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The Relationship Between Perceived Coaching Style and Athlete Well-Being

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## ABSTRACT

Previous research has explored the influence of coaching style on athletes' well-being including mental health outcomes such as anxiety and burnout. Using a cross-sectional design, we further examined the relationship between coaching style and athlete well-being, and the role of perfectionism (fear of failure, self-oriented, and socially prescribed) as a mediator of this association. Student-athletes (N = 49) at the Pennsylvania State University 18-26-years-old reported their time spent with their coach (the one they work most closely with, i.e., head coach, assistant coach, position coach, etc.), the coaching style of that coach, the athlete's feelings of perfectionism and fear of failure, and the athlete's well-being. I hypothesized that 1) athletes' perception of coaching style as more controlling would be associated with lower reports of well-being; 2) perfectionism would mediate the relationship between the athlete's perception of their coach's style and their well-being, such that controlling coaching style would be associated with higher perfectionism among athletes, which in turn would be associated with lower psychological well-being. Multiple regression indicated that a controlling coaching style was not associated with well-being or with perfectionism. However, higher fear of failure among athletes was strongly associated with lower self-acceptance. Looking at different variables that can affect not only the coach-athlete relationship but also the athlete's perception of that relationship can give insight into a way to inform/instruct coaches so they can create an environment with ideal performance and maximum well-being in their athletes.

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## **Chapter 1**

### **Introduction**

#### **Background**

Sports have been shown to improve prosocial behaviors both in and out of the sport context (Li & Shao, 2022); however, in the context of poor coaching, participation in sports could have maladaptive consequences for athlete well-being (Barrio et al., 2021). Previous research has explored the importance of coaching style on athletes' mental health outcomes such as anxiety and burnout (Hagerty & Felizzi, 2023; Peterson, 2019; Roxas & Ridinger, 2016; Walton et al., 2024).

More specifically, Oliveira et al. (2022) found that self-criticism mediated the relationship between a coach's critical attitudes and mental health, as 15% of the athletes' self-criticism was explained by critical attitudes expressed by their coaches (Oliveira et al., 2022). They also found that athletes with higher levels of self-criticism had decreased psychological well-being (Oliveira et al., 2022). In an extensive literature review, a theme presented itself in that coaches who take advantage of their power and institute a controlling coaching style increase or cause their athletes anxiety (Hagerty & Felizzi, 2023).

Despite a fairly robust literature on the association between coaching and athlete well-being, mechanisms through which coaching style may affect well-being are understudied. Three potential mechanisms through which coaching style may impact athlete well-being are three

aspects of perfectionism: self-oriented perfectionism, socially prescribed perfectionism, and fear of failure. These constructs have all been researched separately in the athletic context and evidence suggests they all can have effects on performance (Carbonneau et al., 2022; Correia et al., 2018; Cunha et al., 2022). However, these constructs may also relate to coaching style and may be separate mechanisms through which coaching style impacts overall athlete well-being.

### **Coaching Style and Athlete Perfectionism (Self-Oriented, Socially Prescribed, and Fear of Failure)**

Differences in coaching style have been consistently linked with varying levels of athlete-reported perfectionism. Perfectionism is an umbrella term used to describe a characteristic defined as “rigidly requiring nothing short of absolute perfection and being highly self-critical” (Molnar et al., 2022). There are three major components that are measured as separate, but related, aspects of perfectionism: self-oriented perfectionism, socially prescribed perfectionism, and fear of failure. There is limited literature linking the effects of coaching style on athletes’ levels of perfectionism. Aleksic-Veljkovic et al. (2019) explained the effects of coaching behavior on perfectionist ideals in athletes through their work surveying athletes. This study found that if coaches showed democratic behaviors and focused on performance and positive feedback, their athletes would have less negative perfectionism (Aleksic-Veljkovic et al., 2019). This association is consistent across research in this field and is highlighted by the recent work of Hu et al. (2023) in their examination of the effects of coaching style on fear of failure. Results indicated that a higher controlling coaching style (CCS) was associated with greater fear of failure among athletes; this association was mediated by higher constrained commitment—an athlete’s external responsibility to their sport. CCS may also have effects on passion and



enjoyment for their sport (Hu et al., 2023). As CCS decreased the basic psychological needs of athletes their fear of failure was affected as well (Hu et al., 2023). Likewise, Moreno-Murcia et al. (2019) examined the same relationship between coaching style and fear of failure among athletes. Results showed that coaching style characterized by high control and low support for autonomy is associated with higher fear of failure among their athletes (Moreno-Murcia et al., 2019).

### **Self-Oriented Perfectionism, Socially Prescribed Perfectionism, and Fear of Failure to Well-being**

Despite a robust literature linking perfectionism with well-being in general populations, the literature on the relationship between perfectionism and well-being among student-athletes is relatively more sparse given that sports psychology is an emerging field of study. However, recent work has examined the relationship between perfectionism and various aspects of mental health and well-being among student-athletes. For example, research using a sample of student-athletes illustrated a significant positive relationship between fear of failure and other aspects of perfectionism, highlighting the importance of examining multiple aspects of perfectionism in student-athletes (Correia et al., 2018). In addition, athletes with high performance-based self-esteem risk a higher likelihood of athlete burnout, defined as emotional and physical exhaustion, with a reduced sense of accomplishment (Guillet-Descas et al., 2018). Additionally, Ozcan (2021), found evidence that self-oriented perfectionism and socially prescribed perfectionism negatively impacted the mental well-being of athletes. Higher levels of socially prescribed perfectionism have also been found to be associated with lower mattering and mattering partially mediated the relationship between perfectionism and depression (Flett et al., 2012). Importantly,

researchers have found consistent relationships between various aspects of perfectionism and various aspects of well-being in the context of being a student-athlete.

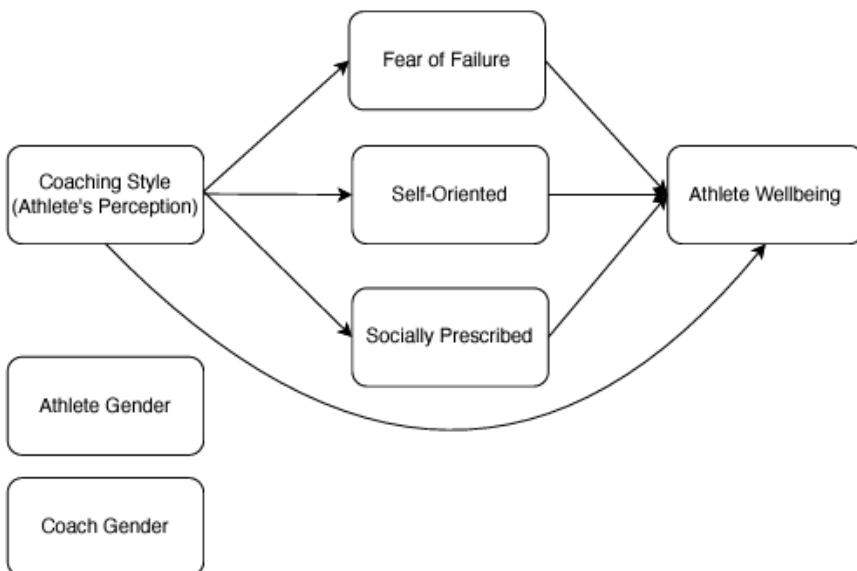
Overall, existing literature emphasizes the importance of perfectionism for athlete well-being and well-being in general, but existing studies do not often consider student-athlete perfectionism as a mediator of coaching style and well-being. However, a recent study revealed a direct association between athletes' perception of their coaches' criticism and their own self-criticism as well as a positive correlation between athlete self-criticism and feelings of depression (Cunha et al., 2022). These findings suggest that impacts of the athlete-coach relationship extend beyond the athletic context and may be important predictors of overall athlete well-being. Thus, if teams want to simultaneously maximize success and athlete well-being, a stronger focus needs to be placed on the interpersonal relationship between the coach and the athlete (Cockerill & Jowett, 2003; Murray et al., 2018). Although the existing research indicates that coaching style impacts athlete well-being, the mechanisms through which coaching style affects athlete well-being is an evident gap in the literature that should be addressed to best support both team performance and individual athletes.

### **Current Study**

Based on the above literature, I examined the relationship between coaching style and athlete well-being, and the role of perfectionism (fear of failure, self-oriented, and socially prescribed) as a mediator of this association (see Figure 1). I hypothesized that athlete perceptions of coaching style as more controlling would be associated with lower reports of well-being. In addition, I hypothesized that perfectionism would mediate the relationship between the

athlete's perception of their coach's style and their well-being, such that more controlling coaches would have athletes with higher levels of perfectionism and higher perfectionism would be associated with lower psychological well-being.

**Figure 1. Hypothesized Model**



## Chapter 2

### Methods

#### Participants

Research studies examining the relationship between coaching style and perfectionism have found small to medium effect sizes (Cohen's  $d$  ranging from .299 to .742). Research studies on the relationship between perfectionism and well-being have found large effect sizes (Cohen's  $d$  ranging from .807 to 1.118). Using G\*Power software, I calculated the sample size required by my proposed analysis (linear multiple regression) to find effects of the sizes identified in previous studies. Required sample sizes ranged from 53 to 675 with an average of  $n = 198$ . Thus, given the effect sizes were mostly medium to large, for my own study, I aimed to recruit about 100 participants drawn from a random sample of Pennsylvania State University student-athletes.

Of the 153 total participants who completed a portion of the survey, a total of 49 participants had sufficient data to be included in at least one regression analysis. Of this sample, 17 played a team sport (i.e., soccer, football, basketball, hockey, etc.) and 32 played an individual sport (i.e., golf, gymnastics, track and field, etc.). A majority of the athletes (22) spent 11-20 hours training with the coach they work with most closely while 10 spent 0-10 hours, 16 spent 21-30 hours, and 1 spent 31-40 hours. Participants were asked what best described their gender: 11 were male, 25 were female, and 1 identified as non-binary or third gender. When asked about their race, 6.1% were Asian, 10.2% were Black or African American, 2% were Native Hawaiian or other Pacific Islander, and 67.3% were white. Lastly, the majority of student-athletes were between the ages of 18 and 21 years old.

Potential participants were recruited through the Pennsylvania State University Park courses and student organizations including leaders of Greek Life and The International Honor Society in Psychology (Psi Chi). For courses, I contacted the current faculty teaching one or more courses including but not limited to Psychology at the University Park campus. I included a brief description, link, and flyer asking for them to share it with their course. Greek Life and Psi Chi leaders were asked to do the same among their members. The method of distribution was at the discretion of the individual faculty member, but I provided the instructor with the exact recruitment message, introducing the study, how they can participate, and how they can contact the study team.

Potential participants were also recruited through flyers in school facilities (bathrooms, bulletin boards, classrooms, groups, and discussion forums) and through mass e-mails to school issued e-mail addresses. All participants were recruited between the Fall 2023 semester and the Spring 2024 semester. The QR code or link led the potential participant to an initial screening questionnaire where participants younger than 18 years old and non-college student athletes were excluded. Participants who met all inclusion criteria were automatically directed to the next page containing the consent document with the survey immediately following.

This study was reviewed and approved by the University Institutional Review Board. Implied consent was obtained as subjects did not sign a consent form as the research presents no more than minimal risk of harm to subjects. Before entering the survey, the participants read and gave their consent by clicking an arrow to proceed; otherwise, they did not receive access to any further questions. Participants had the opportunity to exit the survey at any time and were told

that their participation was voluntary. Their status as student-athletes was not impacted by their decision on whether or not to participate.

## **Procedures**

This was a cross-sectional study completed online, designed to examine the associations between athlete perceptions of coaching style, their perfectionism, and their overall well-being in addition to how these relationships may vary across student-athlete gender. Student-athletes from the Pennsylvania State University volunteered for the study and participation was anonymous. Participants were asked to complete an individual questionnaire about how much time was spent with their coach (the one they work most closely with, i.e., head coach, assistant coach, position coach, etc.), the coaching style of that coach, the athlete's feelings of perfectionism and fear of failure, and the athlete's well-being. This data collection was done via Qualtrics surveys on eligible participants' mobile devices or personal computers at a time and place of the subjects' choosing.

## **Measures**

### ***Coaching Style***

The Leadership Scale for Sport (LSS; Chelladurai & Saleh, 1980) was used in the current study to assess the coaching style of the coach the athlete works with most closely (e.g., "Explain how each athlete's contribution fits into the total picture", "Look out for the personal welfare of the athletes"). It was 40 items, and each item was categorized based on five categories: always, often, occasionally, seldom, and never. This questionnaire yielded five subscales: Training and

Instruction, Democratic Behavior, Autocratic Behavior, Social Support, and Positive Feedback. In the current study, we used: Training and Instruction ( $\alpha = .88$ ), Autocratic Behavior ( $\alpha = .79$ ), and Positive Feedback ( $\alpha = .77$ ). Higher scores reflected higher levels of guidance through training and instruction, higher levels of autocratic behavior, and higher levels of positive feedback no matter the athlete's performance, respectively.

### ***Perfectionism***

The Multiperfectionism Scale (MPS; Hewitt & Flett 1991b) was used in the current study to assess the socially prescribed and self-oriented aspects of perfectionism (e.g., “When I am working on something, I cannot relax”, “The people around me expect me to succeed at everything I do”). It was 45-items, and each item was responded to on a scale of 1 to 7. If the participant strongly agrees, they select 7. If the participant strongly disagrees, they select 1. If they felt somewhere in between, they selected one of the numbers between 1 and 7. This questionnaire yielded three subscales: Self-Oriented perfectionism, Other-Oriented perfectionism, and Socially Prescribed perfectionism. In the current study, we used: Self-Oriented ( $\alpha = .77$ ) and Socially Prescribed ( $\alpha = .67$ ). Higher scores on each subscale reflected more perfectionistic tendencies in their respective subscale.

The Performance Failure Appraisal Inventory: Form B (PFAI; Conroy, 2001) was used in the current study to assess the fear of failure aspect of perfectionism (e.g., “When I am failing, I expect to be criticized by important others”, “When I am failing, I lose the trust of people who are important to me”). It was a 25-item survey where each statement was responded to in one of five ways: -2 (Do Not Believe At All), -1, 0 (Believe 50% of the Time), +1, +2 (Believe 100% of the Time). This questionnaire yielded five subscales: Fear of Experiencing Shame & Embarrassment (FESE), Fear of Devaluing One's Self-Estimate (FDSE), Fear of Having an

Uncertain Future (FUF), Fear of Important Others Losing Interest (FIOLI), and Fear of Upsetting Important Others (FUIO). In the current study, we used the General Fear of Failure scale ( $\alpha = .91$ ). Higher scores reflected higher overall fear of failure.

### ***Well-Being***

Ryff and Keyes (1995) Psychological Well-being scale was used in the current study to assess the athletes' psychological well-being (e.g., "I like most parts of my personality", "I live life one day at a time and don't really think about the future"). It was an 18-item survey where each statement was categorized on a 6-point Likert scale ranging from 1 to 6 where 1 represented "Completely disagree" and 6 was "Completely agree." This questionnaire yielded six subscales: Autonomy, Environmental Mastery, Personal Growth, Positive Relations with Others, Purpose in Life, and Self-Acceptance. In the current study, we used: Autonomy ( $\alpha = .62$ ), Personal Growth ( $\alpha = .70$ ), and Self-Acceptance ( $\alpha = .73$ ). Higher scores reflected higher levels of psychological well-being.



## Chapter 3

### Results

#### Descriptive Statistics and Bivariate Correlations

All study variables were approximately normally distributed. Descriptive Statistics are presented in Table 1. Preliminary correlation analyses were run on all variables of interest (See Table 2). At the bivariate level, there were no significant correlations between coaching style and well-being. However, these analyses revealed significant correlations between general fear of failure and personal growth, such that higher fear of failure was associated with lower personal growth, lower self-acceptance, higher self-oriented perfectionism, and higher socially prescribed perfectionism. The significant relationship between the fear of failure scale and separate perfectionism scale is consistent with previous findings as fear of failure is seen in the field as a component of perfectionism (Molnar et al., 2023). These analyses also revealed significant associations between self-acceptance and personal growth, such that higher self-acceptance was associated with higher personal growth, socially prescribed perfectionism and self-oriented perfectionism, such that higher socially prescribed perfectionism was associated with self-oriented perfectionism, positive feedback and training and instruction, such that higher positive feedback was associated with more training and instruction, and positive feedback and autocratic behavior, such that less positive feedback was associated with higher autocratic behavior. It is important to note that all correlations were in the expected directions. Therefore, the significant correlations in the bivariate analysis and not in the regression analysis are likely due to the limited sample size.

We used linear multiple regression to test the study hypotheses in IBM SPSS 29.0 (Statistical Package for the Social Sciences, version 29.0). First, we tested perceived coaching style as a predictor of each of the well-being outcomes, however we did not find any significant associations. Next, we tested coaching style as a predictor of each of the three types of perfectionism, but again we did not find any significant associations. Finally, we used the three types of perfectionism as a predictor of each of the well-being outcomes. We found that athletes' fear of failure was significantly associated with self-acceptance. The overall model including, Socially Prescribed Perfectionism, Self-Oriented Perfectionism, and General Fear of Failure explained 34.8% of the variance in Self-Acceptance. Higher levels of general fear of failure were significantly associated with lower levels of self-acceptance,  $\beta = -.64$ ,  $t(29) = 5.17$ ,  $p = .001$ . There were no other significant associations.

### **Effect Size**

Due to the small sample size, it is important to discuss the effect sizes of the associations described. Effect sizes for the relationships tested, as measured by Cohen's  $d$ , ranged from .05 to 1.38 (see Table 3). The effect size of the significant association between general fear of failure and self-acceptance was  $d = 1.38$ , indicating a large effect size.

**Table 1.***Descriptive Statistics*

	Coach Positive Feedback	Coach Autocratic Behavior	Training and Instruction	Perf Self-Oriented	Perf Socially Prescribed	FF General Fear of Failure	WB Autonomy	WB Personal Growth	WB Self-Acceptance
N	88	88	89	49	49	36	33	33	33
Missing	65	65	64	104	104	117	120	120	120
Mean	2.0182	3.6864	1.9345	66.2653	61.3265	3.0483	15.1818	18.8485	17.6970
Std. Deviation	.60620	.73733	.57961	11.67043	11.62681	.68169	3.44106	2.26552	3.04636
Range	2.80	4.00	2.31	60.00	55.00	3.32	14.00	9.00	13.00

*Note.* WB = well-being, FF = fear of failure, Perf = perfectionism

**Table 2.**  
*Correlations*

	WB Autonomy	WB Personal Growth	WB Self-Acceptance	FF General Fear of Failure	Perf Self-Oriented	Perf Socially Prescribed	Training and Instruction	Coach Autocratic Behavior	Coach Positive Feedback
WB Autonomy	Pearson Correlation N	-.33 33	-.567** 33	-.541** 36	-.559** 49	-.085 49	-.132 88	-.245* 88	-.022 88
WB Personal Growth	Pearson Correlation Sig. (2-tailed) N	.160 .374 33	-.369* <.001 33	.541** <.001 36	.559** <.001 49	.085 .561 49	-.132 .219 88	-.245* .022 88	-.022 88
WB Self-Acceptance	Pearson Correlation Sig. (2-tailed) N	.002 .989 33	.577** <.001 33	-.567** <.001 33	-.559** <.001 49	-.085 .561 49	-.132 .219 88	-.245* .022 88	-.022 88
FF General Fear of Failure	Pearson Correlation Sig. (2-tailed) N	-.193 .282 33	-.369* .035 33	-.567** <.001 33	-.541** <.001 36	-.085 .561 49	-.132 .219 88	-.245* .022 88	-.022 88
Perf Self-Oriented	Pearson Correlation Sig. (2-tailed) N	-.023 .897 33	-.232 .193 33	-.148 .411 33	-.541** <.001 36	-.085 .561 49	-.132 .219 88	-.245* .022 88	-.022 88
Perf Socially Prescribed	Pearson Correlation Sig. (2-tailed) N	-.229 .199 33	-.318 .071 33	-.252 .157 33	-.492** .002 36	-.085 .561 49	-.132 .219 88	-.245* .022 88	-.022 88
Training and Instruction	Pearson Correlation Sig. (2-tailed) N	-.232 .194 33	-.205 .254 33	-.025 .890 33	-.060 .728 36	-.085 .561 49	-.132 .219 88	-.245* .022 88	-.022 88
Coach Autocratic Behavior	Pearson Correlation Sig. (2-tailed) N	.305 .084 33	.215 .230 33	.174 .332 33	-.080 .642 36	-.193 .184 49	-.132 .219 88	-.245* .022 88	-.022 88
Coach Positive Feedback	Pearson Correlation Sig. (2-tailed) N	-.268 .132 33	-.225 .208 33	-.036 .840 33	-.137 .426 36	.046 .751 49	.328** .002 88	-.245* .022 88	-.022 88

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

**Table 3.**  
*Effect Sizes*

	WB Autonomy	WB Personal Growth	WB Self Acceptance	Gen Fear of Failure	Perf Self-Oriented	Perf Socially Prescribed	Training and Instruction	Coach Autocratic Behaviors	Coach Positive Feedback
WB Autonomy	-								
WB Personal Growth	-								
WB Self Acceptance		-							
General Fear of Failure	-0.393	-0.794	-1.377						
Perf Self-Oriented	-0.046	-0.477	-0.299	-					
Perf Socially Prescribed	-0.471	-0.671	-0.521	-	-				
Training and Instruction	-0.477	-0.419	-0.05	-0.12	-0.183	0.171			
Coach Autocratic Behaviors	0.641	0.44	0.353	-0.161	0.118	-0.393	-		
Coach Positive Feedback	-0.556	-0.462	-0.072	-0.277	-0.264	0.092	-	-	

*Note.* WB = well-being, FF = fear of failure, Perf = perfectionism

**Table 4.***Regression<sup>a</sup>*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	23.509	2.948		7.975	<.001
	FF General Fear of Failure	-2.838	.797	-.640	-3.559	.001
	Perf Self-Oriented	.058	.055	.212	1.058	.299
	Perf Socially Prescribed	-.016	.050	-.066	-.328	.745

<sup>a</sup>. Dependent Variable: WB Self-Acceptance

Note. WB = well-being, FF = fear of failure, Perf = perfectionism

## Chapter 4

### Discussion

I hypothesized that there would be a negative association between an autocratic coaching style and well-being because when athletes perceive the coaching style as more controlling (autocratic), the athlete's sense of well-being should decrease. I also hypothesized that perfectionism would mediate the relationship between the athlete's perception of their coach's style and their well-being, such that more controlling coaches will have athletes with higher perfectionistic ideals and subsequently a decrease in psychological well-being. Overall, our results were inconsistent with our original predictions.

We did not find a significant relationship between our predictor variables (coaching style) and our hypothesized mediator variables (perfectionism). There is a limited literature on this relationship, and findings vary. Aleksic-Veljkovic et al. (2019) also used the Leadership Scale for Sport and did not find a statistically significant relationship between coaching style and athlete perfectionism. However, Moreno-Murcia et al. (2019) found a significant, positive

relationship between the two variables. It is important to note that the study that found a significant relationship had triple the number of participants as the current study and the aforementioned study. It is possible that in these cases, most athletes reported a supportive relationship, decreasing the variability on the autocratic subscale and skewing the data. This highlights the importance of increasing the sample size to gain insight into all types of coach-athlete relationships. Similarly, we did not find a significant relationship between our predictor variables (coaching style) and outcome variables (well-being). There is limited literature on this association as well, however, a majority found a significant relationship between the two variables. Hu et al. (2023) found a significant negative relationship between a controlling coaching style and psychological needs. Additionally, Lemelin et al. (2022) found that autonomy-supportive coaching styles were associated with higher subjective well-being of athletes. Therefore, given the limited sample size of the current study and smaller effect sizes for these associations, we may not have had the power to detect these effects.

We did find a significant association between one of the mediator variables (general fear of failure) and one of the outcome variables (self-acceptance) (See Table 4). This is consistent with our hypotheses and previous literature on the effect of perfectionism on well-being (Filipkowski et al., 2021; Flett et al., 2012; Geranmayepour & Besharat, 2010). The effect size of this relationship was very large and because of how large it was we were able to detect this relationship even with the small sample size. For collegiate-level student-athletes, fear of failure is strongly associated with self-acceptance implying that as their fear of failure increases, their feelings of self-acceptance will decrease and vice versa. Using these results, future research should investigate the implications this relationship has on how coaches and programs run their teams and organizations. These results were consistent with previous studies as researchers

struggled to find significant associations when it was a cross-sectional design or when they used a convenient sample of collegiate athletes (i.e., using athletes from one, easily accessible college campus). These factors, in addition to others, could have affected the findings of both the current study and previous studies. For example, the student-athletes who were having extremely negative experiences may not have had the well-being to complete the questionnaire. Even though the consent form stated otherwise, athletes may have also been concerned with the true anonymity of the survey dissuading them from answering honestly. Additionally, the data showed that a majority of the participants did not complete all aspects of the survey and perhaps the missing data contributed to the non-significant results. As mentioned previously, the majority of the athletes may have reported positive relationships with their coaches which may wrongfully skew the data making it hard to find the effects of negative coach-athlete relationships. It is also important to note that this study did not account for the effects of gender or cultural differences between the coach and athlete or the competition level of the athlete. Lastly, the current study focused on perfectionism as a mediator, such that more controlling coaches would have athletes with higher levels of perfectionism and higher perfectionism would be associated with lower psychological well-being. However, it is possible that perfectionism is instead a moderator, such that coaching style directly predicts well-being only for people with high levels of perfectionism. Research should study this process further with perfectionism as a moderator.

### **Strengths and Limitations**

This study had several strengths including psychometrically validated measures to assess coaching style, perfectionism, and well-being, and draws from a large population of collegiate



student-athletes at a Division I university. However, there are several limitations of this study the first being sample size. There was a total of 49 participants who completed at least one full subscale. This limited sample not only gave opinions of a very small group as compared to the number of athletes and coaches it represents but also limited our ability to detect small and medium effects. Future studies should aim to recruit a larger, more representative sample of collegiate athletes. The study was also done at one, local site which can affect the results as well. Pennsylvania State University is located in rural Pennsylvania and while the student-athletes come from all over the world, the university represents a different population than schools in the Midwest or West Coast, for example. Expanding this study to multiple sites nationally or internationally would likely reflect a wider variety of social and economic statuses creating a more representative sample overall. Additionally, only a limited number of individual and team sports were surveyed. Including as many sports as possible (men and women) could give insight into whether coaching style preference depends on gender, sport, experience, or level of performance. Lastly, since data was only collected at a singular timepoint, there is no temporal ordering which limits our findings in terms of the directions of the associations. For example, perhaps it is that athletes with lower well-being perceive their coaches more negatively and have a greater fear of failure instead of it solely being the other way around (i.e., coaches instill perfectionistic ideals that cause their athletes to have a greater fear of failure).

Demographics may also pose as a potential confound. When focusing on both the coach and the athlete, it is necessary to note whether their social, cultural, and/or economic statuses are homogenous or not. This could affect a wide variety of factors including preferences for a certain style, perceptions of behavior based on culture, etc. It is difficult to account for these differences, especially with such a small sample size.

## **Implications**

These results and inconsistencies have implications for future research. It would be beneficial to extend the study to multiple sites across the country to create a more representative sample of athletes in the United States. Increasing the sample size is also essential to finding significant relationships or data that is representative of the whole population. Since participants only had to fill out the survey at a single time point, expanding to a longitudinal study can provide further information on the directionality of these relationships as well as further data on confounding or mediating variables that influence how coaching style affects well-being. It would also be interesting to analyze the effects of the level of sport (ex: club, Division I, Division III, etc.), how gender alignment between the coach and the athlete affects the relationship, etc. Looking at different variables that can affect not only the coach-athlete relationship but also the athlete's perception of that relationship can give insight into a way to inform/instruct coaches so they can create an environment with ideal performance and maximum well-being in their athletes.

## Appendix A

### Sample Scale Items

Training and instruction
See to it that every athlete is working to his capacity.
Explain to each athlete the techniques and tactics of the sport.
Pay special attention to correcting athlete's mistakes.
Make sure that his part in the team is understood by all the athletes.
Instruct every athlete individually in the skills of the sport.
Figure ahead on what should be done.
Explain to every athlete what he should and what he should not do.
Expect every athlete to carry out his assignment to the last detail.
Point out each athlete's strengths and weaknesses.
Give specific instructions to each athlete as to what he should do in every situation.
See to it that the efforts are coordinated.
Explain how each athlete's contribution fits into the total picture.
Specify in detail what is expected of each athlete.

Figure A2. *Leadership Scale for Sports: Training and Instruction Subscale*

<p><b>Autocratic Behavior</b>            Work relatively independent of the athletes.            Not explain his action.            Refuse to compromise a point.            Keep to himself.            Speak in a manner not to be questioned.</p>	<p><b>Positive Feedback</b>            Compliment an athlete for his performance in front of others.            Tell an athlete when he does a particularly good job.            See that an athlete is rewarded for a good performance.            Express appreciation when an athlete performs well.            Give credit when credit is due.</p>
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Figure A3. *Leadership Scale for Sport: Autocratic Behavior and Positive Feedback Subscale*

1. When I am failing, it is often because I am not smart enough to perform successfully.
2. When I am failing, my future seems uncertain.
3. When I am failing, it upsets important others.
4. When I am failing, I blame my lack of talent.
5. When I am failing, I believe that my future plans will change.
6. When I am failing, I expect to be criticized by important others.
7. When I am failing, I am afraid that I might not have enough talent.
8. When I am failing, it upsets my "plan" for the future.
9. When I am failing, I lose the trust of people who are important to me.
10. When I am not succeeding, I am less valuable than when I succeed.
11. When I am not succeeding, people are less interested in me.
12. When I am failing, I am not worried about it affecting my future plans.
13. When I am not succeeding, people seem to want to help me less.
14. When I am failing, important others are not happy.
15. When I am not succeeding, I get down on myself easily.
16. When I am failing, I hate the fact that I am not in control of the outcome.
17. When I am not succeeding, people tend to leave me alone.
18. When I am failing, it is embarrassing if others are there to see it.
19. When I am failing, important others are disappointed.
20. When I am failing, I believe that everybody knows I am failing.
21. When I am not succeeding, some people are not interested in me anymore.
22. When I am failing, I believe that my doubters feel that they were right about me.
23. When I am not succeeding, my value decreases for some people.
24. When I am failing, I worry about what others think about me.
25. When I am failing, I worry that others may think I am not trying.

**Figure A4. *Performance Failure Appraisal Inventory: Form B***

1. I like most parts of my personality.
2. When I look at the story of my life, I am pleased with how things have turned out so far.
3. Some people wander aimlessly through life, but I am not one of them.
4. The demands of everyday life often get me down.
5. In many ways I feel disappointed about my achievements in life.
6. Maintaining close relationships has been difficult and frustrating for me.
7. I live life one day at a time and don't really think about the future.
8. In general, I feel I am in charge of the situation in which I live.
9. I am good at managing the responsibilities of daily life.
10. I sometimes feel as if I've done all there is to do in life.
11. For me, life has been a continuous process of learning, changing, and growth.
12. I think it is important to have new experiences that challenge how I think about myself and the world.
13. People would describe me as a giving person, willing to share my time with others.
14. I gave up trying to make big improvements or changes in my life a long time ago.
15. I tend to be influenced by people with strong opinions.
16. I have not experienced many warm and trusting relationships with others.
17. I have confidence in my own opinions, even if they are different from the way most other people think.
18. I judge myself by what I think is important, not by the values of what others think is important.

**Figure A5. *Psychological Wellbeing***

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## ACADEMIC VITA

### Peri L. Manoff

#### EDUCATION

**Pennsylvania State University**, State College, PA, Fall 2020-Present, **Schreyer Honors College**, Summer 2022-Present

Major: Psychology, Minor: Sports Studies

Relevant Coursework: Introduction to Psychology, Introduction to Human Development and Family Studies, Developmental Psychology, Elementary Statistics, Psychology as a Science and a Profession, Introduction to Abnormal Psychology, Introduction to Positive Psychology, Honors Psychology Methods, Diversity and Human Development, Introduction to Cognitive Psychology, Child Psychopathology

#### RESEARCH EXPERIENCE

**Development, Risk, and Resilience Lab**, Lab Director: Dr. Rina Eiden, Spring 2022-Present; Undergraduate Research Assistant

- Strong Family Foundations Participant Contact Lead
- Facilitate project participation, act as liaison between lab manager and research assistants, and manage critical correspondence
- Utilize online databases to identify potentially eligible study participants and expand sample size
- Contact pregnant, first-time parents via phone calls, letters, and e-mails to recruit potential research participants
- Conduct extensive literature review focusing on developmental trajectories of externalizing and internalizing behaviors
- Digitize and code videos for behavioral trends (i.e. following instructions or anger upon failure of tasks) to create quantifiable data

**Honors Thesis**, Pennsylvania State University: Schreyer Honors College, Fall 2022-Present

- Principal Investigator
- Create an original research question, collect and analyze primary data, and submit final manuscript for approval
- Filing IRB Application (HRP-591 Protocol for Human Subject Research and HRP-509 Study Team Member Qualification)

**Pennsylvania State University Undergraduate Research Conference**, April 2022; Undergraduate Researcher, “Attitudes Toward Therapy”

- Surveyed participants (n = 116) using multiple questionnaires to gain information regarding society’s attitudes towards therapy
- Presented methods, data, results, and analysis to judges; reliability of self-constructed scale:  $\alpha = .88$

#### INTERNSHIP AND WORK EXPERIENCE

**Brain Balance**, Bergen County, NJ, Supervisor: Kyla Haapaoja, May 2023-August 2023

- Sensory Motor & Cognitive Coach
- Guide students through individualized Brain Balance sessions by motivating neurodivergent students to complete physical and sensory-motor exercises, academic and cognitive skills training, and social and emotional learning (SEL) skills

**Morris County Department of Human Services**, Morris County, NJ – May 2023-August 2023; Intern

- Participated in 100 non-paid internship hours by shadowing the social work supervisor for Morris County Youth Services, Juvenile Detention Center and Youth Shelter
- Engaged in conversations with and about youth in the system, observed interactions between youth and social workers, and attended court hearings and weekly meetings regarding each individual in the shelter and the detention center

#### CERTIFICATIONS

**CITI Program**, Issued January 2022– Expires January 2025

- GCP– Social and Behavioral Research Best Practices for Clinical Research

- IRB– Social and Behavioral Human Subjects Research Course, Human Subjects Research
- SBR– Research with Children, Human Subjects Research

### VOLUNTEER ACTIVITIES

**Crisis Text Line**, United States, Canada, United Kingdom, and Ireland – August 2023-Present

- Crisis Counselor
- Provide 24-hour free mental health service through confidential crisis intervention
- Training Cohort 241 (08/26/2023-09/06/2023)
- 30 hours of immersive training through readings, videos, activities, quizzes, and conversation roleplay assignments– graded and ungraded– under the supervision of a Learning Specialist

**Pennsylvania State University Dance Marathon** – 2021-Present

- Committee Member, Dancer Relations and Donor Alumni Relations
- Serve as the Diversity, Equity, and Inclusion Liaison
- Facilitate important conversations to improve inclusivity within committees and the THON community at-large
- Organize, learn, and prepare for THON through weekly meetings designed to ensure safety and physical/emotional well-being of approximately 600 student dancers
- Create and foster relationships with THON’s growing donor base and educate the THON community about awareness campaigns and effective fundraising to further THON’s mission

### ORGANIZATIONAL MEMBERSHIPS

**NextGen Psych Scholars Program** – July 2023-Present; Mentee

- Selected for virtual graduate student-led mentorship program that guides undergraduate and post-baccalaureate students applying to psychology Ph.D. programs

**Sigma Delta Tau**– Phi Chapter, Pennsylvania State University, February 2021-Present; Member

- Accepted into the Order of the Lapis: Sigma Delta Tau Academic Honor Society
- Participate in philanthropic and community service events such as blood drives, food drives, and fundraisers benefitting Prevent Child Abuse America (PCAA) and Jewish Women International (JWI)