

## **Sport self-efficacy and behavioral problems: A bidirectional, longitudinal investigation from middle childhood to early adolescence**

*Arianna Gonzales and Paul S. Strand*

*Department of Psychology Washington State University, Washington D.C., USA*

*Sport self-efficacy is concerned with attitudes and beliefs about one's own athletic abilities. According to self-efficacy theory, sport self-efficacy will impact not only sports performance but also distal indicators of well-being such as emotional and behavioral adjustment. The present study utilized a sample of 961 children assessed at ages 12 and 15 years to examine longitudinal associations between sport self-efficacy and internalizing (e.g., depression/withdrawal) and externalizing (e.g., aggression/defiance) behavior symptoms. We hypothesized that sport self-efficacy would predict subsequent internalizing but not externalizing symptoms, with stronger effects for boys. Contrary to predictions, behavior symptoms predicted sport self-efficacy, but not vice versa. Specifically, higher internalizing symptoms predicted lower sport self-efficacy, and higher externalizing symptoms predicted higher sport self-efficacy. No sex differences were observed. In sum, sport self-efficacy may be differentially influenced by internalizing and externalizing symptomatology and associated experiences, rather than influencing those symptom profiles.*

KEY WORDS: Adolescence, Childhood, sport .

### **Introduction**

Self-efficacy refers to beliefs about one's capacity to perform in a manner consistent with attaining desired goals (Bandura, 1997). Multiple self-efficacies may be operationally defined, each concerned with some performance domain such as academics, work, social-emotional, and sports, just to name a

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Correspondence to: Arianna Gonzales, Psychology Department at Washington State University, Johnson Tower 233, Pullman, WA 99164, United States. (E-mail: [arianna.gonzales@wsu.edu](mailto:arianna.gonzales@wsu.edu))

few (Judge et al, 2007; Klassen & Usher, 2010; Ramchander & Martins, 2014). Self-efficacies have in common a proposed causal impact on functioning within the domain in question and a broader or generalized impact on personal well-being and social adjustment (Bandura, 1997, 2006). For example, studies reveal that higher levels of academic self-efficacy predict not only better academic performance but also higher levels of positive affect, less anxiety and depressive symptomatology, and better self-regulation (Di Giunta et al., 2018; Jessor, 1993; Klassen & Usher, 2010; Phan & Ngu, 2016; Rocchino et al., 2017; Trautner and Schwinger, 2020). These findings are consistent with predictions of self-efficacy theory and support efforts to explore how other self-efficacies may relate to and perhaps impact personal well-being and social adjustment.

The present study seeks to explore this possibility with sport self-efficacy. *Sport self-efficacy* is concerned with attitudes and beliefs about one's abilities and skills as they relate to athletic performance (Sivrikaya, 2019). According to Bandura's model, higher sport self-efficacy should be related to better personal well-being and social adjustment, in keeping with the notion that positive beliefs about one's abilities have generalized positive effects on functioning.

We utilize a repeated measures research design to assess sport self-efficacy's predictive impact on children's psychological well-being from late childhood to early adolescence, as indicated by assessments of internalizing and externalizing behavior symptomatology (Achenbach & Rescorla, 2000). The design also allows for investigating the converse; that behavioral symptomatology may impact sport self-efficacy. Internalizing behaviors include sadness, anxiety, depression, and social withdrawal. Externalizing behaviors include aggression, impulsivity, and rule breaking.

### **Self-efficacy and Psychological Well-Being Among Adolescents**

Self-efficacy is a protective factor for emotional well-being, important during the developmental transition from childhood to early adolescence (Bacchini & Magliulo, 2003; Bandura, 2006; Kleppang et al., 2023; Schunk & Meece, 2006). During this developmental timeframe, low self-efficacy is thought to impair a youth's ability to seek out social support, persevere in learning new skills, and resist succumbing to negative peer pressure. Conversely, children with positive self-efficacy are expected to cope more effectively with stress and novelty, actively seek out positive support from peers and role models, and engage in activities that build skills. In this way, high self-efficacy establishes a virtuous cycle that entails effective resource utilization, perseverance, and increased competence (Bandura, 1997).

Such theorizing aligns with research suggesting that the beliefs and attitudes that adolescents hold toward themselves are associated with their emotional well-being and behavioral adjustment (Jessor, 1993; Cummings et al., 2013; Deater-Deckard & Dodge, 1997; Eisenberg et al., 2001; Telzer & Fuligni, 2013). For example, Caroli and Sagone (2014) found that adolescents between the ages of 14 and 18 years old who felt highly efficacious in academics reported higher psychological well-being in the domains of mastery, self-acceptance, and personal growth. Moreover, Rocchino and colleagues (2017) examined academic self-efficacy and emotional and behavioral adjustment in an adolescent sample and found that lower academic self-efficacy predicted both internalizing and externalizing behaviors. In other words, adolescents who reported lower self-efficacy showed higher levels of aggression, impulsivity, anxiety, and withdrawal. Other studies have reported on how performance, and presumably self-efficacy, is impacted by emotional and behavioral adjustment, suggesting the possibility of bidirectional effects (Breslau et al., 2011; Morris et al., 2013). Taken together, these studies support explorations into aspects of self-efficacy other than just academic self-efficacy and their potential associations with the emotional and behavioral adjustment of children and adolescents.

Evidence exists for how sport self-efficacy relates to sports-related activities and performance, but less attention has been devoted to how sport self-efficacy relates to broader indicators of social and emotional well-being. For example, with a sample of high school and college basketball players, Vealey et al. (1998) found that sports confidence and social support predicted athletic performance and physical self-presentation (i.e., feeling strong). In a study of adult athletes, Beaumont and colleagues (2015) found that sports consultation strategies aimed at improving sport self-efficacy positively impacted confidence in one's capacity for training effectively. Similarly, sport self-efficacy has been shown to be positively associated with training perseverance (Pajares & Urdan, 2006). The results of these studies are consistent with self-efficacy theory but do not shed light on its most far reaching prediction--that sport self-efficacy may impact general or distal indicators of well-being (Bandura, 1997).

The converse might also be true, internalizing and externalizing symptoms may impact sport self-efficacy. Vella and colleagues (2016) reported a bidirectional relationship between sports involvement and behavioral symptomology including internalizing behaviors in 5<sup>th</sup> and 6<sup>th</sup> graders. Bidirectional effects have also been observed with respect to adolescent physical activity and life satisfaction (Lee et al., 2024). The present study allows for examining bidirectional, cross-lagged relationships between sport

self-efficacy and internalizing and externalizing behavior disorder symptoms across the developmentally important transition from late childhood to early adolescence.

#### SPORT SELF-EFFICACY AND GENDER

Investigations into sport self-efficacy should model potential effects for sex given differences in sports participation and attitudes between males and females. Daniels and Leaper (2006) found, for example, that participation in sports was more important to the self-esteem of boys than girls. Though not synonymous with self-efficacy, self-esteem can be considered an adjacent concept due to its conceptualization as self-value compared to self-ability. Older studies have found that males report higher self-confidence in their sports abilities and more positive attitudes towards sports than girls (Corbin et al., 1983; Eccels & Harold, 1989; Lewko & Ewing, 1980). Lirgg (1991) attributed such gender differences to type of task, such that higher confidence levels for boys are limited to sports that involve “masculine motor tasks”. It is also the case that gender differences may be limited to the high school years, as they were not evident for elementary school samples. With respect to social and psychological barriers, girls reported feelings that they were crossing traditional gender boundaries when playing sports, particularly for sports traditionally classified as ‘masculine’ (Slater & Tiggemann, 2010). Girls also reported concerns about getting along with teammates, exposure to ridicule, and concerns about appearance while playing sports (Slater & Tiggemann, 2010). Compared to females, male students rated natural ability as more influential for successful skill level and performance than female students, but the beliefs seemed to vary for activities that are gender-linked (Li et al., 2006). Therefore, it may be that as girls grow older, they may prioritize sports or physical activity less than boys due to numerous factors, including losing interest, lack of competence, and insufficient time.

#### **Hypotheses for the Present Study**

The present study sought to examine the bidirectional, time-dependent relationships between sport self-efficacy and two indicators of social-psychological well-being with a sample of children followed from ages 12 to 15 years. Based on past literature showing a bidirectional link between self-efficacy and internalizing behaviors (Vella et al., 2016), we hypothesized that at both time points, sport self-efficacy scores would be associated with internal-

izing behavior disorder scores. Longitudinally, we expected that higher sport self-efficacy scores at age 12 (time 1) would predict lower internalizing behavior problems at age 15 (time 2). Further, based on past studies looking at sports participation within youth, we expected no significant cross-sectional or longitudinal associations between sport self-efficacy and externalizing behavior problems (White-Gosselin et al., 2021). Regarding sex, we expected that sport self-efficacy scores would not differ for boys and girls at time 1, but that at time 2, boys would have higher sport self-efficacy scores than girls. Regarding longitudinal cross-lagged associations, we expected statistically significantly stronger effects for boys than girls regarding the prediction that sport self-efficacy at time 1 would impact internalizing behavior disorder symptoms at time 2.

## Methods

### PARTICIPANTS

The data in the present study comes from the Study of Early Child Care and Youth Development (SECCYD), a longitudinal study of children's physical, cognitive, and social development sponsored by the Eunice Kennedy Shriver National Institute of Child Health and Human Development. Children ( $N = 1,364$ ) and their families were recruited for the NICHD SECCYD study in 1991 from 31 hospitals across the United States. Children were recruited at birth and were followed for data collection in four total phases with multiple time points at each phase (Phase I, ages 0–3; Phase II, through 1st grade; Phase III, through 6th grade; Phase IV, through 9th grade) until they were 15 years old. All surveys were distributed to mothers over the phone or in person if able (Vandell & Gulsevan, 2023). The present study contains a sample of 961 participants and involves sport self-efficacy ratings and behavior problem ratings, assessed in Phase III and Phase IV, when participants were 12 and 15 years old, respectively. Variables of interest were only collected at Phase III and IV, limiting the developmental timeframe of the present investigation to 12–15 years. The ethnic composition of participants was not made public for this dataset. The gender split between participants was 49.8% girls and the mean age at time 1 was 11.4 years old and at time 2 it was 14.7 years old. Although not exclusively representative of the population, the study is unique in its comprehensive measurement of children's development within their home, school, and community environments. For more details on the recruitment strategy, sampling, and representativeness of the SECCYD families, see NICHD Early Child Care Research Network (1993).

### MEASURES

*Sport Self-Efficacy.* Sport self-efficacy was measured from the “How I Do in School” instrument, which is a youth self-report measure made up of three subscales pertaining to self-efficacy within the domains of reading, math, and sports skills (Eccles & Wigfield, 1995). The sport self-efficacy subscale consists of five of the nineteen 7-point Likert scale items and

pertains solely to sport ability beliefs. Example questions are “How good at sports are you?” and “How well do you expect to do in sports this year?” The mean of the five scores was computed with higher scores indicating a more positive self-concept of ability in sports. The scale was found to have good reliability as indicated by Cronbach’s  $\alpha = .93$ . Additionally, the KMO (Kaiser-Meyer-Olkin) factor analysis estimate to inspect the factor structure and common variance of the items in the measured construct was high at .89.

*Child Internalizing and Externalizing Behaviors.* The current study utilized mother ratings to assess child externalizing and internalizing behavior problems. Behavior problem ratings were completed at two time points, 6<sup>th</sup> grade (12 years) and 15 years of age, using the Child Behavior Checklist 4–18 (CBCL; Achenbach, 1991). Items were rated as 0 = *not true*, 1 = *somewhat or sometimes true*, and 2 = *very true or often true*. The internalizing scale of the CBCL is made up of subscales that assess behaviors of Anxiety/Depression, Somatic complaints, and Withdrawal. The Achenbach scales are widely used, and the current study showed adequate reliability at  $\alpha = .69$ , indicating that the CBCL items that constitute the measure are appropriately assessing internalizing problem behaviors. The externalizing scale of the CBCL is made up of subscales that assess behaviors of Aggression and Delinquent Behavior. This subscale showed adequate reliability at  $\alpha = .65$  indicating the CBCL items within the measure are appropriately assessing externalizing problem behaviors. Additionally, the KMO factor analysis estimate to inspect the factor structure and common variance of the items within the internalizing subscale in the measured construct was moderate at .63. The KMO factor analysis estimate within the externalizing subscale in the measured construct was moderate at .66. As the cutoff value for KMO is believed to be under .500, such construct validity can be deemed appropriate (Dizuiban & Shirkey, 1974).

*Socioeconomic Status (SES).* Caregivers were asked to fill out the Family Education and Income questionnaire to assess their economic status. The family member, most often the mother, was asked to select 1 of 22 brackets that fell within their total pre-taxed income. Some examples of the brackets were “less than \$5,000” to “\$500,001- and above”. Additionally, the mother was asked to indicate the highest level of education they had completed. Assessments were conducted every year. Socioeconomic status was included as a covariate because it is associated with both internalizing and externalizing behavior difficulties (DeCarlo et al., 2011; Newacheck et al., 2003).

## PROCEDURE

### *Data Analytic Plan and Preliminary Analyses*

The present study sought to examine a bidirectional, longitudinal model of time-dependent relationships between sport self-efficacy and the child internalizing and externalizing behavior symptoms, controlling for family socioeconomic status. Additionally, sex is included as a group variable, with the expectation that the relationship between sport self-efficacy and externalizing and internalizing behaviors would differ for boys and girls.

All analyses were conducted in Mplus version 8.8 (Muthén & Muthén, 2022). Model fit was evaluated by chi-square test, the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). The following criteria were used as cut-offs for good model fit: non-significant  $\chi^2$ , CFI > 0.90, RMSEA > .08, SRMR > .06. Maximum likelihood parameter estimates with standard errors (MLR) addressed any missing data, which was minimal with 9 missing data patterns. The final sample size consists of 961 participants.

## Results

Table 1 presents descriptive statistics and zero-order correlations for all study variables. Average values for internalizing and externalizing behavior disorders fall below clinical cut-offs, consistent with the recruitment of a nonclinical sample (Achenbach & Rescorla, 2000). Skewness and kurtosis indicators fall below non-normality cut-offs (3 and 10, respectively) for path model analyses (Weston & Gore, 2006).

Figure 1 presents the path model for the bidirectional model that includes sport self-efficacy, internalizing behavior, externalizing behavior, and child sex for the full sample of children. Mother income and education were included as covariates to control for the potential confounding effects of SES on other parts of the model. For clarity of presentation, statistically significant parameter estimates appear in Figure 1. All significant and nonsignificant parameter estimates are reported in Table 2.

At time 1, cross-sectional results reveal significant negative associations between internalizing problems and both sport self-efficacy and externalizing problems. Externalizing problems and sport self-efficacy were not statistically significantly related to one another. At time 2, cross-sectional associations were negative and significant, with the exception of a positive association between internalizing and externalizing behaviors.

Looking at time-dependent relationships, autocorrelations for all three variables were positive and statistically significant. For cross-lagged relationships, sport self-efficacy at age 12 predicted neither age 15 internalizing behavior nor externalizing behavior, but both internalizing and externalizing behavior at age 12 were statistically significant predictors of age 15 sport self-efficacy. Interestingly, the direction of effects differed such that higher internalizing scores predicted lower sport self-efficacy scores over time, whereas higher externalizing scores predicted higher sport self-efficacy over time. Therefore, while both types of behavior problems are associated with lower sport self-efficacy (as per the time 1 and time 2 cross-sectional results), time 1 internalizing behavior problems predict relatively lower subsequent sport self-efficacy scores. Externalizing behavior problems, by contrast, predict relatively higher subsequent sport self-efficacy scores over time.

Regarding socioeconomic covariates, higher mother income was associated with lower internalizing scores at time 1 and lower internalizing and externalizing scores at time 2. Higher mother education predicted lower sport self-efficacy at time 1 and lower externalizing scores at time 2 (Table 2). Time dependent associations involving sex revealed that female sex predict-



TABLE I.  
Descriptive Statistics and Correlations among Study Variables.

Variable	1	2	3	4	5	6	7	8	9	M	SD	Skewness	Kurtosis
1. SSE T1	--									29.37	5.93	-1.41	1.81
2. SSE T2	.55**	--								27.14	7.42	-1.01	0.46
3. INT 12	-.17**	-.10**	--							5.14	5.35	1.97	5.27
4. EXT 12	.01	.11**	.55**	--						6.24	1.48	1.48	2.79
5. INT 15	-.08*	-.13**	.60**	.41**	--					5.18	5.29	1.75	4.10
6. EXT 15	.02	.02	.37**	.65**	.61**	--				5.43	6.57	2.29	8.18
7. FIN	.00	-.04	-.13**	-.24**	-.12**	-.25**	--			11.71	4.59	-0.31	-0.43
8. ED	-.08**	-.08**	-.02	-.19**	-.04	.16**	.48**	--		4.23	1.95	0.73	0.36
9. SEX	-.08**	-.16**	.03	.06	.10**	-.02	.00	-.00	--	0.50	0.01	0.01	-2.00

Note. N = 961. SSE = Sport Self-Efficacy at age 12 and age 15; INT = Internalizing problems at age 12 and age 15; EXT = Externalizing problems at age 12 and age 15; FIN = Financial income; ED = educational attainment; SEX = Youth's sex. T1= 12 years of age (6<sup>th</sup> grade), T2= 15 years of age.

\*p<.05. \*\*p<.01



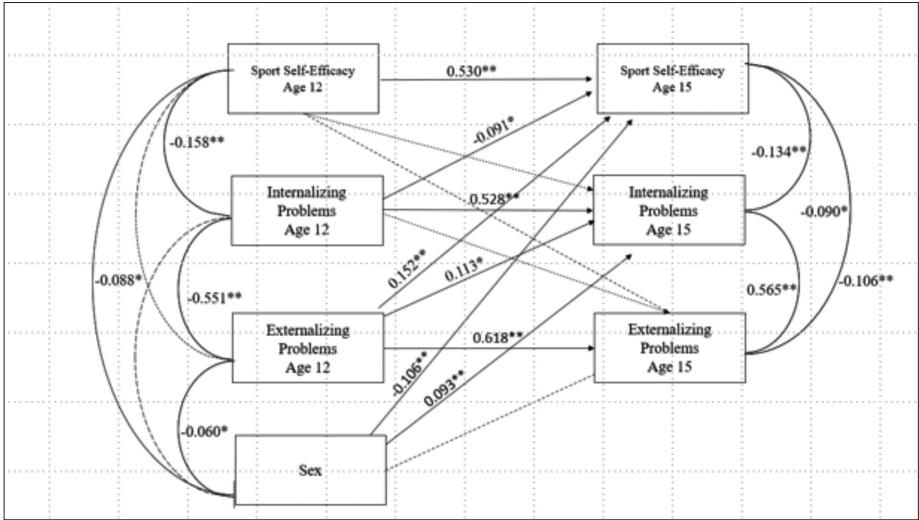


Figure 1 - Model of Directionality tests between Sport Self-Efficacy and Internalizing and Externalizing Behaviors Among Adolescents.

ed higher internalizing behavior over time and lower sport self-efficacy over time, and there were no effects for sex on externalizing behavior over time.

We were interested to see if bidirectional associations between sport self-efficacy and the indicators of behavior problems differed as a function of sex. For instance, might it be that the time-dependent effect of sport self-efficacy on internalizing behavior is less strong for girls than boys—reflecting the notion that sports are more important to self-concept for boys compared to girls? To test for magnitude differences for specific coefficients, an additional path model was run in which interaction terms involving sex (coded as a dummy variable where girls = 0 and boys = 1) were included in the path models predicting time 2 variables of interest. Results revealed nonsignificant interaction term estimates for all four paths predicting: (1) time 2 sport self-efficacy by a sex-by-time 1 internalizing behavior term,  $EST = -.008$  ( $SE = .123$ ),  $p = .95$ ; (2) time 2 sport self-efficacy by a sex-by-time 1 externalizing term,  $.013$  ( $.111$ ),  $.91$ ; (3) time 2 externalizing behavior by a sex-by-time 1 sport self-efficacy term,  $.117$  ( $.131$ ),  $.37$ ; and (4) time 2 internalizing behavior by a time 1 sex-by-sport self-efficacy term,  $.058$  ( $.169$ ),  $.73$ . Thus, contrary to predictions, these results reveal no sex differences for time-dependent influences of behavior disorders on sport self-efficacy, or for sport self-efficacy on behavior disorders.

TABLE II.  
Path Model Estimates and Standard Error Terms for the Full Sample Model.

Variable	1	2	3	4	5	6	7	8	9
1. SSE T1	--								
2. SSE T2	.530**(.028)	--							
3. INT T1	-.158**(.038)	-.091* (.035)	--						
4. EXT T1	-.021(.034)	.152**(.035)	.55**	--					
5. INT T2	-.011 (.030)	-.134**(.037)	.528**(.043)	.113**(.038)	--				
6. EXT T2	.027 (.024)	-.090*(.038)	.013(.045)	.618**(.039)	.565**(.031)	--			
7. FIN	.054 (.037)	-.007 (.035)	-.157**(.036)	-.205**(.036)	-.028(.034)	-.104**(.032)	--		
8. ED	-.108**(.039)	.003(.034)	.054 (.037)	-.089**(.032)	-.012(.031)	.015(.029)	.427**(.026)	--	
9. SEX	-.088**(.031)	-.106**(.027)	.029 (.031)	-.060*(.030)	.093**(.025)	.025(.024)	---	---	--

Note. N = 961. SSE = Sport Self-Efficacy at age 12 and age 15; INT = Internalizing problems at age 12 and age 15; EXT = Externalizing problems at age 12 and age 15; FIN = Financial income; ED = educational attainment; SEX = Youth's sex. T1= 12 years of age (6<sup>th</sup> grade), T2= 15 years of age.  
\*p<.05. \*\*p<.01.

TABLE III  
Model Fit Statistics for the Constrained and Unconstrained Models.

	Model 1	Model 2
$\chi^2$	42.299*	0.095
df	8	2
RMSEA	0.064	0.000
SRMR	0.031	0.001
CFI	0.979	1.000

Note. Model 1 refers to the full model with sex constrained fit statistics; Model 2 refers to the full model with sex unconstrained fit statistics.

\* $p < .05$ .

## Discussion

The aim of the present study was to explore how sport self-efficacy relates to internalizing and externalizing behavior problems for youth transitioning from middle childhood to early adolescence. We hypothesized that sport self-efficacy would predict change to internalizing disorder symptoms, with stronger effects for boys than girls. Furthermore, we expected no longitudinal effects for sport self-efficacy on externalizing behavior disorders, nor did we expect any longitudinal effects of either internalizing or externalizing behavior disorders on sport self-efficacy. Finally, we expected that, over time, boys would experience increased sport self-efficacy scores relative to girls.

The results of the present study did not support the primary hypotheses that informed it. Path analyses revealed that sport self-efficacy at age 12 was not a significant predictor of internalizing behavior at age 15 (or of externalizing behavior). Also, contrary to predictions, no differences existed between boys and girls for any time-dependent effects. Consistent with predictions, sport self-efficacy scores became higher for boys over time relative to scores for girls. Unexpectedly, both internalizing and externalizing behavior problem scores at age 12 were significant predictors of sport self-efficacy change such that higher internalizing behavior problems at age 12 predicted lower sport self-efficacy at age 15 and higher externalizing behavior problems at age 12 predicted higher sport self-efficacy at age 15.

The present study's findings are inconsistent with self-efficacy theory (Bandura 1997), which posits that self-efficacy positively impacts well-being and social adjustment. Instead, we find opposite direction effects; that is, internalizing and externalizing symptoms at an early age (12 years) are

predictors of subsequent sport self-efficacy with higher internalizing behaviors predicting lower sport self-efficacy and higher externalizing behaviors predicting higher sport self-efficacy. Despite being inconsistent with our predictions, the findings are partially supportive of prior studies revealing bi-directional, longitudinal effects between self-efficacy and internalizing and externalizing behaviors, where past studies concluded that internalizing and externalizing problem behaviors influenced sports participation and affections (Morris et al., 2011; Rocchino et al., 2017). We also found no evidence for sex differences for cross-lagged associations involving sport self-efficacy and either internalizing or externalizing symptomatology. While these findings are inconsistent with predictions deriving from self-efficacy theory they have interesting implications for understanding how self-efficacy develops in early adolescence. Sport self-efficacy developed differently for children according to the nature of their internalizing and externalizing symptoms, not sex. As such, it may be that differences observed between boys and girls with regard to attitudes towards sports participation are a function of differential internalizing and externalizing behavior symptom profiles.

This may have implications for well-being derived from levels of future participation in sports or other physical activities. Internalizing symptoms may be a risk factor for physical and psychological outcomes that are associated with reductions in sports activities. In other words, it may be that when children experience symptoms of depression, anxiety, somatization, and/or withdrawal, they experience negative distortions regarding their sport self-efficacy, discouraging them from participating in sports and further perpetrating the cycle of negative self-efficacy perceptions. Moreover, holding a negative and distorted sense of ability may cause youth to experience low self-efficacy even if they are engaging in sports and performing adequately, strengthening the negative cycle as well. Externalizing symptoms, on the other hand, may facilitate positive sports outcomes for youth for sports that entail the use of instrumental aggression. This interpretation is in keeping with self-efficacy as a psychological attribute that influences performance, as the relationship between self-evaluation and performance is reciprocal with higher performance facilitating positive self-evaluation and vice versa (Beaumont et al., 2015; Vealey et al., 1998). Specifically, athletes who experience more anxiety and negative self-evaluation (i.e., internalizing symptomology) are more likely to display poor athletic skills and coping (i.e., low self-efficacy) and vice versa (Craft, 2003). Additionally, athletes who reported higher self-efficacy were more likely to show resilience and effort, often through athletic behaviors characterized by aggression and competitiveness to overcome challenges (Parajes & Urdan, 2006). As such, it is likely that individu-

als who experience more depression and anxiety may withdraw from sports or perceive themselves as having poor athletic ability or as failures, while individuals who are more aggressive and oppositional thrive in sports and perceive themselves as having strong athletic ability and being successful.

Weaknesses of the present study include the fact that actual sports participation was not assessed in addition to sport self-efficacy. As such, it would be beneficial for future studies to examine how sport self-efficacy is impacted by and interacts with sports participation (e.g., type and frequency) with regard to behavioral and emotional well-being. Another limitation of the present study concerns the representativeness of the findings. The sample is primarily white and, therefore, racial and ethnic minorities are underrepresented (Vandlle & Gulseven, 2023).

In conclusion, the present study found a unidirectional relationship between sport self-efficacy and internalizing and externalizing behaviors, where internalizing and externalizing problem behaviors predict sport self-efficacy from middle childhood to early adolescence. No sex differences were observed with respect to these longitudinal relationships. As such, it may be the case that internalizing behaviors serve as a risk factor for lower sport self-efficacy and consequently these youth may be at risk for withdrawing from sports participation, while externalizing behaviors promote sport self-efficacy. Preventative interventions may be useful to overcome tendencies among youth with higher levels of internalizing behavior to withdraw from sports participation. This might take the form of conversations that challenge negative self-assessments and stereotypes that interfere with participation in athletics. Initiating such discussions may improve self-image, self-esteem, self-efficacy, and mental well-being of youth, keeping them engaged in an active, sporting lifestyle.

## REFERENCES

- Achenbach, T. M. (1991). Manual for the child behavior checklist/4-18 and 1991 profile.
- Achenbach, T. M., & Rescorla, L. A. (2000). *Manual for the ASEBA preschool forms and profiles* (Vol. 30). Burlington, VT: University of Vermont, Research center for children, youth, & families.
- Bacchini, D., Magliulo, F. (2003). *Self-image and perceived self-efficacy during adolescence. Journal of Youth and Adolescence*, 32, 337-349. <https://doi.org/10.1023/A:1024969914672>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W H Freeman/Times Books/ Henry Holt & Co.
- Bandura, A. (2006). Guide for constructing self-efficacy scales. In F. Pajares & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (Vol. 5, pp. 307-337). Greenwich, CT: Information Age Publishing.
- Beaumont, C., Maynard, I. W., & Butt, J. (2015). Effective ways to develop and maintain

- robust sport-confidence: Strategies advocated by sport psychology consultants. *Journal of Applied Sport Psychology*, 27, 301-318. <http://dx.doi.org/10.1080/10413200.2014.996302>
- Bongers, I. L., Koot, H. M., van der Ende, J., & Verhulst, F. C. (2004). Developmental trajectories of externalizing behaviors in childhood and adolescence. *Child Development*, 75(5), 1523-1537. <https://doi.org/10.1007/s00127-010-0297-9>
- Breslau, N., Breslau, J., Miller, E., & Raykov, T. (2011). Behavior problems at ages 6 and 11 and high school academic achievement: Longitudinal latent variable modeling. *Psychiatry Research*, 185(3), 433-437. <https://doi.org/10.1016/j.psychres.2010.07.027>
- Craft, L. & Magyar, T. M. & Becker, B. & Feltz, D. (2003). The Relationship between the Competitive State Anxiety Inventory-2 and sportperformance: A meta-analysis. *Journal of Sport & Exercise Psychology*, 25(1), 44-65. <https://doi.org/10.1123/jsep.25.1.44>
- Cummings, J. R., Bornoalova, M. A., Ojanen, T., Hunt, E., MacPherson, L., & Lejuez, C. (2013). Time does not change everything: The longitudinal course of distress tolerance and its relationship with externalizing and internalizing symptoms during early adolescence. *Journal of Abnormal Child Psychology*, 41(5), 735-748. <https://doi.org/10.1007/s10802-012-9704-x>
- Daniels, E., & Leaper, C. (2006). A longitudinal investigation of sport participation, peer acceptance, and self-esteem among adolescent girls and boys. *Sex Roles*, 55(11-12), 875-880. <https://doi.org/10.1007/s11199-006-9138-4>
- Daughters, S. B., Reynolds, E. K., MacPherson, L., Kahler, C. W., Danielson, C. K., Zvolensky, M., & Lejuez, C. W. (2009). Distress tolerance and early adolescent externalizing and internalizing symptoms: The moderating role of gender and ethnicity. *Behaviour Research and Therapy*, 47(3), 198-205. <https://doi.org/10.1016/j.brat.2008.12.001>
- DeCarlo Santiago, C., Wadsworth, M. E., & Stump, J. (2011). Socioeconomic status, neighborhood disadvantage, and poverty-related stress: Prospective effects on psychological syndromes among diverse low-income families. *Journal of Economic Psychology*, 32, 218-230. <https://doi.org/10.1016/j.joep.2009.10.008>
- Deater-Deckard, K., & Dodge, K. A. (1997). Externalizing behavior problems and discipline revisited: Nonlinear effects and variation by culture, context, and gender. *Psychological Inquiry*, 8(3), 161-175. <https://doi.org/10.1207/s1532>
- Di Giunta, L., Iselin, A. M. R., Lansford, J. E., Eisenberg, N., Lunetti, C., Thartori, E., Basili, E., Pastorelli, C., Bacchini, D., Tirado, L. M. U., & Gerbino, M. (2018). Parents' and early adolescents' self-efficacy about anger regulation and early adolescents' internalizing and externalizing problems: A longitudinal study in three countries. *Journal of Adolescence*, 64(1), 124-135. <https://doi.org/10.1016/j.adolescence.2018.01.009>
- Dziuban, Charles D.; Shirkey, Edwin C. (1974). When is a correlation matrix appropriate for factor analysis? Some decision rules. *Psychological Bulletin*, 81(6): 358-361. <https://doi.org/10.1037/h0036316>.
- Eccles, J. S., & Harold, R. D. (1991). Gender differences in sport involvement: Applying the Eccles' expectancy-value model. *Journal of Applied Sport Psychology*, 3(1), 7-35. <https://doi.org/10.1080/10413209108406432>
- Eccles, J. S., & Wigfield, A. (1995). In the mind of the actor: The structure of adolescents' achievement task values and expectancy-related beliefs. *Personality and Social Psychology Bulletin*, 21(3), 215-225. <https://doi.org/10.1177/0146167295213003> <https://doi.org/10.1186/1479-5868-10-98>
- Hankin, B. L., Mermelstein, R., & Roesch, L. (2007). Sex differences in adolescent depression: stress exposure and reactivity models. *Child development*, 78(1), 279-295. <https://doi.org/10.1111/j.1467-8624.2007.00997.x>
- Jessor, R. (1993). Successful adolescent development among youth in high-risk settings. *American Psychologist*, 48(2), 117-126. <https://doi.org/10.1037/0003-066X.48.2.117>

- Judge, T. A., Jackson, C. L., Shaw, J. C., Scott, B. A., & Rich, B. L. (2007). Self-efficacy and work-related performance: The integral role of individual differences. *Journal of Applied Psychology*, 92(1), 107-127. <https://doi.org/10.1037/0021-9010.92.1.107>
- Klassen, R.M. and Usher, E.L. (2010), "Self-efficacy in educational settings: Recent research and emerging directions", Urdan, T.C., and Karabenick, S.A. (Ed.) *The Decade Ahead: Theoretical Perspectives on Motivation and Achievement* (Advances in Motivation and Achievement, Vol. 16 Part A), Emerald Group Publishing Limited, Leeds, pp. 1-33. [https://doi.org/10.1108/S0749-7423\(2010\)000016A004](https://doi.org/10.1108/S0749-7423(2010)000016A004)
- Kleppang, A.L., Steigen, A.M. & Finbråten, H.S. (2023). Explaining variance in self-efficacy among adolescents: the association between mastery experiences, social support, and self-efficacy. *BMC Public Health* 23, 1665. <https://doi.org/10.1186/s12889-023-16603-w>
- Leadbeater, B. J., Kuperminc, G. P., Blatt, S. J., & Hertzog, C. (1999). A multivariate model of gender differences in adolescents' internalizing and externalizing problems. *Developmental Psychology*, 35(5), 1268-1282. <https://doi.org/10.1037/0012-1649.35.5.1268>
- Lee, Y., Sung, H., Cho, H. (2024). A longitudinal study on the bidirectional relationship between adolescents' physical activity and life satisfaction. *International Journal of Sport Psychology*, 55(4), 313-333. <https://doi.org/10.7352/IJSP.2024.55.313>
- Lirgg, C. D. (1991). Gender differences in self-confidence in physical activity: A meta-analysis of recent studies. *Journal of Sport & Exercise Psychology*, 13(3), 294-310.
- Morris, A. S., John, A., Halliburton, A. L., Morris, M. D., Robinson, L. R., Myers, S. S., Aucoin, K. J., Keyes, A. W., & Terranova, A. (2013). Effortful control, behavior problems and peer relations: What predicts academic adjustment in Kindergarteners from low-income families?. *Early Education and Development*, 24(6), 813-828. <https://doi.org/10.1080/10409289.2013.744682>
- Morris, A. S., John, A., Halliburton, A. L., Morris, M. D. S., Robinson, L. R., Myers, S. S., ... Terranova, A. (2013). Effortful control, behavior problems and peer relations: What predicts academic adjustment in kindergarteners from low-income families? *Early Education and Development*, 24(6), 813-828. <https://doi.org/10.1080/10409289.2013.744682>
- Newacheck, P. W., Hung, Y. Y., Park, M. J., Brindis, C. D., & Irwin, C. E. (2003). Disparities in adolescent health and health care: Does socioeconomic status matter? *Health Services Research*, 38, 1235-1252. <https://doi.org/10.1111/1475-6773.00174>
- Pajares, F., & Urdan, T. C. (2006). *Self-efficacy beliefs of adolescents*. Greenwich, Conn: IAP-Information Age Pub., Inc.
- Phan, H. P., & Ngu, B. H. (2016). Sources of self-efficacy in academic contexts: A longitudinal perspective. *School Psychology Quarterly*, 31(4), 548-564. <https://doi.org/10.1037/spq0000151>
- Ramchunder, Y., & Martins, N. (2014). The role of self-efficacy, emotional intelligence and leadership style as attributes of leadership effectiveness. *SA Journal of Industrial Psychology*, 40(1), 1-11.
- Rocchino, G. H., Dever, B.V., Telesford, A., Fletcher, K. (2017). Internalizing and externalizing in adolescence: the roles of academic self-efficacy and gender. *Psychology in the Schools*, 54: 905-917. <https://doi.org/10.1002/pits.22045>
- Rudolph, K. D. (2002). Gender differences in emotional responses to interpersonal stress during adolescence. *Journal of Adolescent Health*, 30(4), 3-13. [https://doi.org/10.1016/S1054-139X\(01\)00383-4](https://doi.org/10.1016/S1054-139X(01)00383-4)
- Sattler, J. M. (2022). *Foundations of behavioral, social, and clinical assessment of children* (7<sup>th</sup> ed.). Jerome M. Sattler, Publisher, Inc.
- Scaramella, L. V., Conger, R. D., & Simons, R. L. (1999). Parental protective influences and gender-specific increases in adolescent internalizing and externalizing problems. *Journal of Research on Adolescence*, 9(2), 111-141. <https://doi.org/10.1207/s153277>



- Schunk D.H. & Meece J.L. (2006). Self-efficacy development in adolescence. In: F. Pajares & T. Urdan (Eds.). *Self-Efficacy Beliefs of Adolescents* (pp. 71-96). Greenwich: Information Age Publishing.
- Slater, A., & Tiggemann, M. (2010). "Uncool to do sport": A focus group study of adolescent girls' reasons for withdrawing from physical activity. *Psychology of Sport and Exercise*, 11(6), 619-626. <https://doi.org/10.1016/j.psychsport.2010.07.006>
- Telzer, E. H., & Fuligni, A. J. (2013). Positive daily family interactions eliminate gender differences in internalizing symptoms among adolescents. *Journal of Youth and Adolescence*, 42(10), 1498-1511. <https://doi.org/10.1007/s10964-013-9964-y>
- Trautner, M., & Schwinger, M. (2020). Integrating the concepts self-efficacy and motivation regulation: How do self-efficacy beliefs for motivation regulation influence self-regulatory success? *Learning and Individual Differences*, 80, 101890. <https://doi.org/10.1016/j.lindif.2020.101890>
- Vandell, D. L., & Gülseven, Z. (2023). The Study of Early Child Care and Youth Development (SECCYD): Studying Development from Infancy to Adulthood. *Annual Review of Developmental Psychology*, 5, 331-354. <https://doi.org/10.1146/annurev-devpsych-120621-035345>
- Vealey, R. S., Hayashi, S. W., Garner-Holman, M., & Giacobbi, P. (1998). Sources of sport-confidence: Conceptualization and instrument development. *Journal of Sport & Exercise Psychology*, 20, 54-80. <http://dx.doi.org/10.1123/jsep.20.1.54>
- Vella, S. A., Swann, C., Allen, M. S., Schweickle, M. J., & Magee, C. A. (2017). Bidirectional associations between sport involvement and mental health in adolescence. *Medicine and Science in Sports and Exercise*, 49(4), 687-694. <https://doi.org/10.1249/MSS.0000000000001142>
- White-Gosselin, Charles-Étienne & Poulin, François & Denault, Anne-Sophie. (2022). Trajectories of team and individual sports participation in childhood and links with internalizing problems. *Review of Social Development* 32. <https://doi.org/10.1111/sode.12640>