

## BRIEF REPORT: Social Inclusion of Ontario Children with Developmental Disabilities in Community Settings

### Abstract

*This study examined the social inclusion of Ontario children (n = 27), aged 6 to 17, with severe developmental disabilities in community settings, in relation to child characteristics and contextual factors. Results revealed that 70% of children were rated as being moderately to highly socially included. Adaptive Age, Social Age and Mental Age were moderately correlated with social inclusion scores but there was no correlation with language, maladaptive behaviour, or child's age. Inclusion was rated higher in integrated or mixed settings (some typically developing peers available) versus segregated settings and was associated with certain types of play and activities.*

Various studies have shown that children with developmental disabilities (DD) have a higher risk of being socially excluded in comparison to their typically developing (TD) peers (Solish, Perry, & Minnes, 2010). Despite the world-wide advocacy efforts at promoting rights for children with disabilities (UNICEF Innocenti Research Centre, 2007) and educational mainstreaming for most children, full inclusion and participation in community activities is still elusive. Children with DD become especially vulnerable during out-of-school periods due to minimized peer contact (Knight, Petrie, Zuurmond, & Potts, 2009). However, studies tend to focus on inclusion in schools rather than recreational settings. The extent of social inclusion in typical community settings remains relatively unexplored and requires further investigation. There are also conflicting findings about whether the integration of children with DD into mainstream settings is beneficial. Studies have reported that friendships are possible in integrated settings (Kasari, Locke, Gulsrud, & Rotheram-Fuller, 2011) whereas other studies determine that there are fewer social interactions (Diamond & Hong, 2010). Child characteristics also need to be closely examined as research shows that children with particular child characteristics, such as lower language levels (Odom, 2002), fare less well in inclusive settings. Additionally, examining the nature of peer interaction and types of play in some detail would be beneficial in understanding whether children are meaningfully included (e.g., joint engagement, playing structured games) or merely physically present (e.g., parallel activity or simple proximity) (Solish et al., 2010). Therefore, the present study examines child characteristics and contextual variables in relation to overall social inclusion within community settings.

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## Method

For the current study, a subset of data was used from the larger GO4KIDDS Social Inclusion study, a multi-method study of inclusion in school and community settings (Bebko, Perry, & Minnes, 2014). GO4KIDDS is a Canadian research initiative aimed to understand the lives of children with severe DD and their families ([www.go4kidds.ca](http://www.go4kidds.ca)). Ethics approval was obtained through York University. Consent was given by parents or primary caregivers.

## Participants

Participants were recruited through multiple methods, such as surveys, websites and school boards. In total, 27 children, aged 6 to 17 (63% boys) were included (assessment data were only available for 21). Approximately 48% had a diagnosis of intellectual disability (ID, including genetic syndromes); 43% were diagnosed with autism and an ID, and 9% had autism without an ID (by parent report). Child characteristics are summarized in Table 1.

## Measures

The data reviewed for the present study consisted of parent report measures: the Vineland Adaptive Behavior Scales-Second Edition Socialization Domain (VABS-II; Sparrow, Cicchetti, & Ball, 2005), and the Scales of Independent Behavior-Revised Adaptive and Maladaptive sections (SIB-R; Bruininks, Woodcock, Weatherman, & Hill) and standardized child measures: Mullen Scales of Early Learning (MSEL; Mullen, 1995) or Stanford-Binet Fifth Edition (SB5; Roid, 2003), and the Receptive and Expressive One-Word Picture Vocabulary Tests 4<sup>th</sup> Edition (ROWPVT-4; Martin & Brownell, 2010b and EOWPVT-4;

Martin & Brownell, 2010a). These measures provide information for the child characteristic variables used for each participant.

Social inclusion measures were based on the Post-Observation Comments Form from the larger GO4KIDDS Social Inclusion study, completed by coders following a 20-minute observation of children in community settings (e.g., soccer practice, dance class). Pairs of trained coders interviewed adults in those environments and observed each child using an interval coding approach (they had excellent reliability for the observational data used in the larger study). For the purpose of this current study, their consensus ratings for overall social inclusion, rated on a Likert scale from 1 = not at all to 5 = completely was used as the main dependent variable. Contextual variables were also derived from this form. Types of play/activity were adapted from a reliable and valid system called the Playground of Peer Engagement (POPE) (Mahjouri, Locke, Rotheram-Fuller, & Kasari, 2011), as seen in Table 2. Reported here are the two most predominant types of play/activity seen during the observation interval.

## Analysis

Ratings of overall social inclusion (the dependent variable) were examined in relation to seven child characteristics (Child Age, Mental Age, Receptive Age, Expressive Age, Social Age, Adaptive Age and Maladaptive Behaviour) using Spearman's Rank Correlation. Also, the 5-point scale was dichotomized into low versus moderate/high social inclusion and independent *t*-tests were used to compare the two subgroups on child characteristics. The two contextual variables, Type of Setting (integrated, mixed, segregated), and Type of Play/Activity were examined descriptively using percentages and chi-square tests.

Table 1. Child Characteristics

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>Min-Max</i>
Age (years)	27	10.76	2.70	6.66-17.50
Mental Age (S-B or MSEL) (months)	21	43.93	32.99	< 12-124
IQ Estimate (SS from S-B or MSEL)	21	40.47	29.97	< 20-94
VABS Socialization SS	21	58.05	17.00	36-98

Table 2. Possible Types of Play/Activity Observed

Type of Play	Description
Engaged Solely with Adult(s)	Child engaged solely with adult(s), no peer engagement.
Alone/ No Peers	Solitary/Isolated play with no peers within two meters. No mutual eye gaze with other children.
Proximity	Child plays alone within a 2 meter range of peer.
Onlooker	Child has one-way awareness of peers. It appears the child is watching another child or group of peers in a game with interest or the intent to participate.
Parallel	Child and peer are engaged in a similar activity but there is no social behaviour.
Parallel Aware	Child and peer are engaged in the similar activity and are mutually aware of each other during activity.
Joint Engagement	Child and peer direct social behaviour, e.g., toy taking, offering objects, conversing, and other activities with a turn-taking structure. Children may be fighting or engaged in negative behaviour and it could still be "joint engagement."
Games with Rules	Child participates in organized sports and/or engages in fantasy or pretend games, provided all children are playing by a set of rules that seem to be shared. A game has to be played with another. Waiting in line for a turn is included in "Games with Rules," if the child is not staring off or otherwise not attending to the game.

## Results

The correlation between child characteristics and overall social inclusion were first examined. Three significant correlations were found: Social Age ( $\rho = .54$ ;  $p < .01$ ), Adaptive Age ( $\rho = .52$ ;  $p < .05$ ), and Mental Age ( $\rho = .39$ ;  $p < .05$ ). These variables demonstrated moderate to strong associations with overall social inclusion. The other child factors (Maladaptive Behaviour ( $\rho = .16$ ;  $p < .05$ ), Child's Age ( $\rho = -.04$ ;  $p < .05$ ), Receptive Age ( $\rho = .17$ ;  $p < .05$ ) and Expressive Age ( $\rho = .19$ ;  $p < .05$ ) were not significantly correlated.

The 5-point social inclusion scale was then dichotomized into *low* social inclusion (values of 1 or 2; 30% of the sample) and *moderate/high* social inclusion (values of 3, 4 or 5; 70% of the sample) to facilitate further analysis. Table 3 compares the child characteristic variables in the two subgroups with low vs. moderate/high social inclusion. Although only approaching significance in this small sample, these tests

suggested that there were fairly large magnitude differences in the two subgroups for Mental Age (28 vs. 51 months) and Social Age (20 vs 46 months).

For contextual variables, we examined whether type of setting was associated with low or moderate/high social inclusion and a chi-square test indicated that it was ( $\chi^2 (2) = 5.90$ ,  $p = 0.05$ ). As demonstrated in Figure 1, children who were observed in Mixed settings (i.e., several children with DD & several TD) were often rated as having moderate/high social inclusion (85.7% of the seven children) as were 83.3% of the 12 children observed in Integrated settings (i.e., all TD children except the DD child). However, only 37.5% of the eight children observed in Segregated settings (i.e., all children with DD) were rated as having moderate/high social inclusion.

The other contextual variable examined was type of play/activity (based on the eight types of possible play observed by raters as defined in

Table 3. Child Characteristics in Subgroups with Higher vs. Lower Social Inclusion Ratings

	Low SI		Moderate/High SI		t	p
	M	SD	M	SD		
Child Age	11.36	3.76	10.10	2.20	1.09	.29
Mental Age (months)	27.71	32.16	51.12	31.47	-1.65	.11
Receptive Age (months)	63.00	53.00	67.40	39.58	-.19	.86
Expressive Age (months)	78.00	56.56	74.08	35.78	.14	.89
Social Age (months)	19.50	25.93	45.67	33.91	-1.80	.09
Adaptive Age (months)	35.71	42.14	54.67	28.00	-1.26	.22
Maladaptive Behaviour	-10.00	7.85	-12.15	13.53	.360	.72

Note: SI=Social Inclusion

Table 4. Predominant Types of Play/Activity in Relation to Low or Moderate/High SI

	n	Low SI n (%)	Moderate/High SI n (%)
Solely with Adults	12	5 (41.7)	7 (58.3)
Alone	4	2 (50.0)	2 (50.0)
Proximity	12	6 (50.0)	6 (50.0)
Onlooker	3	2 (66.7)	1 (33.3)
Parallel	1	0 (0.0)	1 (100.0)
Parallel Aware	2	0 (0.0)	2 (100.0)
Joint Engagement	11	0 (0.0)	11 (100.0)
Games with Rules	9	1 (11.1)	8 (88.9)

Note: For each child, observers rated the two most predominant types of play seen.

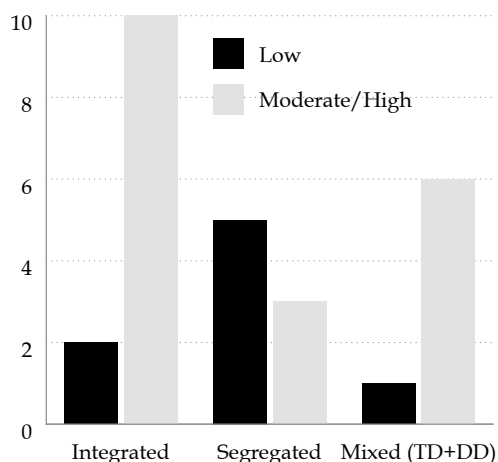


Figure 1. Number of Children with DD with Low or Moderate/High SI in Each Setting

Table 2). As shown in Table 4, the most common were: Engaged Solely with Adults, Proximity, Joint Engagement and Games with Rules. When we looked at these types in relation to the overall social inclusion being low versus moderate/high, we saw that almost all the children who were rated as engaging in Joint Engagement and Games with Rules were also rated as having moderate/high social inclusion, whereas only about half of the children rated as Engaged Solely with Adults and Proximity were seen as having moderate/high social inclusion.

## Discussion

In this study we reported on the social inclusion of 27 children with severe DD in community settings, as a function of child and contex-

tual factors. Results showed that most children (70% of the sample) observed in community settings were rated by coders as being moderately to highly socially included. This provides insight into community settings as potentially supportive environments that are available for children with DD. This major finding contrasts with some studies that found low levels of participation in community activities (Orsmond, Krauss, & Seltzer, 2004). There could be several reasons for this. It may be a result of our sample, which consisted of children who had already been involved in community activities, or our methodology of using ratings based on direct observations, whereas some other studies tend to rely solely on parent report. It may be that our rating of overall social inclusion is tapping social inclusion differently than other data sources, which we cannot determine from the subset of data used here (but this is being examined in the larger study).

In terms of child characteristic variables, adaptive, social and mental age were moderately correlated with social inclusion, consistent with research suggesting that higher functioning children are more likely to be included (Odom, 2002). Child's age was not associated with inclusion, which was somewhat surprising as younger children might be expected to be more easily socially included (e.g., Hestenes & Carroll, 2000). Level of maladaptive behaviour also did not correlate with social inclusion in our sample. This optimistic result demonstrates that difficult temperament may not be a significant barrier to inclusion with peers. However, it should be noted that the level of maladaptive behaviour in the sample was not extreme.

Our findings reinforce the idea that context is important to consider, as well as child characteristics. Results indicated that children with disabilities are moderately/highly included in integrated and mixed settings versus segregated ones. This finding supports the notion that children with disabilities may be provided with more social opportunities when TD peers are present (Brookman et al., 2003). However, the presence of TD children is likely necessary but not sufficient to create inclusion (Solish et al., 2010), as children in integrated settings were often rated as interacting solely with adults, being in proximity to children but not interacting, or being alone during part of the observation. Furthermore, it is important to remember that the directionality of these findings is

unclear. Post hoc analyses showed that the children observed in segregated settings tended to be older and have lower social skills than other children in the sample.

In our observations, engaging with adults was common, even in children rated as being highly socially included. This could mean that the child was interacting with peers, but also spent part of the observation time interacting with an adult. Or, the adult was helping the child interact with other children, thus supporting inclusion. This is consistent with literature suggesting inclusion frequently involves interaction with or facilitation by parents or other adults (Solish et al., 2010).

Additionally, results indicated that Games with Rules was a type of activity that was associated with moderate/high inclusion. Structured activities may provide built in prompts helping children know what to do and may demand lower social competency, thus creating easier opportunities for participation for children with disabilities (McConkey, Dowling, Hassan, & Menke, 2013).

The study has a number of limitations (small sample, limited measures) but does provide some valuable data on Ontario children with severe DD and their social participation in community settings. Future directions for research include examining how long each child was observed in a particular type of play and the extent of positive or negative interactions initiated by the target child or another peer, as well as gaining a better understanding of the role of adults in these environments. It would also be important to examine the interaction of child characteristics and contextual variables using a larger and more representative sample and further sophisticated analyses, such as examining interval coding data to determine frequency and quality of actual interactions.

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## Key Messages From This Article

**People with disabilities:** You have the right to participate and be included in fun activities with other kids outside of school.

**Professionals:** Children with severe DD can participate in regular community activities. Carefully matching a child's struggles and strengths with an appropriate and engaging community activity (with adult support) can help with social inclusion.

**Policymakers:** Promoting the inclusion of people with disabilities is important in generic community settings, so that social interactions are still possible once the school year ends. It is important to support initiatives that help children with disabilities and their families find support in their natural communities.

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