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Social validity and psychometric properties of Teacher Impression Scale – A pilot study

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ABSTRACT

Teachers of inclusive early childhood education (ECE) are responsible for monitoring children's social skills achievement, and promoting social play between children with and without special educational needs (SEN). The Teacher Impression Scale (TIS) is an observational assessment developed for this purpose. This study aims to explore the social validity of the Swedish version of TIS, TIS-S, and to evaluate its effectiveness in identifying participants for peer-mediated interventions in Swedish preschools; by also testing the internal consistency, and the construct and criterion-related validity of the scale. The teachers (N = 16) observed children with SEN (n = 16) and without SEN (n = 16) in social play situations with TIS-S and subsequently answered a survey. Data were analysed quantitatively and qualitatively. Results demonstrate that the TIS-S has high internal reliability. The TIS-S also discriminated between the groups of children with and without SEN, which provided evidence of construct and criterion validity. Social validity was verified as the teachers reported that TIS-S was suitable for recognising individual children's need for support in interactions with peers, planning for adaptations for all children in the social learning environment, and reflecting on the complexity of children's social behaviour in play.

KEYWORDS

Early childhood education; special educational needs; social play; observational assessment; psychometric properties; social validity

Introduction

Policies for ECE stress that peer play is crucial for children's learning, development, and achievement of social skills (OECD 2015). To provide social participation for children with SEN, inclusion in quality and regular ECE is also emphasised (The United Nations 1989, 2006; UNESCO 1994). However, placement in inclusive ECE-settings does not guarantee that children with SEN will experience togetherness with peers without SEN during play situations (Guralnick and Bruder 2016). Specific activities promoting child-to-child interactions may be necessary. Besides, without considering children's individual learning needs and providing appropriate support for social interactions, children with SEN may risk becoming less included in joint play (Lifter, Mason, and Barton 2011).

Peer-mediated play interventions can guide ECE-teachers to increase positive interactions between children with and without SEN and to stimulate social skills achievement

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for children with SEN (Odom 2019). To implement such interventions, ECE-services need to develop assessments that generate information on social progress and integration (Division for Early Childhood 2016; European Agency for Special Needs and Inclusive Education 2017). These assessments would involve observations of different play situations in children's natural settings (Lillvist 2010; Pinto et al. 2018). The Teacher Impression Scale (TIS) is based on direct and structured observations of children's social play behaviours, and may serve this purpose (Odom et al. 1997). TIS was originally developed in the United States for Play Time Social Time (PTST), an intervention for inclusive preschools. By this intervention, the participating children, children with SEN and their more socially developed peers, are encouraged to use basic social skills and to play together, through adult support and peer-mediation (Odom et al. 1997). In an earlier study of TIS, where data from multiple sources were submitted to principal component analysis to identify common variance across multiple agents and measurement methods, McConnell and Odom (1999) found the scale to have construct validity and high inter-observer agreement (in this study it was named Observer Impression Scale). In later intervention studies in Polish preschools where TIS was used as one of the outcome measures, construct validity has similarly been confirmed and test-retest reliability has further been established (Szumski, Smogorzewska, and Karwowski 2016); evidence of strong internal consistency has also been provided (Szumski et al. 2019).

The study context

In Sweden, preschool is a legal right for children from age one until six, when compulsory school begins (SFS 2010, 800), and almost 85% of children ages one to five, and 95% between ages four and five attend preschool (SNAE (Swedish National Agency for Education) 2019). Swedish regular preschools are receiving children with and without SEN in the same groups (SNAE (Swedish National Agency for Education) 2011, SNAE (Swedish National Agency for Education) 2018), where the quality of inclusive education may vary; and there are only a few specialised units for children with specific disabilities (Lundqvist, Westling, and Siljehag 2016), such as severe physical disabilities, profound autism, hearing impairments, deaf-blindness and language impairment.

A need to increase social play participation for children with SEN

The importance of peer play is underscored by the Swedish preschool curriculum, for children to develop socially and to experience fellowship with others; consequently, preschool teachers need to pay attention to factors that might hinder play between children and provide learning environments that promote play (SNAE (Swedish National Agency for Education) 2011, SNAE (Swedish National Agency for Education) 2018). According to a recent systematic review, preschool teachers subsequently use play to support and stimulate children's social abilities, for example by partaking in children's play and mediating between children, or by setting the scene for social play between children (The Swedish Institute for Educational Research 2019). Yet, several studies show a need to increase shared play situations between children with and without disabilities in inclusive preschools (Allodi et al. 2019; Janson 2001; Luttropp and Granlund 2010). Further, it has proved that not only children with formal disabilities may have SEN in play and interaction. In a study by Lillvist and Granlund (2010) including about 9103

children in 571 Swedish preschools, children with SEN and disabilities amounted to 3.7%, and children with SEN without disabilities amounted to 13.6%. For a great part of the children (54.8% of the children with disabilities and 59.6% of the children without disabilities), the SEN was related to peer interactions.

A need to address SEN for specific learning objectives

Although supervision by external special educators is provided for many preschools, access to such competence is not legally required in the Swedish education system until children start compulsory school at the age of six (SFS 2010, 800). This means that preschool teachers and childminders, the formal professional categories in Swedish preschools, have a prominent role for inclusion in practice. It has shown that preschool teachers documented children's learning and development following the intentions of the inclusive curriculum, to some extent, but often not concerning specific learning objectives (Sheridan, Williams, and Sandberg 2013). Furthermore, national reports call for common strategies for preschool teachers to identify and address children's needs of support (Swedish School Inspectorate 2017), and to evaluate the outcome of measures for children with SEN (SNAE (Swedish National Agency for Education) 2017). According to Emilson and Samuelsson (2014), however, observational assessments have been discouraged in Swedish preschools, in connection with a criticism of psychological approaches ascribing children to develop similarly with age, and placing social ability mainly within the child. Instead, new perspectives have influenced preschools, among others inspired by Reggio-Emilia pedagogy and social constructivist theories, which emphasised the relational context for the understanding of children's development (Alvestad and Sheridan 2015).

Recently, international observational assessments like the Inclusive Classroom Profile (ICP; Lundqvist and Bodin 2018) and the Autism Program Environment Rating Scale (APERS; Bejnö et al. 2019), have been validated in Swedish preschools. Both ICP and APERS cover contextual dimensions of children's development; like adults guidance of play and the social climate. A common result from these studies was that preschool professionals in Sweden would benefit from feasible and research-based instruments to fulfil the goals of quality inclusive education.

Against this background, the question arises if TIS could contribute with important information for implementation and evaluation of interventions with the specific objective to increase participation in peer play for children with SEN. An evaluation of TIS with the rationale described here, would require examination of the social validity of its use (Carter 2010; Wolf 1978), as perceived by teachers and considered in the actual ECE context (Craig et al. 2008; Hurley 2012) – but also of the psychometric qualities of the instrument – before starting to employ it for peer-mediated interventions.

Aims

This study aims to explore the social validity of the Swedish version of TIS, TIS-S, and to evaluate its effectiveness in identifying participants for peer-mediated interventions in preschools in Sweden; by also testing the internal consistency and the construct and criterion-related validity of the scale.

Methods

A mixed-method design using quantitative and qualitative data was employed for data collection (Onwuegbuzie and Combs 2010). Quantitative data consists of the teacher's scorings from observations with TIS-S and their answers from closed questions in a survey. Qualitative data consists of their answers to open-ended questions in the survey. These data were first analysed separately and then linked in the final discussion of the result, by using the conceptualisation of social validity that Wolf (1978) established for evaluation of early interventions. He proposed three components of social validity, which consisted of (1) the general importance of the skills addressed (e.g. social play competence), (2) the utility of the practice to address the skill (i.e. is the instrument acceptable and feasible), and (3) the outcomes that the practice generates (i.e. does the instrument accomplish the intended purpose).

Participants

During August 2017, we invited preschool teachers, headmasters, and special educators from 94 preschools to participate in this pilot study on TIS-S via email and meetings, with additional information on the forthcoming trial of the PTST-intervention. Sixteen teachers (preschool teachers with a tertiary degree or child-minders with secondary education, hereafter called teachers) working with children aged 3–5, from 12 preschools in four municipalities agreed to participate. The preschools were located in four municipalities of varying character: three were minor to medium municipalities and one was a metropolitan area. Of the preschools, seven were municipal, four were independent, and one was a parent-staff cooperative, reflecting the variation of ECE-settings in Sweden, each similarly funded with public resources and income-based parental fees. In these preschools, the children were organised into groups of about 16 to 20 children. Each teacher chose one child they considered to have SEN in social play with peers (N = 16) and one child they considered to be socially competent (N = 16) for the observations with TIS-S. The latter will be referred to as children without SEN in the study. Since the study mainly examines the social validity of using TIS-S and since not all children with SEN are formally diagnosed in regular inclusive preschools in Sweden, detailed information was not collected about the children.

The TIS scale

TIS is an informal rating scale with 16 items, rated on a five-point Likert scale (1 = never performs skill, to 5 = frequently performs skill). The items (see Table 1) reflect qualities of prosocial behaviours (i.e., social play competence) that children use to begin or maintain contact and interactions with peers in play (e.g. 'The child is persistent at social attempts', 'The child continues an interaction once it has begun'). The items can be considered individually, or grouped as a total score, and can be used to identify children's needs for support in play and interaction and follow their social advancement (Odom et al. 1997). An authorised translator translated the items in TIS. The Swedish version of TIS, which was close to the original scale and named TIS-S, was carefully overlooked by special education

Table 1. Teachers' (N = 16) mean scorings and standard deviations from observations with TIS-S for children with SEN, children without SEN, and all children; factor loadings from PCA.

Type of Social Behaviour	*Children with SEN (n = 16)*		*Children without SEN (n = 16)*		*Children (N = 32)*		*Factor loadings*
	M	*SD*	*M*	*SD*	*M*	*SD*	
1. The child converses appropriately.	2.69	.94	4.38	.88	3.53	1.24	.85
2. The child takes turns when playing.	2.75	1.00	4.31	.79	3.53	1.19	.88
3. The child plays cooperatively.	2.75	1.00	4.44	.81	3.59	1.24	.91
4. The child varies social behaviour appropriately.	2.38	.80	4.13	1.02	3.25	1.27	.89
5. The child is persistent at social attempts.	2.38	.61	4.44	.72	3.41	1.24	.94
6. The child spontaneously responds to peers.	2.44	1.09	4.19	.83	3.31	1.30	.90
7. The child appears to have fun.	3.88	.95	4.81	.40	4.34	.86	.81
8. Peers interacting with the child appear to have fun.	3.44	.96	4.44	.81	3.94	1.01	.75
9. The child continues an interaction once it has begun.	2.38	.88	4.50	.63	3.44	1.31	.91
10. Peers seek out the child for social play.	2.38	1.14	4.13	.88	3.25	1.34	.83
11. The child uses appropriate social behaviour to begin an interaction.	2.38	.95	4.38	.80	3.37	1.33	.92
12. The child enters play activities without disrupting the group.[a]	3.06	1.23	4.55	.64	3.80	1.22	.82
13. The child suggests new play ideas for a play group.	1.94	.85	4.38	.80	3.16	1.48	.84
14. The child smiles appropriately at peers during play.	3.31	1.07	4.63	.61	3.97	1.09	.77
15. The child shares play materials with peers.	2.44	.96	4.19	.75	3.31	1.23	.90
16. The child engages in play activities where social interaction might occur.	2.44	1.09	4.56	.81	3.50	1.43	.89

Note. TIS-S = Teacher Impression Scale Swedish version; SEN = special educational needs; PCA = principal component analysis; M = mean; SD = standard deviation. Likert scale: min = 1, max = 5.
[a]One missing value on item 12 is replaced with series mean.

experts proficient in both English and Swedish, tested with students in the teacher program, and approved by the original author.

The survey

To assess the social validity of TIS-S for teachers in Swedish preschools a survey with 10 closed questions and 8 open-ended questions was developed (Carter 2010). The closed questions used a three-point Likert scale (1 = not at all, to 3 = to a high extent), or yes/no responses. Examples of these questions were 'How usable do you consider TIS-S in observing children's interaction', and 'Do you miss any items in TIS-S?' Examples of the open-ended questions were 'What are your experiences and impressions of using TIS-S to observe children's play and interaction?', and 'If you have any objections to TIS-S as an observation tool describe which ones.' The questions in the survey focused on the outcome and utility of TIS-S since the importance of social play can be considered established among preschool teachers in Sweden.

Data collection

The teachers (N = 16) were instructed to observe one child with SEN (n = 16) and one child without SEN (n = 16) in play situations with peers on several different occasions. Each child was observed for five minutes three to four times over two weeks. After each observation, the teacher completed scorings of each item in TIS-S for each child. At the end of the observation period, the teachers emailed their scores, and we computed average scores. Average scores were thus based on all three to four observations the teachers conducted for each child in the sample. In addition to the questions in the survey, teachers were asked about factors that could influence the social performance of the children with SEN (n = 16) in the observed play situations. These were the questions: 'Does the child know other children well?', 'Is the play activity known and is the context known to the child?', 'Is the play adapted for the child?', 'Is the child in good health or is there the influence of, for example, medicines?' (Odom et al. 1997, 9–10). The teachers reported that the children with SEN knew the other children in the play situation well (n = 13), that they were involved in familiar play situations (n = 14), that they had access to adapted materials during the observations (n = 13), and that they were in good health (n = 13). The data was collected in September and October 2017.

Data analysis

The TIS-S scale

The data were analysed using IBM SPSS statistics (Version 25). The internal consistency of the whole scale was measured with Cronbach's alpha. A principal component analysis (PCA) was used to determine the scale's construct validity, that is, to what degrees different items in TIS-S contributed to the common factor, i.e. social play competence. As an assessment of criterion-related validity, a matched t-test to examine the difference in mean total TIS scores for the children with and without SEN was used. The effect size (ES) was calculated with Cohen's *d* and a Two-group Gardner-Altman plot (Ho et al. 2019).

The survey

The closed answers from the survey were first processed into descriptive statistics to get the overall picture of the results. Were the preschool teachers mainly positive or negative to TIS-S for observations? Did they think TIS-S was convenient to use or not? To further explore the teacher's perceptions of TIS-S we then conducted a thematic analysis with the answers from the open-ended questions in the survey (Braun and Clarke 2006), which followed an inductive logic (Teddlie and Tashakkori 2010). The first and second authors (MG, MWA) carefully scrutinised the answers from the survey and coded each line, categorised the codes into descriptive themes, and separately formed two code lists. The third author (ES) read the two code lists and supplemented them. All three authors reached a consensus around six themes, describing meanings the teachers attributed to the observations with TIS-S. In addition to these themes, the teachers gave suggestions for future use and minor revisions of TIS-S.

Ethical considerations

The Regional Ethical Review Board in Stockholm approved this study, Protocol number 2016/5:8. Consents for participation were obtained from headmasters and teachers who also were informed of a forthcoming trial on the peer-mediated intervention PTST. Consents from parents were not required since no identifying data of children were collected, but the parents in the preschools were informed about the study. Children are referred to as 'Children with SEN' and 'Children without SEN', and teachers as T1, T2, T3, etc.

Results

TIS-S: general outcome

Scale average total scores were calculated for all children (N = 32; M = 56.7; SD = 17.2; CI = 50.4–62.9) and for two groups: Children with SEN (n = 16; M = 43; SD = 11.6; CI = 36.8–49.1) and Children without SEN (n = 16; M = 70.4; SD = 8.9; CI = 65.6–75.2). The difference between groups was significant (Children with SEN, Children without SEN, $p < .001$). As shown in Table 1, for both groups the highest means were regarding *Item 7. The child appears to have fun*, where Children with SEN scored (M = 3.88) and Children without SEN (M = 4.81). In turn, the lowest means were for Children with SEN regarding *Item 13. The child suggests new play ideas for a playgroup* (M = 1.94) and Children without SEN regarding *Item 4. The child varies social behaviour appropriately* and *Item 10. Peers seek out the child for social play*, with (M = 4.13) respectively. Children with SEN also scored relatively low for *Item 5. The child is persistent at social attempts* and *Item 9. The child continues an interaction once it has begun*, with (M = 2.38) respectively.

TIS-S: internal consistency

The internal consistency as measured by Cronbach's alpha was .97, $p < .000$. When the internal consistency was calculated separately for the observations for Children with SEN

Table 2. Teachers' (N = 16) perceptions of using TIS-S for social play observations in inclusive preschools.

	Not at all	To some extent	To high extent
Agreement . . .			
with previous understanding of the child's social skills	-	7	9
Useful . . .			
to observe children's interaction	-	-	16
to identify children's strengths	-	7	9
to assess children's needs of support	-	5	11

Note. TIS-S = Teacher Impression Scale Swedish version.

Table 3. Teachers' (N = 16) perceptions of using TIS-S for social play observations in inclusive preschools.

	Yes	No	Missing	Comments
Applicable for identifying needs to develop . . .				
support for child with SEN	15	1		
support for the group	11	5		
the learning environment	7	9		
Do you miss any items in TIS-S?	1	14	1	If the child needs support from an adult to get into play
Do you have any objections to TIS-S as an observation tool?	4	12		The word 'appropriately' difficult to understand (n = 2) Good instrument to observe what is challenging for children in interactions (n = 1) Difficult to answer item 12 'The child enters play activities without disrupting the group' as the teachers sometimes start the play activity with a group of children, i.e. the child is already there (n = 1)
Do you have any further views on TIS-S?	5	11		Five minutes not enough for observations (n = 1) Good for observation of social play (n = 4), of which (n = 2) considered it time effective Sometimes difficult to get other children to play with child with SEN (n = 1)

Note. TIS-S = Teacher Impression Scale Swedish version; SEN = special educational needs.

and Children without SEN, the alpha coefficient remained high (.94 and .93 respectively; $p < .000, .030$).

TIS-S: construct validity

Factor loadings of items on the common factor (social play competence) ranged from .75 (*Item 8. Peers interacting with child appear to have fun*) to .94 (*Item 5. The child is persistent at social attempts*), with 14 of the 16 items loading above .80, see Table 1. The PCA explained 75.4% of the variance. The factor identified in the PCA corresponded to an eigenvalue of 12.06.

TIS-S: criterion-related validity

The mean item rating score was 2.6 (SD = .71) and 4.3 (SD = .55) for the Children with SEN and the Children without SEN, respectively. The distribution of ES appears in Figure 1. The unpaired Cohen's d between Children without SEN and Children with SEN is 4.55 [95.0%CI 2.73, 6.76].

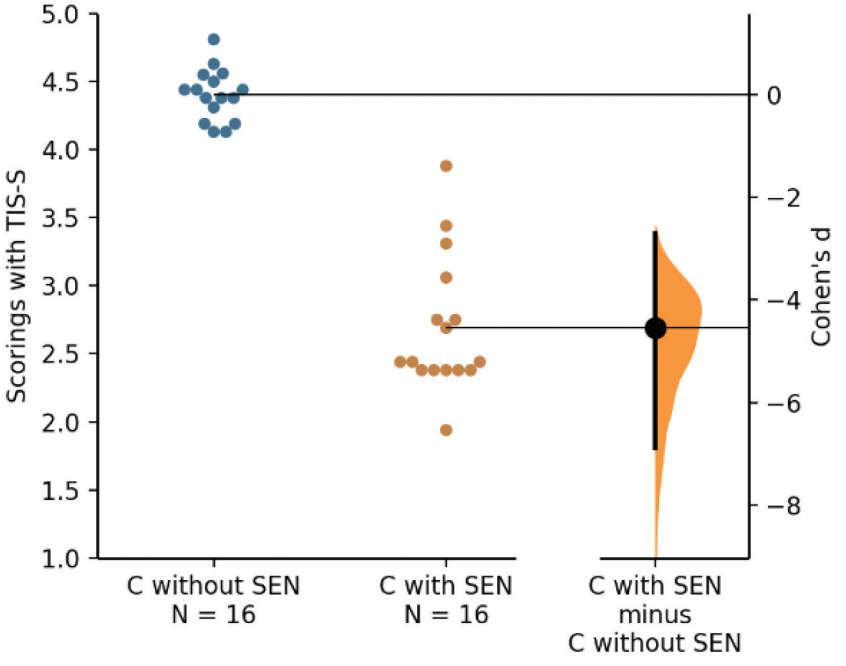

Figure 1. The Cohen's *d* from observations with Teacher Impression Scale Swedish version (TIS-S) between children without special educational needs (SEN) and children with SEN is shown in the above Gardner-Altman estimation plot. Both groups are plotted on the left axes; the mean difference is plotted on a floating axis on the right as a bootstrap sampling distribution. The mean difference is depicted as a dot; the 95% confidence interval is indicated by the ends of the vertical error bar (Ho et al. 2019).

The social validity of TIS-S

The descriptive statistics of the teacher's perceptions of TIS-S are presented in Tables 2 and 3. As shown the teacher's perceived TIS-S applicable for identifying needs to develop support for children with SEN; but also for developing support for the whole preschool group and adapting the learning environment, which will be further demonstrated by the themes in the following section.

The utility of tool and applications

As evinced, structured observations like TIS-S were new for the teachers, which didn't seem to counteract its function for them: 'TIS-S is one of the least time-consuming observation methods I have used and is simultaneously very informative when it comes to observing children. A very good tool, I am happy to have had the opportunity to test it.' (T12). According to the teachers, TIS-S served the purpose of enabling them to identify social obstacles between children and, 'to see how, where, and when to support the child during play.' (T14). In terms of utility, TIS-S clarified and confirmed teacher's impressions of children and provided them with new information about social play interactions.

Acceptability and feasibility of observation procedures

TIS-S seemed practical and valuable for teachers to use for play observations and their answers suggest that they could master it relatively quickly with the instructions we gave. Two of the teachers found the question 'The child varies social behaviour appropriately' hard to answer, to estimate the level of specific statements, and to take the non-participatory role when using TIS-S for the five minutes of observation. However, one of these teachers commented on the feasibility with TIS-S by relating it to the responsibility towards children with SEN: 'I do not view TIS-S as a tool to assess children's play, but to observe different play situations and discover (. . .) how we can support children with difficulties' (T14). Similarly, when a teacher reported five minutes as insufficient for play observation, she reflected that children with SEN might need more time to get started and thereby extended the observation a few minutes.

Supported reflections about play interactions

The teachers reported that TIS-S helped them to focus their attention: 'It is always good to have some questions to relate to since you want to observe many different things when children play.' (T8). This sharpened focus allowed them to simultaneously consider several aspects of children's play interactions: 'I caught sight of behaviours that led to new reflections for me as a teacher. I was able to use these reflections in the continued work with the child group when I planned for different play situations.' (T11). In that respect, TIS-S supported the teachers to reflect on several aspects of play interactions, targeting both individual children and the social play environment.

Highlighted children's strengths and challenges

Some quotes from the teachers suggest that TIS-S provided a basis for a more varied picture of children's social behaviour, where both their strengths and challenges got highlighted: 'I saw things I did not see before, first with Child with SEN. Saw that he had better play and interaction skills than I thought before.' (T5). This could also apply to insights about social play situations in which children without SEN could have difficulties: 'I noticed that one child without SEN didn't often suggest new play ideas during play. Therefore, this is something we need to support him with so that he feels like he is more involved with his peers during play.' (T4). In that sense, it seems as the observations with TIS-S contributed to a less stereotypical perception of individual children's social behaviour in play.

Observed multidimensionality of social behaviour

The teachers' statements indicate that the observations with TIS-S made them more aware of the multidimensionality of children's social behaviour: 'I caught sight of details that I had not seen before, for example, that the desire for interaction was shown in certain situations for the child with SEN in a way that I have never seen before.' (T2). They also reported that TIS-S supported them in identifying specific social behaviours for a child with SEN: 'If he didn't get a response from friends, he gave up.' (T4). As an example, to be persistent in play is one of the social behaviours that is included in TIS-S, and the observations helped the teacher to identify whether the child showed it or not in a certain situation.

Recognised influence of relations and contexts

By gaining increased insights into children's social play behaviours through a current situation, the teachers could also analyse their social behaviours towards the children: 'Do we make it easier for children with SEN or is it mostly tellings-off about doing "right"? How does our approach affect children with SEN?' (T12). Through the repeated observations with TIS-S, the teachers also experienced that other contextual factors, such as relation quality with peers and type of play, could influence children's social play behaviour.

Suggestions and expansions

Mainly, teachers reported that TIS-S would serve their purpose with the current format and content. Minor revisions suggested by two of the teachers were: to add the item 'if the child needs support to get into play', and to provide space in the protocol for taking notes during observations. According to the teachers, TIS-S could serve as a tool to be used in both pre-and in-service training, to monitor all children's social learning and development, for discussions in team meetings and with parents, and to plan for activities to promote play and interaction.

Discussion

This pilot study aimed to explore the social validity of the observational assessment TIS-S in Swedish preschools and to evaluate its effectiveness in identifying participants for peer-mediated interventions, by also testing some of its psychometric properties. As noted, we discuss the result of the study through Wolf's (1978) conceptualisation of social validity consisting of the three elements: outcome, utility, and importance.

The outcome of TIS-S

As previously described, the items in TIS-S can be considered individually, or grouped as a total score, and can thereby support teachers to identify children's needs for support in play and interaction and follow their social advancement (Odom et al. 1997). In this study, differences in mean overall scores with TIS-S between children with and without SEN were significant, with large ES, indicating that TIS-S could discriminate between groups in a reliable way. The average scoring-result of children with SEN in this sample (n = 16) was (M = 43), with the lowest value 36 and highest value 49. This can be compared to the intervention study in Polish preschools previously referred, where reported pre-test average scores with TIS were for children with autism (M = 33.47, n = 15), children with intellectual disability (M = 41.8, n = 9), and children with physical and sensory disabilities (M = 45, n = 7) (Szumski, Smogorzewska, and Karwowski 2016). By also confirming the variance in the results for children with SEN, this could indicate that the children in our study have similar SEN in social play as children that in other preschool contexts are identified as having different disabilities.

Utility of outcome

For an instrument developed in one national context and implemented into another, there must be a correspondence between contexts in terms of goals and values, or

adjustments would be needed. The original goal of TIS-S is to identify participants, children with and without SEN, for peer-mediated play interventions and evaluate such interventions. Participating teachers were informed about the forthcoming trial of the PTST-intervention, as a part of our rationale for testing TIS-S. The result indicates that using TIS-S was acceptable for the teachers when they related it to support measures for children with SEN, which they were also interested to learn more about. Further, the teachers in this study reported that most children with SEN were involved in familiar play situations with adapted material and activities during the observations. Nevertheless, the items in TIS-S supported the teachers to discover *what* became *socially* difficult for children. This follows the logic of observational assessments like TIS-S, which are designed to identify the needs of individual children in natural and varied situations rather than comparing behaviours to age-related standards (Pierangelo and Giuliani 2002). In that sense, TIS-S would be adaptable with the Swedish preschool curriculum, which advocates general social goals for children's learning (SNAE (Swedish National Agency for Education) 2017, SNAE (Swedish National Agency for Education) 2018).

Utility of procedures

According to the Swedish preschool curriculum, the teachers are responsible for continuously documenting and evaluating the results of the education and giving special attention to children who need support (SNAE (Swedish National Agency for Education) 2018). However, there is a lack of guidance for preschool teachers on how to do this, and structured observations such as TIS-S are uncommon in Swedish preschools. For the teachers in this study, using TIS-S required them to systematically observe play interactions and to transfer information about children's social behaviour into a quantitative rating scale. It also required them to step aside in actual play situations to learn more about what was socially occurring to plan for optimal support; for which the 16-item scale was helpful and feasible. As confirmed by the statements of the teachers, the content of TIS-S was considered relevant to their practice and well-matched to their educational values. Observing with TIS-S, the teachers seemed to simultaneously consider each child's capacities and contextual influences on social play interactions for all children. Besides, they wanted to learn more about strategies to promote social play specifically for children with various SEN. These perceptions of TIS-S could indicate that different theoretical perspectives of children's development and learning do not need to exclude each other, as concluded previously (Emilson and Samuelsson 2014). Rather it seems possible, for preschool teachers to employ a technical eclectic approach, i.e. combining several theoretical sources of knowledge with input from intervention procedures, to optimally arrange pedagogical situations (Odom 2016).

Importance of outcome

Children's joint play is of central importance in its own right, but also and not least, for children to develop socially, which is confirmed by the Swedish preschool curriculum (SNAE (Swedish National Agency for Education) 2011, SNAE (Swedish National Agency for Education) 2018). Guralnick (1990) has described social competence as the ability to accomplish interpersonal goals leading to outcomes on a given social task, that is, as

a dynamic and somewhat personal process. Thereby the phrase 'appropriate' (item 4, 11, 14 in TIS-S, Table 1) would mean that a behaviour will be socially rewarded in a given play situation, rather than merely allude to notions of what children should be able to do at a certain age. Based on such an understanding of social development, teachers need to consider that children may have different interpersonal goals that may vary as per the play situation and that children sometimes need support to accomplish their goals. The results of our study indicate that since TIS-S helped preschool teachers to be aware of specific dimensions of social play behaviours, some of these could be targeted for the progress of social competence by their supportive actions in children's play.

In Sweden, the formal identification of children's disabilities is made by psychologists and psychiatrists. However, as noted, it may be for reasons other than disabilities that children have SEN in preschool, and the Swedish Education Act consequently states the preschool's responsibility to identify and respond to children's need for special support for physical, mental, or other reasons (SFS 2010, 800). A recent study found that most preschool professionals can distinguish typical and atypical developments after observing children's behaviour, demonstrating they could play an important role to identify SEN (Zhang et al. 2019), which is important for implementing early interventions effectively. In our study, the teachers' repeated and varied observations with TIS-S, seem to have prevented a static picture of children's social play behaviour, in favour of a more contextual assessment. In that sense, TIS-S supported the teachers to discover social interaction goals for each child that could be a base to plan both general and individual adaptations of an inclusive and supportive learning environment.

Implications for practice and further research

Results in this sample suggest that TIS-S may serve to identify children that would benefit from peer-mediated interventions in social play, and that it is valuable for preschool teachers and compatible with their common professional activities. The next steps would be to investigate TIS-S test-retest reliability and interrater agreement in larger samples, to use TIS-S for the evaluation of peer-mediated interventions, and to continue discussing the role of observational assessments for quality inclusive ECE.

Limitations

Two important limitations of this study need to be stressed. First, to explore the social validity for TIS-S, a larger sample of teachers and more detailed data about education levels and years in the profession, would have been desirable. Second, we didn't collect detailed data about the participating children in terms of gender, formal disabilities, or multilingualism, which could have added important information as to the outcome of TIS-S. Although the results are not generalisable, these Swedish examples of teachers' experiences may provide useful information that can guide future intervention efforts in research contexts, where peer-mediated approaches could be adopted by preschools professionals to increase participation in social play for children with SEN.

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Disclosure statement

The authors reported no potential conflict of interest.

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