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## Validation of the Lithuanian version of the Perceived Parental Success Standards in Sport Scale (PPSSS)

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## Abstract

**Background:** The recently developed Perceived Parental Success Standards Scale (PPSSS) provides a new opportunity to understand better how parents perceive success in sport from the young athlete's perspective. The aim of the present study was to adapt and validate the Lithuanian-language version of the PPSSS. **Material and methods:** The study included 587 adolescents (mean age = 14.3, SD = 1.11) from different sport teams in Lithuania. Confirmatory factor analysis (CFA) and additionally exploratory Pearson's correlation and regression analysis were performed to test discriminant, concurrent, and predictive validity. **Results:** Exploratory structural equation modelling provided an acceptable fit of a two-factor model of PPSSS. Reliability analysis revealed good levels of internal consistency for the mastery and ego success standards factors. A significant positive relationship was found between perceived parental success standards based on mastery and self-esteem and intrinsic motivation. Perceived parental success standards based on ego were significantly and positively correlated with amotivation; moreover, perceived parental success standards were predictors for athletes' prosocial and antisocial behaviour in sports. **Conclusions:** Given the adequate psychometric properties, the Lithuanian version of the PPSSS can be used in studies aiming to better understand how young athletes perceived parental success standards within the sport domain.

## Keywords

achievement goal orientation, parental motivational climate, young athletes' perceptions, reliability, validity

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# Validation of the Lithuanian version of the Perceived Parental Success Standards in Sport Scale (PPSSS)

## Authors' Contribution:

**A** Study Design  
**B** Data Collection  
**C** Statistical Analysis  
**D** Data Interpretation  
**E** Manuscript Preparation  
**F** Literature Search  
**G** Funds Collection

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## abstract

**Background:** The recently developed Perceived Parental Success Standards Scale (PPSSS) provides a new opportunity to understand better how parents perceive success in sport from the young athlete's perspective. The aim of the present study was to adapt and validate the Lithuanian-language version of the PPSSS.

**Material and methods:** The study included 587 adolescents (mean age = 14.3, SD = 1.11) from different sport teams in Lithuania. Confirmatory factor analysis (CFA) and additionally exploratory Pearson's correlation and regression analysis were performed to test discriminant, concurrent, and predictive validity.

**Results:** Exploratory structural equation modelling provided an acceptable fit of a two-factor model of PPSSS. Reliability analysis revealed good levels of internal consistency for the mastery and ego success standards factors. A significant positive relationship was found between perceived parental success standards based on mastery and self-esteem and intrinsic motivation. Perceived parental success standards based on ego were significantly and positively correlated with amotivation; moreover, perceived parental success standards were predictors for athletes' prosocial and antisocial behaviour in sports.

**Conclusions:** Given the adequate psychometric properties, the Lithuanian version of the PPSSS can be used in studies aiming to better understand how young athletes perceived parental success standards within the sport domain.

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## INTRODUCTION

All children have the right to a universal and balanced programme of physical education including different types of sporting activity. Many young people do this compulsory physical activity outside school by attending sessions of their chosen sport. Some young people practice sport simply to fulfil their own potential; others aim to achieve better results and take part in competitive sports; still others look ahead to a future career and become professional sportsmen and women. Sport is more than just a way to fill leisure time: it plays an important role in forming personality and determining values [1, 2] and also improves physical, psychological and social health [3, 4]. However, simply participating in sport does not in itself create positive outcomes for young people [5, 6]. Factors motivating athletes to participate in sport, the goals they set and how they evaluate their performance are all of crucial importance. Evidence suggests that how athletes set their goals is related to how they perceive success in sport [7]. Athletes may set their own criteria for success in order to measure their achievement, or these criteria may be set by parents, coaches or other authorized persons.

The majority of research examining athletes' goal orientation [8–11] is based on achievement goal theory (AGT) [12], which defines two contrasting achievement goals that explain how individuals describe success in completing a task: mastery orientation and ego orientation. The mastery-oriented person uses a non-differentiated concept of skill, focusing on improving existing skills, developing new ones and demonstrating mastery of the task. The demonstration of skill is based on maximum effort and is self-referenced; mistakes are treated as an opportunity to learn and to achieve better results by investing greater effort [13]. In contrast, the ego-oriented individual, who focuses on demonstrating abilities, may succeed with less effort and still outperform others, but views mistakes as failure, and experiences negative effects such as anxiety and self-derogation [12, 13]. Understanding a person's standards of success, and the actions they take to achieve a goal, can help them understand their motivation [14].

If we compare mastery- and ego-based achievement goal orientations, when mastery-based orientation prevails, people are inclined to experience greater satisfaction [15], moral reasoning [16], intrinsic motivation [17] and self-esteem [18, 19]. Thus, goal orientation is thought to influence prosocial and antisocial personal attitudes [20] and moral behaviour [21, 22]. Moreover, task orientation positively predicts prosocial behaviour [23, 4], whereas ego orientation positively predicts antisocial behaviour and vice versa [25, 26].

One further inseparable construct in AGT is the motivational environment created by other significant figures who implicitly or explicitly endorse certain criteria as to what constitutes success [27, 28]. In previous studies much attention has been paid to the role of coaches [29, 30], but recent research highlights the importance of parents in adolescents' experience in sport [18, 31–34]. This is understandable, since the research tools for analysing the influence of the climate created by coaches had been developed a decade earlier than those for analysing the climate created by parents [19]. According to the authors, the reason may lie in the fact that a coach can affect 10–30 athletes at a time, while parents have influence only on their own children [19]. Research evidence based on AGT has shown that parents have a significant impact compared to coaches [35]. Parents create a climate based on their point of view, expectations and behaviour that, positively or negatively, influences the adolescent's goals [19] and their motivation to achieve these goals [36]. Consequently, the motivational

climate is based on the behavioural patterns and reinforcement of key socializing agents (in this case, the parents), and the children themselves interpret the effects they cause [14]. The authors state that 'the inferred values and beliefs of socializing agents have a particular significance, and, according to AGT, they constitute a core component of the motivational climate' [14, p3]. Research on young athletes suggests a greater influence of parents on the child's self-esteem [37–40], when sport is an important aspect of family life, since the parental influence on the child is mostly focused on this element of the child's experience. Moreover, other studies emphasized that the atmosphere created by the parents is not only related to the self-esteem of the child but also has a significant impact on it [14, 18, 19]. In accordance with AGT, an emphasis on mastery stimulates self-esteem by reinforcing the inner motivation of the adolescent [18].

To date, a number of research tools have been developed based on AGT, but none that reveals the parents' perceived standard of success in sport. This lack encouraged researchers to develop new research tools to investigate this further. Perceived Parent Success Standards Scale (PPSSS) provides an opportunity to reveal how parents perceive success in sport from the child's perspective. This scale was adapted from the Perception of Success Questionnaire [41], which measures athletes' achievement goals in sport. The PPSSS provides a measure of athletes' perceptions of their parents' ego- and mastery-oriented success criteria, an essential component of the motivational climate created by parents [14]. It should be noted that the PPSSS provides an alternative to the Parent-Initiated Motivational Climate Questionnaire-2 (PIMCQ-2) [42], which measures a learning/enjoyment climate, a worry-conductive climate, and a success-without-effort climate. But the PIMCQ-2 focuses more on facets of motivational climate than the PPSSS does. The PPSSS was found to display orthogonality between the mastery and ego standards that mirrors the orthogonality shown between goal orientations in other studies [41, 43]. Therefore, taking everything into account, the PPSSS is a useful new tool for researchers aiming to study athlete-perceived parental success standards within the sport domain. But future studies aiming to measure psychometric properties of this scale are also encouraged. As authors of this scale emphasized, it was validated with the sample of young basketball players. Thus, cross-cultural adaptation of the PPSSS also is important allowing data comparison. Therefore, the applicability of this scale should be tested in different cultural contexts and languages than the ones in the original version.

Building upon the initial work of Schwebel et al. [14], the main purpose of this study was to investigate the validity and reliability of an adapted version of the PPSSS as applied to adolescent participants in sport in Lithuania. Further examination of the validity and reliability of the PPSSS will make an important contribution to establishing the psychometrics of the scale. Moreover, a psychometrically sound measure of the perceived success standards of parents in sport would be an important tool for further research into the influence of parents on their children's psychosocial development. Thus, adaptation and validation of the PPSSS will offer the possibility of including Lithuanian studies on parental influences on the conception of success to the international context.

## **MATERIAL AND METHODS**

Firstly, we carried out an initial test of a two-factor model of the PPSSS structure, based on the findings of Schwebel et al. [14]. Secondly, we analysed the construct validity of the scale by examining the discriminant and convergent as well as criterion-related validity of the PPSSS. On the basis of previous research

related to motivation [17] and self-esteem [14, 18, 19, 44], we expected to see a relationship between the PPSSS and the athletes' motivation. Specifically, we expected to find that perceived parent master success standards would be positively related to athletes' intrinsic motivation and self-esteem. We also expected that where athletes perceived parental standards to be based on ego, there would be lower levels of self-esteem and motivation. Based on previous findings on moral sport behaviour [22-26, 45], we hypothesized that a perception of parental standards based on mastery would be positively associated with athletes' more prosocial behaviour and, conversely, a perception of parents' standards based on ego would be positively related to antisocial behaviour as evidence of the predictive validity of PPSSS.

## TRANSLATION OF THE PPSSS

In order to achieve the Lithuanian version of the PPSSS, we used a forward and back-translation procedure [46]. First, the scale was translated into Lithuanian by three independent native Lithuanian translators. In translating the scale text, emphasis was given to the conceptual equivalent of words and phrases (instead of providing a literal translation). Next, a synthesis of the three was performed by an expert committee composed of a panel of experts (including the authors of this study). Finally, the scale text was backward translated from Lithuanian into English by two English language professionals (who were not the same individuals providing the first translation from English to Lithuanian) and any discrepancies were discussed by the authors of this research until agreement was reached. This resulted in a 12 item Lithuanian version of the PPSSS, which was tested with 125 participants (a pilot study) to ensure that the scale was clear and understandable on a 5-point scale (e.g., 1 = absolutely unclear, 5 = completely clear).

## PARTICIPANTS AND PROCEDURES

In total, 587 adolescents (201 boys and 386 girls, M age = 14.3, SD = 1.11, and age range = 13-15) from different sports teams in Lithuania participated in the study. The sample included only those athletes who had participated in sport for at least one year. Athletes represented basketball, football, volleyball and track and field sports and had participated in their current sport on average for 4.01 years (SD = 2.48).

The research was conducted in two stages. As the two-factor orthogonal structure of the PPSSS was established [14], the first stage aimed to test the factor structure in the adapted version and used 202 participants (159 boys and 43 girls). In the second stage, 385 young people (227 boys and 158 girls) took part, aiming to test the construct validity and reliability of the PPSSS.

Prior to the commencement of the study, approval was received from the University Ethics Committee of the first and third authors (No SMTEK-12). Initial contact was made with representatives of the youth teams to obtain their permission to approach the athletes regarding the study. Written parental/guardian informed consent was obtained before the young people were involved. Parental/guardian consent forms were distributed by the researcher in envelopes to all athletes on the selected teams. Athletes returned the consent forms to their coaches. Almost 80% of the consent forms were returned (< 5% declined to give permission). Athletes with parental consent were informed about the study aim, that participation was voluntary, honesty in responses was vital, and data would be kept strictly confidential and used only for research



purposes. Athletes completed the questionnaire after a training session, in the presence of research assistants. Participants were instructed to complete the questionnaires as carefully as possible. The questionnaires were completed anonymously and without the coach present to minimize socially desirable responding. Respondents who participated in the survey were not remunerated.

## MEASURES

**Perceived Parental Success Standards.** Athlete perception of parents' success standards in sport was assessed using the PPSSS [14], in which young athletes answered 12 questions focused on their parents' definition of success, as exhibited by the parents. Each of the questions was introduced with the prompt, 'When I play sports, it is most important TO MY PARENTS that...' and responses were made on a 4-point scale ranging from 1 (strongly disagree) to 4 (strongly agree). PPSSS has two subscales: ego and mastery standards.

**Sport motivation.** The Sport Motivation Scale (SMS) [47] was used to measure participants' motivation in sport. The adaptation and psychometric validation of this scale in Lithuania first time was conducted with a sample of adolescent athletes [48]. Study results showed evidence of structural validity of the SMS. Also the SMS has demonstrated adequate reliability, with Cronbach's alpha ranging from 0.60 to 0.88. A more recent study aiming to assess psychometric characteristics of this scale also provided evidence for the reliability, with Cronbach's alpha ranging from 0.65 to 0.80 [49]. The athletes were asked to what extent they agreed with the stated items, based on the root question 'Why do you currently participate in sport?', and using a 7-point scale ranging from 1 (does not correspond at all) to 7 (corresponds exactly). The scale consisted of seven subscales: three types of intrinsic motivation, three types of extrinsic motivation, and amotivation. There are several ways to identify categories in the SMS, one of which is to group broader motivational categories [50]. Accordingly, in this study, we calculated scores only for intrinsic motivation and for amotivation. The Cronbach internal reliability coefficients for both subscales were good (0.90 for intrinsic motivation and 0.79 for amotivation).

**Self-esteem.** Self-esteem was measured using [51] 10-item self-esteem Likert scale. All statements (e.g. 'I feel that I have a number of good qualities', 'I feel I do not have much to be proud of') were answered using a 4-point Likert scale format ranging from strongly agree to strongly disagree. Five items were reverse-scored. This scale has been used in numerous previous publications in Lithuania, including studies with sport-based samples, e.g. [52], with good internal consistency alpha coefficients (e.g. 0.86). The Cronbach internal reliability coefficient in the present study was acceptable (0.76).

**Prosocial and antisocial behaviour in sports.** The Prosocial and Antisocial Behaviour in Sport Scale (PABSS) [53] was used to measure athletes' prosocial and antisocial behaviour in sports. Participants were presented with 20 behaviours and were asked to report how often they had engaged in each behaviour during the current season on the 5-point Likert scale from 1 (never) to 5 (very often). The PABSS consists of four subscales that measure antisocial behaviour towards opponents and teammates (e. g. 'Tried to injure an opponent', 'Physically intimidated an opponent'), and prosocial behaviour towards opponents and teammates (e.g. 'Encouraged a teammate', 'Helped an injured opponent'). The Lithuanian version of this scale in previous studies had been validated by providing evidence of convergent and discriminant validity

and demonstrated good internal consistency with alpha coefficients ranging from 0.79 to 0.85 [54]. Internal consistency of the subscales in the present study was good ranging from 0.77 to 0.88.

## STATISTICAL ANALYSIS

Data were analysed using the Statistical Package for the Social Sciences (SPSS) 23.0 and Mplus 6. Preliminary data screening was conducted in order to check for missing values and normality. There were no missing data. The distribution of the data was acceptable because the skewness and kurtosis values were between  $\pm 1$ . Descriptive analysis included the mean and standard deviations, and the values of the ranges. The factor structure of the Lithuanian version of PPSSS used in the first stage was Exploratory Factor Analysis (EFA). Next, the PPSSS factor structure was tested by using Exploratory Structural Equation Modelling (ESEM) [55, 56]. ESEM is an alternative solution, incorporating the advantages of EFA and Confirmatory Factor Analysis. Assessing the model fit involved examining the comparative fit index (CFI) [57], and to this end the (robust) Tucker-Lewis index (TLI) [58], and the (robust) root mean square error of approximation (RMSEA) [59], with its 90% confidence interval, were employed. CFI and TLI values of  $> 0.95$  and RMSEA values of  $< 0.06$  were considered as indicators of excellent fit [60], and CFI and TLI values of  $> 0.90$  and RMSEA of  $< 0.08$  were considered as indicators of acceptable fit [61]. Data for the ESEM analyses were treated categorically. For the reliability analysis, Cronbach's alpha coefficients were calculated. Based on literature [62], alphas of 0.80 were deemed acceptable. Discriminant and convergent validity were tested via Pearson correlation coefficients between the PPSSS (LT) and subscale scores of sport motivation and self-esteem. For predictive validity, two sets of regression analyses were conducted, one each for prosocial and antisocial behaviour.

## RESULTS

Although the study by Schwebel et al. [14] reported a two-factor structure of PPSSS, in order to explore the factorial structure of PPSSS (LT) in the Lithuanian sample, all 12 items of the scale were subjected to an EFA with Varimax rotation. The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis:  $KMO = 0.81$ . Bartlett's test of sphericity was significant ( $\chi^2 (66) = 1108.26$ ;  $p < 0.001$ ) suggesting that the correlation matrix was significantly different from the identity matrix and therefore factorable. The maximum likelihood factor analysis with a cut-off point of 0.40, and Kaiser's criterion of eigenvalues greater than 1, yielded a two-factor solution as the best fit for the data, accounting for 58.06% of the variance (Table 1). The first factor comprised six elements with factor loadings from 0.679 to 0.860 and represented the ego subscale. The second factor comprised six elements with factor loadings from 0.403 to 0.876 and represented the mastery subscale.

In order to cross-validate the two-factor structure of PPSSS (LT) further, ESEM was carried out in the second subsample. ESEM results showed that the two-factor PPSSS revealed an acceptable fit of the data:  $CFI = 0.943$ ;  $TLI = 0.908$ ;  $RMSEA = 0.07$  (90% CI = .06 to .08). The result analysis showed the two-factor model with 6 ego (with standardized factor loading ranged between 0.540 – 0.855) and 6 mastery standards (with standardized factor loading ranged between 0.399 – 0.749 items) (Table 1). As can be seen in Table 1, the loading of element 12 ('I perform to the best of my ability') was quite low but reached the cut-off point of 0.40.



The reliability analysis with all sample data revealed good levels of internal consistency, with a Cronbach alpha of 0.86 for the ego standards factor and .80 for the mastery standards factor. Concerning the loading level of element 12, we checked for changes in the alpha value if this item were deleted, and results showed that the increase of Cronbach alpha was very low – 0.81.

Descriptive statistics showed that the mean for parental mastery standards in the total sample was 3.26 (SD = 0.47), and for parental ego standards the mean score was 2.49 (SD = 0.61).

In order to provide further evidence for the validity of the PPSSS, Pearson's correlation was conducted with the entire sample (Table 2). Correlation analysis showed that the perceived parental success standards based on mastery were significantly and positively correlated with self-esteem, intrinsic motivation and prosocial behaviour of young athletes and negatively correlated with amotivation (Table 2). Perceived parental success standards based on ego were significantly and positively correlated with amotivation, and antisocial behaviour of young athletes. Furthermore, a weak positive correlation was displayed between perceived parental success standards based on ego, and self-esteem.

In order to access the predictive validity, we conducted four regression analyses to test whether the perceived parental success standards based on mastery and ego predict the moral behaviour of young athletes. The results of the analyses (Table 3) indicated that perceived parental success standards based on mastery were a positive predictor for prosocial behaviour towards both teammates and opponents. As shown in Table 3, perceived parental success standards based on ego emerged as a positive predictor for antisocial behaviour towards teammates.

Table 1. Factor loadings for EFA (group one) and ESEM solution (group two) for PPSSS

	EFA factor loading		ESEM factor loading	
	Ego	Master	Ego	Master
I am clearly better than others.	<b>.860</b>	-.101	<b>.855***</b>	-.114*
I am the best.	<b>.787</b>	.036	<b>.724***</b>	.001
I play better than my opponents.	<b>.741</b>	.253	<b>.540***</b>	.262***
I show other people I am the best.	<b>.731</b>	.157	<b>.697***</b>	.109
I beat other people.	<b>.727</b>	-.074	<b>.710***</b>	-.053
I accomplish something others cannot do.	<b>.679</b>	.379	<b>.606***</b>	.284***
I overcome difficulties.	.116	<b>.876</b>	-.032	<b>.749***</b>
I show clear personal improvements.	.127	<b>.768</b>	.022	<b>.699***</b>
I master something I couldn't do before.	.008	<b>.764</b>	-.039	<b>.720***</b>
I reach a goal.	.212	<b>.758</b>	.052	<b>.652***</b>
I work hard.	-.068	<b>.621</b>	.001	<b>.586***</b>
I perform to the best of my ability.	.367	<b>.403</b>	.353***	<b>.399***</b>

Ego = Ego standards, Master = Master standards.

\* p < 0.05, \*\*\* p < 0.001

Table 2. Correlations between PPSSS subscales and self-esteem, motivation, and moral behaviour in sport variables

Variables	1	2	3	4	5	6	7	8	9
1. PPMSS	—								
2. PPESS	.30**								
3. Self-esteem	.27**	.09*							
4. Intrinsic	.44**	.14**	.21**						
5. Amotivation	-.21**	.21**	-.29**	-.35**					
6. PT	.35**	.09*	.24**	.34**	-.14**				
7. PO	.17**	.21**	.15**	.31**	-.03	.48**			
8. AT	.07	.15**	-.13**	.05	.16**	.05	.04		
9. AO	.08	.15**	-.03	.10*	.06	.12*	.14**	.57**	
Mean	3.26	2.49	31.25	5.69	2.06	3.95	2.76	1.62	1.42
SD	0.47	0.61	3.86	0.99	1.21	0.73	0.99	0.57	0.60

PPMSS = perceived parent mastery success standards, PPESS = perceived parent ego success standards,  
PT = prosocial teammates, PO = prosocial opponent, AT = antisocial teammates, AO = antisocial opponent  
\* p < 0.05, \*\* p < 0.01

Table 3. Hierarchical regression of PPSSS predicting athletes' moral behaviour in sport

Variable	B	B 95% CI	$\beta$	t	AR <sup>2</sup>
Prosocial behaviour with teammates					
PPMSS	0.54	0.41 < > 0.66	0.35	8.42***	
PPESS	-0.02	-0.01 < > 0.08	-0.01	ns	
					0.15***
Prosocial behaviour with opponent					
PPMSS	0.28	0.10 < > 0.46	0.13	3.09*	
PPESS	0.24	0.10 < > 0.38	0.15	3.39***	
					0.06***
Antisocial behaviour with teammates					
PPMSS	0.04	-0.07 < > 0.14	0.03	ns	
PPESS	0.11	0.03 < > 0.19	0.15	3.39***	
					0.09***
Antisocial behaviour with opponent					
PPMSS	0.12	0.02 < > 0.12	0.05	ns	
PPESS	0.05	-0.03 < > 0.12	0.14	3.19**	
					0.03***

AR<sup>2</sup> = R<sup>2</sup> unique to each step, \*\*\*p < 0.001, CI = confidence interval, ns = not significant

## DISCUSSION

Development and application of the PPSSS [14] was an important new step in assessing how young athletes perceive parental success standards in sport, a core element of the parent-initiated motivational climate. Originally developed using a sample of young basketball players in the United States, the analysis of the PPSSS psychometric properties in different cultural contexts is an important line of research that will enable comparative studies analysing athlete perception of parents' orientation of achievement goals across different countries. Thus, the aim of this study was to investigate the validity and reliability of the PPSSS in a sample of Lithuanian adolescent participants in sport.

The original study by Schwebel et al. [14] supported the two-factor structure of the PPSSS allowing measurement of independent ego and mastery dimensions. In the current study, the first step was the evaluation of the PPSSS factorial structure. First, the finding of the EFA showed that the PPSSS has a two-factor (ego and mastery) structure. The two-factor PPSSS (LT) structure was further cross-validated using ESEM. ESEM supported a two-factor structure of the PPSSS. The findings of the current study are consistent with those of Schwebel et al., supporting the two dimensions of perceived parental standards of success in sport.

To determine the reliability of the Lithuanian version of the PPSSS, the internal consistency of the athletes' scores on the mastery and ego subscales was examined. The Cronbach's alpha coefficients were satisfactorily high for both mastery and ego factors. In the initial validation of Schwebel et al. [14], Cronbach's alpha internal consistency reliability coefficients were 0.84 and 0.86. Very similar alpha coefficients in our study confirmed that the translated PPSSS is a reliable measure of perceived parental success standards in sport.

As the purpose of the current study was to investigate the validity of the PPSSS, we analysed the association of perceived ego and mastery success standards with other related variables as evidence of discriminant and convergent validity. Previous studies documented the relationship between achievement orientation, athletes' motivation [12, 28, 63] and higher self-esteem [64]. It was also found that the coach, a key figure, created a motivational climate positively related with young athletes' self-determined motivation [65, 66] and self-esteem [67]. Furthermore, recent studies have highlighted the influence of perceived parent-initiated motivational climates, based on mastery and ego, on young athletes' motivation [19] and self-esteem [18, 19, 44]. Our results, using the PPSSS, which found that perceived parental success standards based on mastery positively relate to higher self-esteem in young athletes, are in line with the aforementioned studies and also support a similar conclusion by Schwebel et al. [14]. The current study additionally showed the relationship between perceived parental success standards and young athletes' motivation in sport: parental success standards based on mastery were positively correlated with intrinsic motivation and negatively correlated with amotivation, while perceived parental success standards based on ego were positively correlated with amotivation. These results can be interpreted as conceptually consistent with the authors of the PPSSS, showing perceived parental success standards based on mastery positively associated with mastery-based achievement goal orientation and negatively associated with ego-based achievement goal orientation. AGT theory emphasizes that mastery orientation is supported by the inner beliefs of the individual (intrinsic motives), whereas ego orientation is supported by external influences (extrinsic motives) [12].

Evaluating predictive validity, four regression analyses were conducted to test whether the perceived parental success standards based on mastery and ego predict the moral behaviour of athletes. Overall, our results provide evidence that perceived parental success standards based on mastery are positively related to athletes' prosocial behaviour towards teammates and opponents, while parental success standards based on ego emerged as a positive predictor for antisocial behaviour. Unexpectedly, parental success standards based on ego also positively predict prosocial behaviour of athletes towards opponents. This result is partly explained by the fact that the antisocial aspects of the moral climate are absorbed more quickly and easily than the prosocial aspects [22]. It means antisocial influence on human behaviour has a stronger impulse than prosocial influence. 'Bad is stronger than good, as a general principle across a broad range of psychological phenomena' [68, p. 323].

This may explain why the study found that parental success standards based on ego positively influence prosocial behaviour towards opponents. Nevertheless, namely a person's belief that a certain behaviour is morally correct has a high motivational power to act on that belief [22]. Therefore, the standard of parental success is a critical factor in shaping their children's behavioural patterns to achieve that success.

Previous studies also found that young athletes' perception of a mastery climate has been associated with prosocial behaviour [23, 24]. In addition, an athlete's perception of a mastery climate promoted by other significant figures not only leads to prosocial behaviours, but also reduces the expression of antisocial behaviour [69, 70]. Inter alia, adolescent athletes' perceptions of a motivational climate based on mastery predicted positive prosocial and negative antisocial behaviour towards teammates [71]. Such behaviours are influenced by adolescents' perception of the environment as supportive and stimulating, and therefore athletes themselves tend to be tolerant of teammates and rivals [71]. Similarly, if an athlete's environment is dominated by an ego-based climate, he or she tends to be more egoistic, criticise others, and behave in an antisocial way with teammates [71]. In other words, whatever the climate and behaviour broadcast from those around the athletes, the same response can be expected from them.

The results of our study found that the structure of the Lithuanian version of PPSSS allowed us to differentiate between perceived parental mastery-based and ego-based standards for success in sport. One of the strengths of this study is that the analysis covered adolescent athletes participating in different sports, compared with the participants of the initial validation study. This study confirms a relatively new research instrument to assess the relationship between parents' perceived success standards in sport and their influence on adolescent personality variables from an AGT perspective that provides a framework for understanding how individuals interpret and respond to achievement activity [13]. We believe that this study will stimulate and expand further research in this area. The present study, however, also has limitations. Firstly, some relationships between the variables were found to be weaker than expected, based on the original scale measurements. This may be due to differences in perception of the statements across socio-cultural contexts, in comparison with the environment for which the original questionnaire was developed. Secondly, this study measured the overall standard of success for both parents, although there is a possibility that the role of father and mother could differ in influencing athletes' experiences. In future studies, it would therefore be useful to measure separately the father's and mother's perceived success standards and their impact on athletes. Thirdly, the subjects in this study were from different sports teams, although this may not fully explain the relevance of the adaptive questionnaire. In future studies, it would be useful to use a questionnaire targeting both team and individual athletes in order to further generalize the impact of parental success standards on all athletes.

## CONCLUSION

This study has shown that the Lithuanian version of the PPSSS has satisfactory psychometric properties. Internal consistency was good, supporting the reliability of the scale. There was found to be an acceptable measurement model fit demonstrating evidence for construct validity of the scale. Moreover, significant relationships were found between perceived parental success standards and

other athletes' variables. Therefore, the results provide justification for the use of the PPSSS in its Lithuanian version. In future research, it can help to increase our understanding of the relative impact of parents on young athletes in competitive settings.

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