NSCA®
NATIONAL STRENGTH AND CONDITIONING ASSOCIATION

2022 NSCA National Conference Research Abstract Submission & Presentation Guidelines

October 26, 2022

THE NATIONAL STRENGTH AND CONDITIONING ASSOCIATION® (NSCA®)

The National Strength and Conditioning Association (NSCA) is a nonprofit professional organization dedicated to advancing the strength and conditioning profession around the world.

Mission statement: As the worldwide authority on strength and conditioning, we support and disseminate research based knowledge and its practical application, to improve athletic performance and fitness

The NSCA advances the profession by supporting strength and conditioning professionals devoted to helping others discover and maximize their strengths. We disseminate research-based knowledge and its practical application by offering industry-leading certifications, research journals, career development services, and continuing education opportunities. The NSCA community is composed of more than 45,000 members and certified professionals who further industry standards as researchers, educators, strength coaches, personal trainers, and other roles in related fields.

GENERAL INFORMATION

The National Strength and Conditioning Association (NSCA) is pleased to make a call for research abstract submissions for presentation at the 2022 National Conference. Research abstract presentations are an opportunity to present current research findings to researchers and strength and conditioning professionals at the NSCA National Conference. The research abstracts are the largest portion of the scientific programs presented every year at the National Conference. The NSCA encourages all researchers and students to submit their abstracts for consideration to the 2022 National Conference.

SUBMISSION DEADLINE

The abstract submission deadline is March 1, 2022. Late submissions will not be accepted.

NOTIFICATION

Submitting authors will receive notification of acceptance or rejection of their research abstract by May 2, 2022. If you do not receive notification by May 2, please contact abstracts@nsca.com.

LANGUAGE

All abstracts must be written in English.

COST

There is no cost to submit an abstract, but due to costs incurred by the NSCA, all accepted abstracts are expected to be presented.

FAILURE TO PRESENT

Failure to present an accepted abstract may result in disqualification from presentations at future NSCA conferences.

PRESENTATION FORMAT

Research abstracts can be presented in either a podium or poster. Due to a limited number of available podium presentations, all requests for podium presentations cannot be accommodated. If an abstracted submitted for a podium presentation is not accepted for that format, it will automatically be assigned to a poster presentation.

PRESENTATION DATES

Podium and poster presentations occur on all three days of the conference (July 7 – 9, 2022). Podium presentations typically occur in the morning with poster presentations occurring in two blocks each day.

PUBLICATION OF ABSTRACTS

Accepted abstracts, that are presented, will be published in an electronic supplement to the *Journal of Strength and Conditioning Research* (date to be determined). The NSCA encourages all research abstract presenters to submit the completed manuscript of their presented research for consideration in the *Journal of Strength and Conditioning Research*.

RESEARCH ABSTRACT SUBMISSION GUIDELINES

- Abstracts must be original research studies that are unpublished.
- Abstracts may not have been previously presented (except at an NSCA regional or state conference).
- All data collection must be completed at the time of submission. Incomplete data collection will not be accepted.
- Do not submit abstracts containing data currently in press. In the event that data contained in an accepted abstract is published (paper, electronic, or other format) prior to the abstract's submission to the National Conference, the abstract will be withdrawn.
- Case studies (involving clinical cases, rare circumstances, adverse events, etc.) will only be considered on an individual basis.
- Sample size should be sufficient to draw meaningful conclusions based on primary statistical analyses used.
- The first author of the research abstract is considered the *primary author* and must present the abstract. However, all authors must approve the abstract prior to submission.
- One person may be the primary author on a maximum of two abstracts (only one may be submitted as a podium presentation).
- The number of authors for each abstract is limited to ten (10). An author is defined as an individual identified by the research group to have made substantial contributions to the reported work and agrees to be accountable for these contributions.
- All abstract presenters must pay for their conference registration and all other fees associated with travel.
- Abstracts may only be submitted online.
- For questions, please email the NSCA at abstracts@nsca.com.

SUBJECT CATEGORIES

There are twelve (12) available categories for research abstracts:

1. Biochemistry / Endocrinology
2. Biomechanics / Neuromuscular
3. Body Composition
4. Endurance Training / Cardiorespiratory
5. Fitness / Health
6. Flexibility / Stretching
7. Nutrition / Ergogenic Aids
8. Resistance Training / Periodization
9. Social and Behavioral Science
10. Special Populations (health conditions)
11. Speed / Power Development
12. Tactical Strength and Conditioning

USE OF HUMAN AND ANIMAL SUBJECTS

All research studies that include data recorded from human participants must comply with the Declaration of Helsinki and the US Department of Health and Human Services Policy for the Protection of Human Research Subjects (US Code, Title 45, Part 46 Protection of Human Subjects). All animal studies must comply with the Public Health Service Policy on Humane Care and Use of Laboratory Animals.

ABSTRACT FORMATTING SPECIFICATIONS

- All abstract submissions must be formatted correctly (see examples below) and include original research-based data to allow for a thorough review. Abstracts that do not meet these criteria will not be accepted.
- The body of the abstract cannot exceed 3,500 characters (including spaces) when there is no figure or table included. When there is a figure or table associated with the abstract, the text cannot exceed 3,000 characters (including spaces).

FIGURES AND TABLES

- Abstracts may contain either one figure or one table, but not both. Abstracts submitted with more than one figure or table will have both images removed.
- Any figure or table must pertain to the abstract for the purpose of visualizing data and must be referred to in the text of the abstract. Figures or tables that do not pertain to the abstract will be removed.
- Figures or tables must be concise. It is at the discretion of the NSCA if a figure or table is too big, and if so, it will be removed. Additional text that should be in the abstract may not be substituted in the figure or table.
- The resolution of the figure or table must be adequate for reprinting (i.e., = 150 dpi).
- Including a figure or table does not replace any of the required sections (i.e., purpose, methods, results, etc.).
- No photos or pictures are allowed – only a figure or a table.
- The figure or table must be an image file (.jpg, .gif, and .png are accepted). PDF and PowerPoint are not acceptable.

REQUIRED INFORMATION

- Abstracts/submissions must contain the following:
  - Long title (in ALL CAPS) cannot exceed 150 characters (including spaces).
  - Short title cannot exceed 10 words.
  - Language: English.
  - Abstracts must contain the following labeled sections: PURPOSE, METHODS, RESULTS, CONCLUSIONS, and PRACTICAL APPLICATIONS. These section labels must appear in all capital letters on the abstract.
  - Acknowledgements should be included to denote funding sources and/or conflicts of interest when applicable.
- Abstracts/submissions cannot contain the following:
  - Advertising. Research abstracts should be non-biased, free from solicitations, and should not contain demonstrations of products for the purpose of sales.
  - Author(s) degrees (MS, PhD, etc.) or credentials (CSCS, FNSCA, etc.).
- The following information will be asked during the submission process:
  - All authors' names.
    - If the primary/presenting author is submitting for award consideration, they must be an NSCA Member (professional or student).

        - If an author is NSCA certified, their NSCA ID Number must be entered to automatically record NSCA CEUs. If the authors NSCA ID Number is not entered, the author must self-report the CEUs.
    - All authors' primary institutions/laboratories (institution/laboratory name, city, state).
    - All authors' professional mailing address, email address, and phone number.
    - Desired presentation format (i.e., podium or poster).
        - Due to limited availability, not all podium requests can be accommodated.
    - Abstract subject category.
    - If the abstract is being considered for a Student Research Award (see below).

BRAND NAMES

- Brand names may only be used in the METHODS section to describe testing procedures when necessary and/or in the ACKNOWLEDGEMENTS section to describe funding or disclose any financial relationships.
- Brand names cannot appear in the title (short or long).
- Brand names may not be used for promotional purposes. It is at the discretion of the NSCA to determine if the use of the brand name is for descriptive or promotional purposes.
- The NSCA reserves the right to replace any brand name with a generic name without notice.

EXAMPLE ABSTRACT WITH FIGURE OR TABLE

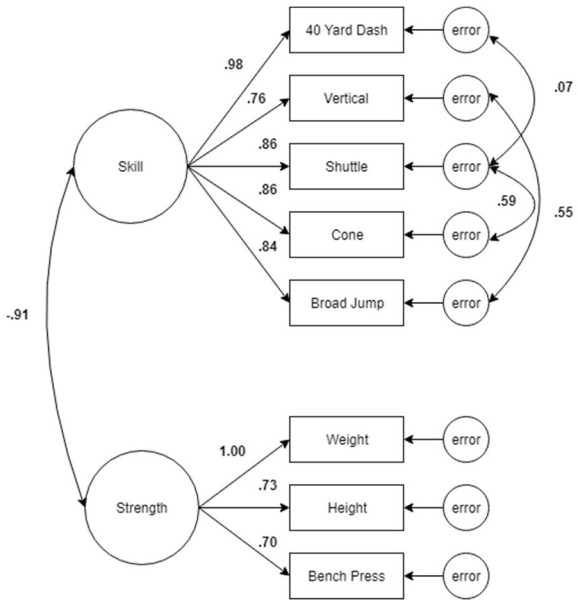
CONSTRUCTING AND IMPLEMENTING A CONFIRMATORY FACTOR MODEL USING SKILL AND STRENGTH FOR NFL COMBINE MEASURES

K. Allen[1], C. Thomas, R. Herron[2], J. Cook, G. Ryan[3]

[1]The University of Southern Mississippi, [2]United States Sports Academy, [3]Georgia Southern University

The National Football League (NFL) annually invites a select-group of potential players to perform in a scouting combine. A major component of the combine is a battery of anthropometric measurements and performance-based assessments that include a 40-yd dash, 20-yd shuttle, vertical jump, broad jump, 225lb bench-press repetitions, and 3-cone drill. However, it is less understood how these assessments relate to when/if the athlete is drafted to a team. **PURPOSE:** The purpose of this study was to investigate how combine results can be factorially grouped to best predict draft pick order using NFL combine data from 2013-2017. **METHODS:** To investigate the constructs and structure of the combine results, an exploratory factor analysis (EFA) was conducted. This analysis used data from 2013-2015 with Quarterbacks and Kickers excluded. The EFA using a principal-axis factor extraction was conducted with the scree plot and Parallel analysis recommending a two-factor solution. For interpretation of the two factors, an oblique rotation was used, and the component loadings indicated two factors, Skill and Strength. A Confirmatory Factor Analysis (CFA) was done using the data from 2016-2017. After the CFA, an ordinal regression was run using the factor scores for Skill and Strength, to predict which round the player would be drafted in. **RESULTS:** The EFA using a principal-axis factor extraction recommended a two-factor solution for the data. The CFA yielded the same two-factor model which fit the data, χ^2 (*df* = 17) = 184.253, Comparative Fit Index (CFI) = 0.959. The two-factor model confirmed that Skill and Strength were latent variables that could be determined from combine measures (see Figure 1). An ordinal regression using the factors to predict which round a player would be drafted in had good fit with the deviance goodness-of-fit test, $\chi^2(4191) = 2215.327$, p = 1.00 and the final model over the intercept-only model was $\chi^2(2) = 16.206$, p < .001. Concluding that a decrease in Skill was associated with a decrease in the odds of being drafted in Round 1, with an odds ratio of .417 (95% CI [.274, .635], Wald $\chi^2(1) = 16.553$, $p < .001$). A decrease in Strength was associated with a decrease in the odds of being drafted in Round 1, with an odds ratio of .458 (95% CI [.304, .689], Wald $\chi^2(1) = 16.553$, $p < .001$). **CONCLUSION:** The CFA using Strength and Skill was a valid approach to determine performance in the NFL Combine over using only traditional measures. Using the factor scores may allow for a more accurate prediction of draft. When Strength and Skill measures decrease, the less likely the player is to be drafted in the initial rounds, when compared to being not-drafted. **PRACTICAL APPLICATIONS:** If use of factor scores and traditional NFL Combine measures can yield a better prediction of players draft pick, this could be useful for further preparation, assessment, and scouting for players prior to the draft, which could provide great insight for coaches and personnel managers.

Figure 1: Standardized Regression Weights for the Accepted Model



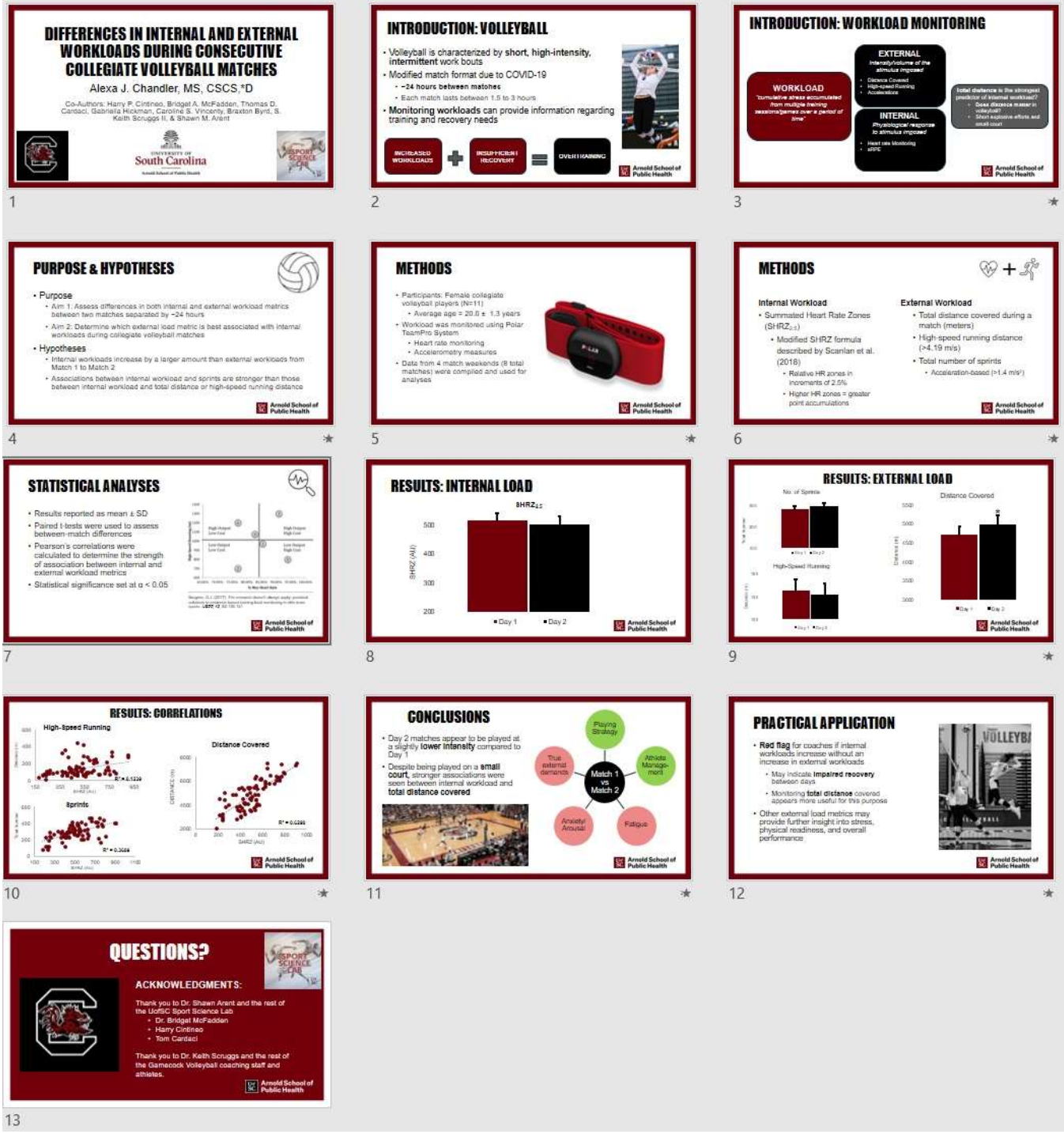
PODIUM ABSTRACT PRESENTATION GUIDELINES

- All podium abstract presentations must be prepared in Microsoft PowerPoint.
- All presenters are required to upload their presentation to an NSCA Dropbox account by July 5, 2022 (11:59 PM Eastern Time). Dropbox account URL to be provided.
- Presenters should bring a back-up copy of their presentation on a USB drive.
- All presenters should check in with their session's moderator prior to presenting.
    - Moderators are assigned in 1-hour blocks (9:00 – 10:00 AM, 10:00 – 11:00 AM, etc.). Podium presenters should check-in with their moderator before the hour block of their presentation.
- Podium abstract presentations must be consistent with the contents of the accepted abstract, and include the following sections: purpose, methods, results, conclusions, and practical applications.
- Podium presentations are 10 – 12 minutes in duration with 3 – 5 minutes of questions from the audience and responses from the presenter.

EXAMPLE PODIUM PRESENTATION

2021 Doctoral Student Outstanding Podium Presentation

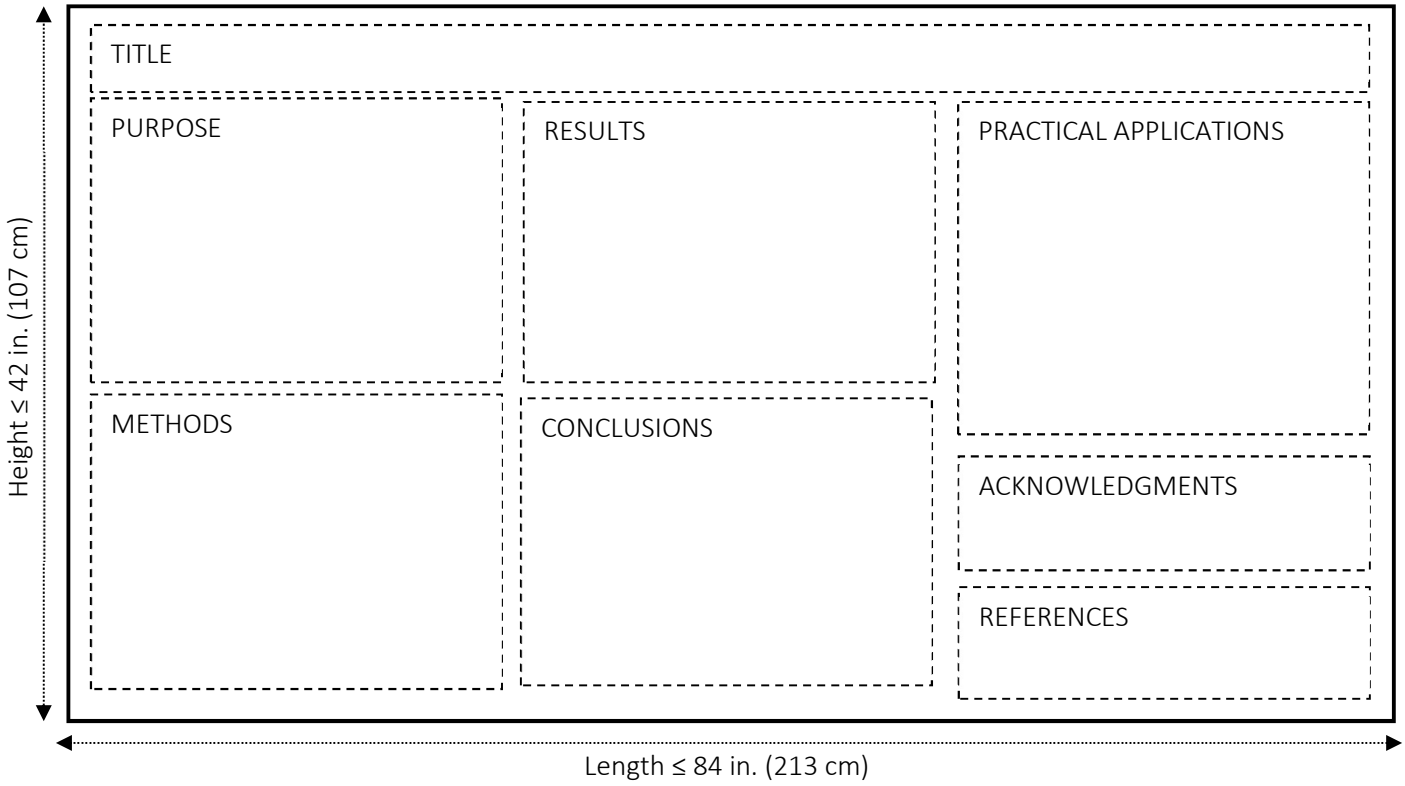
Alexa Chandler - University of South Carolina



POSTER ABSTRACT PRESENTATION GUIDELINES

- All poster presentations should be printed on one uniform poster sheet with dimensions not exceeding 42 × 84 in. (107 × 213 cm) (height × width). Unless otherwise noted, the poster boards on which the posters are hung should be 48 × 96 in. (122 × 244 cm).
- Poster abstract presentations abstract presentations must be consistent with the contents of the accepted abstract, and include the following sections: purpose, methods, results, conclusions, and practical applications.
- The Research Committee recommends one of the two following layouts (Traditional Poster or #betterposter) as a general guideline for all poster presentations:

I. TRADITIONAL POSTER DESIGN



EXAMPLE OF TRADITIONAL POSTER PRESENTATION

2021 Master's Student Outstanding Poster Presentation Winner

Katie Kennedy – University of South Alabama

Contraction Type Does Not Influence Muscle Activation or Force Perception of the Elbow Flexors

Katie G. Kennedy[1], Ryan J. Colquhoun[1], Mitchel A. Magrini[2], Sydnie R. Fleming[1], Nile F. Banks[3], Emily M. Rogers[3]

[1]University of South Alabama; [2]Creighton University; [3]University of Iowa

Introduction

While it is known that concentric and eccentric muscle contractions produce differing amounts of fatigue[1], the ability of an individual to estimate their force production in the recovery period these differing contraction types remains unclear. Additionally, existing research has investigated the impact of fatigue on estimation of force[2], but the relationship of this change to muscle activation following different contraction types remains unknown.

Purpose

Therefore, the purpose of this investigation was to examine the effects of maximal concentric (CON) and eccentric (ECC) contractions of the elbow flexors on force perception, strength, and muscle activation.

Methods

Nineteen healthy, resistance-trained males (Age: 24 ± 3 y) completed 6 sets of 10 repetitions of maximal CON and ECC contractions of the elbow flexors across 2 separate experimental visits. Exercise condition and arm utilized were randomized and counterbalanced. Visits were separated by 6 ± 1 days. Testing was completed at pre-exercise as well as 24-, 48-, and 72-hours post-exercise. At each testing session, subjects performed 3 submaximal contractions of the elbow flexors at 75% of their perceived maximal voluntary isometric contraction (MVIC) strength. No feedback was provided to participants during submaximal contractions. Immediately following the submaximal contractions, participants performed two MVIC attempts. Surface electromyography of the biceps brachii was recorded during all contractions. The root mean square (RMS) amplitude of the signals was calculated offline following data collection.

Force (nF) and RMS (nRMS) from the 75% submaximal contractions were calculated relative to MVIC from the same visit. Separate 2 (Conaition) x 4 (Time) x 3 (Repetition) repeated measures ANOVAs were used to examine nF and nRMS. A 2 (Condition) x 4 (Time) repeated measures ANOVA was run to examine differences in MVIC. Lower order ANOVAs and t-tests were run to decompose significant interaction and main effects.

Results

No significant three-way (p= 0.102- 0.252) or two-way (p= 0.056-0.755) interaction effects were uncovered for nF or nRMS. A significant main effect for repetition was uncovered for nRMS (p= 0.016). Post-hoc analyses revealed significantly greater nRMS during the second (p = 0.036; 67.3 ± 19.8% MVIC) and third (p = 0.035; 68.7 ± 19.3% MVIC) repetitions when compared to the first repetition (64.3 ± 22.1%) of the 75% contractions. No additional main effects (p= 0.104- 0.878) were revealed for nF nor nRMS.

MVIC decreased from PRE (425.6 ± 66.6 N) to $POST_{24}$ (p=0.025; 394.2 ± 85.3 N), non-significantly recovered at $POST_{48}$ (p=0.097; 408.1 ± 69.1 N), but remained depressed from PRE at $POST_{72}$ (p=0.028; 406.5 ± 70.1 N) in CON. In ECC, MVIC decreased from PRE (420.6 ± 97.5 N) to $POST_{24}$ (p<0.001; 310.1 ± 96.9 N), before progressively recovering at $POST_{48}$ (p<0.001; 339.1 ± 106.1 N) and $POST_{72}$ (p=0.03; 356.0 ± 109.7 N) but remaining depressed from PRE (p<0.001). ECC MVIC was lower at $POST_{24}$ (p=0.007) and $POST_{48}$ (p=0.023) when compared to their respective CON timepoints.

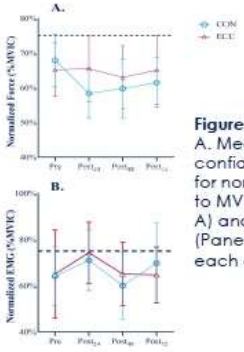


Figure 1
A. Mean ± 95% confidences intervals for normalized (relative to MVIC) force (Panel A) and EMG Amplitude (Panel B) across time in each condition.

Conclusions

The results of the present study suggest that contraction type does not affect perceptions of force and muscle activation when performing submaximal contractions of the elbow flexors, despite significant differences in force output across time-points and conditions. Additionally, despite similar normalized force outputs across repetitions, muscle activation was greater in the second and third repetitions compared to the first. Finally, it is important to note that nF (63.3% MVIC) and nRMS (66.8% MVIC) were both lower than the targeted effort of 75% when collapsed across all timepoints and conditions.

Practical Applications

Our findings suggest that individuals similarly perceive force following concentric and eccentric contractions of the biceps brachii. This lack of difference is not altered during the recovery period, despite absolute force values beginning to recover after 48 hours post-exercise. Regardless of this, subjects underestimated their force and activation at 75% of MVIC. Practitioners must consider this potential underestimation of force production during submaximal exercise at higher contraction levels. Further, additional warmup repetitions may be useful to increase muscle activation prior to exercise. Due to the single-joint nature of this exercise, future research should investigate larger muscle groups and multi-joint movements.

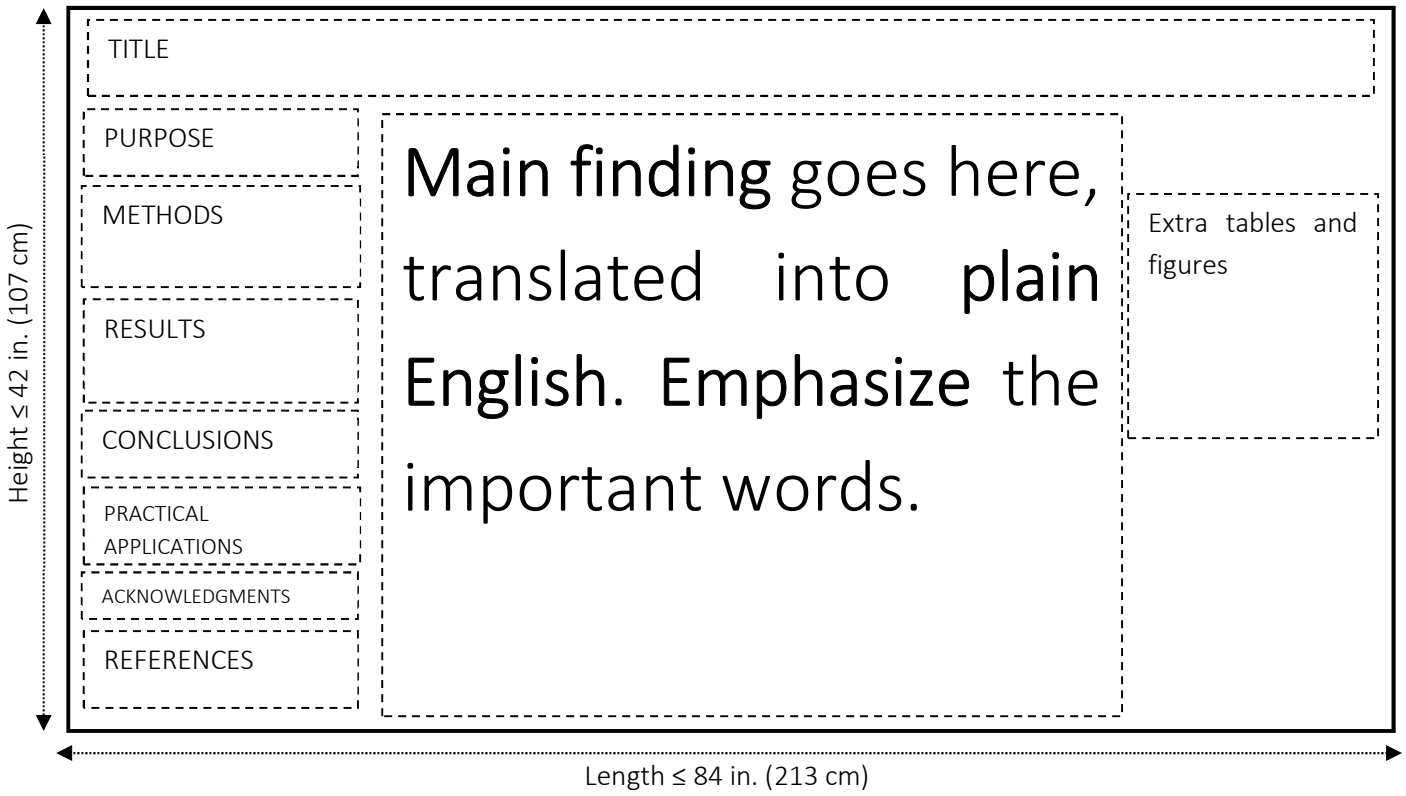
Acknowledgements

This project was supported by the NSCA Foundation's Doctoral Research Grant, awarded to RJC. The authors would like to thank Dr. Rob Wildman and Dymatize Sports Nutrition for donation of products to the project.

References

1. Newham, D. J., Mills, K. R., Quigley, B. M., & Edwards, R. H. T. (1983). Pain and Fatigue after Concentric and Eccentric Muscle Contractions. *Clinical Science*, 64(1), 55-62.
2. Carson, R. G., Riek, S., & Shahbazpour, N. (2002). Central and peripheral mediation of human force sensation following eccentric or concentric contractions. *The Journal of Physiology*, 539(3), 913-925.

II. #BETTERPOSTER DESIGN

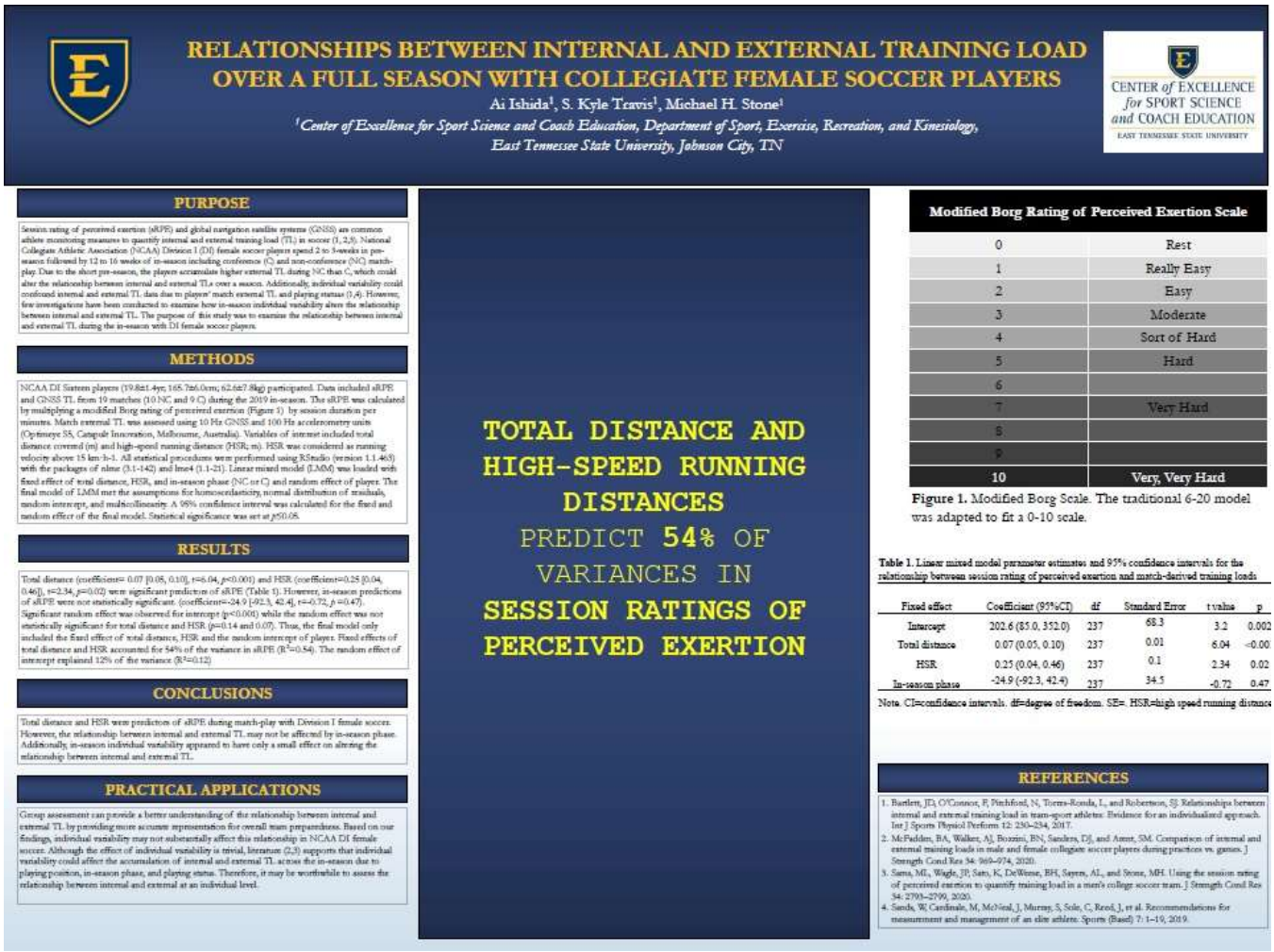


More information on #betterposter design can be found at https://www.youtube.com/watch?v=1RwJbhkCA58

EXAMPLE OF #BETTERPOSTER DESIGN

2021 Doctoral Student Outstanding Poster Presentation Winner

Ai Ishida – East Tennessee State University



RELATIONSHIPS BETWEEN INTERNAL AND EXTERNAL TRAINING LOAD OVER A FULL SEASON WITH COLLEGIATE FEMALE SOCCER PLAYERS

Ai Ishida[1], S. Kyle Travis[1], Michael H. Stone[1]

[1]*Center of Excellence for Sport Science and Coach Education, Department of Sport, Exercise, Recreation, and Kinesiology, East Tennessee State University, Johnson City, TN*

CENTER *of* EXCELLENCE *for* SPORT SCIENCE *and* COACH EDUCATION
EAST TENNESSEE STATE UNIVERSITY

PURPOSE

Session rating of perceived exertion (sRPE) and global navigation satellite systems (GNSS) are common athlete monitoring measures to quantify internal and external training load (TL) in soccer (1, 2,5). National Collegiate Athletic Association (NCAA) Division I (DI) female soccer players spend 2 to 3-weeks in pre-season followed by 12 to 16 weeks of in-season including conference (C) and non-conference (NC) match-play. Due to the short pre-season, the players accumulate higher external TL during NC than C, which could alter the relationship between internal and external TL over a season. Additionally, individual variability could confound internal and external TL data due to players' match external TL and playing status (1,4). However, few investigations have been conducted to examine how in-season individual variability alters the relationship between internal and external TL. The purpose of this study was to examine the relationship between internal and external TL during the in-season with DI female soccer players.

METHODS

NCAA DI Sixteen players (19.8±1.4yr, 165.7±6.0cm, 62.6±7.8kg) participated. Data included sRPE and GNSS TL from 19 matches (10 NC and 9 C) during the 2019 in-season. The sRPE was calculated by multiplying a modified Borg rating of perceived exertion (Figure 1) by session duration per minutes. Match external TL was assessed using 10 Hz GNSS and 100 Hz accelerometry units (Optimeye S5, Catapult Innovation, Melbourne, Australia). Variables of interest included total distance covered (m) and high-speed running distance (HSR; m). HSR was considered as running velocity above 15 km·h-1. All statistical procedures were performed using RStudio (version 1.1.463) with the packages of nlme (3.1-142) and lme4 (1.1-21). Linear mixed model (LMM) was loaded with fixed effect of total distance, HSR, and in-season phase (NC or C) and random effect of player. The final model of LMM met the assumptions for homoscedasticity, normal distribution of residuals, random intercept, and multicollinearity. A 95% confidence interval was calculated for the fixed and random effect of the final model. Statistical significance was set at $p \leq 0.05$.

RESULTS

Total distance (coefficient= 0.07 [0.05, 0.10], t=6.04, $p<0.001$) and HSR (coefficient=0.25 [0.04, 0.46], t=2.34, $p=0.02$) were significant predictors of sRPE (Table 1). However, in-season predictions of sRPE were not statistically significant. (coefficient=-24.9 [-92.3, 42.4], t=-0.72, $p=0.47$). Significant random effect was observed for intercept ($p<0.001$) while the random effect was not statistically significant for total distance and HSR ($p=0.14$ and 0.07). Thus, the final model only included the fixed effect of total distance, HSR and the random intercept of player. Fixed effects of total distance and HSR accounted for 54% of the variance in sRPE ($R^2=0.54$). The random effect of intercept explained 12% of the variance ($R^2=0.12$).

CONCLUSIONS

Total distance and HSR were predictors of sRPE during match-play with Division I female soccer. However, the relationship between internal and external TL may not be affected by in-season phase. Additionally, in-season individual variability appeared to have only a small effect on altering the relationship between internal and external TL.

PRACTICAL APPLICATIONS

Group assessment can provide a better understanding of the relationship between internal and external TL by providing more accurate representation for overall team preparedness. Based on our findings, individual variability may not substantially affect this relationship in NCAA DI female soccer. Although the effect of individual variability is trivial, literature (2,3) supports that individual variability could affect the accumulation of internal and external TL across the in-season due to playing position, in-season phase, and playing status. Therefore, it may be worthwhile to assess the relationship between internal and external at an individual level.

TOTAL DISTANCE AND HIGH-SPEED RUNNING DISTANCES PREDICT 54% OF VARIANCES IN SESSION RATINGS OF PERCEIVED EXERTION

Modified Borg Rating of Perceived Exertion Scale	
0	Rest
1	Really Easy
2	Easy
3	Moderate
4	Sort of Hard
5	Hard
6	
7	Very Hard
8	
9	
10	Very, Very Hard

Figure 1. Modified Borg Scale. The traditional 6-20 model was adapted to fit a 0-10 scale.

Table 1. Linear mixed model parameter estimates and 95% confidence intervals for the relationship between session rating of perceived exertion and match-derived training loads

Fixed effect	Coefficient (95%CI)	df	Standard Error	t value	p
Intercept	202.6 (85.0, 352.0)	237	68.3	3.2	0.002
Total distance	0.07 (0.05, 0.10)	237	0.01	6.04	<0.00
HSR	0.25 (0.04, 0.46)	237	0.1	2.34	0.02
In-season phase	-24.9 (-92.3, 42.4)	237	34.5	-0.72	0.47

Note. CI=confidence intervals. df=degree of freedom. SE=. HSR=high speed running distance

REFERENCES

1. Bartlett, JD, O'Connor, F, Pitchford, N, Torres-Ronda, L, and Robertson, SJ. Relationships between internal and external training load in team-sport athletes: Evidence for an individualised approach. Int J Sports Physiol Perform 12: 230–234, 2017.
2. McFadden, BA, Walker, AJ, Bozzini, BN, Sanders, DJ, and Arent, SM. Comparison of internal and external training loads in male and female collegiate soccer players during practices vs. games. J Strength Cond Res 34: 969–974, 2020.
3. Sarma, ML, Wagle, JP, Sato, K, DeWeese, BH, Sayers, AL, and Stone, MH. Using the session rating of perceived exertion to quantify training load in a men's college soccer team. J Strength Cond Res 34: 2793–2799, 2020.
4. Sands, W, Cardinale, M, McNeal, J, Murray, S, Sole, C, Reed, J, et al. Recommendations for measurement and management of an elite athlete. Sports (Basel) 7: 1–19, 2019.

ABSTRACT REVIEW PROCESS

The Scientific Programs Subcommittee is responsible for reviewing the NSCA Research Abstracts to assure that the correct formatting has been applied and to solicit blinded external review(s) for scientific content. Abstracts that do not meet the previously stated formatting criteria will be rejected. The Scientific Programs Subcommittee may solicit a blinded external review. The abstract may be externally reviewed for scientific content, appropriate methodology, correct statistical analysis, proper interpretation of results, and contribution to the field of strength and conditioning. If a reviewer suggests that an abstract be rejected, the Scientific Programs Subcommittee will independently re-review the abstract in question. In this case, the Scientific Program Subcommittee will have final authority to accept or reject the abstract.

STUDENT AWARD CONSIDERATION

Any student author who wishes to submit a research abstract for award consideration must be a Student or Professional Member of the NSCA at the time the abstract is submitted. Each student can only have one (1) abstract (podium or poster) submitted for award consideration.

STUDENT RESEARCH AWARD DESCRIPTION

The NSCA awards outstanding research efforts by students through the NSCA Student Research Awards. Five awards are given each year:

1. Doctoral Student Research Award for Outstanding Podium Abstract Presentation
2. Doctoral Student Research Award for Outstanding Poster Abstract Presentation
3. Master's Student Research Award for Outstanding Podium Abstract Presentation
4. Master's Student Research Award for Outstanding Poster Abstract Presentation
5. Undergraduate Student Research Award for Outstanding Poster Abstract Presentation

PRELIMINARY JUDGING FOR STUDENT AWARDS

The top ten (10) master's podium and top ten (10) doctoral podium submissions after the initial review period will be selected to be judged at the National Conference. The top ten (10) doctoral posters, top ten (10) master's posters, and top five (5) undergraduate posters after the initial review period will be selected to be judged at the National Conference. Students selected to be judged at the National Conference will be notified of their selection.

STUDENT RESEARCH AWARD CRITERIA

- Each student award applicant must be a current Student or Professional NSCA Member at the time the abstract is submitted.
- A student can be the primary author on a maximum of 2 abstracts; however, only 1 abstract can be eligible for the student award.
- The candidate must be enrolled as a full-time student at the time of abstract submission *or* have completed his/her degree no more than 1-year prior to the NSCA National Conference.
- The abstract must be submitted according to the required specifications (*see above*) and the "Student Award" option must be selected.
- The presentation guidelines (either podium or poster) must be met as stated in this document.
- Student award candidates must attend the NSCA National Conference to present their research.
- Winners will be announced at the NSCA Awards Banquet on the Friday evening of the conference, as well as through NSCA's social media channels.
- Case studies are not eligible for award consideration.

STUDENT AWARD JUDGING CRITERIA

Below are five (5) basic questions and additional sub-questions that are used by the judges to evaluate the student award candidates. Each question is answered with a Likert scale response on evaluation sheets, with spaces for judges' comments. The points are tallied and the comments are considered, narrowing the candidates for consideration. In the event of a tie, an overall subjective score provided by the judges from 1 – 100 will be considered.

1. Was the presentation knowledgeable and professional?
    a. For podium presentations – were the slides readable?
    b. For poster presentations – was the poster readable?
    c. How involved was the student with this project?
        i. Did the student provide well-informed responses to the questions?
        ii. How knowledgeable was the student about this project?
    d. How well did the authors follow the guidelines for abstract presentations (component parts)?
2. Was the introduction/literature review sufficient and relevant?
3. Was the study well designed?
    a. Was the purpose clearly stated?
    b. Did the methodology address the research question?
    c. Were the statistical procedures appropriate?
    d. Were the conclusions valid based on the results of the study?
4. What was the scientific impact of the research?
5. How well did the student *bridge the gap* with the practical application section?

SUBMISSION CHECKLIST

- ✓ Abstract is written in English.
- ✓ Research study is original and has not been previously published or presented.
- ✓ All required sections are provided and labeled.
- ✓ PURPOSE, METHODS, RESULTS, CONCLUSIONS, and PRACTICAL APPLICATIONS.
- ✓ All data are completed and present at the time of submission.
- ✓ No brand names are included (only permitted in METHODS and/or ACKNOWLEDGEMENTS sections to describe procedures).
- ✓ No brand names appear in the long or short title.
- ✓ Any funding is described in the acknowledgements section.
- ✓ Any potential conflicts of interest are described in the acknowledgements section.