

## Psychometric properties of the youth experience survey with young athletes

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### ARTICLE INFO

#### Article history:

Received 7 January 2011

Received in revised form

30 August 2011

Accepted 12 September 2011

Available online 17 September 2011

#### Keywords:

Athlete development

Positive youth development

Youth sport

### ABSTRACT

**Objectives:** The topic of positive youth development through sport has received much research attention in recent years. However, a specific tool that measures this construct has yet to be fully developed. The purpose of this study was to test the factor structure of the Youth Experience Survey 2.0 (YES; Hansen & Larson, 2005) in a sample of youth sport participants; an instrument that was originally developed to assess experiences across any type of structured activity.

**Design/methods:** A total of 637 athletes aged 9–19 years completed the YES. A confirmatory factor analysis was conducted to fit the data to the model. The confirmatory factor analysis did not provide strong support for the models tested that resulted in a re-examination of the data using exploratory analyses. This analysis was preceded by a parallel analysis to determine the number of factors to retain. **Results:** Results of exploratory analyses created a modified version of the YES that measures 5 dimensions of youth development (personal and social skills, initiative, goal setting, cognitive skills, and negative experiences). The revised version of the scale, which contains 37 items, was renamed the Youth Experience Survey for Sport (YES-S).

**Conclusions:** The YES-S is proposed as an instrument capable of measuring positive and negative developmental experiences occurring in the youth sport domain.

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In the late 1980s, researchers from several disciplines of human development came to the conclusion that issues of youth development required creative and integrative research to underpin youth intervention programs and public policies. Consistent with the principles of developmental system theories (Ford & Lerner, 1992; Thelen & Smith, 1998), new frameworks of youth development emerged (Benson, Scales, Hamilton, & Sesma, 2006; Danish, Fazio, Nellen, & Owen, 2002; Gould & Carson, 2008; Hellison, 2003; Jelicic, Bobek, Phelps, Lerner, & Lerner, 2007) to synthesize research and applications related to developmental outcomes such as initiative, identity, and responsibility in youth. These applied theories aimed at addressing youth development were aptly termed the Positive Youth Development (PYD) approach. PYD may be seen as an encompassing theoretical framework that is predicated on a developmental system theoretical perspective. The theoretical framework of PYD proposes that children should be viewed as resources to be developed rather than burdens to society (Damon, 2004). More specifically, the PYD perspective utilizes an 'asset promotion' rather than 'deficit reduction' approach (Benson et al., 2006). An asset

promotion approach results in youth being empowered throughout development in hopes of preventing future developmental problems (e.g., school dropout, substance abuse) while a deficit reduction approach addresses problems after their occurrence.

Organized sport has been identified as one of the most popular extracurricular activities in youth (Guèvremont, Findlay, & Kohen, 2008) and an ideal setting to promote PYD (Fraser-Thomas, Côté, & Deakin, 2005). Whether participation results in positive or negative outcomes depends on the complex interaction of any number of factors including participant and program characteristics. To date, the development of an appropriate psychometric tool to assess the influence of sport participation on PYD has lagged far behind the proliferation of participatory programs available to youth today (Gould & Carson, 2008). A common feature of many programs includes both claims that their programs promote positive outcomes and an absence of any empirical evidence to substantiate the claim.

Despite the lack of instruments available to measure PYD in sport, a number of positive outcomes have been associated with participation in organized sports. In a landmark paper by Larson (2000), it is argued that the development of initiative should be of primary focus during adolescence. Initiative, which is defined as intrinsic motivation used to put forth effort and attention toward a particular goal, leads to a "language of agency" that is characterized in youth by

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better critical thinking and knowledge searching skills. Larson contends that initiative will develop in individuals who are intrinsically motivated, exert high concentration levels while participating in an activity, and engage in the activity over time. Since young athletes typically engage in sports for extended periods of time (i.e., one season), initiative can then be developed if the environment satisfies the conditions of motivation and concentration. Therefore, it is clear that sport programs can assist in equipping individuals with the general characteristic of initiative.

Another characteristic related to sport participation in several studies is goal setting (Burton & Weiss, 2008; Widmeyer & DuCharme, 1997). As outlined by Locke and Latham (1985), sport is an ideal environment for the development of goal setting skills. In recent years, Danish and colleagues (Danish et al., 2002; Danish, Forneris, Hodge, & Heke, 2004; Danish, Forneris, & Wallace, 2005) have incorporated the teaching of goal setting as part of their SUPER (Sport United to Promote Education and Recreation) program aimed at teaching life skills. Other studies have shown that many athletes use goal setting (Burton & Weiss, 2008) and it is an effective tool for influencing athlete behaviors (Widmeyer & DuCharme, 1997). This suggests that goal setting is an integral component of sport participation and an important characteristic for youth to develop.

In addition to the specific characteristics mentioned above, organized sport participants can experience a number of other psychological and social benefits. For example, participation in sport has been positively associated to life satisfaction (Gilman, 2001), leadership skills (Wright & Côté, 2003), educational achievement (Eccles & Barber, 1999), character building (Bredemeier & Shields, 2006; Camiré & Trudel, 2010; Shields & Bredemeier, 1995), identity development (Coatsworth & Conroy, 2009), and peer relationships (Smith, Ullrich-French, Walker, & Hurley, 2006). Taken together, these benefits suggest that the organized sport environment, if structured effectively, can provide youth with a number of positive characteristics for use in other life domains such as school or work.

Concurrent to the different personal characteristics that can result from sport participation, the setting in which the activity takes place can have an impact on the development of athletes. For example, the environment created by the coach has been shown to impact the experience of athletes (Conroy & Coatsworth, 2007). Although coaches acknowledge that teaching aspects of PYD is important, most do not believe they have the necessary tools to do so effectively (McCallister, Blinde, & Weiss, 2000). To counteract these reports, Conroy and Coatsworth conducted a number of studies aimed at helping coaches incorporate aspects of PYD into their coaching (Coatsworth & Conroy, 2006; Conroy & Coatsworth, 2006, 2007). Their work shows that providing coaches with PYD training has a positive effect on the experiences of sport participants. Considering the important role coaches play in the lives of young athletes, integrating PYD into coaching practice is of utmost importance to the sport community.

Although a range of positive characteristics have been associated to sport participation, a number of negatives ones have also been reported. In a review of the literature, Fraser-Thomas et al. (2005) suggest that negative experiences in sport can occur on three levels. First, physical health can be negatively affected by sport participation. Issues such as injuries (Law, Côté, & Ericsson, 2007) and eating disorders (Anshel, 2004) can impact a child's physical health and well-being. Second, negative psychological and emotional development can be manifested by decreased self-esteem or self-confidence (Martens, 1993), burnout, and dropout (Fraser-Thomas, Côté, & Deakin, 2008). Finally, negative behaviors such as poor sportspersonship and increased aggression in sport (Dunn & Dunn, 1999) can negatively affect the social development of youth. Taken together, it is clear that if the sporting environment

is not carefully constructed, participants can experience a range of positive and negative behavioral characteristics.

Measurement of positive and negative experiences in organized activities is the focus of the Youth Experiences Survey (YES; Hansen & Larson, 2005). The YES was originally designed to assess the experiences of youth participating in different structured activities that include performance and fine arts, academic clubs and organizations, community organizations, sports, service organizations, and faith-based groups. In their work, Hansen and Larson defined positive experiences as developmental situations that enhance a young person's well-being. Although not developed for the assessment of participation in sport per se, the Hansen and Larson (2005) scale has recently been used exclusively with a sample of athletes (Strachan, Côté, & Deakin, 2009) and appears to contain the major developmental characteristics that should result from sport participation. The current version of the YES (2.0) contains 70 items assessing positive and negative experiences in structured activities. The positive domains of the YES 2.0 are identity, initiative, basic skills, interpersonal relationships, teamwork and social skills, and adult networks. Each positive domain is further broken down into subscales believed to represent these latent constructs. A total of 17 subscales related to the six positive experiences are included. The seventh domain of negative experiences includes 5 subscales believed to represent the construct (for a list of subscales, see Hansen & Larson, 2005).

Hansen and Larson (2005) conducted a confirmatory factor analysis of the YES 2.0 on 1822 youth to determine which factor structure best represented the scale. They tested four models; two for the positive domains and two for the negative domains. The two models for the positive domain were a 1-factor model and a 6-factor model. The purpose of their analysis was to determine if positive experiences in organized activities were best conceptualized as one general positive factor or by 6 separate factors. A similar procedure was used for negative experiences with a 1-factor and 5-factor model being tested. They tested positive and negative models separately since these domains were conceptually distinct from one another. Goodness of fit indices (GFI) showed that positive experiences were best represented by six factors (GFI = .73) whereas negative experiences were best represented by five factors (GFI = .92). Therefore, they suggested that the YES 2.0 measures positive and negative experiences in organized activities on eleven domains (Fig. 1).

The YES has been used in different studies involving youth across different types of structured activities (Hansen & Larson, 2007; Hansen, Larson, & Dworkin, 2003; Larson, Hansen, & Moneta, 2006). The Hansen et al. (2003) and Larson et al. (2006) studies investigated how different structured activities (i.e., faith-based activities, performance and fine arts, and sports) relate to development in samples of 450 and 2280 students respectively. Results of these studies demonstrated that sport participation is linked to a mix of positive and negative experiences. Further, Hansen and Larson (2007) evaluated how youth experiences in a sample of 1822 youth were influenced by variations in dosage, motivation, leadership roles, and adult-child ratio. They reported that sport participants had more positive experiences when they spent more time in the activity, participated more frequently, and had higher motivation levels compared to non-sport participants.

In a recent application of the YES 2.0 with 74 sport participants aged 12–16 years ( $M = 13.6$ ), Strachan et al. (2009) investigated differences between a group of young athletes who sampled multiple sports and a group who specialized in one sport during childhood. Using discriminant function analysis, results demonstrated that athletes who specialized had more diverse peer relationships while samplers had higher rates of integration with family and linkages to community. Taken together, the work of

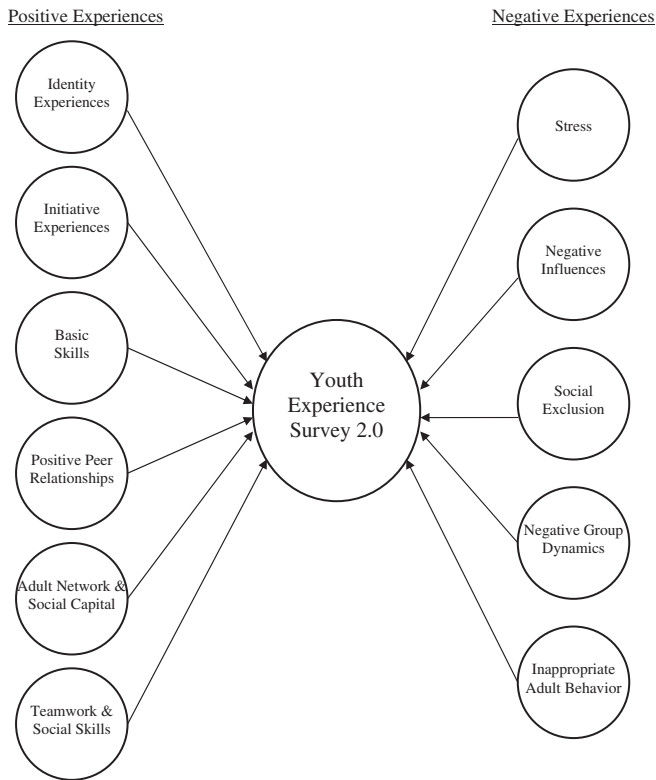


Fig. 1. Proposed model of the YES 2.0.

Hansen, Larson and colleagues (Hansen & Larson, 2007; Hansen et al., 2003; Larson et al., 2006) and Strachan et al. (2009) suggests that the YES 2.0 can be used to investigate experiences in sport; however, the psychometric properties of the instrument in the sport domain are currently unknown.

Hansen and Larson (2002) suggest that the flexibility of the YES to measure developmental experiences across different domains (i.e., music, sports) may limit the instruments ability to capture experiences specific to a given domain. This implies that researchers interested in PYD experiences gained through organized sport would benefit from a modified version of the instrument to better understand the impact of sport on youth experiences. This would provide the sport psychology field with an instrument better suited to measure positive and negative developmental experiences in sport relative to the existing YES 2.0. Therefore, based on previous efforts to develop and validate the YES 2.0, the purpose of this study was to determine if a modified version of the instrument possesses psychometric properties that would allow for its use in the sport domain. We hypothesized that Hansen and Larson's (2005) proposed factor structure would produce acceptable psychometric results in a group of athletes.

## Method

### Participants

A sample of 637 athletes (52.3% male, 47.7% female) between the ages of 9 and 19 years ( $M = 15.0$ ,  $SD = 1.5$ ) participated in the study. Athletes were sampled from a variety of recreational, competitive, single-gender, and co-ed sport programs. A total of 32 sports were represented in the sample. Ice hockey was the most represented sport (21.7%), followed by soccer (15.5%), basketball (11%), volleyball (8.9%), and football (6.6%). All other sports were represented at

frequencies below 5%. Within the sample, 17 individuals (2.7%) did not specify which sport they participated in.

### Measure

#### Modified version of YES 2.0

A modified version of the YES 2.0 was used to assess the experiences of youth sport participants. Since the present sample contained youth younger than the age of 14 – the age for which the instrument was developed – modifications were made to the language of the tool.

Prior to administration of the instrument, a group of five youth sport researchers gathered to discuss the 70 items of the YES 2.0. The language of each item and its relevance to sport were discussed. A total of 20 modifications were made to the instrument (see Table 1). Of these, 14 were related to the language of the instrument. For example, item #46 was changed from 'Had the opportunity to be in charge of a group of peers' to 'Had an opportunity to lead a group of peers'. Five other modifications were related to the meaning of the items. These modifications were aimed at making each item more relevant for younger sport participants. An example of this is item #52 where 'This activity helped prepare me for college' was changed to 'This activity helped prepare me for college or high school'. This allowed younger athletes to relate with items in a more meaningful way when reflecting on their experience. The final modification was to reverse the Likert scale of the instrument from '1 = Yes, definitely, to 4 = Not at all' to '1 = Not at all to 4 = Yes, definitely'. Matching the highest number on the scale with experiences occurring most often in the sport environment would be less confusing for the participants in the present sample. After all modifications had been incorporated, the Flesch–Kincaid readability score (Kincaid, Fishburne, Rogers, & Chissom, 1975) of the instrument was grade 4.7, which makes the instrument appropriate for athletes included in our sample.

### Procedure

Prior to data collection, the study was reviewed by the University ethics board. Upon approval, participants were recruited in two separate ways. First, community youth sport programs and clubs were contacted by e-mail or telephone and invited to participate. Second, high schools were recruited to allow students to participate. The recruitment process resulted in 11 community programs ( $n = 120$ ) and three high schools ( $n = 517$ ) as sources of participants for the study. All programs and schools were located in the province of Ontario, Canada.

Once a sport program agreed to participate, the primary researcher met with the team. This occurred at the end of a practice or game. The purpose of the study and instructions for completing the questionnaire were verbally explained to the athletes and any questions were addressed at that time. Participants were told that their responses should be based on their experiences in the program they were in at that moment. Athletes completed the questionnaire and consent forms and returned them to the primary researcher in a sealed envelope. Researchers recommended that athletes complete the questionnaire on location, however this was not always possible and athletes who could not do so were given the option of completing the questionnaire at home. A total of 8.6% of athletes completed the questionnaires at home. In these instances, the primary researcher met with the team after a subsequent game or practice to collect the completed documents.

For participants recruited in high schools, data collection occurred during a designated class period. On the day of data collection, the child could decide to not participate in the study. A research assistant proceeded with the data collection by providing

**Table 1**  
List of modification made to the YES 2.0.

Item #	Original item	Revised item
5	This activity got me thinking about who I am	This activity got me thinking about who I am as a person
6	This activity has been a positive turning point in my life	This activity has been a positive experience in my life
8	Learned to find ways to achieve my goals	Learned to find ways to reach my goals
9	Learned to consider possible obstacles when making plans	Learned to consider challenges when making future plans
16	Learned about organizing time and not procrastinating (not putting things off)	Learned about organizing time and not putting things off
26	Artistic/creative skills	Improved creative skills
32	Made friends with someone from a different social class (someone richer or poorer)	Made a new friend
34	I was able to change my school or community for the better	I was able to impact my school or community for the better
46	Had an opportunity to be in charge of a group of peers	Had an opportunity to lead a group of peers
51	This activity opened up job or career opportunities for me	This activity opened up job opportunities for me
52	This activity helped prepare me for college	This activity helped prepare me for college or high school
54	Demands were so great that I didn't get homework done (skip this item if your target activity is a class)	Demands were so great that I didn't get homework done
59	I was ridiculed by peers for something I did in this activity	I was laughed at by peers for something I did in this activity
64	I get stuck doing more than my fair share	I got stuck doing more than my fair share
66	Was discriminated against because of my gender, race, ethnicity, disability, or sexual orientation	Was treated differently because of my gender, race, ethnicity, disability, or sexual orientation
67	Adults in this activity are controlling and manipulative	Adults in this activity were controlling and manipulative
68	Adult leaders "hit" on me (made sexual advances)	Adult leaders scared me
69	Adult leaders made inappropriate sexual comments or jokes	Adult leaders made personal comments that made me mad
23–28	Added 'Improved' before each statement and removed 'In this activity I have improved.'	
All	Reverse coding of the scoring to: 1 = not at all; 4 = yes, definitely	

an explanation of the study to participants and instructing them to complete the questionnaire with their main sport in mind. The inclusion criterion was self-report sport involvement. In all cases, completion of the questionnaire took approximately 20 min.

#### Data analyses

A total of seven models were tested to evaluate the factor structure of the instrument. The first four models were tested in a manner akin to the methods used by Hansen and Larson (2005). First, a model with one positive latent factor was tested. Second, a model with one negative latent factor was tested. The third and fourth models represented the breakdown of the positive and negative factors with the third model comprising of six positive factors and the fourth model consisting of five negative factors. Although testing the positive and negative factors as separate models is uncommon, we believed that replicating this procedure was important prior to exploring additional models.

Three additional models not tested by Hansen and Larson (2005) but believed to make theoretical sense were fitted to the data. Considering positive and negative experiences were collected using a single scale, it was believed that testing the factor structure with positive and negative models combined was worthwhile to fully assess the properties of the scale. Therefore, the following three additional models were analyzed: (a) one-positive/one negative factor, (b) six positive/one negative, and (c) six positive/five negative. These models were tested because they combine both positive and negative dimensions of the scale and represent a general to specific breakdown of the instrument. The one positive/five negative model was not tested given that with such a large number of positive items, an equal or higher number of subscales for positive items was expected compared to negative ones. For each model tested, co-variances were included between the latent factors while the variance of the factors was set to one. Each item was related to one factor, and the estimation method used for each model was maximum likelihood.

Analyses were performed using AMOS 17. Since there has been debate about adjudging model fit (Barrett, 2007; Hu & Bentler, 1999; Markland, 2007), multiple indices were used for this study.

The  $\chi^2$  value has been identified as potentially problematic due to sample size sensitivity, but its value is reported since it represents the only true inferential statistic of model testing (Markland, 2007). Given its sensitivity to sample size, the  $\chi^2/df$  was also used as a measure of model fit (Thompson, 2004). Additionally, the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA) are also reported as indicators of model fit. Research practices using these indices state values for the  $\chi^2/df$  should be less than 3 while values above .90 for the CFI and below .05 for the RMSEA represents good fit (Marsh, 2007).

#### Results

Prior to the analyses, data were inspected for signs of non-normality, heterogeneity of variance, and patterns of missing data. No anomalies were identified across the range of scores for normality and variance distributions. Missing data analyses revealed that less than 1% of the data were missing. A mean replacement technique was used to input missing values. As stated by Tabachnick and Fidell (2007), this technique is as effective as other methods when less than 5% of the data are missing. To maintain consistency between missing scores and participant responses, imputed values were rounded to the whole number nearest to the mean. These scores represented values similar to ones provided by the participants who completed the questionnaire. With a negligible amount of missing data and the use of rounding to whole numbers, we believed this imputation technique did not have an impact on the results of our analyses.

Means, standard deviations, and internal consistency scores of the subscales are provided in Table 2. All subscales demonstrated good reliability with Cronbach alpha values all greater than .70 (Nunnally & Bernstein, 1994). Correlations between subscales ranged from .12 to .82.<sup>1</sup>

Summary statistics for the confirmatory factor analyses of the different models tested are presented in Table 3. For all the models

<sup>1</sup> A full correlation matrix of the data is available from the first author upon request.



**Table 2**  
Descriptive statistics of the modified YES subscales.

	M	SD	$\alpha$
Positive subscales	2.86	.59	.97
Identity experiences	2.89	.64	.73
Initiative experiences	3.06	.63	.91
Basic skills	2.70	.69	.87
Positive relationships	2.84	.69	.83
Teamwork and social skills	2.99	.71	.91
Adult networks and social capital	2.56	.80	.86
Negative subscales	1.79	.80	.96
Stress	2.14	.95	.83
Negative influences	1.77	.89	.87
Social exclusion	1.73	.87	.85
Negative group dynamics	1.74	.91	.84
Inappropriate adult behavior	1.62	.90	.92

tested the  $\chi^2$  values were found to be significant. When the data were fit for positive and negative factors independently the six positive and five negative factor structures showed the best results. This was evidenced by  $\chi^2/df = 4.34$ , CFI = .768, and RMSEA = .072 values for the six positive structure and values of  $\chi^2/df = 3.73$ , CFI = .965, and RMSEA = .066 for the five negative structure. By comparing these to the minimum acceptable values of model fit outlined by Marsh (2007), it was concluded that the six positive factors structure did not fit the data well. Alternatively, the five negative factors structure provides an adequate fit to the data.

However, since positive and negative items are combined into a single questionnaire, models containing positive and negative factors were tested. Results indicate that the 11-factor model (six positive and five negative) fit the data best. Fit statistics for the model were  $\chi^2/df = 3.27$ , CFI = .814, and RMSEA = .060. As the number of factors in each model tested increased (Table 3), summary statistics came closer to acceptable values (Marsh, 2007). Although the 11-factor model provided the best results of all the models tested which combined positive and negative domains together, fit indices did not support the proposed factor structure for the questionnaire. This was demonstrated by a  $\chi^2/df$  value greater than 3, a CFI value considerably below .90 and a RMSEA value within the acceptable range (.05–.08). Good model fit should yield a  $\chi^2/df$  value less than 3, a CFI value above .90, and a RMSEA value below .05.

Since fit indices of the confirmatory analysis did not reproduce the factor structure outlined by Hansen and Larson (2005), an exploratory factor analysis was conducted to determine if a different factor structure would best represent our sample of sport participants. This secondary analysis also provided us with the opportunity to refine the instrument. Hansen and Larson (2002) noted that the YES may benefit from modifications if used in a specific setting. The lack of support from CFA performed above justified the exploration of an alternative factor structure. In this situation, EFA results were not informed by previous CFA analyses because the goal was not to confirm a factor structure but rather explore and propose an alternative model.

**Table 3**  
Fit indices for all models tested.

Model	$\chi^2$	$\chi^2/df$	CFI	RMSEA
1-Positive	7540.3*	5.69	.669	.086
1-Negative	1147.3*	9.64	.879	.117
6-Positive	5679.5*	4.34	.768	.072
5-Negative	406.6*	3.73	.965	.066
1-Positive/1-negative	10306.9*	4.40	.716	.073
6-Positive/1-negative	8337.4*	3.59	.786	.064
6-Positive/5-negative	7499.6*	3.27	.814	.060

Note. \* $p < .001$ .

A critical decision in exploratory analyses concerns the number of factors to retain. Many researchers have relied on the 'eigenvalues greater than one rule' (O'Connor, 2000). However, this technique has been criticized for overestimating the number of factors retained (Zwick & Velicer, 1986). Zwick and Velicer (1986) demonstrated that parallel analysis is a more reliable method of deciding the number of factors to retain. In addition, they recommend that inspection of the Scree plot be used to support results of parallel analysis. Based on these recommendations, use of parallel analysis and Scree plot was preferred over the 'eigenvalues greater than one rule' in determining the number of factors. For a description of parallel analysis, see O'Connor (2000) and Zwick and Velicer (1986).

Using the parameters of the current study (sample size and number of questionnaire items), parallel analysis recommended that five factors be retained. The cutoff used to determine the number of factors was based on comparing our eigenvalues with the 95th percentile scores of the parallel analysis. Inspection of the Scree plot (see Fig. 2) supported the results of the parallel analysis suggesting five factors as best representing the data. Therefore, an exploratory analysis retaining five factors was conducted using the maximum likelihood extraction method with direct oblimin rotation. The direct oblimin rotation method was used due to correlations between factors. Inspection of the factor correlation matrix showed non-zero correlations between the proposed factors. Since it produces results which are easier to understand (Tabachnick & Fidell, 2007), the pattern matrix was used for interpretation of the factors following the analysis. Items with a factor loading of .32 or above were retained (Tabachnick & Fidell, 2007) and items that had cross-loadings greater than .30 were removed. The .30 cutoff for cross-loadings was selected as a conservative criterion to minimize the impact of the changes made to the instrument.

The analysis revealed all of the items loaded significantly on at least one factor. However, many items did have cross-loadings above .30 and were subsequently removed. After items were removed, the remaining items were put through subsequent analyses and inspection of the loadings occurred. This process was repeated until each item loaded significantly only on one factor with no cross-loadings. The analysis resulted in 33 items being removed due to low factor loadings or high cross-loadings, which created a revised version of the YES containing 37 items renamed the Youth Experience Survey for Sport (YES-S; see Appendix A). The factors of the YES-S were labeled (i) Personal and Social Skills, (ii) Cognitive Skills, (iii) Goal Setting, (iv) Initiative, and (v) Negative Experiences. Loadings and communalities for items across the five factors of the YES-S are presented in Table 4. Variables are ordered by factor and size of loadings. Reliability analyses throughout the refinement procedures consistently showed acceptable values greater than .70 with the final model yielding high internal consistency scores with Cronbach Alpha values of .92, .94, .85, .82, and .82 respectively.

## Discussion

The purpose of this study was to test the factorial validity in the sport domain of the YES 2.0 originally developed by Hansen and Larson (2005). The modified version of the YES 2.0 administered to a sample of 637 athletes between the ages of 9 and 19 years did not produce conclusive support to the factor structure proposed by Hansen and Larson (2005). Additional analyses allowed for modifications to the scale that resulted in a shorter questionnaire containing 37 items representing 5 factors. These modifications, combined with the use of the instrument in the sport context led to the Youth Experience Survey for Sport (YES-S).

Results from the present study did not reproduce the factor structure outlined by Hansen and Larson (2005). In their analyses,

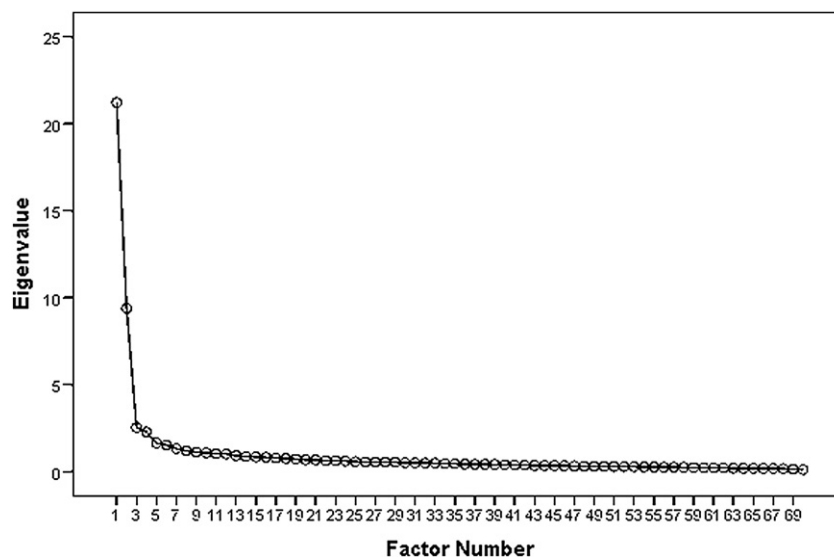


Fig. 2. Scree plot analysis to determine the number of factors to retain in exploratory analysis.

the obtained GFI values of .73 and .92 for the six positive and five negative factor structures respectively are comparable to our CFI values of .77 and .97. Although there may have been differences between the two samples, the overall fit of the model did not differ

**Table 4**  
Factor loadings and communalities ( $h^2$ ) of the 37 items retained across five factors.

	Factors					$h^2$
	Personal & social skills	Cognitive skills	Goal setting	Initiative	Negative experiences	
Item 1	.761					.637
Item 2	.723					.629
Item 3	.715					.564
Item 4	.707					.527
Item 5	.700					.602
Item 6	.685					.564
Item 7	.640					.497
Item 8	.637					.579
Item 9	.628					.393
Item 10	.574					.495
Item 11	.554					.469
Item 12	.482					.420
Item 13	.397					.383
Item 14	.334					.424
Item 15		.872				.677
Item 16		.860				.659
Item 17		.749				.614
Item 18		.530				.461
Item 19		.335				.371
Item 20			.845			.617
Item 21			.672			.579
Item 22			.482			.446
Item 23			.359			.490
Item 24				.857		.593
Item 25				.651		.523
Item 26				.647		.463
Item 27				.526		.446
Item 28					.843	.710
Item 29					.840	.707
Item 30					.821	.725
Item 31					.807	.690
Item 32					.805	.752
Item 33					.780	.608
Item 34					.774	.667
Item 35					.752	.569
Item 36					.654	.445
Item 37					.528	.389

dramatically in both cases. It is possible that the modifications brought to the original instrument helped in maintaining the consistency. More specifically, since the present sample included youth up to five years younger than the sample recruited by Hansen and Larson (2005), it was necessary to modify the language of the instrument to make the items relatable to younger athletes. The consistency of model fit between the revised version and the YES 2.0 suggests the language modifications served their intended purpose without changing the meaning of the questionnaire.

When the positive and negative factors were tested in combined models, results were only marginally better than when tested individually (Table 3). Of the three models tested, the six positive/five negative model produced the best fit. Similar to the results above, fit indices did not provide equivocal support for the factor structure. The  $\chi^2/df$  value was greater than 3 while the CFI value was low (.81) along with an acceptable RMSEA value of .06 (Marsh, 2007). These results suggest an alternate factor structure may be useful in measuring experiences of young athletes.

The lack of strong statistical support for any of the models led to an exploratory analysis investigating an alternative structure to better represent the sample of athletes. This process led to the development of the YES-S with the 5 factors of (i) Personal and Social Skills, (ii) Cognitive Skills, (iii) Goal Setting, (iv) Initiative, and (v) Negative Experiences. Although theoretically different, the YES-S and YES 2.0 share similarities. As can be seen in Fig. 3, items from the factors of 'positive peer relationships', 'adult network and social capital', and 'teamwork and social skills' combined into the factor labeled 'personal and social skills'. The 14 items that make up this factor deal with issues of social development (i.e., making new friends, working together requires compromises) and personal development (i.e., emotions affect behavior, better at taking feedback). When considering issues of youth development, facing these types of experiences in sport can have positive effects and be applicable to life outside sport. For example, individuals are often asked to work as a team within their school or work environment. If youth sport participants learn how their emotions affect their behavior and others, they can incorporate these experiences into other facets of their life. Similarly, young athletes continually receive feedback from coaches or team members. Experiences in dealing with others can prove beneficial for the challenges of life outside sport. The construct of 'personal and social skills' is closely related to the work of Hellison (2003). In his work with youth,

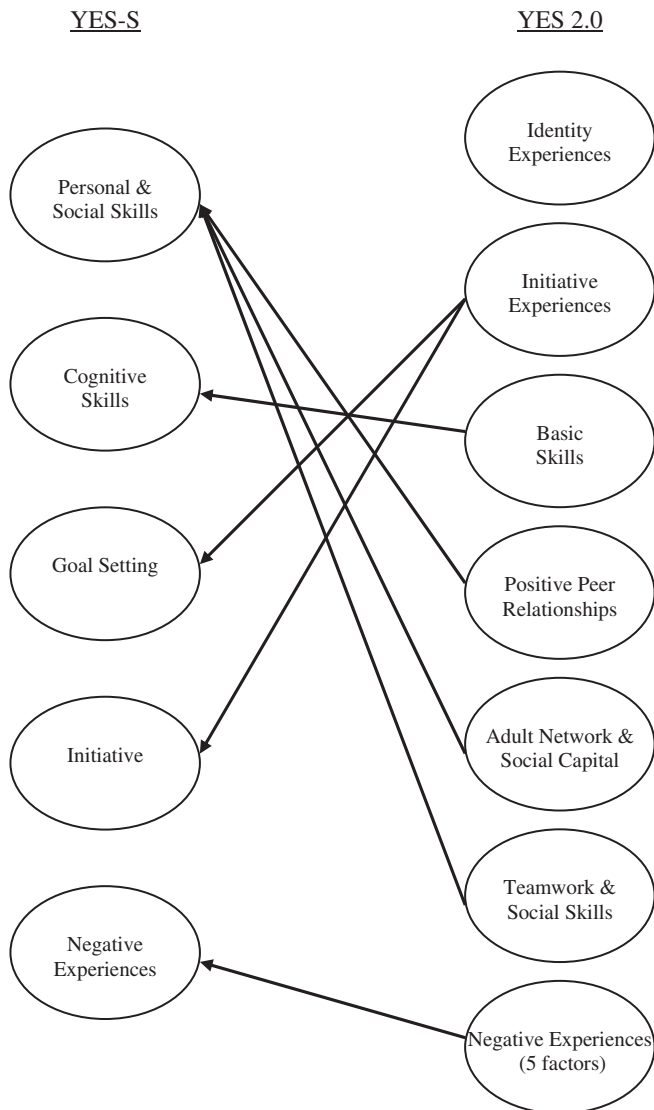


Fig. 3. Visual representation between factors of the YES-S and YES 2.0.

Hellison outlined that participation in physical activity has the ability to teach youth personal and social responsibility. By providing youth with a positive environment, participants learn how to impact their environment by being responsible young adults. The present results may point to a similar construct, however further investigation of the relationship between personal and social skills and personal and social responsibility is warranted. We believed that youth who score high on the items included in the 'personal and social skills' subscale may develop skills akin to the concept of responsibility as outlined by Hellison (2003).

The second positive factor of the YES-S is cognitive skills. This factor consists of YES 2.0 items originally related to the concept of 'basic skills'. Sports are mainly a physical undertaking; however, youth can develop cognitive abilities within this setting (Dwyer, Sallis, Blizzard, Lazarus, & Dean, 2001; Eccles & Barber, 1999). Creating a sport environment that allows youth to try different things (i.e., positions, tactics) can develop creative skills. Additionally, research findings demonstrate that youth who participate in sport show increased academic performance and desire to stay in school (Eccles & Barber, 1999). This may reflect the time management skills required to balance sports and academics.

The third and fourth positive factors of the YES-S were created by breaking down the construct of 'initiative experiences' outlined by Hansen and Larson (2005) in the YES 2.0. Results suggest this construct should be considered as two factors which were termed 'goal setting' and 'initiative'. The creation of a goal setting subscale is relevant since athletes often set specific goals within the sport domain (Burton & Weiss, 2008). When one considers the development of youth outside of sport, young athletes can benefit from goal setting experiences. More specifically, youth can apply these experiences to school or part-time work by setting performance goals with respect to their academic undertakings and evaluating the effort needed to reach these goals. In their implementation of a life skills program with athletes, Danish et al. (2005) taught the principles of goal setting and showed how it can be applicable to different facets of a person's life. We believe that the goal setting subscale can be useful for evaluating such programs by measuring changes in goal setting behaviors. Also, coaches interested in sport-specific goal setting behaviors may utilize this construct to quantify an athlete's progress or development.

With respect to the 'initiative' subscale of the YES-S, items represent the notion of initiative as defined by Larson (2000). Larson argues that initiative will develop in youth who are intrinsically motivated by the activity, who invest high amounts of attention and effort, and participate in an activity for a significant amount of time. Assuming youth sport participants will engage in the activity for an extended period of time, high scores on the four items of the subscale (items 24–27; see Appendix A) will represent the construct of initiative.

Finally, the five negative subscales outlined in the YES 2.0 grouped together to form one negative factor in the YES-S. Although negative experiences only consist of one factor, each of the negative items are useful in understanding experiences in sport. For example, increased alcohol consumption has been reported in grade 12 youth sport participants (Eccles & Barber, 1999) and this experience is represented by one item. The YES-S covered a wide age range which may explain why negative experiences grouped into a single factor. Youth of different ages may not have the same experiences – evidenced by Eccles and Barber (1999) who found no differences in alcohol consumption in grade 10, but differences in grade 12. Results of this study suggest that the current negative experiences subscale has the flexibility to cover the entire span of adolescence.

The results of the current study provide an instrument for evaluating the positive and negative developmental experiences of youth sport participants and fill an identified gap in the literature (Holt & Jones, 2008). The five subscales identified by the YES-S cover a range of constructs consistent with existing frameworks within the PYD through sport literature (Danish et al., 2005; Hellison, 2003; Larson, 2000) and with the construct identified as outcomes of youth sport participation (Fraser-Thomas et al., 2005). Through the development of the YES-S, researchers interested in aspects of PYD through sport can utilize this measure to investigate the process of youth development in the sport domain.

Finally, there are limitations that need to be acknowledged. First, there was a large age range in the present study and it is unknown if athletes of different ages had differing experiences. Future research should investigate differences in athlete experiences of varying age. Second, the proposed structure of the YES-S is not definitive and needs further validation. Although this version of the YES-S can be useful in understanding positive and negatives developmental experiences of young athletes, it is important to further investigate the factor structure. Future studies could investigate how males and females or team versus individual sport athletes respond to the questionnaire. Considering the growing interest given to PYD through sport (Holt, 2008), the current form of the YES-S brings a much needed instrument to the field.

## Appendix A

### The Youth Experience Survey For Sport (YES-S).

Your experience in the sport of: _____	Not at all	A little	Quite a bit	Yes definitely
1. I became better at giving feedback	1	2	3	4
2. I became better at taking feedback	1	2	3	4
3. Became better at sharing responsibility	1	2	3	4
4. Learned that working together requires some compromising	1	2	3	4
5. Learned to be patient with other group members	1	2	3	4
6. Others in this activity counted on me	1	2	3	4
7. Learned about the challenges of being a leader	1	2	3	4
8. Learned about helping others	1	2	3	4
9. Learned that it is not necessary to like people in order to work with them	1	2	3	4
10. Made a new friend	1	2	3	4
11. Got to know people in the community	1	2	3	4
12. Learned I had a lot in common with people from different backgrounds	1	2	3	4
13. I had good conversations with my parents/guardians because of this activity	1	2	3	4
14. Learned how my emotions and attitude affect others in the group	1	2	3	4
15. Improved skills for finding information	1	2	3	4
16. Improved academic skills (reading, writing, math, etc.)	1	2	3	4
17. Improved computer/internet skills	1	2	3	4
18. Improved creative skills	1	2	3	4
19. This activity increased my desire to stay in school	1	2	3	4
20. Learned to find ways to reach my goals	1	2	3	4
21. I set goals for myself in this activity	1	2	3	4
22. Learned to consider challenges when making future plans	1	2	3	4
23. Observed how others solved problems and learned from them	1	2	3	4
24. Learned to push myself	1	2	3	4
25. Learned to focus my attention	1	2	3	4
26. I put all my energy into this activity	1	2	3	4
27. Improved athletic or physical skills	1	2	3	4
28. Was treated differently because of my gender, race, ethnicity, disability, or sexual orientation	1	2	3	4
29. Adult leaders in this activity were controlling and manipulative	1	2	3	4
30. Adult leaders scared me	1	2	3	4
31. Adult leaders made personal comments that made me mad	1	2	3	4
32. Adult leaders encouraged me to do something I believed morally wrong	1	2	3	4
33. Other youth in this activity made inappropriate sexual comments, jokes, or gestures	1	2	3	4
34. Youth in this activity got me into drinking alcohol or using drugs	1	2	3	4
35. I got stuck doing more than my fair share	1	2	3	4
36. There were cliques in this activity	1	2	3	4
37. This activity has stressed me out	1	2	3	4

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