Running head: Irrational Beliefs in Sport

Confirmatory factor analysis of the irrational Performance Beliefs Inventory (iPBI) in a sample of amateur and semi-professional athletes

(short communication)

Submitted: 7th September 2017

Date of revised submission: 22nd October 2017

Accepted into Psychology of Sport and Exercise: 28th November 2017

Turner, M. J[1]., & Allen, M. S[2].

[1] School of Life Sciences and Education, Staffordshire University

[2] School of Psychology, University of Wollongong

Acknowledgements

The authors sincerely thank Staffordshire University colleagues Gillian Aspin, Helen Davis, Saqib Deen, Joseph Dixon, Mark Green, Lyle Kirkham, Ann McDonnell, and Michael Wong for their role in data collection.

Abstract

Objectives. This investigation sought to test the construct validity of the irrational performance beliefs inventory (iPBI) in a sample of amateur and semi-professional athletes.

Method. In total, 550 athletes (312 men, 212 women, M_{age} = 38.04 ± 13.80 years) completed the iPBI and demographic questions at a single time point.

Results. Confirmatory factor analysis showed lower than acceptable fit indices for the 28-item iPBI (comparative fit index [CFI] = .84). After removal of potential problem items, a 20-item version (iPBI-2) was developed (CFI = .91). Results showed that amateur athletes scored higher than semi-professional athletes on primary irrational beliefs and low frustration tolerance, whereas semi-professional athletes scored higher than amateur athletes on depreciation.

Conclusions. This study provides initial evidence of construct validity for a 20-item version of the iPBI in an athletic sample, and shows medium effect size differences in irrational beliefs between amateur and semi-professional athletes.

Keywords: Construct validity; criterion validity; REBT; gender differences

Confirmatory factor analysis of the irrational Performance Beliefs Inventory (iPBI) in a sample of amateur and semi-professional athletes

1. Introduction

Rational emotive behaviour therapy (REBT) represents a humanistic cognitive behavioural approach to psychological well-being (Ellis, 1957). REBT distinguishes itself from other cognitive-behavioural approaches (e.g., cognitive therapy; Beck, 1976) by placing irrational beliefs at its core. Rational beliefs are flexible, non-extreme, and logical whereas irrational beliefs are rigid, extreme, and illogical. Irrational beliefs are at the heart of REBT and are associated with negative cognitive and behavioural outcomes (Dryden & Branch, 2008; Ellis & Dryden, 1997). The REBT framework predicts a binary model of distress (David, Mongomery, Macavei, & Bovbjerg, 2005) in which healthy negative emotions (associated with adaptive behaviours) stem from rational beliefs, whereas unhealthy negative emotions (associated with maladaptive behaviours) stem from irrational beliefs. Unhealthy negative emotions are associated with unpleasant physical symptoms (chronic and severe) and motivate behaviours that are detrimental to goal attainment. Healthy negative emotions are associated with some unpleasant physical symptoms (acute and mild) and motivate behaviours that facilitate goal attainment.

The practice of sport psychology has been dominated by cognitive-behavioural approaches to behaviour change in which mental imagery, positive self-talk, relaxation, concentration, and goal setting (known as 'the canon') have been identified as effective in helping athletes to manage their thoughts, emotions, and behaviours (see Andersen, 2009). REBT offers a very specific intervention where deeply held irrational beliefs are first assessed, then rigorously disputed, and finally replaced using the ABCDE framework (see Ellis, 1994). This involves recognising

that irrational beliefs cause emotional and behavioural consequences (rather than the event itself) and then encouraging dispute of the irrational thought and promoting and reinforcing rational thoughts. In sport settings, irrational beliefs have been identified as important for the experience of anxiety (Turner & Barker, 2013), self-acceptance (Cunningham & Turner, 2016), burnout (Turner & Moore, 2016), resilience (Deen, Turner, & Wong, 2017), psychological distress (Turner, Carrington, & Miller, 2017), and task performance (Wood, Turner, Barker, & Higgins, 2017). Research in non-sport settings also reveals that irrational beliefs are associated with an array of emotional and behavioural malfunctioning (Visla, Fluckiger, Holtforth, & David, 2016) that could also afflict athletes (Turner, 2016). To advance research on irrational beliefs in athletic settings, it is important for researchers to develop valid and reliable measures.

In the REBT framework (Dryden & Branch, 2008), irrational beliefs are categorised into four core dimensions: a primary belief (demandingness), and three secondary beliefs derived from the primary belief (awfulising, low frustration tolerance, and self/other depreciation). To investigate irrational beliefs in achievement contexts, a measure of irrational beliefs was developed that assesses these four core dimensions: the irrational Performance Beliefs Inventory (iPBI; Turner et al., 2016). The investigation provided initial evidence of construct and concurrent validity for a 28-item self-report measure of irrational beliefs in an organisational context. The measure was developed to be generalisable to all achievement contexts (e.g., occupational, athletic, military, and academic), and has been adopted for research in athletic contexts (e.g., Deen et al., 2017; Turner et al., 2017), but so far has not been validated in an athletic sample. This is important as a recent investigation identified item 7 of the iPBI ("I need my manager/coach to act

respectfully towards me") as problematic for educational settings (Allen, El-Cheikh, & Turner, 2017) meaning some changes might be necessary for the questionnaire to be valid across different achievement contexts. This investigation sought to test the construct validity of the iPBI in a sample of amateur and semi-professional athletes.

2. Method

2.1 Participants

In total, 550 sport performers (312 men and 212 women; M_{age} = 38.04 ± 13.80 years) agreed to participate in the study. The sample included 281 amateur athletes and 178 semi-professional athletes. Semi-professional athletes were defined as those performing at national and international level and receiving some remuneration as part of their sport participation. Amateur athletes were defined as those performing in local competitions and who were not receiving remuneration as part of their sport participation. All athletes were participating in their sport in an organised and competitive way, but were training for athletic development and competitive success on a part-time basis. The athletes were participating in the sports of distance running (n = 176), triathlon (n = 186), golf (n = 56), association football (n = 44), futsal (n = 30), athletics (n = 15), cycling (n = 15), squash (n = 10), duathlon (n = 10), and swimming (n = 7).

2.2 Measures

The iPBI (Turner et al., 2016) is a 28-item self-report scale that measures the four dimensions of irrational beliefs: primary irrational beliefs (e.g., "I have to be respected by the members of my team"), low-frustration tolerance (e.g., "I can't stand not reaching my goals"), awfulising (e.g., "It would be awful if my position in my team was not secure"), and depreciation (e.g., "If I face setbacks it goes to show how stupid I am"). Responses are provided on a five-point scale from 1 (*strongly*

disagree) to 5 (*strongly agree*). The iPBI has demonstrated construct and concurrent validity in organisational settings (Turner et al., 2016) with strong fit indices (CFI = 0.93, NNFI = 0.92, SRMR = 0.06, RMSEA = 0.07) and positive correlations between similar subscales of a corresponding measure of irrational beliefs – the shortened general attitude and belief scale (Lindner, Kirkby, Wertheim, & Birch, 1999). The questionnaire was developed for achievement contexts in general (Turner et al., 2016) and has been used to measure irrational beliefs in athletic samples (Deen et al., 2017; Turner et al., 2017).

2.3 Procedure

Ethical approval was granted from a university research ethics committee prior to the study. The authors adopted multiple sample recruitment methods (convenience and snowball sampling) to limit self-selection and sampling biases associated with a single approach to sample recruitment. Potential participants were asked to email the authors to take part in the study and were then sent the online version (using Qualtrics) of the iPBI via email. All participants provided informed consent prior to completing the questionnaire. Participants did not receive any compensation for taking part in the study.

2.4 Data Analyses

We aimed to test the theoretical four-factor structure of the iPBI using confirmatory factor analysis (CFA). Goodness of fit was assessed using the χ^2 statistic, the comparative fit index (CFI), the non-normed fit index (NNFI), the standardised root mean square residual (SRMR), and the root mean square error of approximation (RMSEA). Values close to .06 for the RMSEA and .08 for the SRMR are indicative of a good model fit, as are values close to .95 for the CFI and NNFI (Hu & Bentler, 1999; also see Marsh, Hau, & Wen, 2004). We also computed internal

reliability coefficients (Cronbach's alpha) for each irrational belief subscale. Coefficients greater than .70 are suggestive of good test score reliability and coefficients greater than .90 are suggestive of excellent test score reliability (Nunnally & Bernstein, 1994; for a critique of coefficient alpha, see McNeish, 2017). We tested for multivariate outliers using Mahalanobis distance (testing the cumulative probability that a value is from the χ^2 distribution with 28 degrees of freedom). Main analyses were re-run with multivariate outliers listwise deleted to check on the robustness of results (a sensitivity analysis).

We also took the opportunity to test the criterion validity of the iPBI by correlating subscales with established correlates of irrational beliefs. In particular, we correlated subscales of the iPBI with participant age and explored differences in irrational beliefs between men and women. Based on past research findings (e.g., Turner et al., 2017; Walen & Greiger, 1988), we hypothesised that women would report higher levels of irrational beliefs than men. Also based on past research (Ndika, Olagbaiye, & Agiobu-Kemmer, 2012; Turner et al., 2016), we hypothesised that higher levels of irrational beliefs would be reported by younger participants than older participants. Support for these hypotheses would be considered evidence for the predictive validity of the iPBI in athletic settings. In addition, we also explored differences in irrational beliefs between amateur athletes and semi-professional athletes. As far as we are aware, no published research has explored differences in irrational beliefs between amateur and semi-professional athletes. Therefore, these analyses were considered exploratory and were not used for validation purposes.

3. Results

3.1 Confirmatory Factor Analysis

Standardized factor loadings, error variances, and coefficient alpha estimates are reported in Table 1. The initial CFA produced a somewhat unacceptable fit to the theoretically expected four-factor structure, $n = 550$, $\chi^2(344) = 1439.37$, $p < .001$, CFI = .84, NNFI = .82, SRMR = .081, RMSEA = .076 (90% CI: .072, .080). Sensitivity analyses, involving the removal of 18 potential multivariate outliers (Mahalanobis Distance values outside of the χ^2 distribution [at $p < .001$] with 28 degrees of freedom) produced a similar (less than satisfactory) fit to the theoretically predicted four-factor structure, $n = 532$, $\chi^2(344) = 1319.49$, $p < .001$, CFI = .86, NNFI = .85, SRMR = .081, RMSEA = .073 (90% CI: .069, .077). We explored whether removal of potential problem items would improve statistical fit. Items were selected for removal based on modification indices, standardised factor loadings and error variances. A 20-item measure produced an acceptable fit to the theoretically expected four-factor structure, $n = 550$, $\chi^2(163) = 678.68$, $p < .001$, CFI = .90, NNFI = .88, SRMR = .067, RMSEA = .076 (90% CI: .070, .082). The removal of 18 potential multivariate outliers (sensitivity analysis) produced a similar fit to the theoretically predicted four-factor structure, $n = 532$, $\chi^2(163) = 636.87$, $p < .001$, CFI = .91, NNFI = .90, SRMR = .067, RMSEA = .074 (90% CI: .068, .080). Coefficients alpha estimates were similar for the 20-item and 28-item versions of the iPBI (see Table 1).

3.2 Population-based Differences

Table 2 provides zero order correlations for age, and effect size differences between men and women, and between amateur and semi-professional athletes, for both the 28-item and 20-item versions of the iPBI. Almost identical findings were observed across the two versions of the iPBI. Higher levels of irrational beliefs were reported among younger athletes, with small negative correlations observed for low frustration tolerance and awfulising, and a small-medium negative correlation for

depreciation. Primary irrational beliefs and awfulising were higher among women than among men with small effects. Primary irrational beliefs and low frustration tolerance were higher among amateur athletes than semi-professional athletes with small-medium effects. In contrast, depreciation was higher among semi-professional athletes than amateur athletes, with a medium effect detected.

4. Discussion

The purpose of this investigation was to test the construct validity of the iPBI in a sample of amateur and semi-professional athletes. Confirmatory factor analyses established potential problem items with the 28-item iPBI and somewhat unacceptable fit indices. Potential problem items were removed and a subsequent CFA on a 20-item version (the iPBI-2) showed stronger fit indices suggesting that the iPBI-2 might be a more suitable measure of irrational beliefs for athletic samples. Criterion validity was established through negative correlations between participant age and dimensions of irrational beliefs, and through higher levels of irrational beliefs among women than among men. The 20-item iPBI-2 showed almost identical relationships with age, gender, and participation level (amateur or semi-professional) as the 28-item iPBI.

The finding that older athletes have fewer irrational beliefs than younger athletes is consistent with research in educational (Ndika et al., 2012) and occupational (Turner et al., 2016) settings. Also, the finding that women report higher levels of primary irrational beliefs and awfulising than men directly replicates findings from the initial validation of the iPBI in organisational workers (Turner et al., 2016). Taken together, these findings provide evidence of criterion validity for the iPBI and iPBI-2 in an athletic sample, and highlight important population-based differences that might be important for applied work in sport. That older athlete's

report fewer irrational beliefs might be explained by the greater levels of experience typically found among older athletes. Sex differences are less easy to explain and might reflect differences in demands between men's and women's sport, but could equally represent a social desirability bias in which men are simply less willing to report that they experience irrational beliefs (see Hyde, 2014). More research is needed to identify the underlying cause of population-based differences.

This study also explored differences in irrational beliefs between amateur and semi-professional athletes. Primary irrational beliefs and low frustration tolerance were found to be higher in amateur athletes than semi-professional athletes, but depreciation was found to be higher in semi-professional athletes than amateur athletes. To explain, it is possible that the need to win (primary irrational beliefs) and intolerance of failure (low frustration tolerance) are lower in semi-professional athletes because these athletes have experienced failure under pressure more often. By facing stressful situations more frequently, and experiencing adversity in pursuit of athletic success more often, higher-level athletes might have developed a greater ability to dispute their own irrational beliefs. Perhaps the more intriguing result was that semi-professional athletes reported greater levels of depreciation than amateur athletes. We can only speculate on why this might be the case, but it is possible that changes in athletic identity and the importance of winning contribute to this effect. For instance, semi-professional athletes might feel that athletic success is a large part of who they are given the time and effort dedicated to sport (Brewer, 1993). As a result, they might endorse deprecation beliefs in which failure in competition triggers the global evaluation of the self as "a complete failure". This suggestion is conjectural, but logically there may be some commonality between global self-evaluation (depreciation) and strong athletic identity that is relevant to athlete self-

worth (Callero, 1985) since depreciation beliefs reflect contingent self-worth ("I failed, *therefore* I am a failure"). We recommend future research explore further how irrational beliefs might change over the athletic career.

To conclude, the 20-item iPBI-2 appears to be a suitable alternative to the 28-item iPBI – showing stronger construct validity and comparable criterion validity – and we recommend researchers adopt this shorter version for use in athletic settings. The eight items removed also include the problem item identified for educational settings (Allen et al., 2017) meaning the iPBI-2 might also be more suitable measure for educational settings. There is a need to examine whether the 20-item iPBI-2 is able to predict psychological outcomes (e.g., symptoms of anxiety and depression) as has been shown with the 28-item version (Turner et al., 2016; Turner et al., 2017) and examine the test-retest reliability of the iPBI-2 across various achievement populations. A shorter questionnaire is more economical and can benefit researchers and practitioners in assessing irrational beliefs in time restricted conditions. Practitioners and researchers are encouraged to use the 20-item iPBI-2 in athletic samples as it offers a briefer, but no less valid, measure of irrational performance beliefs.

References

Allen, M. S., El-Cheikh, S., & Turner, M. J. (2017). A longitudinal investigation of irrational beliefs, hedonic balance and academic achievement. *Learning and Individual Differences, 58*, 41-45.

Andersen, M. B. (2009). The "canon" of psychological skills training for enhancing performance. In K. F. Hays (Ed.), *Performance psychology in action* (pp. 11-34). Washington, DC: American Psychological Association.

Beck, A. T. (1976). *Cognitive Therapy and the Emotional Disorders*. London, UK: Penguin.

Brewer, B. (1993). Self-identity and specific vulnerability to depressed mood. *Journal of Personality*, *61*, 343-364.

Callero, P. L. (1985). Role-identity salience. *Social Psychology Quarterly*, *48*, 203-215.

Cunningham, R., & Turner, M. J. (2016). Using Rational Emotive Behavior Therapy (REBT) with Mixed Martial Arts (MMA) athletes to reduce irrational beliefs and increase unconditional self-acceptance. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 34*(4), 289-309.

David, D., Montgomery, G. H., Macavei, B., & Bovbjerg, D. H. (2005). An empirical investigation of Albert Ellis's binary model of distress. *Journal of Clinical Psychology*, *61*, (4), 499-516.

Deen, S., Turner, M. J., & Wong, R. S. (2017). The effects of REBT, and the use of credos, on irrational beliefs and resilience qualities in athletes. *The Sport Psychologist, 31*(3), 249-263.

Dryden, W., & Branch, R. (2008). *The fundamentals of rational-emotive behavior therapy*. West Sussex, UK: Wiley.

Ellis, A. (1957). Rational psychotherapy and individual psychology. *Journal of Individual Psychology*, *13*, 38-44.

Ellis, A. (1994). *Reason and emotion in psychotherapy* (2nd ed.). Secaucus, NJ: Birscj Lane.

Ellis, A., & Dryden, W. (1997). *The practice of rational-emotive behavior therapy*. New York, NY: Springer.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55.

Hyde, J. S. (2014). Gender similarities and differences. *Annual Review of Psychology, 65,* 373-398.

Lindner, H., Kirkby, R., Wertheim, E., & Birch, P. (1999). A brief assessment of irrational thinking: The shortened general attitude and belief scale. *Cognitive Therapy and Research, 23,* 651-663.

Marsh, H. W., Hau, K. T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling, 11*(3), 320-341.

McNeish, D. (2017). Thanks coefficient alpha, we'll take it from here. *Psychological Methods*. Advance online publication.

Ndika, N, A., Olagbaiye, F., & Agiobu-Kemmer, I. (2012). Age differences in irrational beliefs, self-efficacy and self-confidence of adolescents in a Nigerian secondary school. *Psychology and Education Journal, 46*(3), 16.

Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric Theory* (3rd ed.). New York, NY: McGraw-Hill.

Turner, M. J. (2016). Rational Emotive Behavior Therapy (REBT), irrational and rational beliefs, and the mental health of athletes, *Frontiers: Movement Science and Sport Psychology*, doi: 10.3389/fpsyg.2016.01423

Turner, M. J., Allen, M. S., Slater, M. J., Barker, J. B., Woodcock, C., Harwood, C. G., & McFayden, K. (2016). The development and initial validation of the

irrational performance beliefs inventory (iPBI). *European Journal of Psychological Assessment*. Ahead of print issue.

Turner, M., & Barker, J. B. (2013). Examining the efficacy of rational-emotive behavior therapy (REBT) on irrational beliefs and anxiety in elite youth cricketers. *Journal of Applied Sport Psychology, 25*(1), 131-147.

Turner, M. J., Carrington, S., & Miller, A. (2017). Psychological distress across sport participation groups: The mediating effects of secondary irrational beliefs on the relationship between primary irrational beliefs and symptoms of anxiety, anger, and depression. *Journal of Clinical Sport Psychology.* Ahead of print issue.

Turner, M., & Moore, M. (2016). Irrational beliefs predict increased emotional and physical exhaustion in Gaelic football athletes. *International Journal of Sport Psychology, 47*(2), 187-201.

Visla, A., Fluckiger, C., Grosse Holtforth, M., & David, D. (2015). Irrational beliefs and psychological distress: A meta-analysis. *Psychotherapy and Psychosomatics*, *85*, 8-15.

Walen, S., & Grieger, R. (1988). Cognitive-behavior therapy with women. *Journal of Rational-Emotive and Cognitive-Behavior Therapy*, *6*, 1-2.

Wood, A., Turner, M., Barker, J., & Higgins, S. (2017). Investigating the effects of irrational and rational self-statements on motor-skill and hazard perception performance. *Sport, Exercise, and Performance Psychology*. Ahead of print issue.

Table 1

Standardised solution and fit statistics for the four-factor 28-item and 20-item iPBI (*values in parentheses are for the 20-item iPBI).*

Items	Error variances	Standardised factor loadings			
		PIB	LFT	AWF	DEP
Decisions that affect me must be justified	.86	.44			
I have to be viewed favourably by people that matter to me	.77 (.79)	.52 (.50)			
I need others to think that I make a valuable contribution	.83 (.81)	.58 (.60)			
I absolutely should not be snubbed by people that matter to me	.48 (.49)	.68 (.68)			
I must not be dismissed by my peers	.64 (.66)	.65 (.64)			
I have to be respected by the members of my team	.50 (.50)	.71 (.71)			
I need my manager/coach to act respectfully towards me	.64	.50			
I can't bear not being given chances	.64		.57		
I can't stand not reaching my goals	.75 (.77)		.65 (.64)		
I can't bear not succeeding in things that are important to me	.52 (.54)		.73 (.72)		
I can't tolerate it when I fail at something that means a great deal to me	.90		.49		
I can't stand failing in things that are important to me	.53 (.50)		.66 (.68)		
I can't bear not getting better at what I do	.36 (.34)		.79 (.80)		
I couldn't stand it if my competencies did not continually develop and improve	.37 (.38)		.82 (.82)		
It's awful to not be treated fairly by my peers	.88			.54	
It's awful if others do not approve of me	.57			.64	
It's awful if others think I do not make a valuable contribution	.50 (.55)			.71 (.67)	
It would be terrible to be dismissed by my peers	.66 (.65)			.63 (.64)	
It is appalling if others do not give me chances	.48 (.51)			.72 (.70)	

It would be awful if my position in my team was not secure				.63 (.60)			.62 (.65)	
It's terrible if the members of my team do not respect me				.77 (.74)			.64 (.65)	
If decisions that affect me are not justified, it shows that I am worthless				.75				.56
If others think I am no good at what I do, it shows I am worthless				.49 (.55)				.73 (.69)
If I face setbacks it goes to show how stupid I am				.52 (.58)				.74 (.70)
If I am not given opportunities, then it shows that I am not a worthwhile person				.91				.64
I am a loser if I do not succeed in things that matter to me				.43 (.42)				.76 (.77)
If my position in my team was not secure, then it would show I am worthless				.63 (.63)				.70 (.70)
If my competencies did not continually develop and improve, it would show what a failure I am				.35 (.31)				.83 (.86)

Factor	*Mean*	*SD*	*Skew.*	α	Inter-factor correlations			
Primary irrational beliefs (PIB)	24.98 (17.45)	4.71 (3.70)	–0.41 (–0.33)	.79 (.76)				
Low frustration tolerance (LFT)	24.77 (17.98)	5.26 (4.12)	–0.44 (–0.47)	.85 (.85)	.57 (.52)			
Awfulizing (AWF)	22.31 (15.77)	5.10 (3.85)	–0.28 (–0.26)	.83 (.79)	.75 (.74)	.59 (.54)		
Depreciation (DEP)	14.85 (10.45)	5.72 (4.26)	0.52 (0.55)	.87 (.87)	.22 (.25)	.36 (.28)	.42 (.44)	

Note: All inter-factor correlations are significant at the .001 level.

Table 2

Effect size differences between subgroups and bivariate correlations with participant age for irrational beliefs dimensions

	Age (*r*)	Sex					Level				
		Men		Women			Amateur		Semi-professional		
		M	*SD*	M	*SD*	*d*	M	*SD*	M	*SD*	*d*
28-item IPBI											
Primary irrational beliefs	.01	24.41	4.72	26.05	4.55	.35**	25.95	4.71	23.54	4.63	.52***
Low frustration tolerance	–.10*	24.62	5.14	25.20	5.51	.11	25.56	5.38	23.87	5.10	.32**
Awfulizing	–.11**	21.92	5.31	23.00	4.88	.21*	22.63	5.51	21.93	4.88	.13
Depreciation	–.23***	15.03	5.53	14.51	6.10	.09	13.92	5.98	16.44	5.30	.45***
20-item IPBI											
Primary irrational beliefs	–.01	17.08	3.72	18.18	3.57	.30**	18.08	3.77	16.48	3.49	.44***
Low frustration tolerance	–.09*	17.95	4.01	18.21	4.34	.06	18.66	4.18	17.22	3.96	.35***
Awfulizing	–.11*	15.52	3.97	16.24	3.74	.19*	15.97	4.22	15.58	3.57	.10
Depreciation	–.23***	10.56	4.14	10.26	4.54	.07	9.78	4.45	11.71	4.00	.46***

Note: men, $n = 312$; women, $n = 212$; amateur athletes, $n = 281$; semi-professional athletes, $n = 178$.

*$p < .05$, **$p < .01$, ***$p < .001$