, Emergency care<sup>3</sup>, Treatment/rehabilitation<sup>2</sup>, and Organization & Administration<sup>1</sup>. Question 21 asked for the participant's graduation year, which used a 10 point Likert scale. This displayed as 2011<sup>10</sup>, 2012<sup>9</sup>, 2013<sup>8</sup>, 2014<sup>7</sup>, 2015<sup>6</sup>, 2016<sup>5</sup>, 2017<sup>4</sup>,

2018<sup>3</sup>, 2019<sup>2</sup>, and 2020<sup>1</sup>. Question 22 listed the options for career paths utilizing a 4 point Likert scale. These paths included: Immediately entering into the athletic training profession as a certified athletic trainer<sup>4</sup>, enrolling in graduate school for athletic training<sup>3</sup>, enrolling in graduate school or another school for a different allied health or medical field<sup>2</sup>, and to no longer pursue athletic training or allied health<sup>1</sup>. Usage of a 5 point Likert scale, question 23 assessed for the participant's gender in a fashion that asked female<sup>4</sup>, male<sup>3</sup>, Other<sup>2</sup>, Prefer not to specify<sup>1</sup>. Question 20 was a qualitative question that uses participants' weakest domain, from question 19, to give an explanation in their own words. Question 20 responses were thematically coded to assess descriptive statistics (frequency counts and percentages).

### **RESULTS**

82% (n=36) of participants felt prepared to take the BOC examination, 14% (n=6) felt neutral, and 5% (n=2) felt unprepared. 90% (n=40) felt prepared for the athletic training profession, 5% (n=2) felt neutral, and 2% (n=1) felt unprepared. 2% (n=1) selected "N/A." 50% (n=22) participants attended graduate school. Of those 50%, 91% (n=20) claimed they were prepared for graduate studies, while the other 9% (n=2) felt neutral. 100% (N=44) of participants felt prepared in the injury/illness prevention domain, 98% (n=43) felt prepared in the emergency skills domain, and 89% (n=39) felt prepared in the clinical evaluation and diagnosis domain. In the treatment/rehabilitation domain, only 68% (n=30) felt prepared, 18% (n=8) felt neutral, and 14% (n=6) felt unprepared. In the organization and administration domain, 73% (n=32) felt prepared, 14% (n=6) felt neutral, leaving another 14% (n=6) feeling unprepared. 91% (n=40) felt prepared to perform an injury evaluation, which left 9% (n=4) participants who felt neutral. Only 55% of participants felt prepared to appraise motivational analysis, while 21% (n=9) felt neutral, and 25% (n=11) felt unprepared.

75% (n=33) felt prepared to evaluate general medical conditions while 9% (n=4) felt neutral, and 16% (n=7) felt unprepared. 73% (n=32) felt prepared to treat/refer athletes with these conditions, leaving 21% (n=9) feeling neutral, and 7% (n=3) unprepared. 93% (n=41) felt their clinical experiences gave them the hands on skills they needed, while only 7% (n=3) felt neutral. The Chi Squared test compared 45% (n=20) alumni who entered the athletic training profession versus 39% (n=17) of those who enrolled in graduate school and 39% (n=17) male versus 61% (n=27) female alumni. Amongst these grouping variables, there were no statistically significant differences in confidence levels for the BOC, athletic training profession, and graduate school. Additionally, there were also statistically significant differences in specific areas. These areas included specific topic-related confidence levels for each graduation class from 2011-2020. This included general medical condition evaluation ( $H=20.309$ ,  $df=10$ ,  $p=0.026$ ) in which classes 2015 and 2020 reported significantly lower confidence levels. These participants, 16% (n=7), reported they felt neutral to unprepared for a general medical condition evaluation. The other 84% (n=37) felt prepared for a general medical condition evaluation. General medical condition treat/referral ( $H=20.773$ ,  $df=10$ ,  $p=0.023$ ) in which classes 2015 and 2020 also reported significantly lower confidence levels (which resulted in the same descriptive statistics as general medical condition evaluations) compared to the other classes. Lastly, performance of clinical diagnostic skills ( $H=20.058$ ,  $df=10$ ,  $p=0.029$ ) reported different confidence levels in alternating years. Classes '10, '11, '14, '16, '18, 50% (n=22), felt they strongly agreed they could perform these skills, classes '13, '15, '17, '19, '20, 48% (n=21), felt they somewhat agree they could perform these skills, and the class of '12, 2% (n=1), reported they felt neutral confidence in performing these skills. 48% (n=21) participants also claimed that their weakest domain lied in treatment & rehabilitation. From the qualitative portion of

this study, participants claimed there was a lack of hands-on experience with treatment & rehabilitation in the classroom and clinical experience, lack of progression and regression knowledge, and modality applications. 39% (n=17) of participants felt their weakest domain lied in organization & administration. From the qualitative portion of this study, pertaining to organization & administration, participants claimed there was a lack of instruction, clinical applications, and also felt this domain was difficult to prepare for.

### **CONCLUSION**

Overall, participants felt best prepared for the athletic training profession and graduate studies. Although the majority of students felt prepared for the BOC examination as well, this was the weakest perceived area of preparation. Students noted they were dominantly strong in dealing with injury/illness prevention clinical eval & diagnosis, emergency & immediate care, performing evaluations, clinical experience opportunities, and research background for graduate school. Students felt weakest with treatment, rehabilitation, organization & administration, evaluating total motion analysis, developing clinical diagnosis skills, modality applications, and the fundamentals of general medical conditions. This particular athletic training program can use these weaknesses to improve the education, for future students, as the program prepares for the graduate level education. Some students have recommended extending the therapeutic course from an abbreviated session to an entire semester, spend more time with modality usage and education, more time with general medical condition awareness, and heavily reviewing previously covered course material within their clinical practicum courses. Incorporating these suggestions will produce even more confident and skilled entry-level athletic trainers in the profession's future.

**KEY WORDS:** *BOC, Graduate School, Athletic Training, Preparation, Domains of Athletic Training*