Development of a Measure to Assess Youth
Self-Reported Experiences of Activity Settings (SEAS)

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Running Head: Youth Experiences of Activity Settings

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Abstract

There is a need for psychometrically-sound measures of youth experiences of community/home leisure activity settings. The 22-item Self-Reported Experiences of Activity Settings (SEAS) captures the following experiences of youth with a grade 3 level of language comprehension or more: Personal Growth, Psychological Engagement, Social Belonging, Meaningful Interactions, and Choice & Control. Forty-five youth ages 14 to 23 (10 with severe disabilities) completed the SEAS in 160 leisure activity settings. The SEAS has good to excellent internal consistency (Cronbach's alphas from 0.71-0.88) and moderate test-retest reliability (mean scale ICC= 0.68) as expected due to changes in activity settings over time. The SEAS was able to differentiate various types of activity settings and participation partners. The SEAS can be used to gain greater understanding of situation specific experiences of youth participating in various types of recreation and leisure activity settings, including youth with different types of disabilities and those without disabilities.

Despite widespread support for full community integration, very little is known about how youth experience their environments and activity settings (Holloway & Valentine, 2000). Even when youth with disabilities are physically included in an activity setting, they may not be meaningfully engaged in the activities or with others, and they may not experience a sense of choice and control, all of which are defining attributes of participation (Hoogsteen & Woodgate, 2010; King et al., 2009; Perlman, 2007). As research in the area of participation grows, there is a need for a measure of youth experiences that can be used by youth with differing abilities and disabilities, within a variety of community and home activity settings.

To “participate” means having the experience of “being a part of” (Almqvist & Granlund, 2005). Meaningful engagement in activity occurs when an individual derives a sense of fulfillment from activity, feels connected to others, and/or has a better understanding of themselves or their abilities (King, 2004; Raphael et al., 1996). In this article we use the term ‘meaningful participation experiences’ to refer to the meaning that individuals derive from participating in specific contexts, including feelings of fun, challenge, choice, self-determination, and self-expression (Hammel et al., 2008). Since there are individual differences in needs for affiliation, achievement, and certainty in understanding, participation is realized at a very private and personal level (Hammel et al., 2008).

Much more research is needed to understand youths’ experiences and constructions of their daily lives (Brannen & O'Brien, 1995) and how they perceive the benefits of their engagement in activities (Poulsen & Ziviani, 2004). To truly understand youth experiences, we need to understand their own perspectives and cannot rely on reports of proxies (Derr, 2006). Communicating experiences is a challenging endeavor for youth with low literacy and language skills, including difficulties with comprehension and/or expression; however, it is important to

develop participation assessments that capture the subjective and lived experiences of *all* individuals with disabilities, including those with severe disabilities (Hammel et al., 2008).

This article describes the development and psychometric properties of a measure of youth self-reported experiences of recreation and leisure activity settings at home and in the community. By ‘activity setting,’ we mean a combination of place and activity (King, Rigby, & Batorowicz, 2013), such as shopping in a store at the mall, reading a book in a bookstore, or playing piano in the living room. The measure we developed (Self-Reported Experiences of Activity Settings; SEAS) is applicable to all youth with at least a grade 3 level of language comprehension, including youth with and without disabilities. The SEAS was designed to be completed by youth, using their typical communication methods, assisted by a caregiver or service provider when appropriate. Our intent was to develop an inclusive tool suitable for use with any youth population, which could be used to compare their activity setting experiences. The SEAS was developed with input from youth with severe disabilities who are typically excluded from research studies, and was tested with youth with and without disabilities. Very few existing tools capture the meaning of activity participation experiences to youth, and none measure the activity setting experiences of youth with severe disabilities.

The activity setting context is useful with regard to participation experiences, as ‘activity setting’ denotes particular places or spaces in which children/youth take part in active pursuits (e.g., doing artwork, taking part in physical activities) and more passive activities (e.g., reading, watching television) (King et al., 2013). According to Almqvist, Uys, and Sandberg (2007), an activity setting is a ‘situation-specific’ experience, opportunity, or event that provides a context for a child to learn about his or her own capabilities (Dunst, Trivette et al., 2001). Other types of positive and negative experiences also arise in activity settings, including fun, boredom,

disinterest, and reflection. Activity setting experiences encompass setting-specific perceptions and evaluations, whereas ‘quality of life’ refers to psychological and social experiences across settings that provide an overall sense of well-being (Horelli, 2006).

Based on previous classifications of activities (Cantell, Smyth, & Ahonen, 1994; King et al., 2004; Poulsen et al., 2007), we differentiated activity settings in terms of (a) their formal versus informal nature, (b) their solitary versus group nature, and (c) the types of activities taking place (i.e., active physical, passive recreational, skill-based, or self-improvement). In the following sections, we discuss existing participation measures and the background behind the development of the SEAS.

Measuring Participation Experiences

Participation can be measured in various ways (Sakzewski, Boyd, & Ziviani, 2007). Participation measures can assess what is done in the context of different life domains (King et al., 2004); occupational performance or satisfaction with activities (Hammel et al., 2008); perceptions of whether a given setting supports or hinders participation (Reinhardt et al., 2011); or the subjective experience of participation (Hoogsteen & Woodgate, 2010). According to Noreau and Boschen (2010, p. S51), participation “can be conceptualized as an objective approach based on what people do or as a subjective approach reflecting personal experience in terms of chance or difficulty of participating.” In the following sections, we focus on the experience of participation, as reported by proxies or the self.

Proxy measures. Many existing participation measures are parent-report or other proxy-completed assessments. For example, the Child Engagement Questionnaire (McWilliam, 1991) is completed by parents, teachers, or other adults with broad knowledge of the child, and assesses four aspects of engagement, namely competence, persistence, undifferentiated

behavior, and attention. Engagement is defined as the amount of time children spend interacting with their social and nonsocial environments in a developmentally and contextually appropriate manner. The Participation and Environment Measure for Children and Youth (PEM-CY) (Coster et al., 2011) captures parents' perceptions of supports and barriers to their child's participation rather than the child's experiences per se.

Self-report measures. There is increasing use of self-report measures in pediatric rehabilitation (Kramer, 2011). Several authors have proposed that the participation of children with disabilities is measured most appropriately by instruments that ask the child directly (Hoogsteen & Woodgate, 2010; McConachie et al., 2006) and particularly by measures of participation experiences rather than measures of participation problems or participation accomplishment (Eyssen et al., 2011). Existing measures include the Children's Assessment of Participation and Enjoyment (King et al., 2004; King et al., 2006), which measures what children and youth do, where, with whom, and how frequently; and the Child Occupational Self-Assessment, which measures children with disabilities' perceived competence in performing everyday activities, as well as the importance they attach to these activities (Keller, Kafkes, & Kielhofner, 2005). The Youth Experiences Survey (YES) (Hansen & Larson, 2005) assesses the retrospective experiences of typically developing youth in an organized youth activity, such as an extracurricular activity, over their duration of involvement with that activity.

The Experience Sampling Method (EMS) repeatedly samples subjective experiences of leisure unfolding in real time (Csikszentmihalyi, Larson, & Prescott, 1977), using questionnaires measuring constructs such as intrinsic motivation, interest, and perceived freedom (Csikszentmihalyi & Rathunde, 1993). Shernoff and Vandell (2007) used this method to assess the quality of experience of typically developing youth taking part in afterschool programs.

In summary, there is an identified need for measures providing a better understanding of the subjective aspects of participation, including the notion of meaningful engagement.

Existing self-report measures do not capture the experiences of youth with severe disabilities and do not adequately assess experiences of a range of recreation and leisure activity settings with respect to experiences such as excitement, interest, challenge, choice, self-understanding, mastery, and social connection.

Development of the Measure of Self-Reported Experiences of Activity Settings (SEAS)

Intent. Due to a lack of measures by which to capture participation experiences, we set out to develop the SEAS, a measure of youth experiences of a particular activity setting. The SEAS is situation-specific, and is *not* designed to summarize a youth's experience over several different leisure activities. As well, the SEAS is *not* intended to measure youth's perception of facilitators or barriers to participation, or personal or situational factors that may contribute to those experiences, such as a youth's understanding of rules or expectations; rather, our interest was in experiences per se. The SEAS captures both positive and negative experiences, since both can be present. For example, youth may feel they had fun in an activity setting, but also that they lacked connection with others present.

Context of development. The SEAS was developed by an interdisciplinary team of researchers conducting a project involving youth between 13 and 23 years of age with severe disabilities (i.e., youth with complex continuing care needs and/or those who use augmentative and alternative communication). The SEAS was developed as part of a series of quantitative, physiological, and qualitative techniques and measures to assess the experiences of youth in community and home recreation and leisure activity settings. The project aim was to elucidate the qualities of activity settings most highly associated with youth's experiences of

engagement, sense of meaning and benefit, challenge, choice, and social belonging.

Subsequent project phases will examine relationships of the experiential measurement techniques with a measure of environmental qualities developed by the team—the Measure of Environmental Qualities of Activity Settings (King et al., 2012).

Conceptual basis. We adopted a person-specific experiential approach, focusing on experiences of activity settings, since the quality and nature of experience matter for developmental outcomes (Eccles, 2005) and because relatively little is known about the ways in which the developmental benefits of participation accrue or are realized (Ben-Arieh & Ofir, 2002). The literature indicates that there are a variety of meaningful participation experiences, including positive emotions, a sense of psychological engagement, experiences that help one to explore identities, social experiences that provide a sense of inclusion, and experiences that are transformative or spiritual in nature. Reflecting the notion of optimal experience or “flow”, development is considered to be propelled by experiences that are deeply engaging and enjoyable, engender full concentration, and present a balance between challenge and skill (Csikszentmihalyi, 1990). Choice is another important participatory experience, which facilitates a child’s sense of control or autonomy (Almqvist et al., 2007; Hoogsteen & Woodgate, 2010).

Meaningful activity-specific experiences are thought to arise through several opportunity-related mechanisms. Eccles, Barber, Stone, and Hunt (2003) have proposed three mechanisms underlying optimal experience in activity for children who are typically developing, including opportunities to engage in challenging activities, engage with others, and develop a sense of positive identity. These mechanisms are hypothesized to lead to meaningful activity-specific experiences, reflecting engagement with the activity (leading to a sense of competence when the activity is challenging yet commensurate with skills), engagement with co-participants

(leading to a sense of belonging), and connection of the activity to the self (leading to self-awareness and self-understanding) (King et al., 2003; Petrenchik & King, 2011).

Constructs measured by the SEAS. To determine relevant constructs, we examined several bodies of literature, including youth experiences of organized activity settings (Hansen, Larson, & Dworkin, 2003; Shernoff & Vandell, 2007), the need-gratifying properties of leisure activities (Tinsley & Eldredge, 1995), the nature of interest-based activity (Hidi, 2000; Raab, 2005), frameworks of how people acquire and create meaning in life (King, 2004), aspects of youth identity and developmental outcomes or assets (Duerden, Taniguchi, & Widmer, 2011; Klein et al., 2006), experiences of environments (Fidler, 1999; Harding et al., 2009), self-reports of participation experiences by children/youth with disabilities (Eriksson & Granlund, 2004; Harding et al., 2009), insiders' views of the meaning of participation (Hammel et al., 2008), and the nature of optimal experiences (Delle Fave & Massimini, 2004). Since a theoretical framework linking specific experiences to specific outcomes is critical (Eccles, 2005), the initial selection of constructs for the SEAS was also guided by a model of processes leading to developmental benefit from activity (King et al., 2009).

Experiences of interest included challenge, interest, and enjoyment (Duerden et al., 2011; Hunter & Csikszentmihalyi, 2003), having fun (Bazyk & Bazyk, 2009; Hammel et al., 2008; Harding et al., 2009), making decisions and choices (Dunst, Bruder et al., 2001; Hammel et al., 2008; Lawlor, 2003; Wiseman, Davis, & Polatajko, 2005), expressing oneself (Groff & Kleiber, 2001; Waterman, 1993), feeling successful and doing things independently (Heah et al., 2007), feeling fellowship or social connection with others (Eriksson & Granlund, 2004; Hammel et al., 2008), identity exploration and reflection (Hansen et al., 2003), and perceptions of autonomy, growth, self-awareness, and spirituality (Duerden et al., 2011; Lerner & Benson, 2003).

The literature therefore indicated the importance of an array of experiences, which we then categorized, guided by our conceptual model (King et al., 2009), into (a) psychological engagement with activity (i.e., emotional experiences, challenge and a sense of empowerment, and the perception of choice/opportunity), (b) personal experiences (i.e., sense of identity and competence), (c) interpersonal experiences (social), and (d) transpersonal experiences (spiritual).

Study Objectives

The overall objective was to develop a situation-specific, self-report measure of youth experiences of a particular community and home recreation or leisure activity setting, such as taking part in a youth program or reading a book at home. We generated items for the SEAS following a construct approach to test development (Wiggins, 1973) and then examined its factor structure, internal consistency and test-retest reliability, and construct validity (Streiner & Norman, 2003).

We examined construct validity through predictions related to the Youth Experience Survey (YES), a self-report survey of adolescents' developmental experiences in organized activities (Hansen & Larson, 2005; Hansen et al., 2003). We hypothesized a correspondence in ratings of experiences in formal activity settings with the YES. We also examined predictions involving (a) different types of activity settings (formal vs. informal; group vs. solitary; active physical, passive recreational, skill-based, vs. self-improvement activities), (b) youth familiarity with the activity setting, and (c) the presence of different social partners (relatives, friends, vs. no one). First, we hypothesized that different types of activity settings would provide distinct types of experiences as measured by the SEAS. We hypothesized that formal activity settings (those with rules or goals, and a formally designated leader, coach, or instructor) would receive

higher ratings on scales reflecting social experiences and experiences of challenge, whereas informal activity settings would receive higher ratings on experiences of choice and personal growth linked to exploration and discovery (after Kleiber, Larson, & Csikszentmihalyi, 1986; Shernoff & Vandell, 2007). We also hypothesized that group activity settings would receive higher scores than solitary activity settings on social experiences and feelings of competency, and that physical activities would have higher ratings on competency or personal growth, as they often involve skill development (Kleiber et al., 1986).

Second, we hypothesized that greater familiarity with the type of activity setting, the people involved, and the activity itself would be associated with different experiences, as measured by the SEAS. Third, we hypothesized that experiences would be different in the presence of relatives and friends (vs. no one), with positive mood states more likely to be reported with friends (Shernoff & Vandell, 2007).

Method

Development consisted of four phases: (a) item generation based on a review of the literature and existing participation assessment tools; (b) consultations with experts; (c) pretesting and piloting with youth; and (d) psychometric testing. In all, seven versions of the measure were systematically reviewed and refined. The study was approved by the research ethics review board of Holland Bloorview Kids Rehabilitation Hospital in Toronto Canada.

A. Item Generation Phase

Following a construct approach, the primary investigator generated 59 items to represent the four domains identified in the literature review: (a) processes of psychological engagement (general feelings/emotions, challenge and empowerment, choice and opportunity), (b) personal experiences (sense of identity, sense of competence), (c)

interpersonal experiences (sense of belonging), and (d) transpersonal experiences (spiritual).

Items were carefully examined and refined by members of the research team, who had backgrounds in social psychology and occupational therapy.

Instrument format. Since the SEAS was intended to be broadly appropriate to youth, including youth with severe disabilities, we used careful wording of instructions; clear and simple language (Aman, 1991; Finlay & Lyons, 2001); and completely labelled response options along with visual images (Bell, 2007). Avoiding abstract concepts is also recommended, but was hard to achieve given the focus of the SEAS. We aimed for grade 3 levels of comprehension and readability.

The SEAS is completed at the end of a specific activity lasting at least 15 minutes. Based on the piloting process and the clinical judgment of five team members (with 4 to 36 years of clinical experience), 15 minutes was determined to be the minimum amount of time youth need to have a full enough experience to complete the SEAS accurately. This length of time also provides adequate opportunity for a range of experiences to occur. Observational measures often use a 15-minute time period (e.g., Brentnall, Bundy, & Scott Kay, 2008; Bundy et al., 2001).

After providing background information about the nature of the recreation/leisure activity engaged in, where, with whom, time, and familiarity with aspects of the activity setting, youth are asked to rate how they felt while doing the activity. In order to capture both positive and negative aspects of experience, a bipolar format was adopted (Bundy, 1999; Harter & Pike, 1984) consisting of a 7-point rating scale with labelled endpoints (e.g., I was having fun vs. I wasn't having fun; I had a say in things vs. I didn't have a say in things). This resulted in a 36-item measure. The rating scale includes "strongly agree," "agree," and "agree a little" options

on both sides, along with a visual analogue scale consisting of “+” signs varying in sizes, a “neither” option, and a “not applicable” option (see Figure 1). Our rationale for choosing a 7-point bipolar scale was based on a review of the literature. Bipolar rating scales with seven points yield greater measurement accuracy than three-, five-, and nine-point scales (Malhotra, Krosnick, & Thomas, 2009). We used a Harter-like format, as this approach has been found appropriate for respondents at a grade 3 level of comprehension and encourages truthful rather than socially desirable responses (Harter & Pike, 1984), and because we wanted to provide youth with the opportunity to agree with negative as well as positive statements.

B. Consultant Review Phase

Five content experts (with backgrounds in developmental psychology, augmentative and alternative communication (AAC), speech-language pathology, occupational therapy, and child and adolescent psychiatry) reviewed the conceptual groupings, items, and format of the SEAS. They found the a priori constructs to be sufficiently comprehensive and endorsed the focus on episodic experience (i.e., experience in the moment).

C. Pretesting and Piloting Phases

In the pretesting phase, research team members asked youth they knew personally (a mix of youth with and without disabilities) to complete the SEAS for an activity of 15 minutes or more in which they had just taken part, and to provide feedback about item wording and items to remove. The instructions were revised to include whether help was provided in filling out the scale. A highly experienced elementary school teacher, who had experience working with children with and without disabilities, reviewed the SEAS and indicated that a typically developing grade 3 child would have no problem comprehending the measure (reflecting our grade 3 language comprehension criterion).

In the piloting phase, five youth with disabilities (members of a Youth Advisory Committee) completed the measure and attended a meeting to provide feedback. Based on feedback, the instructions were modified to indicate that no value is being placed on youths' answers: "Your answers to questions are about your experiences when you did the activity and are not a positive or negative reflection on you." Some items were clarified by the inclusion of examples, and the "neither" option was included at this time.

D. Psychometric Testing Phase

Participants. Three samples of youth ages 13 to 23 years took part: 10 youth with severe disabilities (3 males and 7 females) ages 14 to 23 (Sample 1), 12 youth without disabilities (4 males, 8 females) ages 13 to 19 (Sample 2), and 23 youth without disabilities (10 males, 13 females) ages 14 to 19 (Sample 3).

Sample 1 consisted of 10 youth with severe disabilities (2 with complex continuing care needs and 8 who communicated using AAC; 9 with Cerebral Palsy, 1 with Myotubular Myopathy) who each completed two SEAS (a total of 20 SEAS). All youth had language comprehension at the grade 3 level or greater; this was required in order to understand the SEAS instructions, items, and rating scale. Eight of these youth completed the SEAS for a selected formal or informal activity twice over a 2-4 week period, while the other two youth completed the SEAS for two separate activities. The research assistant provided support as needed, by reading questions aloud, scribing, or providing explanations. This ensured that the second SEAS questionnaire was completed for the same activity, in the same place, and at the same time of day (for the test-retest reliability). Youth with approximately a grade 6 literacy level had no problems in completing the SEAS; however, some youth with grade 3 literacy required explanation of words such as "involved," "responsibility," and "calm." The research

assistant developed a list of explanations to use as required, thus ensuring consistency.

Sample 2 was comprised of 12 youth without disabilities recruited at local high schools. They completed a background information form and took part in one formal and one informal activity setting twice each over 4-6 weeks, providing a total of 48 SEAS. They also completed the YES for formal activities. Sample 3 was comprised of 23 youth without disabilities recruited through snowball sampling following from announcements in the hospital's on-line newsletter. These youth completed a background information form and completed the SEAS for four different self-selected activities (a total of 92 SEAS).

Youth Experiences Survey 2.0 (YES). The YES (Hansen & Larson, 2005; Hansen et al., 2003), used to examine the concurrent validity of the SEAS, is a self-report measure of high school-aged youths' developmental experiences in an organized youth activity, such as an extracurricular activity or community-based program. The measure uses a 4-point rating scale (1= Yes, Definitely; 4= Not at All) and contains 11 domains. The measure has evidence of construct validity and the scales demonstrate acceptable internal consistency reliability. We focused on two YES scales that were similar to SEAS scales (Identity Reflection and Social Exclusion), and also examined associations with the YES Stress scale. Lower scores on Identity Reflection indicate higher rates of reflection, whereas higher scores on Social Exclusion and Stress reflect less exclusion and less stress, respectively.

Analysis Plan

Data were used to examine the factor structure of the SEAS (all three samples), test-retest reliability (Sample 1), and construct validity (all samples). Together, the samples provided 160 completed SEAS questionnaires (20 from Sample 1, 48 from Sample 2, 92 from Sample 3); based on the rule of thumb of 5-8 participants per item, this sample size was sufficient for the

principal components analyses (Norman & Streiner, 2003). Our decision criteria for excluding items in the principal components analyses were: (a) a factor loading under .50, or (b) loading on two or more factors with the difference in loadings under 0.10.

Test-retest reliability was examined using intraclass correlation coefficients (ICC) for eight youth with severe disabilities (Sample 1) who completed the SEAS for the same type of activity setting at a second point in time. This sample size is minimally adequate for a preliminary assessment of test-retest reliability. The research assistant ensured that the activity took place in the same physical location and at the same time of day; however, since the people present and the exact nature of the activities were assumed to vary between time points, we expected moderate test-retest reliabilities between 0.40 and 0.59 (Fleiss, 1981).

We examined validity through correlations of SEAS scales with YES scales, aspects of familiarity with the activity setting, and through predictions involving different types of activity settings. Familiarity was ascertained in the SEAS questionnaires and type of activity setting was determined from background information provided by youth on the questionnaire. Mean scale scores for formal vs. informal and group vs. solitary activity settings were compared using t-tests and the four activity types were compared using analyses of variance (ANOVAS).

Results

Principal Components Analyses

Principal component analyses with varimax rotation were performed on the 36-item measure, based on 160 SEAS questionnaires and using SPSS 19, with the aim to identify a stable scale structure and items best exemplifying the constructs. Mean substitution was used to replace missing data, which were minimal (11.1% legitimately missing due to “not applicable” and a section pertaining only to solitary activities; 2.0% missing in error). A total of 12 items

were dropped based on our decision criteria regarding factor loadings. A 5-factor solution was determined to be conceptually most appropriate. The final factor structure accounted for 61.9% of the variance. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.79 and Bartlett's Test of Sphericity was highly significant ($p < 0.0001$). (Four of the five scales remained the same in an analysis performed without mean substitution.) At this point, two items were dropped because they reduced scale reliabilities ('I took initiative' and 'I controlled my emotions'). As shown in Table 1, the scales were labelled Personal Growth (6 items), Psychological Engagement (4 items), Social Belonging (4 items), Meaningful Interactions (4 items), and Choice & Control (4 items).

The resulting scales were highly similar to the a priori groupings of psychological engagement, and personal, interpersonal, and transpersonal experience, as described below. The Psychological Engagement scale mapped onto the a priori grouping of psychological engagement; all items reflected positive emotions (e.g., I was having fun). The Personal Growth scale reflected 'personal experience', with 5 of the 6 items reflecting a sense of personal competence (e.g., I became better at something); feeling challenged also loaded here. The Social Belonging scale reflected 'interpersonal experience', consisting of interpersonal items reflecting a sense of belonging (e.g., I got along with others). The other two scales reflected more discrete aspects of the a priori categories. Meaningful Interactions was a mix of interpersonal items with a focus on sharing thoughts, feelings, and ideas, as well as sense of identity (I talked about my thoughts and feelings). Choice & Control reflected challenge and empowerment (I was in control, I was free of pressure), as well as choice and opportunity (I could choose what to do for the most part).

Scale scores were created, reflecting the "extent" of each dimension of experience (we

used a 7-point scale, ranging from +3 to -3, with more positive scores reflecting agreement with positive experiences). The correlations among the scales ranged from 0.04 to 0.60 (Table 2). Overall, these were moderate, indicating distinct constructs, as desired. Statistically significant correlations were found between Psychological Engagement and all other scales, and between Choice & Control and all scales except Personal Growth.

Reliability

As shown in Table 3, the Cronbach's alphas ranged from 0.71 to 0.88, indicating very good to excellent internal consistency reliability (Streiner & Norman, 1989; Tabachnik & Fidell, 1989). Also as shown in Table 3, the test-retest reliabilities were moderate for Psychological Engagement, Social Belonging, and Choice & Control, but excellent for Personal Growth and Meaningful Interactions. The average test-retest reliability was 0.68. The highest ratings for the total sample (and for youth with and without disabilities separately) were for Psychological Engagement and Social Belonging, and the lowest ratings were for Personal Growth, indicating that youth selected activity settings they knew would be enjoyable.

Construct Validity

Correlations with other measures. We examined associations between SEAS and selected YES scales for the 8 able-bodied youth who completed both measures. The findings pertain only to formal organized group settings and youth who have higher levels of cognitive functioning (grade 6 level) and are therefore able to complete the YES. As shown in Table 4, higher Personal Growth scores were associated with more reflection on identity, as one would expect, and with less stress. As hypothesized, higher scores on Psychological Engagement and Social Belonging were associated with lower ratings of social exclusion. These correlations were relatively high in magnitude (0.64 to 0.80), providing good support for the validity of the SEAS

with respect to able-bodied youth's experiences of formal activity settings.

We examined SEAS scores as a function of familiarity with the activity setting, the people present, and the activity (rated on a 7-point scale, ranging from 1=not at all to 7= to a very great extent). As shown in Table 4, higher familiarity with people was associated with higher scores on Psychological Engagement and Social Belonging whereas higher familiarity with activity was associated with higher scores on Social Belonging and Choice & Control.

SEAS and types of activity settings. As predicted, there were significant differences between formal vs. informal and group vs. solitary activity settings (see Table 5), with the effect sizes (r) being large to medium ($r > 0.29$ = large; > 0.15 = medium) (Rosnow & Rosenthal, 1996). Compared to formal activity settings, youth rated informal activity settings as significantly lower on Personal Growth but significantly higher on Meaningful Interactions and Choice & Control. Compared to solitary activity settings, youth rated group activity settings as significantly higher on Personal Growth and Psychological Engagement, but significantly lower on Choice & Control.

As shown in Table 6, there were also significant differences between the four types of recreation and leisure activities. Bonferroni post hoc comparisons indicated that Passive Recreational activities were rated as significantly lower on Personal Growth than were Active Physical and Skill-based activities, but significantly higher on Choice & Control than all other activities. Self-improvement activities were rated as significantly lower on Psychological Engagement than all other activity types. The effect sizes (partial eta squared values) for Personal Growth, Psychological Engagement, and Choice & Control ranged from .12 to .19, indicating large effect sizes (approximately 12-19% of the variance).

SEAS and people present. ANOVAS were performed to compare SEAS scores for activity

settings involving relatives, friends, or no one else. As shown in Table 7, Psychological Engagement was significantly lower in activity settings involving no one compared to relatives or friends. Choice & Control was significantly higher when no one else was present, compared to the presence of friends. The effect sizes (partial eta squared values) for these two findings were large, accounting for approximately 8-10% of the variance.

Discussion

This article has described the development of a youth self-report measure of experiences of community and home recreation and leisure activity settings. The SEAS provides a retrospective view of youth's recent experiences in a particular activity setting, and is designed to be appropriate for *all* youth with a grade 3 level of language comprehension or more. Although the measure was developed in the context of a study on youth with severe disabilities, the measure's psychometric properties were also established using typically developing youth, and so the SEAS is applicable to youth in general, not just those with disabilities. The SEAS fills an important gap in the literature and will be useful for understanding the experiences of youth.

The SEAS displayed good to excellent psychometric properties. The five scales (Personal Growth, Psychological Engagement, Social Belonging, Meaningful Interactions, and Choice & Control) had very good to excellent internal consistency reliability and the correlations among the scales were small to moderate (ranging from 0.04 to 0.60), indicating that they measured distinct yet related constructs; however, further testing is needed with additional samples to confirm these values. The scales also demonstrated adequate test-retest reliability for youth with severe disabilities (mean scale ICC= 0.68) despite a small sample size ($n= 8$). The scales discriminated between different types of activity settings and patterns of scale scores

confirmed predictions, providing evidence of construct validity.

Not surprisingly, the first three scales reflect the importance of personal growth, psychological engagement, and social belonging—constructs derived from the literature and used to create items for the SEAS. The personal development benefits of participation are typically emphasized (Duerden et al., 2011; Hansen et al., 2003), and the experience of social connection has long been considered to be central to participation (Hammel et al., 2008). These constructs reflect ‘doing/becoming’ and ‘belonging’, as discussed in various quality of life frameworks. Psychological engagement (defined by Vandell et al. (2005) as involving positive emotion, intrinsic motivation, and concentrated effort) is clearly an important component of experience, posited to be a necessary prerequisite for developmental benefits of activity participation (King et al., 2009). Psychological engagement was comprised of items reflecting enjoyment, interest, and excitement.

The other two scales (Meaningful Interactions and Choice & Control) reflect more differentiated aspects of the a priori scales. Taken together, the SEAS scales clearly reflect existing frameworks of aspects of experience, including self-determination theory (needs for relatedness, autonomy, and competence) (Deci & Ryan, 1985), quality of life frameworks (being, belonging, becoming) (Raphael et al., 1996), and the processes that underlie meaning of everyday life experiences (belonging, doing, and understanding) (King, 2004). Furthermore, the SEAS scales reflect how people with disabilities conceptualize participation—in terms of active and meaningful engagement, social connection, and choice and control (Hammel et al., 2008).

Correlations among the scales indicated that Psychological Engagement and Choice & Control were significantly correlated with all the other scales (the one exception was between Personal Growth and Choice & Control). This suggests that choice and psychological

engagement may be fundamental to other positive participatory experiences, as specified in our developmental health model (King et al., 2009; Petrenchik & King, 2011).

The SEAS captures youth perceptions of their experiences of various kinds of community and home activity settings, which has not been done by other measurement tools. No other existing measures of activity participation for youth with disabilities capture experiences of psychological engagement, although Shernoff and Vandell (2007) have measured psychological engagement in typically developing youth using the Experience Sampling Method (EMS). Many assessments of participation do not include “autonomy” or the experience of exerting choice and control (Hammel et al., 2008). Last, the SEAS differentiates the social aspects of experience by separating aspects of belonging from meaningful interactions with others. This distinction appears to reflect the difference between being included in a group (something done *by* others) from the more agentic notion of taking part in meaningful interaction.

The development of the SEAS included input from youth and young adults with severe disabilities, and data from 10 youth with severe disabilities were used to determine the SEAS’ factor structure, reliability, and construct validity. Although more work is required, we believe the SEAS is appropriate for youth with a range of abilities and disabilities, including those with complex continuing care needs and those who communicate using AAC. Indeed, the primary aim of our research project was to develop a measure suitable for youth with severe disabilities. We have also developed a parallel measure using picture communication symbols (the SEAS-PCS©) (Batorowicz et al., 2013).

Study Limitations

This article presents preliminary information about the SEAS. Further work is required to substantiate the factor structure and scales reported here. The sample size of 160 SEAS

questionnaires is relatively small; however, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.79, indicating that it was appropriate to perform a principal component analysis on these data. Although a study strength is the inclusion of youth with and without disabilities (to ensure the wide applicability of the SEAS), this development work involved a relatively small sample of youth with severe disabilities ($n= 10$) because it was very difficult to identify and recruit these youth. We focused on this population because we wanted to design a self-report tool for youth with severe disabilities who are typically not involved in research studies and whose voices are not often heard. Further work is required involving youth with a broader spectrum of abilities and disabilities, including mild disabilities.

The SEAS asks youth to retrospectively report their cumulative experiences in an activity setting in which they have just participated. Since experiences change over time within an activity setting episode, recency effects may bias the measure toward capturing youths' last experiences. For example, a youth might initially feel unwelcome but welcome by the end of the activity setting episode, or he or she might become more uncomfortable or disappointed. Although we need to be aware of this, recency effects do reflect reality at the phenomenological level of experience.

Research Implications

Self-reported experiences are useful indicators of the developmental processes that foster positive participation (Hansen et al., 2003). Profitable research directions involving the SEAS include examinations of (a) the role of person and environment factors in influencing experiences, (b) individual differences in experiences, (c) youth experiences over time, and (d) the experiences of youth with and without disabilities.

First, with respect to environment-experience linkages, a youth self-report measure of

experience such as the SEAS nicely complements environmental measures of global activity setting qualities (Clifford, 2004). The combination will allow the linking of specific patterns of environmental qualities to particular types of youth experiences and, ultimately, developmental benefits or outcomes. We plan to use the SEAS, in conjunction with an observer-rated measure of environmental qualities of activity settings (the Measure of Environmental Qualities of Activity Settings; MEQAS) (King et al., 2012), to examine the nature of optimal activity settings for youth. Examining causal patterns and relationships among youth self-reported experiences and environmental qualities will elucidate optimal qualities of activity settings in a way that has not been possible previously. As well, the SEAS could be used to explore the types of experiences that tend to co-occur across different types of activity settings. For example, do personal growth and meaningful interactions tend to co-occur, reflecting the importance of social connection in the experience of personal development?

Second, with respect to individual differences in experiences, it may be of interest to determine within-setting variability by having groups of youth complete the SEAS in the same activity setting at the same point in time. There may be substantial commonality in experiences, with any differences attributable to youth preferences, skills, confidence, and/or past experiences, all of which could be measured to ascertain their role as antecedent factors influencing experience. Use of the SEAS will therefore allow person-specific studies of the personal and environmental factors affecting a given individual's experience.

Third, longitudinal research is needed to determine how youth's experiences are influenced over time by the present or changing state of both the individual and environmental conditions. The SEAS provides a snapshot of youth perceptions of experience at a particular moment of time. How these experiences evolve over time in similar types of activity settings is

an important area for future research. Different environmental qualities may interact with individual characteristics to create different activity setting experiences and developmental benefits over time. As well, the SEAS could be used with other measures of youth participation to obtain a comprehensive understanding of activity settings from multiple perspectives (e.g., youth, parent, or service providers' perceptions). The SEAS could therefore help us understand the processes by which high quality intervention programs have their effects on youth—their in-the-moment experiences and related longer-term benefits (Petrenchik & King, 2011).

Last, the SEAS allows comparison of the experiences of youth with and without disabilities in the same or similar activity settings. Comparative studies using the SEAS could examine whether some personal and environmental factors contribute to positive participatory experiences for some youth (e.g., those with specific motor, behavioral, or social challenges) more than others. The SEAS could also be used in cross-cultural or regional comparisons. Experiences of personal growth, psychological engagement, social belonging, meaningful interactions, and choice and control may differ among youth in various regions, even while they display similar levels of participation.

Clinical Implications

The SEAS may be useful to service providers working in schools and the community, who are often expected to assess and make recommendations to enable the participation of at-risk youth or youth who have disabilities. The SEAS may be a useful assessment for understanding a given youth's experiences, allowing service providers to make more reasoned recommendations about the types of activities conferring experiential benefits to youth, and to modify activity settings to enable greater participation.

The increasing popularity of youth development programs with a life skill or

participation focus makes it essential that reliable and valid ways be found to evaluate these types of real-world interventions. Practitioners who design community- and place-based interventions aim to create environments that are conducive to growth-enhancing experiences. It is important for them to have techniques and instruments by which to capture participants' experiences, allowing them to understand youth's experience of particular contexts and to demonstrate the ways in which their programs may promote developmental benefits, well-being, and quality of life. Since program effects are often examined through focus groups, the SEAS provides a more precise way to capture key experiences.

The SEAS may assist program managers and service providers to design programs and micro environments to support optimal experiences for any at-risk youth. All built or therapeutically designed environments theoretically serve certain common functions with respect to youth development, including fostering personal identity, developing competence, providing opportunities for growth, promoting a sense of security and trust, and allowing for both social interaction and privacy (Weinstein & David, 1987). We cannot begin to systematically answer questions about the effects of various kinds of programs in rehabilitation centres, schools, and other community environments without tools such as the SEAS. The SEAS allows practitioners to systematically assess and compare profiles of different types of programs, helping to articulate program benefits.

In conclusion, the SEAS provides a means by which to capture the voices of youth, including those with severe disabilities, regarding their participation experiences in a variety of community and home activity settings. Public policy needs to be more closely linked to the lived experiences of youth with disabilities (Hertzman, 2002) and must take into account the reality of their participation experiences. The SEAS is therefore an important and needed alternative to

inferring youth experiences from the reports of others. The SEAS will be useful for the design of social ecological programs for youth with disabilities, and for research on associations between youths' experiences and qualities of their environments.

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Table 1

Factor Loadings for the SEAS Scales (22 Items)

Item	SEAS Scales				
	Personal Growth	Psychological Engagement	Social Belonging	Meaningful Experience	Choice & Control
I learned a new skill	.837	.097	-.032	-.001	-.059
I became better at something	.815	.113	.176	-.225	-.067
I was challenged	.744	.108	.148	-.133	-.111
I tried something new	.710	.197	-.287	.126	-.013
I grew or changed	.652	-.097	.158	.282	-.003
I discovered things about myself	.628	.072	-.051	.378	.107
I was having fun	.062	.876	.142	-.004	.158
I felt in a good mood	.031	.804	.220	.114	.177
I was interested	.113	.802	.179	.003	.069
I felt excited	.235	.769	.153	.095	.030
I got along with others	-.097	.219	.739	.147	.116
I belonged (i.e. I was part of the group)	.067	.099	.701	.137	.109
I was supported and encouraged by others	.221	.229	.669	.078	.057
I was valued by others	-.028	.267	.641	.344	-.054
I talked about my thoughts and feelings	.047	.011	-.119	.808	.123
I shared ideas about things important to me	-.099	-.003	.306	.718	.127
I had good conversations with others	-.093	.078	.406	.550	-.080
I shared something special	.307	.226	.138	.528	.064
I could choose what to do for the most part	-.042	.207	.032	.073	.817
I was in control	.035	-.072	.181	.010	.803
I had a say in things	.086	.408	.049	.323	.588
I was free of pressure	-.163	.421	.145	.093	.557

Table 2

Correlations among the SEAS Scales

Scale	Psychological Engagement	Social Belonging	Meaningful Interactions	Choice & Control
Personal Growth	.22**	.15	.05	.04
Psychological Engagement		.60***	.24*	.42***
Social Belonging			.44***	.38***
Meaningful Interactions				.38***

* $p < .05$, ** $p < .01$, *** $p < .001$ (all 2-tailed)

Table 3

Internal Consistency Reliability and Mean Scores for the SEAS Scales

SEAS Scales	Internal Consistency ^a (Cronbach's Alpha Coefficients)	Test-Retest Reliability ^b	Total Sample Mean Score ^a (Standard Deviation)	Disabled Youth Mean Score ^c (Standard Deviation)	Able-bodied Youth Mean Score ^d (Standard Deviation)
Personal Growth (6 items)	0.86	0.85	0.24 (1.57)	-0.05 (1.96)	0.28 (1.51)
Psychological Engagement (4 items)	0.88	0.59	1.88 (1.12)	2.59 (0.63)	1.78 (1.13)
Social Belonging (4 items)	0.78	0.53	2.23 (0.78)	2.57 (0.58)	2.17 (0.79)
Meaningful Interactions (4 items)	0.71	0.94	0.82 (1.32)	1.19 (1.27)	0.76 (1.32)
Choice & Control (4 items)	0.78	0.51	1.68 (1.14)	2.39 (0.66)	1.58 (1.16)

^a based on 160 SEAS questionnaires^b based on average measure reliability for 8 youth with severe disabilities (8 activity settings)^c based on 20 SEAS questionnaires^d based on 140 SEAS questionnaires

Note. SEAS items were rated on a +3 to -3 scale with two oppositely labeled endpoints: +/-3= Strongly Agree, +/-2= Agree, +/-1= Agree a Little, 0= Neither. For purposes of analysis, scores were entered on a 7-point scale ranging from +3 (Strongly Agree) to -3 (Strongly Disagree).

Table 4

Correlations of SEAS Scales with YES Scales and Activity Setting Familiarity

Scale	YES Identity Reflection ^a	YES Stress ^b	YES Social Exclusion ^b	Familiarity with Activity Setting	Familiarity with People	Familiarity with Activity
Personal Growth	-0.64*	-0.71*	-0.22	-0.06	0.16	-0.10
Psychological Engagement	0.25	-0.10	0.80*	0.00	0.19*	0.13
Social Belonging	-0.21	-0.01	0.72*	0.14	0.23*	0.19*
Meaningful Interactions	-0.17	-0.46	0.27	0.00	0.13	-0.03
Choice & Control	-0.02	-0.21	0.17	0.12	0.07	0.19*

^a lower scores= higher positive experience^b higher scores= higher positive experience* $p < .05$ (1-tailed)

Note: N for correlations with YES= 8. Ns for correlations with familiarity setting were based on the total sample of 160 SEAS; actual n varied due to missing data.

Table 5

Mean Scale Scores (Standard Deviations) for Formal vs. Informal and Group vs. Solitary Activity Settings

Scale	Formal <i>n</i> = 58 ^a	Informal <i>n</i> = 102	T-values and Effect Sizes	Group <i>n</i> = 113	Solitary <i>n</i> = 47	T-values and Effect Sizes
Personal Growth	0.74 (1.18)	-0.06 (1.70)	$t(148)= 3.42^{***}$ Medium effect size ($r= 0.27$)	0.46 (1.41)	-0.33 (1.81)	$t(65)= 2.61^{**}$ Large effect size ($r= 0.31$)
Psychological Engagement	1.93 (1.08)	1.85 (1.14)	$t(155)= 0.45$	2.11 (1.00)	1.32 (1.19)	$t(155)= 4.27^{***}$ Large effect size ($r= 0.32$)
Social Belonging	2.20 (0.70)	2.26 (0.85)	$t(104)= -0.43$	2.23 (0.78)	-	-
Meaningful Interactions	0.54 (1.25)	1.11 (1.34)	$t(99)= -2.24^*$ Medium effect size ($r= 0.22$)	0.82 (1.32)	-	-
Choice & Control	1.06 (1.19)	2.05 (0.93)	$t(95)= -5.31^{***}$ Large effect size ($r= 0.48$)	1.48 (1.13)	2.18 (1.01)	$t(147)= -3.49^{***}$ Medium effect size ($r= 0.28$)

^a Number of activity settings; ns varied by SEAS scales
 r = effect size correlation

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

Table 6

Mean SEAS Scale Scores (Standard Deviations) for Types of Activities

Scale	Active Physical <i>n</i> = 32 ^a	Passive Recreational <i>n</i> = 73	Skill-Based <i>n</i> = 37	Self-Improvement <i>n</i> = 18	F-Values and Effect Sizes
Personal Growth	0.64 ^d (1.04)	-0.28 ^{de} (1.74)	1.01 ^e (1.14)	-0.07 (1.72)	F(3,150)= 7.01*** $\eta^2= 0.12$
Psychological Engagement	2.13 ^f (0.99)	2.06 ^g (0.92)	1.87 ^h (1.11)	0.69 ^{gh} (1.42)	F(3,153)= 8.70*** $\eta^2= 0.15$
Social Belonging	2.23 (0.66)	2.24 (0.92)	2.20 (0.73)	2.29 (0.59)	F(3,102)= 0.03 -
Meaningful Interactions	0.38 (1.28)	1.24 (1.38)	0.62 (1.09)	0.89 (1.57)	F(3,97)= 2.61* $\eta^2= 0.08$
Choice & Control	1.58 ⁱ (0.96)	2.19 ^{ijk} (0.81)	0.97 ^j (1.30)	1.33 ^k (1.33)	F(3,145)= 11.36*** $\eta^2= 0.19$

^a Number of activity settings; actual ns varied due to missing data.**p*< .05, ***p*< .01, ****p*< .001 η^2 = eta squared

Note: Means with the same superscripts were significantly different from one another, as determined by Bonferroni post hoc comparisons. Noteworthy means are highlighted.

Table 7

Mean SEAS Scale Scores (Standard Deviations) for Companions

Scale	Relatives <i>n</i> = 24 ^a	Friends <i>n</i> = 66	No One <i>n</i> = 53	F-Values and Effect Sizes
Personal Growth	-0.02 (1.75)	0.52 (1.30)	-0.19 (1.81)	F(2,134)= 3.04* η^2 = 0.04
Psychological Engagement	2.15 ^d (1.03)	2.14 ^e (1.05)	1.38 ^{de} (1.19)	F(2,137)= 7.80*** η^2 = 0.10
Social Belonging	2.05 (1.11)	2.31 (0.69)	2.38 (0.72)	F(2,86)= 0.87 -
Meaningful Interactions	0.96 (1.13)	0.78 (1.35)	1.19 (1.66)	F(2,82)= 0.30 -
Choice & Control	1.89 (1.04)	1.38 ^f (1.17)	2.09 ^f (1.07)	F(2,129)= 5.67** η^2 = 0.08

^a Number of activity settings; actual ns varied due to missing data.**p*< .05, ***p*< .01, ****p*< .001 η^2 = eta squared

Note: Means with the same superscripts were significantly different from one another, as determined by Bonferroni post hoc comparisons. Noteworthy means are highlighted.

Figure 1.

SEAS rating scale.

With respect to doing the activity **I felt . . .**