

The Modified Readiness for Interprofessional Learning Scale in Currently Practicing Athletic Trainers

Lauren A. Welsch, MS, ATC, VATL; Carolyn Rutledge, PhD; Johanna M. Hoch, PhD, ATC, VATL
Old Dominion University, Norfolk, VA

Context: Athletic trainers are encouraged to work collaboratively with other health care professionals to improve patient outcomes. Interprofessional education (IPE) experiences for practicing clinicians should be developed to improve interprofessional collaborative practice postcertification. An outcome measure, such as the modified Readiness for Interprofessional Learning Scale (mRIPLS), could be used to determine the clinician's attitudes toward IPE and to determine the effectiveness of the experience.

Objective: To determine select psychometric properties of the mRIPLS in practicing athletic trainers.

Design: Cross-sectional.

Setting: Online survey.

Patients or Other Participants: A survey was sent to 2000 randomly selected practicing athletic trainers. A total of 173 (8.7%) participated, and complete data were available for 145 (7.3%).

Intervention(s): The survey consisted of a demographic section and the mRIPLS. The mRIPLS consists of 23 statements scored on a 5-point Likert scale divided into 3 subscales: teamwork and collaboration (TWC), patient-centeredness (PC), and sense of professional identity (PI).

Main Outcome Measure(s): Cronbach α was used to examine the internal consistency. The presence of a ceiling effect (>50% respondents selected the highest score) was determined for each question by examining means and percentages.

Results: The overall internal consistency of the mRIPLS was acceptable ($\alpha = 0.872$) along with the TWC ($\alpha = 0.917$) and PC ($\alpha = 0.862$) subscales. The PI subscale ($\alpha = 0.632$) was not acceptable. A ceiling effect was identified for 10 questions, and $\geq 70\%$ of respondents selected *highly agree* or *agree* for 22 questions.

Conclusions: While the mRIPLS demonstrated overall acceptable internal consistency, all 3 subscales did not. In addition, the presence of a ceiling effect makes the use of this instrument as an outcome measure trivial. Therefore, the current version of the mRIPLS may not be the best outcome to assess openness for IPE or to measure the effectiveness of IPE experiences in practicing athletic trainers.

Key Words: Postprofessional, interprofessional collaboration, collaborative practice

Ms Welsch is currently Graduate Assistant at Old Dominion University. Please address all correspondence to Lauren A. Welsch, MS, ATC, VATL, 3121 Health Sciences Building, Old Dominion University, Norfolk, VA 23529. lwels001@odu.edu.

Full Citation:

Welsch LA, Rutledge C, Hoch JM. The modified readiness for interprofessional learning scale in currently practicing athletic trainers. *Athl Train Educ J*. 2017;12(1):10–17.

The Modified Readiness for Interprofessional Learning Scale in Currently Practicing Athletic Trainers

Lauren A. Welsch, MS, ATC, VATL; Carolyn Rutledge, PhD; Johanna M. Hoch, PhD, ATC, VATL

INTRODUCTION

A focus on interprofessional practice (IPP) has occurred across health care disciplines with the impetus to improve the quality of patient care.¹ Interprofessional practice emphasizes collaborations among numerous health care professionals, patients, and their caregivers to deliver whole-person health care to improve patient outcomes.² However, IPP is a complex process that often requires formal training to optimally implement.¹ *Interprofessional learning or education* (IPE), defined as 2 or more professional groups learning with, from, and about each other, is a necessary form of training that should occur regularly in professional programming.³ It is through IPE activities that students from multiple disciplines can understand the complexities and benefits of working in a health care team and become effective at IPP postlicensure.³ Therefore, the Interprofessional Education Collaborative Expert Panel developed core competencies to facilitate effective development of IPE curricula across health care disciplines.²

Specific to athletic training education, the Commission on Accreditation of Athletic Training Education has standards delineated in the 2012 professional standards which address IPE specifically.⁴ In addition, 1 of the 6 core competencies implemented in the 2014 postprofessional standards⁵ for postprofessional programs is dedicated to IPE and IPP. These standards^{4,5} demonstrate the value and importance of these concepts in athletic trainer education and the impact they will have on athletic trainers after graduation from a professional or postprofessional program. As continued advances in IPE in athletic trainer education are ongoing, thousands of credentialed athletic trainers are currently practicing in various settings who may need additional formal IPE opportunities. Most of the health care professionals with whom athletic trainers might collaborate need continuing education units (CEUs) to maintain their qualification(s).⁶ The development of interprofessional CEU opportunities, or continuing interprofessional education (CIPE) units, where “2 or more postlicensure health care professionals learn with, from, and about each other,”^{6(p143)} may be an avenue to further grow practicing athletic trainers’ IPP abilities. Different types of CIPE activities can be offered including practice-based, distance-based, and electronic-based learning activities.⁷ In order to assess the effectiveness of CIPE units and to gauge attitudes and readiness of health care professionals for IPE and IPP, a developed outcome measure should be used. It is through the use of a reliable and valid instrument to compare IPE readiness, effectiveness of experiences across disciplines, and time that improved IPE methods are promoted.⁸ One of the early tools established for this purpose, the Readiness for Interprofessional Learning Scale (RIPLS) was developed for use in health professional students⁸ and has been adapted and widely used since.^{3,9–15} Eventually, the RIPLS was modified (mRIPLS) for use in postcertification health care professionals as the need arose for an outcome measure which could assess postcertification or practicing health care professionals’ beliefs toward IPP and IPE.¹⁴ Previous research has explored

the use of the RIPLS and mRIPLS in students or practitioners from various health care professions, such as nursing,^{3,9,10,14} physicians,^{3,9,10,13,14} and pharmacists^{3,9,10,13,14}; however, little is known about the usefulness of this instrument in practicing athletic trainers. Therefore, the purpose of this study was to determine select psychometric properties of the mRIPLS in practicing athletic trainers. Specifically, we determined the internal consistency, performed an exploratory factor analysis, and examined the mRIPLS for ceiling and floor effects in practicing athletic trainers. This information will provide the impetus to further explore the use of this instrument in practicing athletic trainers who participate in CIPE learning activities or echo recent evidence which suggests the mRIPLS should not be used as an evaluative scale.¹⁶

METHODS

Participants

The population of interest was members of the National Athletic Trainers’ Association (NATA) who are currently certified by the Board of Certification and practicing in the college/university, secondary school, clinic, hospital, and professional sports settings in the United States. The NATA identified the members who met the study inclusion criteria and randomly selected 2000 members to receive the survey via e-mail. This study sample was believed to be adequate since the purpose of this research study was to determine the internal consistency and examine the mRIPLS for a ceiling effect. A total of 8.7% (n = 173) subjects accessed the survey and participated to some degree. Of these 173, 83.8% (n = 145) completed the survey instrument entirely (92 females, 53 males). The participants were credentialed athletic trainers currently practicing in the collegiate (n = 143), physician’s office (n = 1), or physical therapy clinic (n = 1) and members of the NATA. Additional demographic data can be found in Table 1.

Study Design

This study used a cross-sectional survey design to determine the internal consistency and examine the mRIPLS for a ceiling effect in practicing athletic trainers.

Procedure

The final survey link was e-mailed to the potential participants. The body of the e-mail served as the subject’s informed consent and contained a Web link that took the participants to the survey in Qualtrics (version 2253945, Provo, Utah). The survey remained open for a total of 30 days. A reminder e-mail was sent to all participants 15 days after the initial request. Informed consent was provided if the participants clicked on the link to access the survey. Responses to the survey were collected through Qualtrics in an anonymous manner. All study procedures were approved by the Old Dominion University Institutional Review Board.

Table 1. Demographic Characteristics of the Participants (n = 145)

Demographic Characteristics	No. (%)
Gender	
Male	53 (36.6)
Female	92 (63.4)
Age, y	
22–30	129 (89.0)
31–40	16 (11.0)
41 and over	0 (0)
Certified, y	
Under 3	34 (23.4)
4–10	110 (75.9)
Other	1 (0.7)
Highest education level completed	
Undergraduate (BA, BS)	17 (11.7)
Master's degree (MS, Med)	128 (88.3)
Terminal degree (PhD, EdD, DAT)	0 (0)
Current place of employment, y	
Under 3	102 (70.3)
4–10	43 (29.7)
11 and over	0 (0)
Institution type	
Collegiate Division I	66 (45.5)
Collegiate Division II	29 (20.0)
Collegiate Division III	37 (25.5)
Collegiate National Association of Intercollegiate Athletics/other	13 (9.0)
Current place of employment ^a	
Urban	65 (44.8)
Urban cluster	67 (46.2)
Rural	13 (9.0)
Proximity to a large hospital, miles	
0–15	110 (75.9)
16–45	21 (14.5)
46–150	14 (9.7)
>150	0 (0)
Current collaborators, health care professionals	
1–2	17 (11.7)
3–5	88 (60.7)
6–10	36 (24.8)
>10	4 (2.8)
Desired collaborators, health care professionals	
1–2	18 (12.4)
3–5	40 (27.6)
6–10	50 (34.5)
>10	37 (25.5)

^a Urban defined as 50 000 or more people, urban cluster defined as between 2500 and 50 000, and rural defined as less than 2500 people.¹⁶

Instrumentation

Survey Instrument. The survey instrument consisted of a demographic section and the mRIPLS. The demographic section assessed participant information such as age, gender, education level, and current and desired interprofessional

communication with health care providers. Additional demographic information included descriptors of the participant's work location, including proximity to a large hospital, institution type, and rural or urban classification. The participants were also asked to select from a predetermined list whom they currently collaborate with and whom they wish to collaborate with when providing patient care.

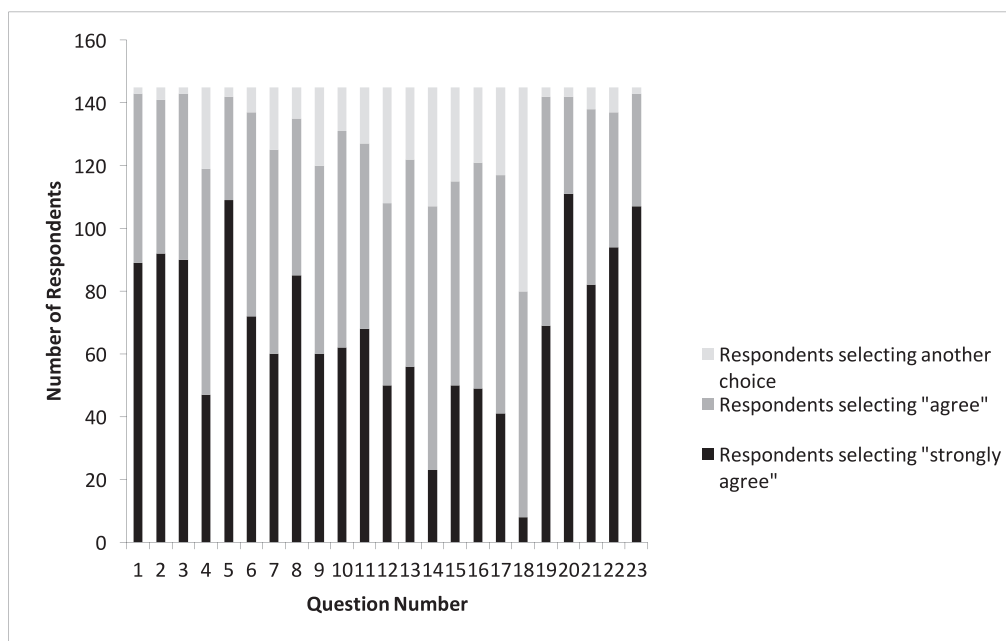
The Modified Readiness for Interprofessional Learning. The RIPLS was originally designed to assess preprofessional students from numerous health care professions readiness for IPE.⁸ The survey was modified to assess postgraduate practicing clinicians' readiness for IPE and IPP.¹⁴ The initial 29-item instrument was evaluated, and the final postcertification instrument was developed which consists of 23 questions that are further divided into 3 subscales: teamwork and collaboration (TWC), patient-centeredness (PC), and sense of professional identity (PI).¹⁴ The TWC subscale examines the clinician's attitude toward IPE as it relates to patient care and working with other health care professionals.⁸ In addition, this subscale assesses the value of working collaboratively.⁸ The PC subscale examines the clinician's attitudes toward patient-centered care by asking questions about their views on the patient and how they involve the patient in their care.⁸ The PI subscale examines how clinicians view their role compared to the role of other health care professionals and how this might affect clinical problem solving.⁸ For all subscales, each statement is graded on a 5-point Likert scale where 1 represents *strongly agree* and 5 represents *strongly disagree*. The TWC subscale is comprised of 13 questions and has a maximum score of 65. The PC and PI subscales have 5 questions each and a maximum score of 25. The TWC and PC subscales are written positively so that a lower score represents the participant being more open to IPP and IPE as it relates to those subscales. However, the PI subscale is written negatively so a higher score represents more readiness and openness to IPP and IPE.

For the purposes of population being sampled, vernacular changes were made to the survey to specifically address the population of athletic trainers. Changes included the addition to the mRIPLS of specific health care professionals with whom athletic trainers are more likely to collaborate (PC subscale, question 15), and the definition of *shared learning* was provided to ensure a uniform understanding of this potentially unfamiliar term. After revisions by the authors, an expert panel of 3 credentialed athletic trainers reviewed the survey instrument for clarity and consistency. The selected expert panel represented a diverse sample of athletic trainers in age, gender, employment setting, and years certified. After expert panel review, general modifications were made to the survey design, such as a reduction in the number of questions that appeared individually. In previous research, the mRIPLS demonstrated acceptable internal consistency for 2 subscales: TWC ($\alpha = 0.88$), PC ($\alpha = 0.86$), but not PI ($\alpha = 0.69$) and an overall acceptable internal consistency score of $\alpha = 0.76$.¹⁴

Data Analysis

In cases where subjects did not complete the entire survey, the responses for all questions were omitted. Descriptive statistics including means (SDs) for continuous variables and number (percentage) for categorical variables were calculated for the demographic variables. Multiple measures of central tendency and variability were calculated for responses to the survey

Figure. Visualization of the ceiling effect for each question on the modified Readiness for Interprofessional Learning Scale.



items for each subscale and for the total score. For the purposes of data analysis, the responses on the PI subscale were reverse scored so a lower score represented readiness for IPE as it pertains to PI. Cronbach α was employed to determine the internal consistency of the mRIPLS subscales and total score, where $\alpha \geq 0.70$ indicated acceptable internal consistency.¹⁷

An exploratory factor analysis using a varimax rotation was performed to examine the construct validity of the 3 subscales included in the mRIPLS. The Kaiser-Meyer-Olkin measure was used to determine sampling adequacy, and Bartlett's test of sphericity was employed to examine the correlations. Factors with eigenvalues greater than Kaiser's criterion of 1 and which explained $>5\%$ of the variance were retained while the scree plot was also examined. The presence of a ceiling effect was examined by determining the percent of respondents who scored at the highest possible level of agreement for each question and also for each subscale. We defined a ceiling effect as 50% or more of the respondents having selected the best score for each item. In addition, the researchers computed the percent of respondents who scored *highly agree* or *agree* for each question. All statistical analysis was conducted using SPSS (version 21.0; SPSS Inc, Chicago, IL).

RESULTS

Demographics

The demographic information for the 145 athletic trainers who completed the survey is presented in Table 1. A majority of the participants were young adults aged 22–30 ($n = 129$, 88%), credentialed for less than 10 years ($n = 144$, 99%), and held a master's degree ($n = 128$, 91%).

Psychometric Properties

Reliability. The mRIPLS demonstrated acceptable internal consistency in a population of athletic trainers with a

Cronbach $\alpha = 0.872$. The TWC and PC subscales demonstrated acceptable internal consistency with $\alpha = 0.917$ and $\alpha = 0.862$, respectively. Professional identity had the lowest internal consistency with $\alpha = 0.632$.

Factor Analysis. The results of the Kaiser-Meyer-Olkin curve verified the sample was adequate (0.845), and the Bartlett's test of sphericity verified the correlations between the items were adequate for the analysis ($P < .001$). There were a total of 6 factors that had eigenvalues of >1 and $>5\%$ of the variance (Table 2). Further examination of the scree plot confirmed 6 distinct factors. The results of the factor analysis indicate the 3 original subscales discussed in the mRIPLS (TWC, PC, and PI) were not able to be replicated in the practicing athletic trainer population; thus, we were unable to confirm the structure of each factor in the mRIPLS as previously described.

Ceiling Effect. A visual examination of the ceiling effect for each question on the instrument can be found in the Figure. For 10 questions, over 50% of respondents scored at the highest level of agreement (*highly agree*), indicating a ceiling effect. Six of these questions came from the TWC subscale, and the remaining 4 were from the PC subscale (Table 3). When subjects who scored *highly agree* or *agree* were totaled for each question, 22 of the 23 questions had $>70\%$ of respondents selecting 1 of these 2 options (Figure). Further analysis revealed 12 of the 23 questions had $\geq 90\%$ of subjects select *agree* or *highly agree* with the statement.

DISCUSSION

An increased emphasis has been placed on IPP in health care in recent years as a means to improve patient outcomes, reduce medical errors, and increase job satisfaction among practitioners.^{1,18} Before IPP can successfully occur in the workforce, health care practitioners must learn interprofessionally. These IPE experiences can occur precertification or postcertification as part of the CEUs many health care professions require to maintain certification.⁶ Prior to

Table 2. Rotated Component Matrix for the Principal Component Analysis

Question ^a	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Shared learning will help me understand my own limitations.	0.680					
Shared learning with other health care professionals will increase my ability to understand clinical problems.	0.631					
Learning with health care students from other disciplines before qualification would improve relationships after qualification.	0.783					
Shared learning will help me to think positively about other health care professionals.	0.826					
Shared learning with other health care professionals will help to communicate better with patients and other professionals.	0.733					
I would welcome the opportunity to work on small group projects with other health care professionals.	0.606					
Shared learning helps to clarify the nature of patient problems.	0.825					
Shared learning before qualification would help health care professionals become better team workers.	0.784					
I like to understand the patient's side of the problem.		0.685				
Establishing trust with my patients is important to me.		0.772				
I try to communicate compassion to my patients.		0.801				
Thinking about the patient as a person is important in getting treatment right.		0.857				
In my profession, one needs skills in interacting and cooperating with patients.		0.684				
Learning with other health care professionals will help me be a more effective member of a health care team.			0.646			
For small group learning to work, health care professionals need to trust and respect each other.			0.709			
Team-working skills are essential for all health care professionals to learn.			0.758			
Patients ultimately benefit if health care professionals work together to solve patient problems.			0.565			
Communication skills should be learned with other health care professionals.			0.509			
The function of nurses, therapists, and athletic trainers is mainly to provide support for doctors.				0.711		
There is little overlap between my role and that of other health care professionals.				0.804		
I would feel uncomfortable if another health care professional knew more about a topic than I did.				0.666		
I have to acquire much more knowledge and skills than other health care professionals.					0.872	
Clinical problem-solving skills should only be learned with professionals from my own discipline.						0.659

^a Questions adapted from: Reid et al.¹⁴

development of IPE opportunities, in either the professional or postprofessional learner, the attitudes of potential students should be accessed to determine their level of interest in this style of learning and also to measure change in their attitudes post-IPE event. While previous literature discusses the inclusion of a needs assessment prior to the implementation of IPE, the assessment of the learner's readiness is often not included.¹⁹ The mRIPLS¹⁴ is one tool designed to fill this gap and assess the attitudes of postqualification health care practitioners toward IPE experiences.

The findings of this study contribute to existing literature exploring the use of the mRIPLS in practicing health care clinicians prior to formal IPE. The present study demonstrates acceptable overall internal consistency of the mRIPLS when used in certified athletic trainers. The TWC subscale in the present study had the highest internal consistency amongst subscales, which has also been reported previously for other types of learners.^{14,15} The PC subscale in the present study ($\alpha = 0.862$) demonstrated internal consistency, which was consistent with previous findings ($\alpha = 0.860$).¹⁴ The lowest

Table 3. Results of the Examination of a Ceiling Effect for Each Individual Item on the Modified Readiness for Interprofessional Learning Scale

Question ^a	Subscale	Mean	Median	Range	No. (%) at Ceiling	No. (%) in Agreement ^b
1. Learning with other health care professionals will help me be a more effective member of a health care team.	TWC	1.41	1	1–4	89 (61.4)	143 (98.6)
2. For small group learning to work, health care professionals need to trust and respect each other.	TWC	1.41	1	1–4	92 (63.4)	141 (97.2)
3. Team-working skills are essential for all health care professionals to learn.	TWC	1.41	1	1–4	90 (62.1)	143 (98.6)
4. Shared learning will help me understand my own limitations.	TWC	1.88	2	1–4	47 (32.4)	119 (82.1)
5. Patients ultimately benefit if health care professionals work together to solve patient problems.	TWC	1.28	1	1–4	109 (75.2)	142 (97.9)
6. Shared learning with other health care professionals will increase my ability to understand clinical problems.	TWC	1.58	2	1–4	72 (49.7)	137 (94.5)
7. Learning with health care students from other disciplines before qualification would improve relationships after qualification.	TWC	1.76	2	1–4	60 (41.4)	125 (86.2)
8. Communication skills should be learned with other health care professionals.	TWC	1.49	1	1–4	85 (58.6)	135 (93.1)
9. Shared learning will help me to think positively about other health care professionals.	TWC	1.77	2	1–4	60 (41.4)	120 (82.8)
10. Shared learning with other health care professionals will help to communicate better with patients and other professionals.	TWC	1.69	2	1–4	62 (42.8)	131 (90.3)
11. I would welcome the opportunity to work on small group projects with other health care professionals.	TWC	1.68	2	1–4	68 (46.9)	127 (87.6)
12. Shared learning helps to clarify the nature of patient problems.	TWC	1.93	2	1–4	50 (34.5)	108 (74.5)
13. Shared learning before qualification would help health care professionals become better team workers.	TWC	1.80	2	1–4	56 (38.6)	122 (84.1)
14. Clinical problem-solving skills should only be learned with professionals from my own discipline.	PI	2.30	2	1–5	23 (15.9)	107 (73.8)
15. The function of nurses, therapists, and athletic trainers is mainly to provide support for doctors.	PI	2.01	2	1–5	50 (34.5)	115 (79.3)
16. There is little overlap between my role and that of other health care professionals.	PI	1.95	2	1–5	49 (33.8)	121 (83.4)
17. I would feel uncomfortable if another health care professional knew more about a topic than I did.	PI	2.01	2	1–5	41 (28.3)	117 (80.7)
18. I have to acquire much more knowledge and skills than other health care professionals.	PI	2.58	2	1–5	8 (5.52)	80 (55.2)
19. I like to understand the patient's side of the problem.	PC	1.55	2	1–4	69 (47.6)	142 (97.9)
20. Establishing trust with my patients is important to me.	PC	1.26	1	1–4	111 (76.6)	142 (97.9)
21. I try to communicate compassion to my patients.	PC	1.49	1	1–4	82 (56.6)	138 (95.2)
22. Thinking about the patient as a person is important in getting treatment right.	PC	1.41	1	1–4	94 (64.8)	137 (94.5)
23. In my profession, one needs skills in interacting and cooperating with patients.	PC	1.28	1	1–4	107 (73.8)	143 (98.6)

Abbreviations: PC, patient-centeredness; PI, sense of professional identity; TWC, teamwork and collaboration.

^a Questions adapted from: Reid et al.¹⁴^b Agreement indicates those that selected either *agree* or *strongly agree*.

internal consistency subscale in the present study, PI, scored similarly low in existing literature in a professional population, with internal consistency estimates of $\alpha = 0.63$ and 0.69 , respectively.¹⁴ Therefore, this study demonstrates overall acceptable internal consistency for the mRIPLS in practicing athletic trainers. However, as identified previously, it is problematic when one subscale's internal consistency is not acceptable, such as the PI scale.¹⁶ Due to issues with subscale internal consistency in previous versions of the RIPLS, changes such as removal of the roles and responsibilities and addition of the PC subscale were made, which are also included in the mRIPLS used in this investigation.¹⁶ However, even with omissions and modifications to the subscales, the results of this investigation demonstrate the current reconfiguring of subscales currently used in the mRIPLS still does not elicit acceptable internal consistency, which remains problematic when examining the use of this instrument in IPE learning environments.

We also performed an exploratory factor analysis to examine the construct validity of the 3 subscales for the mRIPLS when used in a practicing athletic trainer population. The results of the factor analysis revealed 6 factors, only 1 of which mimicked the original reported PC subscale (factor 2). The items in the PI subscale, the subscale with the lowest internal consistency, were divided among 3 factors (factors 4, 5, and 6). Finally the TWC items were divided between 2 factors (factors 1 and 3). Therefore, the construct validity of the mRIPLS proposed subscales were unable to be replicated in practicing athletic trainers, which has been reported previously for versions of the RIPLS.¹⁶ These data in combination with the internal consistency values suggest the psychometric properties of this instrument are not sufficient for future use.

The results of our study demonstrated a ceiling effect for questions throughout all subscales. The researchers hypothesize this could be because a majority of the athletic trainers who responded practice within the collegiate setting and are already practicing collaboratively, as demonstrated in Table 1, and thus are more likely to see the value in IPP. Because of the large number of respondents who scored in agreement with each statement, the mRIPLS is unable to dichotomize respondents into those who are ready or not for IPE/IPP. In addition, the ceiling effect makes the mRIPLS limited in its ability to show improvements in attitudes toward IPE/IPP over time and specifically after learning activities. For these reasons and the previously discussed consistency issues, the mRIPLS, like the RIPLS, may not be suitable for use in assessing attitudes toward IPE in practicing athletic trainers.

LIMITATIONS

This study is not without limitations. First, other psychometric properties such as test-retest reliability and responsiveness of the survey instrument were not assessed. In addition, this research study had a small sample size largely due to the small response rate. The response rate for recent surveys which include athletic trainers as participants varies greatly across the literature. Surveys examining concussion practices have reported a high response rate of 25%.^{20,21} Recent surveys that examined burnout²² or evidence-based practice²³ report smaller responses rates of 15% and 11.67%, respectively. These findings illustrate the variability of response rates of online surveys. The authors acknowledge the response rate of

the present survey is low, and the small sample size necessitates all results be interpreted with caution. Furthermore, there was limited variation in age, years credentialed, and degree obtained for the participants that responded. Therefore, the generalization of these results to all practicing athletic trainers is cautioned. Additionally, the use of the RIPLS, and indirectly the mRIPLS, has been critiqued for issues involving reliability and validity.¹⁶ While studies on the psychometric properties of the RIPLS are prevalent, they still remain inconclusive.¹⁶ In addition, because of changes from the RIPLS to the mRIPLS, most notably a change in population from health care students to practicing clinicians, it is unclear to what extent the concerning properties of the RIPLS are echoed in the mRIPLS.

Future studies should examine other instrument(s) that might better assess health care students' and practitioners' attitudes toward IPP and CIPE. Many instruments have been proposed, with varying levels of usage, which assess similar properties as the RIPLS and mRIPLS. For example, the Interdisciplinary Education Perception Scale has been used to assess perceptions of IPE programs.¹¹ This original 18-item scale, and its modifications, has been well studied in a variety of undergraduate students as a way to assess the effectiveness of IPE in this population.^{12,24,25} While the Interdisciplinary Education Perception Scale has not been studied on a postcertification cohort, and it was not selected for this research study, determination of the psychometric properties of this scale in postcertification learners could be beneficial in the development of future CIPE programs. In addition, the Attitudes Toward Health Care Teams Scale has potential use for future CIPE program in the athletic trainer field. This 20-item measure was designed to measure changes in attitudes toward health care teams pre-IPE and post-IPE or CIPE programing.^{26,27} Future research on the Attitudes Toward Health Care Teams Scale in practicing athletic trainers could be beneficial when determining the effectiveness or promotion of IPE or CIPE programs. While there are many instruments proposed in IPP literature, it is crucial to select a validated and reliable instrument to ensure quality IPP research.

Future studies should also examine ways in which the previously discussed evaluative scales can be interpreted as standalone instruments to examine which learners are ready for IPE or CIPE so the educational sessions can specifically target these populations of health care workers. For health care workers who are not ready for IPE, steps could be taken to improve their attitudes toward IPE before the individual attends a CIPE event. Using the scale in this manner can allow for an individual assessment of the needs of each learner and only implement IPE or CIPE events when the learner is ready and will be more likely to gain knowledge from the event.

CONCLUSIONS

For current athletic training students, the Commission on Accreditation of Athletic Training Education standards^{4,5} and postprofessional core competencies mandate IPE and IPP experiences. A recent summary by the Interprofessional Education and Practice in Athletic Training Working group²⁸ reminded us that IPE experiences for students will provide them with the knowledge, skills, and abilities to understand their roles and the roles of other health care professions and how, together, they will contribute to effective, patient-centered

care. However, IPE is similarly important for practicing clinicians and must be stressed postcertification as well. Continuing IPE events may provide learning activities that specifically focus on collaborative practice for those athletic trainers that are already practicing, along with the health care professionals in which they collaborate. While the majority of research on IPE focuses on prequalification, CIPE is not a new concept, but has yet to be ideally implemented.²⁹ Further research efforts should encourage the formal implementation of CIPE and the planning processes involved in the design, implementation, and evaluation of each program.²⁹ The use of evaluative scales to determine the readiness of the learners and the effectiveness of the education experience, through a tool like the mRIPLS, is a necessary. However, the mRIPLS does not appear to be an outcome measure that should be used in practicing athletic trainers.

REFERENCES

1. Lown B, Kryworuchko J, Biever C, et al. Continuing professional development for interprofessional teams supporting patients in healthcare decision making. *J Interprof Care*. 2011; 25(6):401–408.
2. Framework for action on interprofessional education and collaborative practice. World Health Organization Web site. http://apps.who.int/iris/bitstream/10665/70185/1/WHO_HRH_HPN_10.3_eng.pdf. Accessed December 11, 2015.
3. Horsburg M, Lamdin R, Williamson E. Multiprofessional learning: the attitudes of medical, nursing, and pharmacy students to share learning. *Med Educ*. 2001;35(9):876–883.
4. Standards for the accreditation of professional athletic training programs. Commission on Accreditation of Athletic Training Education Web site. <http://caate.net/wp-content/uploads/2015/12/2012-Professional-Standards.pdf>. Accessed December 11, 2015.
5. Education CoAoAT. Standards for the accreditation of post-professional athletic training degree programs. Commission on Accreditation of Athletic Training Education Web site. <https://caate.net/wp-content/uploads/2014/06/2014-Standards-for-Accreditation-of-Post-Professional-Degree-Programs21.pdf>. Accessed December 11, 2015.
6. Reeves S. An overview of continuing interprofessional education. *J Contin Educ Health Prof*. 2009;29(3):142–146.
7. Barr H. An anatomy of continuing interprofessional education. *J Contin Educ Health Prof*. 2009;29(3):147–150.
8. Parsell G, Bligh J. The development of a questionnaire to assess the readiness of health care students for interprofessional learning (RIPLS). *Med Educ*. 1999;33(2):95–100.
9. Tyastuti D, Onishi H, Ekayanti F, Kitamura K. Psychometric item analysis and validation of the Indonesian version of the Readiness for Interprofessional Learning Scale (RIPLS). *J Interprof Care*. 2014;28(5):426–432.
10. Aziz Z, Teck LC, Yen PY. The attitudes of medical, nursing and pharmacy students to inter-professional learning. *Procd Soc Behv*. 2011;29:639–645.
11. Hawk C, Buckwalter K, Byrd L, Cigelman S, Dorfman L, Ferguson K. Health professions student's perceptions of interprofessional relationships. *Academ Med*. 2002;77(4):354–357.
12. McFadyen A, Maclaren W, Webster V. The Interdisciplinary Education Perception Scale (IEPS): an alternative remodeled sub-scale structure and its reliability. *J Interprof Care*. 2007; 21(4):433–443.
13. Tamura Y, Seki K, Usami M, et al. Cultural adaptation and validating a Japanese version of the Readiness for Interprofessional Learning Scale (RIPLS). *J Interprof Care*. 2012;26(1):56–63.
14. Reid R, Bruce D, Allstaff K, McLernon D. Validating the Readiness for Interprofessional Learning Scale (RIPLS) in the postgraduate context: are health care professionals ready for IPL? *Med Educ*. 2006;40(5):415–422.
15. McFadyen A, Webster V, Maclaren W. The test-retest reliability of a revised version of the Readiness for Interprofessional Learning Scale (RIPLS). *J Interprof Care*. 2006;20(6):633–639.
16. Mahler C, Berger S, Reeves S. The Readiness for Interprofessional Learning Scale (RIPLS): a problematic evaluative scale for the interprofessional field. *J Interprof Care*. 2015;29(4):289–291.
17. Santos R. Cronbach's alpha: a tool for assessing the reliability of scales. *J Extension*. 1999;37(2):2TOT3.
18. Schroder C, Medves J, Paterson M, et al. Development and pilot testing of the Collaborative Practice Assessment Tool. *J Interprof Care*. 2011;25(3):185–195.
19. Silver IL, Leslie K. Faculty Development for continuing interprofessional education and collaborative practice. *Four Contin Ed*. 2009;29(3):172–177.
20. Willimas RM, Welch CE, Weber ML, Parsons JT, Valovich McLeod TC. Athletic trainer management practices and referral patterns for adolescent athletes after sport-related concussion. *Sports Health*. 2014;6(5):434–439.
21. Willimas RM, Welch CE, Parsons JT, Valovich McLeod TC. Athletic trainers' familiarity with and perceptions of academic accommodations in secondary school athletes after sport-related concussion. *J Athl Train*. 2015;50(3):262–269.
22. DeFreese JD, Mihalik J. Work-based social interactions, perceived stress and workload incongruence as antecedents of athletic training burnout. *J Athl Train*. 2016;51(1):28–34.
23. Keeley K, Walker SE, Hankemeir DA, Martin M, Cappaert TA. Athletic trainers' beliefs about and implementation of evidence-based practice. *J Athl Train*. 2016;51(1):35–46.
24. Goellen G, De Clercq G, Huyghens L, Kerckhofs E. Measuring the effect of interprofessional problem-based learning on the attitudes of undergraduate health care students. *Med Educ*. 2006; 40(6):555–561.
25. Cameron A, Ignjatovic M, Langlois S, et al. An introduction to interprofessional education for first-year health science students: perspectives of pharmacy students and faculty. *Am J Pharml Educ*. 2009;73(4):1–7.
26. Brown G, Chamberlin G. Attitudes toward quality, costs, and physician centrality in healthcare teams. *J Interprof Care*. 1996; 10(1):63–72.
27. Curran V, Sharpe D, Forristall J. Attitudes of health sciences faculty members towards interprofessional teamwork and education. *Med Educ*. 2007;41(9):892–896.
28. Breitbach AP, Richardson R. Interprofessional education and practice in athletic training. *Athl Train Educ J*. 2015;10(2):170–182.
29. Owen JA, Schmitt MH. Integrating interprofessional education into continuing education: a planning process for continuing interprofessional education programs. *J Contin Educ Health Prof*. 2013;33(2):109–117.