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3 Review of tools for play and play-based assessment

3.1 Objectives

The review of the tools and methodologies for the evaluation of the play had several aims:

- to report the state of the art of the existing tools and methodologies to assess play;
- to identify the most suitable tools for the assessment of different aspects of play to be applied for children with disabilities;
- to give directions for future research and also to support the development of aspects that have not yet been addressed;
- to share the state of the art with researchers and practitioners, in order to enable an autonomous choice of the best tool for particular case.

3.2 Method

The literature review was performed between the Summer 2016 and the Summer 2017; it was meant to analyse the existing methodologies and tools used in experimental research and clinical practice. The review was performed focusing on the following topics:

- evaluation of play of children with disabilities;
- evaluation of children's play;
- evaluation of playfulness and other play skills;
- evaluation of play from the perspectives of different fields: Occupational Therapy, Psychology, Education, Information and Communication Technology.

The following keywords were used: child, play, playfulness, assessment, evaluation. The sole criterion for exclusion has been: play therapy. However, play-based child assessment tools were included as well in the database, because they show an operationalisation of the play construct. Moreover, the Working Group 1 decided to focus on tools developed in different cultural and linguistic areas that had at least one publication in international papers. The query was run on the following databases:

- PsychInfo
- PubMed
- Google Scholar
- Google search engine

The review reports 29 tools for play or play-based assessment; among them, the following tools are derived from the review by Caprino and Laudanna (2009) “Literature analysis on play assessment methodologies” within the European Project IROMECE:

1. Assessment of Ludic Behaviour
2. Observed Peer Play in Unfamiliar Settings
3. Parten Scale adapted
4. Penn Interactive Peer Play Scale
5. Social Play Continuum
6. Smilansky’s socio dramatic play Inventory Scale
7. Transdisciplinary Play-Based Assessment

3.3 General overview of the tools: descriptive analysis of some characteristics

The tools presented in this chapter had been developed since the 60s of the Twentieth Century; the first version of most of them was published between the 1981 and the 2010 (see Figure 3.1).

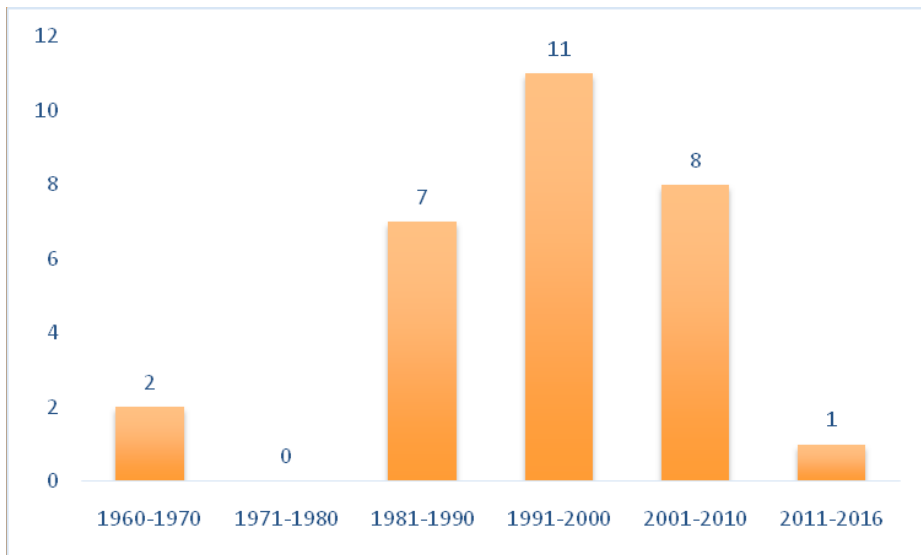


Figure 3.1. Year of publication of the tool first version

The 58.6% of the tools were developed in the United States of America (see Figure 3.2). The other tools were developed in other English-speaking countries, or are available in English, as this was one of the criteria of selection of the current study.

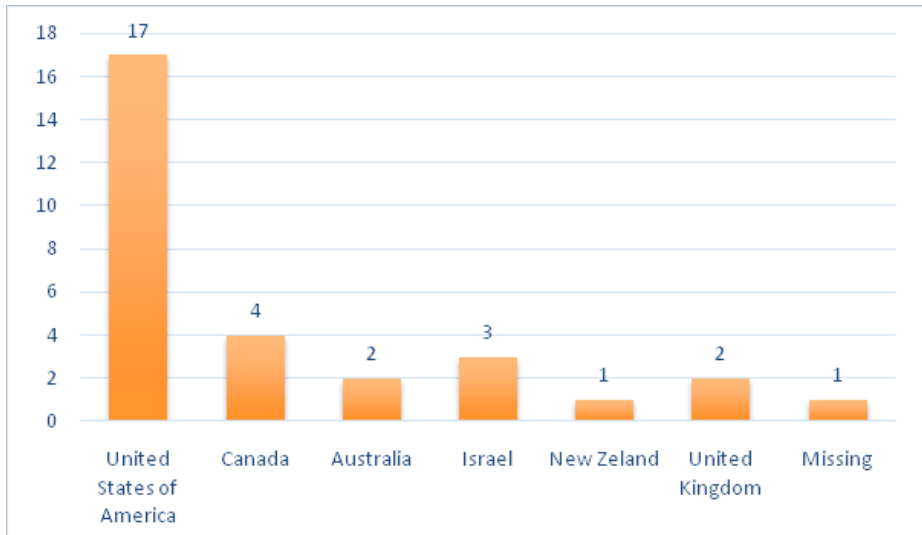


Figure 3.2. Country of origin of the tools

Figure 3.3 reports the scientific fields in which the tools were developed (occupational therapy: 41.4%; psychology: 37.9%; education: 10.3%; psychology and education: 3.5%; psychoanalysis: 7%).

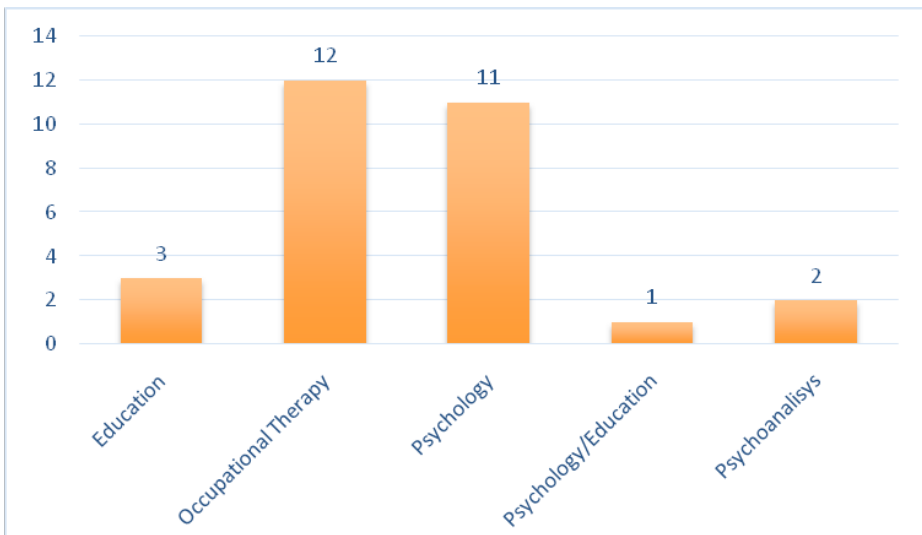


Figure 3.3. Scientific context of the tools

Twenty-two tools are devoted to play assessment (75.9%) and seven to play-based assessment (24.1%).

Table 3.1 reports the age range covered by each tool.

Table 3.1. Age in years covered by the tools

	Age																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
ALB	1	2	3	4	5	6	7														
APS					5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
APS					5	6	7	8	9	10											
APS-P				4	5	6	7														
CAPE						6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
CBI			3	4	5	6	7	8	9	10											
CDPI		2	3	4	5	6	7	8	9												
ChiPPA			3	4	5	6	7	8													
CLASS										10	11	12	13	14	15	16	17	18	19		
CPS				4	5	6	7														
I-PAS	1	2	3	4	5	6															
MCP			3	4	5	6	7	8	9	10											
MPI							7	8	9	10	11										
OPPUS		2	3	4	5	6															
PAC						6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
PSA			3	4	5	6	7														
PAS	1	2	3	4																	
PIECES	1	2	3	4	5	6															
PIP						6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
PIPPS			3	4	5	6	7														
PH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17				
POS	Early to middle childhood, preschool and school children																				
RKPPS	1	2	3	4	5	6	7														
SPC			3	4	5	6	7														
SSEDSP			3	4	5	6	7	8	9												
ToES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
ToP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
ToPP	1	2	3	4	5	6	7														
TPBA	1	2	3	4	5	6	7														

With respect to some psychometric characteristics of the tools, eight of them have a normative sample⁵ (27.6%), whereas 21 tools do not have a normative sample or this information was not available. Twenty-five tool (86.2%) present some information about their reliability and validity; for the rest

⁵ The norms of a tool are scores used to set the typical score of a child in a given age group. To do this, a large number of children, divided into age groups (e.g., 5-year-olds, 6-year-olds, etc.) are assessed using the tool. Their scores and their standard deviations constitutes the norms and the children constitutes the normative sample. The norms are usually reported in the manual or in the scientific paper describing the tool. For a wider discussion, see Chapter 1 (Molina and Muntean, 2018)

of them, the information was not available.

As to the requirement needed to use the tools, eight of them (27.6%) require a training; for the rest of them, training was not necessary or the information was not available.

Sixteen tools (55.2%) are available in at least one language different from English.

3.4 Review of the tools

In this section, 29 tools are alphabetically listed and presented including the following characteristics:

1. Author/s.
2. Year of publication: the first date of publication and date of revised versions, if available.
3. Origin: country of the normative sample or affiliation of the main author/s.
4. Existing translations and/or adaptations.
5. Professional context in which the tool has been developed.
6. Target population for which the tool has been developed.
7. Objectives: play assessment or play-based assessment.
8. Short description.
9. Normative sample.
10. Reliability.
11. Validity.
12. Is training required to use the tool?
13. Time/ sessions.
14. Setting.
15. Toy materials are provided together with the tool?
16. References.
17. Notes.

Some of the tools are devoted to the assessment of play and some are play-based instruments used to evaluate children's cognitive and social skills that are necessary for play as well as their ability to initiate play interactions.

Assessment of Ludic Behaviour (ALB)

Author	Francine Ferland
Year	1997; 2005
Origin	Canada (French): original title «L'évaluation du comportement ludique (ÉCL)»
Translations	Brazilian Portuguese (Sant'Anna, 2008); English (Ferland 1997; 2005); French (Ferland, 2003)
Context	Occupational therapy
Target population	0- to 6-year-old children with physical disabilities
Objectives	Play assessment
Short description	<p>The Assessment of Ludic Behaviour (ALB) is a criterion-referenced evaluation tool designed to assess the development of the social and object play in children with motor impairments. The assessment procedure includes a parent's interview and the observation of child's free play behaviour.</p> <p>The Initial Interview with Parents on the Ludic Behavior of Their Child (Ferland, 1997, 2005) provides information on the child's play behaviour at home from the parents' perspective. It provides information about the child's play material, toy preferences, play interests, favourite playmates, most functional position to play and frequency of play in the family environment.</p> <p>The purpose of the observational assessment is to characterize the qualitative and individual aspects of a child's play behaviour with respect to his/her play interests, play abilities, and play attitude. The manner in which the child communicates is noted as well.</p> <p>Based on observation procedure, five different areas are examined, encompassing different categories: General level of interest and motivation (Human, Sensory); Basic Ludic Abilities (Action with regard to objects, Action with regard to space, Use of objects, Use of space); Ludic Interest (Action with regard to objects, Action with regard to space, Use of objects, Use of space); Ludic attitude (Curiosity, Initiative, Sense of humour, Pleasure, Enjoyment of challenge, Spontaneity); Communication in play.</p> <p>Each area encompasses a different number of items, scored according to a 3-point scale. The evaluator scores the items with the aid of a check list while the child is playing; at the end of the session if some item has not been observed the evaluator can initiate the play activity trying to involve the child.</p> <p>The ALB can be used to set up play-based interventions.</p>
Normative sample	Data not available
Reliability	Data not available
Validity	Some indications of validity are retrievable here: Ferland, 1997; Messier et al., 2008
Training required	No
Time/Sessions	Variable (1 hour average length)

Setting	Familiar; Naturalistic; Indoors
Toy materials	No
References	<p>Ferland, F. (1997). <i>The Ludic Model: Play, Children with Physical Disabilities and Occupational Therapy</i>. Ottawa, CAN: University of Ottawa Press.</p> <p>Ferland, F. (2003). <i>Le modèle ludique: le jeu, l'enfant ayant une déficience physique et l'ergothérapie</i>. Les Presses de l'Université de Montréal.</p> <p>Ferland, F. (2005). <i>The Ludic Model. Play, Children with Physical Disabilities and Occupational Therapy</i>. Nepean, CAN: Canadian Association of Occupational Therapist.</p> <p>Messier, J., Ferland, F., & Majnemer, A. (2008). Play behavior of school age children with intellectual disability: Their capacities, interests and attitude. <i>Journal of Developmental and Physical Disabilities</i>, 20(2), 193-207.</p> <p>Sant'Anna, M. M. M. (2015). <i>Instrumentos de avaliação do modelolúdico para criança com deficiência física (EIP – ACL)</i>. São Carlos, BR: ABPEE M&M Editora.</p>
Notes	<p>The tool is provided in the book “The Ludic Model” (see reference above).</p> <p>The Brazilian version of the tool can be downloaded at this address: http://abpee.net/homepageabpee04_06/editora/avaliacao.pdf</p>

Assistance to Participate Scale (APS)

Authors	Helen Bourke-Taylor, Mary Law & Linsey Howie
Year	2009
Origin	Canada and Australia
Translations	Data not available
Context	Occupational therapy
Target population	5- to 18-year-old school aged children with every kind of disabilities
Objectives	Play assessment
Short description	<p>The APS is an other-report questionnaire meant for caregivers. It measures the assistance that a school aged child with a disability requires to participate in play and leisure activities at home and in the community, from the primary caregiver's perspective. Eight items referring to general types of play and leisure activities are included: watching television, listening to music, indoor play, outdoor play, sharing time with people or attending organized recreational club. Caregivers are asked to rate the level of assistance that they typically provide to their child using a 5-point Likert response scale (1 = Unable to participate; 2 = Participates with my assistance at all stages of the activity; 3 = Participates after I have set him/her up and help at times during the activity; 4 = Participates with my supervision only; 5 = Participates independently). Three separate scores are calculated for the APS: APS-Home alone; APS-Community social and APS-Total.</p> <p>The APS may be used as an outcome measure and to evaluate and predict the amount and type of additional assistance families need to facilitate their child's participation in play and recreation.</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: Bourke-Taylor et al., 2009; Bourke-Taylor & Pallant, 2013
Validity	Some indications of validity are retrievable here: Bourke-Taylor et al., 2009; Bourke-Taylor & Pallant, 2013
Training required	No
Time/Sessions	10 minutes
Setting	Familiar; naturalistic; indoor and outdoor
Toy materials	No
References	<p>Bourke-Taylor, H. M., Howie, L., & Law, M. (2010). Impact of caring for a school aged child with a disability: understanding mothers' perspectives. <i>Australian Occupational Therapy Journal</i>, 57(2), 127-136.</p> <p>Bourke-Taylor, H. M., Law, M., Howie, L., & Pallant, J.F. (2009). Development of the Assistance to Participate Scale (APS) for children's play and leisure activities. <i>Child: Care, Health and Development</i>, 35(5), 738-745.</p> <p>Bourke-Taylor, H., & Pallant, J.F. (2013). The Assistance to Participate Scale to measure play and leisure support for children with developmental disability: Update following Rasch analysis. <i>Child: care, health and development</i>, 39(4), 544-551.</p>
Notes	The APS booklet can be downloaded at this address: https://www.canchild.ca/en/resources/231-assistance-to-participate-scale-aps

Affect in Play Scale (APS)

Author	Sandra W. Russ
Year	1987; 2004
Origin	United States of America
Translations	Italian (Chessa et al., 2011; Mazzeschi et al., 2016)
Context	Psychoanalysis
Target population	5- to 10- year-old typically developing children or children at risk
Objectives	Play-based assessment
Short description	<p>It is an observational rating scale that requires videotaping. Children are asked to play with two puppets and few blocks as they like, for 5 minutes.</p> <p>The Scale measures two factors in children's fantasy play. The first one is a cognitive dimension that encompasses organization (scored by rating the organization of the play and quality and complexity of the plot from 1 to 5), imagination (scored by rating the novelty and uniqueness of the play ranging from 1 to 5) and comfort in play (scored by rating the child's involvement and enjoyment of the play ranging from 1 to 5). The second factor is the affective process that encompasses the total frequency of affect expression, the variety of 11 affective expressions (happiness/pleasure; anxiety/fear; sadness/hurt; frustration/displeasure; nurturance/affection; aggression; oral; oral aggression; anal; sexual; completion) and the intensity of affective expression measured on a scale ranging from 1 (low) to 5 (high).</p> <p>The Affect in Play Scale–Brief Rating version is an adaptation of the scale that does not require videotaping.</p> <p>The APS can be used to evaluate prevention programmes and/or interventions to monitor progress in play and in functions connected to play.</p>
Normative sample	Yes
Reliability	Some indications of reliability are retrievable here: Sacha Cordiano et al., 2008
Validity	Some indications of validity are retrievable here: Russ & Schafer, 2006; Sacha Cordiano et al., 2008
Training required	Yes. It requires videotaping and extensive training to score.
Time/Sessions	5 minutes.
Setting	Unfamiliar; clinical; indoor.
Toy materials	No

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- References
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- Russ, S. W., & Schafer, E. D. (2006). Affect in fantasy play, emotion in memories, and divergent thinking. *Creativity Research Journal, 18*(3), 347-354.
- Sacha Cordiano, T. J., Russ, S. W., & Short, E. J. (2008). Development and validation of the Affect in Play Scale – Brief Rating Version. *Journal of Personality Assessment, 90*, 52-60.
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Affect in Play Scale – Preschoolers (APS-P)

Authors	Karla K. Fehr & Sandra W. Russ
Year	2009
Origin	United States of America
Translations	Italian (Delvecchio, Di Riso, Li, Lis, Mazzeschi, 2016; Delvecchio, Mabilia, Li, & Di Riso, 2016).
Context	Psychology
Target population	4- to 6-year-old children
Objectives	Play-based assessment
Short description	<p>This tool is based on the Affect in Play Scale developed by Russ (1987; see page 64 of this document).</p> <p>Kaugars and Russ (2009) report that “the theoretical foundation for the APS-P is the same as that for the APS in that it is expected that the APS-P also assesses cognitive and affective processes in play. The primary differences in the two measures are in (a) the selection of age-appropriate toys and a greater variety of toys in the APS-P, which allows children the opportunity to engage in the task in an age-appropriate way; and (b) the scoring systems [...]. Also, the APS-P instructions are more engaging for the child and provide several examples of what the child could do with the toys” (p. 737).</p> <p>Children are given a bag with plastic animal toys (dog, elephant, bear, shark, bunny, camel, cheetah, hippopotamus, and giraffe), three plastic cups, a car, and a “hairy” rubber ball.</p> <p>“Some modifications of the APS scoring were made to take into consideration young children’s developing language abilities. Six primary scores were used based on the APS scoring system [...]: total frequency of affect, variety of affect categories, imagination, organization, elaboration, and comfort. Scoring criteria for categorizing the type of play children exhibited (i.e., no play, functional play, or pretend play) were adapted from play coding used in previous research [...] (Kaugars& Russ, 2009, p. 741).</p> <p>For children with developmental disabilities this tool could be particularly important because usual assessment might ignore the abilities of these children, “whereas play-based assessment assesses functional abilities or impairment, provides a direct link between the results and intervention needed, and is more cost- and time-effective” (Fehr & Russ, 2014, p. 350).</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: Kaugars & Russ, 2009
Validity	Some indications of validity are retrievable here: Fehr & Russ, 2013
Training required	Yes. It requires videotaping and extensive training to score
Time/Sessions	5 minutes
Setting	Familiar; clinical; indoor

Toy materials	No
References	<p>Delvecchio, E., Di Riso, D., Li, J. B., Lis, A., & Mazzeschi, C. (2016). Affect in Play Scale-Preschool Version: Validation on a Sample of School Age Italian Children. <i>Journal of Child and Family Studies</i>, 25(12), 3523-3536.</p> <p>Delvecchio, E., Mabilia, D., Li, J. B., & Di Riso, D. (2016). Pretend play in Italian children: Validation of the affect in play scale-preschool version. <i>Journal of Child and Family Studies</i>, 25(1), 86-95.</p> <p>Fehr, K. K., & Russ, S. W. (2014). Assessment of Pretend Play in Preschool-Aged Children: Validation and Factor Analysis of the Affect in Play Scale-Preschool Version. <i>Journal of Personality Assessment</i>, 96(3), 350-357.</p> <p>Kaugars, A. S., & Russ, S. W. (2009). Assessing preschool children's pretend play: Preliminary validation of the Affect in Play Scale-Preschool version. <i>Early Education and Development</i>, 20(5), 733-755.</p>

Children’s Developmental Play Instrument (CDPI)

Author	Saralea E. Chazan
Year	2009
Origin	United States of America
Translations	---
Context	Psychoanalysis
Target population	20-months to 8- year-old typically developing children
Objectives	Play assessment
Short description	<p>Play activity is segmented in four categories: Pre-Play; Play Activity; Non-Play; Interruption.</p> <p>Then, play activity of the child is analysed at three levels:</p> <ol style="list-style-type: none"> 1. Descriptive analysis: <ol style="list-style-type: none"> a. Classification of play activity (for instance, fine or gross motor, sorting and arranging; imitation and fantasy). b. Script Description (who initiates play, how it is sustained, how play ends, etc.). c. Sphere of play activity (autosphere; microsphere; macrosphere). 2. Dimensional analysis: <ol style="list-style-type: none"> a. Affective components: overall affect; modulation/regulation; feelings expressed; relationship feelings. b. Cognitive components: role representation; transformation of persons and objects; object use. c. Narrative components: play theme and topics; use of language. d. Developmental components: estimated developmental level of play activity; social level of play activity. 3. Functional analysis: <ol style="list-style-type: none"> a. Play engagement. b. Symbolic functioning. c. Adaptive play style. d. Inhibited/Conflicted play style. e. Impulsive/Aggressive play style. f. Disorganized play style
Normative sample	No
Reliability	Some indications of reliability are retrievable here: Chazan & Kuchirko, 2017
Validity	Some indications of validity are retrievable here: Chazan & Kuchirko, 2017
Training required	Yes. It requires videotaping and training to score
Time/Sessions	10 minutes
Setting	Familiar; naturalistic; indoor and outdoor
Toy materials	No
References	<p>Chazan, S. E. (2009). Observing play activity: The Children’s Developmental Play Instrument (CDPI) with reliability studies. <i>Child Indicators Research</i>, 2, 417–436</p> <p>Chazan, S. E., & Kuchirko, Y. A. (2017). The children’s developmental play instrument (CDPI): An extended validity study. <i>Journal of Infant, Child, and Adolescent Psychotherapy</i>, 16(3), 234-244.</p>

Children’s Assessment of Participation and Enjoyment (CAPE)

Authors	Gillian A. King et al.
Year	2004
Origin	Canada
Translations	Arabic (Almasri et al., 2017); Dutch (Bult et al., 2010); German (Fink et al., 2016); Spanish (Longo et al. 2014); Swedish (Ullenhag et al. 2012)
Context	Occupational therapy
Target population	6- to 21-year-old children and adolescents with and without disabilities. The CAPE was used with 6- to 15 year-old children with physical impairment (cerebral palsy - musculoskeletal disorder; Law et al., 2006)
Objectives	Play assessment
Short description	<p>The CAPE is a self-report questionnaire and includes an interview version. It is designed to be used together with the PAC (Preference for Activities) but can be used independently.</p> <p>The CAPE should be used first when the tools are used together. It serves to identify the five dimensions of participation (diversity – intensity – with whom – where – extent of enjoyment) for each leisure and play activity the child performed in the last 4 months. The child looks at drawings of children performing 55 different activities. There are five types of activities: recreational, active physical, social, skill-based and self-improvement, belonging to two domains: formal and informal.</p> <p>A manual describes the tool and gives administration and scoring guidelines. Information can be used for the design and implementation of interventions to increase children’s participation.</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: King et al., 2004; Imms, 2008
Validity	Some indications of validity are retrievable here: King et al., 2006; Imms, 2008
Training required	No
Time/Sessions	30 to 45 minutes
Setting	Not applicable
Toy materials	Yes. The kit includes activity cards.
References	<p>Almasri, N. A., Palisano, R. J., & Kang, L. J. (2017). Cultural adaptation and construct validation of the Arabic version of children’s assessment of participation and enjoyment and preferences for activities of children measures. <i>Disability and rehabilitation</i>, 1-8.</p> <p>Bult, M. K., Verschuren, O., Gorter, J. W., Jongmans, M. J., Piškur, B., & Ketelaar, M. (2010). Cross-cultural validation and psychometric evaluation of the Dutch language version of the Children’s Assessment of Participation and Enjoyment (CAPE) in children with and without physical disabilities. <i>Clinical Rehabilitation</i>, 24(9), 843–853.</p>

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- King, G., Law, M., King, S., Hurley, P., Hanna, S., Kertoy, M., Rosenbaum, P., & Young, N. (2004). *Children's Assessment of Participation and Enjoyment (CAPE) & Preferences for Activities of Children (PAC)*. San Antonio: Harcourt Assessment Inc.
- King, G. A., Law, M., King, S., Hurley, P., Hanna, S., Kertoy, M., & Rosenbaum, P. (2006). Measuring children's participation in recreation and leisure activities: construct validation of the CAPE and PAC. *Child: care, health and development*, 33(1), 28-39.
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- Ullenhag, A., Almqvist, L., Granlund, M., & Krumlinde-Sundholm, L. (2012). Cultural validity of the Children's Assessment of Participation and Enjoyment/Preferences for Activities of Children (CAPE/PAC). *Scandinavian Journal of Occupational Therapy*, 19(5), 428-438.

Notes

The CAPE/PAC tools are purchased as a package. The original versions of the tool can be purchased at this address: <https://www.pearsonclinical.ca/en/products/product-master/item-510.html>

Child Behaviors Inventory of Playfulness (CBI)

Authors	Cosby S. Rogers et al.
Year	1998
Origin	United States of America
Translations	Greek (Trevlas et al., 2003); Japanese (Taylor & Rogers, 2001)
Context	Psychology
Target population	3- to 10-year-old children
Objectives	Play assessment
Short description	<p>The CBI is an other-report questionnaire, for parents or teachers. It measures playfulness according to the six dispositions to play as described by Rubin, Fein & Vendenberg (1983): 1. intrinsically motivated behaviour; 2. focus on the process rather than the product; 3. different than exploratory behaviours; 4. non-literality; 5. free from external rules; 6. active engagement.</p> <p>The CBI consists of two sub-scales: playfulness and externality, both of which are independent of age and gender. Items are rated on a scale from 1 (very uncharacteristic) to 5 (very characteristic).</p> <p>Playfulness is a 21-item subscale; sample items include: “Always has ideas of things to do”, “Plays eagerly”, “Creates own way to do things” and “Starts activities for own enjoyment”. Higher scores indicate greater playfulness.</p> <p>Externality is a 7-item subscale that measure behaviours likely to reduce a child’s ability to play; sample items include: “Needs reinforcement to continue activities” and “Once goal is reached, stops”. Higher scores indicate reduction of ability to play.</p> <p>The scale score is obtained by taking the sum across the items, giving a range of scores from 21 to 105 on the playfulness subscale and 7 to 35 on the externality subscale.</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: Rogers et al., 1998.
Validity	Some indications of validity are retrievable here: Rogers et al., 1998.
Training required	No
Time/Sessions	15 minutes
Setting	Not specified
Toy materials	Not specified

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- References
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Child Initiated Pretend Play Assessment (ChIPPA)

Author	Karen Stagnitti
Year	2007
Origin	Australia
Translations	Brazilian Portuguese (Pfeifer et al., 2011); Persian (Golchin et al., 2017). Adaptation for the Australian Aboriginal children who live remotely (Dender & Stagnitti, 2013).
Context	Occupational Therapy
Target population	3- to 7.11-year-old typically developing children (Stagnitti et al., 2000) 4- to 5.8-year-old Australian children with suspected pre-academic problems (Stagnitti et al., 2000)
Objectives	Play assessment
Short description	<p>The ChIPPA is an observational tool.</p> <p>The ChIPPA assesses the child's level of complexity and self-organisation in pretend play. Pretend play incorporates both symbolic and imaginative play. Children are observed playing with toys and unstructured play materials through items investigating: the percentage of elaborated pretend play actions, the number of object substitutions, and the number of imitated actions. It is administered one-on-one in a location free from distraction by excessive noise or other children.</p> <p>The ChIPPA is a norm referenced standardized instrument accompanied by a manual on CD.</p> <p>Through the ChIPPA assessment, it is possible to identify play themes and play styles emerging in the observation of child's play behaviours, highlighting the presence of possible play deficits.</p> <p>ChIPPA scores provide therapists with guidance regarding further assessment of social skills and involvement in play. This information can be used when developing intervention plans within the home or school environments.</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: Golchin et al., 2017; Stagnitti & Unsworth, 2004; Swindells & Stagnitti, 2006
Validity	Some indications of validity are retrievable here: Golchin et al., 2017; Stagnitti et al., 2000; Uren & Stagnitti, 2009
Training required	Yes. The ChIPPA is accompanied by an Instructional DVD (74 minutes). ChIPPA workshops are carried out over 2 to 3 days.
Time/Sessions	18 to 30 minutes
Setting	Familiar; clinical; indoor.
Toy materials	No

References	<p>Dender, A., & Stagnitti, K. (2011). Development of the Indigenous Child-Initiated Pretend Play Assessment: Selection of play materials and administration. <i>Australian occupational therapy journal</i>, 58(1), 34-42.</p> <p>Golchin, M. D., Mirzakhani, N., Stagnitti, K., & Rezaei, M. (2017). Psychometric properties of Persian version of "child-initiated pretend play assessment" for Iranian children. <i>Iranian Journal of Pediatrics</i>, 27(1), e7053.</p> <p>O'Connor, C., & Stagnitti, K. (2011). Play, behaviour, language and social skills: The comparison of a play and a non-play intervention within a specialist school setting. <i>Research in Developmental Disabilities</i>, 32(3), 1205-1211.</p> <p>Pfeifer, L. I., Queiroz, M. A., Santos, J. L., & Stagnitti, K. E. (2011). Cross-cultural adaptation and reliability of child-initiated pretend play assessment (CHIPPA). <i>Canadian Journal of Occupational Therapy</i>, 78(3), 187-195.</p> <p>Stagnitti, K. (2007). <i>Child-Initiated Pretend Play Assessment (CHIPPA)</i>. West Brunswick, Victoria, AUS: Co-ordinates Publications.</p> <p>Stagnitti, K., & Unsworth, C. (2004). The Test–Retest Reliability of the Child-Initiated Pretend Play Assessment. <i>American Journal of Occupational Therapy</i>, 58(1), 93-99.</p> <p>Stagnitti, K., Unsworth, C., & Rodger, S. (2000). Development of an assessment to identify play behaviours that discriminate between the play of typical preschoolers and preschoolers with pre-academic problems. <i>Canadian Journal of Occupational Therapy</i>, 67(5), 291-303.</p> <p>Swindells, D., & Stagnitti, K. (2006). Pretend play and parents' view of social competence: The construct validity of the Child-Initiated Pretend Play Assessment. <i>Australian Occupational Therapy Journal</i>, 53, 314-324.</p> <p>Uren, N., & Stagnitti, K. (2009). Pretend play, social competence and involvement in children aged 5–7 years: The concurrent validity of the Child-Initiated Pretend Play Assessment. <i>Australian Occupational Therapy Journal</i>, 56(1), 33-40.</p>
Notes	<p>The CHIPPA can be purchased at: http://www.thetherapiststore.com.au/product/chippa-child-initiated-pretend-play-assessment-kit/</p> <p>Some information on Child Initiated Pretend play assessment can be found at this address:</p> <p>https://www.learnplayevents.com/for-therapists/</p>

Children's Leisure Assessment Scale (CLASS)

Authors	Sara Rosenblum, Dalia Sachs & Naomi Schreuer
Year	2010
Origin	Israel (Hebrew)
Translations	Chinese (Huang et al., 2009); English (Rosenblum et al., 2010)
Context	Occupational therapy
Target population	10- to 18-year-old children. The CLASS is currently being used in a range of studies supervised by the CLASS developers, among populations such as children and adolescents with learning disabilities, attention deficit disorder, developmental coordination disorder and chronic health conditions (Schreuer et al., 2014).
Objectives	Play assessment
Short description	The CLASS is a self-report questionnaire about participation in children' and adolescents' leisure and play activities. The preliminary CLASS contains 50 items or activities belonging to six dimensions of leisure participation: variety (which activities), frequency (how often), sociability (with whom), preference (how much he or she likes the activity), time consumption (how much time invested), and desired activities (which activities are desired but not currently undertaken). The leisure activity domains measured by the CLASS (variety, frequency, sociability, and preference) serve to thoroughly examine the richness of leisure phenomena. A manual describes the tool and gives administration and scoring guidelines. The information provided about the quantity and quality of children's leisure participation can enrich the clinician's understanding of the children's leisure characteristics. The revealed understandings of the child's leisure characteristics and needs can assist in determining client centred intervention goals.
Normative sample	Yes
Reliability	Some indications of reliability are retrievable here: Rosenblum et al., 2010
Validity	Some indications of validity are retrievable here: Rosenblum et al., 2010
Training required	No
Time/Sessions	30 minutes
Setting	Not applicable
Toy materials	No
References	Huang, Y. J., Wong, S. H., & Salmon, J. (2009). Reliability and validity of the modified Chinese version of the Children's Leisure Activities Study Survey (CLASS) questionnaire in assessing physical activity among Hong Kong children. <i>Pediatric exercise science, 21</i> (3), 339-353. Rosenblum, S., Sachs, D., & Schreuer, N. (2010). Reliability and validity of the Children's Leisure Assessment Scale. <i>American Journal of Occupational Therapy, 64</i> , 633-641. Schreuer, N., Sachs, D., & Rosenblum, S. (2014). Participation in leisure activities: Differences between children with and without physical disabilities. <i>Research in developmental disabilities, 35</i> (1), 223-233.
Notes	It can be purchased from The Lab for Complex Human Activity and Participation – (CHAP) The Department of Occupational Therapy, Faculty of Social Welfare and Health Sciences, University of Haifa, Israel.

Children Playfulness Scale (CPS)

Author	Lynn A. Barnett
Year	1991
Origin	United States of America
Translations	Chinese (Li et al., 1995); Greek (Trevlaset al., 2003); Turkish (Keleş & Yurt, 2017)
Context	Educators in preschool education units
Target population	2- to 5-year-old children 3- to 7-year-old children with autism spectrum disorder (Muys et al., 2006)
Objectives	Play assessment
Short description	<p>The Children’s Playfulness Scale is an other-report questionnaire. It encompasses 5 playfulness dimensions derived from an instrument previously created by Lieberman: physical spontaneity, social spontaneity, cognitive spontaneity, manifest joy, and sense of humour. The questionnaire focuses on the qualities that the child, as a player, brings to the environment. Twenty-three items compose the questionnaire; sample items include: “The child is physically active during play” (physical spontaneity); “The child plays cooperatively with other children” (social spontaneity); “The child uses unconventional objects in play” (cognitive spontaneity); “The child is restrained in expressing emotion during play” (manifest joy); “The child tells funny stories” (sense of humour). The CPS is build-up on 5-point Likert scale, from “sounds exactly like the child” to “doesn’t sound at all like the child”.</p> <p>The CPS helps the educators to orientate their work with children based on better understanding of the role of child’s play and disposition to play.</p>
Normative sample	Yes
Reliability	Some indications of reliability are retrievable here: Barnett, 1990
Validity	Some indications of validity are retrievable here: Barnett, 1990; Bundy & Clifton, 1998
Training required	No
Time/Sessions	10 minutes
Setting	Not specified
Toy materials	Not specified
References	<p>Barnett, L. A. (1990). Playfulness. Definition, design and measurement. <i>Play and Culture</i>, 3, 319-336.</p> <p>Bundy, A. C., & Clifton, J. L. (1998). Construct validity of the Children’s Playfulness Scale. <i>Play and culture studies</i>, 1, 137-147.</p> <p>Keleş, S., & Yurt, Ö. (2017). An investigation of playfulness of pre-school children in Turkey. <i>Early child development and care</i>, 187(8), 1372-1387.</p> <p>Li, W., Bundy, A. C., & Beer, D. (1995). Taiwanese parental values toward an American evaluation of playfulness. <i>OTJR: Occupation, Participation and Health</i>, 15(4), 237-258.</p> <p>Muys, V., Rodger, S., & Bundy, A. C. (2006). Assessment of playfulness in children with autistic disorder: A comparison of the children’s playfulness scale and the test of playfulness. <i>OTJR: Occupation, Participation and Health</i>, 26(4), 159-170.</p> <p>Trevlas, E., Grammatikopoulos, V., Tsigilis, N., & Zachopoulou, E. (2003). Evaluating Playfulness: Construct Validity of the Children’s Playfulness Scale. <i>Early Childhood Education Journal</i>, 31(1), 33-39.</p>

Infant-preschool Play Assessment Scale (I-PAS)

Author	Sally Flagler
Year	1996
Origin	United States of America
Translations	Data not available
Context	Psychology
Target population	0- to 5-year-old children
Objectives	Play-based assessment
Short description	<p>The I-PAS is an observational tool allowing the evaluation of specific skill domains, such as communication; cognition; sensorimotor; fine motor; gross motor; social-emotional. I-PAS results may not be used as standardized or norm-referenced data in determining exact developmental levels: the purpose of the scale is to provide the observer with a frame of reference and general guidelines of the “normal” child development (i.e. criterion referenced).The I-PAS is an assessment instrument that enables teachers, clinicians and other caregivers to systematically observe children at play and in other routine or natural environments for the purpose of: a) determining a child’s developmental level of functioning; b) identifying developmental gaps, skill deficits and emerging skills; c) evaluating child progress; d) evaluating program effectiveness.</p> <p>Because it requires few, if any, formal arrangements and specific tools, the I-PAS also may be used to monitor child progress on an on-going basis in the child’s natural environments at home or in a centre or play group.</p>
Normative sample	Data not available
Reliability	Data not available
Validity	Data not available
Training required	No
Time/Sessions	Data not available
Setting	Familiar; Naturalistic; Indoor
Toy materials	No
References	Flagler, S. L. (1996). <i>I-PAS: Infant-preschool Play Assessment Scale</i> . Chapel-Hill, US: Chapel-Hill Training-Outreach Project.
Notes	Some information on Infant-preschool Play Assessment Scale can be found at this address: http://ctop.org/Products/I-PAS.html

My Child's Play Questionnaire (MCP)

Authors	Eleanor Schneider & Sara Rosenblum
Year	2014
Origin	Israel (Hebrew)
Translations	English (Schneider & Rosenblum, 2014)
Context	Occupational therapy
Target population	3- to 9-years-old children MCP has been used with children with special needs (Rosenblum et al., 2017) and with children aged 4-to 6- years with Developmental Coordination Disorder (Rosenblum et al., 2017).
Objectives	Play assessment
Short description	The MCP is a parent report questionnaire about parental perceptions of the child's play skills and interests, attitudes towards play and the environmental context. It includes 43 items yielding a total score and scores for each of the MCP's four categories: Interpersonal Relationships & Social Participation, Executive Functions, Play Characteristics & Behaviour and Environmental Context. Higher scores reflect better play characteristics. There are instructions for coding the scores. Reading articles describing the development of the tool and research results will contribute to a better understanding of the tool and its use. The tool gives valuable information regarding parental perceptions of their child's play characteristics. The total score and scores in the 4 categories can provide a profile of the child's strengths and weaknesses. This information can be used in defining goals for treatment intervention. It can also be used to provide guidance to parents and other caregivers on how to nurture and facilitate the child's play.
Normative sample	Yes
Reliability	Some indications of reliability are retrievable here: Schneider & Rosenblum, 2014
Validity	Some indications of validity are retrievable here: Schneider & Rosenblum, 2014
Training required	No
Time/Sessions	20 to 30 minutes
Setting	Not applicable
Toy materials	No
References	Rosenblum, S., Waissman, P., & Diamond, G. W. (2017). Identifying play characteristics of pre-school children with developmental coordination disorder via parental questionnaires. <i>Human movement science</i> , 53, 5-15. Schneider, E. & Rosenblum, S (2014). Development, reliability and validity of My Child's Play questionnaire. <i>American Journal of Occupational Therapy</i> , 68 (3), 277-285. Schneider, E. & Rosenblum, S. (2015, March). <i>Mothers' Perceptions of Preschool and School-Aged Children's Play Characteristics – are There Age and Gender Differences?</i> Poster at the Society for Research in Child Development Biennial Meeting, Philadelphia, USA.
Notes	It can be purchased from The Lab for Complex Human Activity and Participation – (CHAP) The Department of Occupational Therapy, Faculty of Social Welfare and Health Sciences, University of Haifa, Israel. It can also be obtained by writing to the first author Eleanor@research.haifa.ac.il

McDonald Play Inventory (MPI)

Author	Ann E. McDonald
Year	1987; 1992; 2012
Origin	United States of America
Translations	Data not available
Context	Occupational therapy
Target population	7- to 11-year-old children with or without disabilities
Objectives	Play assessment
Short description	<p>MPI is a self-report tool, structured into two parts:</p> <p>The McDonald Play Activity Inventory (MPAI) focuses on the child's perceived frequency of engagement in four categories with 10 activities each: 1) Fine Motor (e.g., colour pictures, make models, play with Lego bricks, make clay or dough projects); 2) Gross Motor (e.g., practice shooting basketballs, play catch with a ball, play four square, play kickball); 3) Social Group (e.g., play board games with friends, hang out with friends, go to the park with a friend, play pretend games with a friend or family member); 4) Solitary (e.g., play a game alone, sing by yourself, play with dolls or action figures alone, daydream). The child rates how frequently he or she participates in the activity using a 5-point Likertscale (from never to almost every day).</p> <p>The McDonald Play Style Inventory (MPSI) measures the types and frequencies of play behaviours in four domains: physical coordination, cooperation, peer acceptance, and social participation. It consists of 24 play behaviour items (6 items in each category), 12 neutral play activity items, and 4 "lie" or social desirability items. A 5-point Likert scale is used for the report (from never to always).</p> <p>The MPSI is meant to report about the frequency of participation in an activity; the MPSI is meant to report how the child feels, or the affective component.</p> <p>The MPI allows to assess the perceived behaviour of play in middle childhood and can support building-up intervention programs based on the understanding of the child's sense of mastery or difficulties during play.</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: McDonald & Vigen, 2012
Validity	Some indications of validity are retrievable here: McDonald & Vigen, 2012
Training required	No
Time/Sessions	15 minutes without support; 20-30 minutes when support is needed
Setting	Not applicable
Toy materials	No
References	<p>McDonald, A. E., & Vigen, C. (2012). Reliability and validity of the McDonald Play Inventory. <i>American Journal of Occupational Therapy</i>, 66(4), e52–e60.</p> <p>McDonald, A. E. (1987). <i>The construction of a self-report instrument to measure play activities and play styles in 7 to 11year old children</i>. Unpublished master's thesis, University of Southern California, Los Angeles (US).</p>

Observed Peer Play in Unfamiliar Settings (OPPUS)

Author	Laurie Miller Brotman
Year	2005
Origin	United States of America
Translation	Data not available
Context	Psychology
Target population	2- to 5-year-old children at risk for psychopathology
Objectives	Play-based assessment
Short description	<p>The OPPUS is an observational tool for assessing peer-group entry and play behaviours in preschoolers. The assessed child is observed during free play interactions with unfamiliar peers in a play room. No specific instruction is provided to the peers, while the assessed child is told to play with anyone or anything he/she wants. Observers do not encourage or reinforce child's behaviours.</p> <p>The observer rates the child behaviour on four global items: a) How socially skilled was this child during the interaction?; b) How disruptive was this child?; c) How disconnected or withdrawn was this child?; d) Overall, how well did the child fit into the play situation?</p> <p>A 5-point Likert scale is used to rate the child, from 0 (not at all), 1 (minimally), 2 (somewhat), 3 (very), to 4 (extremely).</p> <p>“Socially Skilled”, “Disconnected” (reversed item) and “Fit In” combine to create an OPPUS Engaged scale. The “Disruptive” item is retained as a single-item measure of disruptive behaviour.</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: Brotman et al., 2005
Validity	Some indications of validity are retrievable here: Brotman et al., 2005
Training required	Yes: observers with minimal training are able to reliably use the OPPUS procedure
Time/Sessions	30 minutes
Setting	Unfamiliar
Toy materials	No
References	<p>Brotman, L. M., Gouley, K. K., & Chesir-Teran, D. (2006). Assessing Peer Entry and Play in Preschoolers at Risk for Maladjustment. <i>Journal of Clinical Child and Adolescent Psychology, 34</i>(4), 671-680.</p> <p>Brotman, L. M., Gouley, K. K., Chesir-Teran, D., Dennis, T., Klein, R. G., & Shrout, P. (2005). Prevention for preschoolers at high risk for conduct problems: Immediate outcomes on parenting practices and child social competence. <i>Journal of Clinical Child and Adolescent Psychology, 34</i>(4), 724-734.</p>

Preferences for Activities of Children (PAC)

Authors	Gillian A. King et al.
Year	2004
Origin	Canada
Translations	Arabic (Almasri et al., 2017); Swedish (Ullenhag et al. 2012)
Context	Occupational therapy
Target population	6- to 21-year-old children and adolescents with and without disabilities
Objectives	Play assessment
Short description	<p>The PAC is a self-report questionnaire about activity preference and includes an interview version. It is designed to be used together with the CAPE (Children's Assessment of Participation and Enjoyment) but can be used independently. The PAC should be used after the CAPE when the tools are used together. The child looks at drawings of children performing 55 different activities. There are five types of activities: recreational, active physical, social, skill-based and self-improvement, belonging to two domains: formal and informal. The child records his preference by circling one of three facial expressions. A card containing enlarged facial expressions with corresponding written descriptions can assist in their sorting (interview-assisted version).</p> <p>A manual describes the tool and gives administration and scoring guidelines. Information can be used for the design and implementation of interventions to increase children's participation.</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: King et al. 2004; Imms, 2008
Validity	Some indications of validity are retrievable here: King et al. 2006; Imms, 2008
Training required	No
Time/Sessions	15 to 20 minutes
Setting	Not applicable
Toy materials	Yes. The kit includes activity cards
References	<p>Almasri, N. A., Palisano, R. J., & Kang, L. J. (2017). Cultural adaptation and construct validation of the Arabic version of children's assessment of participation and enjoyment and preferences for activities of children measures. <i>Disability and rehabilitation</i>, 1-8.</p> <p>Imms, C. (2008) Review of the children's assessment of participation and enjoyment and the preferences for activity of children. <i>Physical and Occupational Therapy in Pediatrics</i>, 28(4), 389-404.</p> <p>King, G., Law, M., King, S., Hurley, P., Hanna, S., Kertoy, M., Rosenbaum, P., & Young, N. (2004). <i>Children's Assessment of Participation and Enjoyment (CAPE) & Preferences for Activities of Children (PAC)</i>. San Antonio: Harcourt Assessment Inc.</p>

King, G. A., Law, M., King, S., Hurley, P., Hanna, S., Kertoy, M., & Rosenbaum, P. (2006). Measuring children's participation in recreation and leisure activities: construct validation of the CAPE and PAC. *Child: care, health and development*, 33(1), 28-39.

Ullenhag, A., Almqvist, L., Granlund, M., & Kruminde-Sundholm, L. (2012). Cultural validity of the Children's Assessment of Participation and Enjoyment/ Preferences for Activities of Children (CAPE/PAC). *Scandinavian Journal of Occupational Therapy*, 19(5), 428-438.

Notes

The CAPE/PAC tools are purchased as a package

The original versions of the tool can be purchased at this address: <https://www.pearsonclinical.ca/en/products/product-master/item-510.html>

Play Assessment Scale (PAS)

Author	Rebecca R. Fewell
Year	1984
Origin	United States of America
Translations	Data not available
Context	Psychology
Target population	2- to 36- month-old children with and without disabilities
Objectives	Play Assessment
Short description	<p>The Play Assessment Scale (PAS) is an observational tool. The scale is made of 45-items that are developmentally sequenced; it is organized into eight age ranges and toy sets, so that only a portion of the items are proposed and rated for each child. Children are first observed in spontaneous play followed by a facilitated play session. The child's play behaviours are coded according to the scale: a play age can then be determined. The play age is composed only of those behaviours observed in spontaneous play. A basal/ceiling approach is used and a conversion chart allows the rater to convert the raw score to the child's play age.</p> <p>The clinical utility of the PAS consisted in inferring the child's developmental level in cognition, communication and social behaviour through play assessment, which is less stressful and supports the child's cooperation.</p>
Normative sample	Data not available
Reliability	Data not available
Validity	Data not available
Training required	No
Time/Sessions	Not specified
Setting	Not specified
Toy materials	No
References	<p>Athanasίου, M. S. (2000). Play-based approaches to preschool assessment. In: Bracken, B. A. (Ed.), <i>The Psychoeducational Assessment of Preschool Children</i> (pp. 412-427). Boston, US: Allyn and Bacon.</p> <p>Fewell, R. R., & Rich, J. S. (1987) Play Assessment as a Procedure for Examining Cognitive, Communication, and Social Skills in Multihandicapped Children. <i>Journal of Psychoeducational Assessment</i>, 2, 107-18.</p> <p>Pizzo, L., & Bruce, S. M. (2010). Language and play in students with multiple disabilities and visual impairments or deaf-blindness. <i>Journal of visual impairment & blindness</i>, 104(5), 287-297.</p> <p>Toth, K., Dawson, G., Meltzoff, A. N., Greenson, J., & Fein, D. (2007). Early social, imitation, play, and language abilities of young non-autistic siblings of children with autism. <i>Journal of autism and developmental disorders</i>, 37(1), 145-157.</p>

Play History (PH)

Authors	Nancy Takata, modified by Kimberly C. Bryze
Year	1969, 1974, 2008
Origin	Data not available
Translations	Data not available
Context	Occupational therapy
Target population	0- to 16-year-old children
Objectives	Play assessment
Short description	<p>The Play history is an interview designed to identify a child's play experiences, interactions, environments and opportunities across the time progression of his or her life. The interview format helps describe a child's play skills.</p> <p>As it was originally designed, the Play History is semi-structured, qualitative and open ended in format; it includes a basic set of questions proposed to the child's parents or primary caregivers.</p> <p>It is based on developmental stages put forward by Piaget (1962) and Erikson (1950), then influenced by occupational therapy with Reilly and Florey. The contribution of Takata (1974) has been the description of play epochs or play developmental levels. The Play History is designed to relate information across past and present play experiences (epochs) in terms of: 1) sensorimotor, 2) symbolic and simple constructive, 3) dramatic and complex constructive and pre-game, 4) games and 5) recreational.</p> <p>Bryze (2008) has used this categorisation as a means of analysing the play activities children engage, so elements of each epoch are analysed following 4 categories: materials (what), action (how), people (with whom), setting (where and when).</p> <p>The information obtained from the Play History Interview yields a total play description of a child that gives valuable information for detecting children with play dysfunctions and to design intervention plans.</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: Behnke & Fetkovich, 1984.
Validity	Some indications of validity are retrievable here: Behnke & Fetkovich, 1984.
Training required	Data not available
Time/Sessions	Data not available
Setting	Familiar; naturalistic
Toy materials	No

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- References
- Behnke, C. J., & Fetkovich, M. M. (1984). Examining the Reliability and Validity of the Play History. *The American Journal of Occupational Therapy*, 38(2), 94-100.
- Bryze, K.C. (2008). Narrative contributions to the Play History. In L. D. Parham & L. S. Fazio (Eds.), *Play in Occupational Therapy for Children. Second Edition* (pp. 43-54). St-Louis, US: Mosby/Elsevier.
- Erikson, E. H. (1950). *Childhood and society*. New York, US: Norton.
- Piaget, J. (1962). *Play, dreams, and imitation in childhood*. New York, US: Norton.
- Reilly, M. (1974). *Play as exploratory. Learning: Studies of Curiosity Behavior*. Beverly Hills, US: Sage.
- Takata, N. (1969). The play history. *American Journal of Occupational Therapy*, 23(4), 314-318.
- Takata, N. (1974). Play as a prescription. In M. Reilly (Ed.), *Play as exploratory. Learning: Studies of Curiosity Behavior* (pp. 209-246). Beverly Hills, US: Sage.
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Play in Early Childhood Evaluation System (PIECES)

Authors	Lisa Kelly-Vance & Brigitte O. Ryalls
Year	1999; 2005
Origin	United States of America
Translations	Data not available
Context	Psychology
Target population	0- to 5-year-old children, typically developing and with disability (motor impairments, autism spectrum disorder, speech/language impairments: Ryalls et al., 2016)
Objectives	Play assessment
Short description	<p>The PIECES is an observational tool, allowing to evaluate three main types of play: exploratory play, simple pretend play and complex pretend play. The child is asked to play with traditional toys (e.g., kitchen sets, plastic foods, plastic animals, baby dolls) and non-toy items that require a little bit of imagination (e.g., toilet paper rolls, cardboard boxes, egg cartons, foam balls). An observer (facilitator) of the play is available near the child and she can interact with the child to solicit play with all the available toys.</p> <p>The PIECES is an assessment tool that can be used to identify strengths and weaknesses in the area of play skills, and to plan intervention with the Child Learning in Play System (CLIPS), providing different intervention strategies for play skills.</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: Kelly-Vance & Ryalls, 2005.
Validity	Some indications of validity are retrievable here: Kelly-Vance et al., 1999.
Training required	Yes
Time/Sessions	30-45 minutes
Setting	Unfamiliar; Clinical; Indoor
Toy materials	No
References	<p>Kelly-Vance, L., Needelman, H., Troia, K., & Ryalls, B. O. (1999). Early childhood assessment: A comparison of the Bayley Scales of Infant Development and a Play-Based Technique. <i>Developmental Disabilities Bulletin</i>, 27, 1-15.</p> <p>Kelly-Vance, L., Ryalls, B. O., & Gill-Glover, K. (2002). The use of play assessment to evaluate the cognitive skills of two- and three-year old children. <i>School Psychology International</i>, 23, 169-185.</p> <p>Kelly-Vance, L., & Ryalls, B. O. (2005). A systematic, reliable approach to play assessment in preschoolers. <i>School Psychology International</i>, 26(4), 398-412.</p> <p>Ryalls, B. O., Harbourne, R., Kelly-Vance, L., Wickstrom, J., Stergiou, N., & Kyvelidou, A. (2016). A perceptual motor intervention improves play behavior in children with moderate to severe cerebral palsy. <i>Frontiers in psychology</i>, 7.</p>
Notes	Tools and training materials available at: http://www.plaisuno.com/page2

Paediatric Interest Profiles (PIP)

Author	Alexis Henry
Year	2000; 2008
Origin	United States of America
Translations	French and German (for further information, see http://www.cade.uic.edu/moho/resources/translations.aspx)
Context	Occupational therapy
Target population	6- to 9-year-olds (Kid play profile), 9- to 12-year-olds (Preteen Play Profile) and 12- to 21-year-olds (Adolescent Leisure Interest Profile) with and without disabilities 6- to 21 year-old US children and adolescents with psychiatric, physical and learning disabilities (Henry, 1998)
Objectives	Play assessment
Short description	<p>The PIP are self-report questionnaires about play interests and participation in a variety of play and leisure activities.</p> <p>The child is asked questions on how often, why, how well, how much and with whom specific activities are performed and enjoyed via lists or pictures of play and leisure activities and replies by marking/circling/ticking a response. Each group of questions is followed up by an interview (Kid and Preteen play profiles). Activities are grouped into 8 categories. In the case of Kid and Preteen play profile: sports, outside, summer, winter, indoor and creative activities; lessons/ classes and socializing. In the case of Adolescent leisure interest profile: sports, outside, exercise, relaxation, intellectual, creative, socializing, club/community organisations.</p> <p>A manual describes the tool and gives administration and scoring guidelines. The conceptual influence of the PIP is the Model of Human Occupation (Moho).</p> <p>The PIP self-reports can be used to identify children or adolescents at risk for play-related problems. They are a quick way for practitioners to gather information about a child's perceptions in order to set goals and plan play-related interventions.</p>
Normative sample	Data not available
Reliability	Some indications of reliability of the Adolescent leisure Interest Profile are retrievable here: Henry, 1998
Validity	Some indications of validity of the Adolescent leisure Interest Profile are retrievable here: Trottier et al., 2002
Training required	No
Time/Sessions	15, 20 and 30 minutes respectively for the different profiles
Setting	Not applicable
Toy materials	No

References	<p>Henry, A. (1998). Development of a Measure of Adolescent Leisure Interests. <i>The American Journal of Occupational Therapy</i>, 52(7), 531-539.</p> <p>Henry, A. (2000). <i>Pediatric interest profiles: Surveys of play for children and adolescents</i>. San Antonio, US: Therapy Skill Builders.</p> <p>Henry, A. (2008). Assessment of play and leisure in children and adolescents. In L. S. Fazio and L. D. Parham (Eds). <i>Play in occupational therapy for children</i> (pp. 95-193). St-Louis, US: Elsevier Mosby.</p> <p>Trottier, A. N., Brown, G. T., Hobson, S. J. G., & Miller, W. (2002). Reliability and validity of the Leisure Satisfaction Scale (LSS-short form) and the Adolescent Interest Leisure Profile (ALIP). <i>Occupational Therapy</i>, 9(2), 131-144.</p>
Notes	<p>Free forms of the PIP are accessible at this address: http://www.cade.uic.edu/moho/productDetails.aspx?aid=43</p> <p>PIP's manual can be retrieved here: www.cade.uic.edu/moho/resources/files/assessments/PIPs%20Manual.pdf</p>

Penn Interactive Peer Play Scale (PIPPS)

Author	John Fantuzzo
Year	1995, 2000
Origin	United States of America
Translations	Chinese (Leung, 2014); Korean (Choi & Shin, 2008); Portuguese (Coelho et al., 2017); Spanish (Castro et al., 2002); Turkish (Ahmetoğlu et al., 2016)
Context	Psychology
Target population	36- to 63-month-old low-income minority children 9- to 13-year old children with autism
Objectives	Play-based assessment
Short description	<p>The PIPPS is an evaluation tool designed to assess the social competence of preschool children by observing their play interaction with peers. This instrument is aimed at identifying the children's behavioural strengths and needs within the context of peer play in the classrooms or home environments. Three different behaviours can be observed and scored through this rating scale:</p> <ul style="list-style-type: none"> - Play disruption: it describes the lack of peer interaction abilities characterized by aggressive behaviours - Play disconnection: it describes the inability to engage in play with peers and to maintain interaction behaving in a quit passive way - Play interaction: it describes the child's play skills in social play and the degree of leadership in the group <p>A teacher and a parent version of the test are provided. A 5-point Likert scale is used to score the observed play behaviour. The parent report version of the PIPPS can support the involvement of parents in the assessment process; the tool can be useful to deepen the continuity and discontinuity between home and school environments. The PIPPS has been developed for research purposes and it is not an appropriate diagnostic or testing tool.</p>
Normative sample	Yes
Reliability	Some indications of reliability are retrievable here: Ahmetoğlu et al., 2016
Validity	Some indications of validity are retrievable here: Fantuzzo et al., 1998; Hampton & Fantuzzo, 2003; Lenung, 2014
Training required	Data not available
Time/Sessions	Data not available
Setting	Familiar
Toy materials	No

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Play Observation Scale (POS)

Author	Kenneth H. Rubin
Year	1989, 2001
Origin	United States of America
Translations	Data not available
Context	Psychology
Target population	Early to middle childhood The POS has been used with children with different motor abilities (Bar-Haim & Bart, 2006)
Objectives	Play assessment
Short description	<p>The Play Observation Scale (POS), related to the play hierarchies developed by Parten (1932) and Piaget (1962), is an observational taxonomy designed to assess the structural components of children's play nested within social participatory categories to record and categorise a child's free play behaviour.</p> <p>When coding a child's behaviour the first decision the observer must make is whether the behaviour is play or non-play.</p> <p>Non-play categories concern unoccupied behaviour, onlooker behaviour, active conversations with teacher and/or peers, transitional, aggressive, rough-and-tumble, hovering, and/or anxious behaviours.</p> <p>In order to code the cognitive play level (functional, constructive and dramatic play and games-with-rules) of a given activity the observer must first decide upon the child's intent or purpose as s/he engages in that activity. When coding the social play (solitary, parallel and group activity) of the focal child it is important to note the proximity of the focal child to any other children in the area, and the attentiveness of the focal child to his/her playmates.</p> <p>The cognitive play categories are nested within the social play: 15 possible nested behaviours (solitary-functional, solitary-constructive, etc.).</p> <p>The POS has been used to capture descriptive data on the type, frequency and social context of young children's play (Barnett 1991, Coplan and Rubin 1998).</p> <p>The scale has proven useful also in determining age and sex differences in children's play, socio-economic status differences in play, effects of ecological setting of play, individual differences in play and the social contexts within which the various forms of cognitive play are distributed over time. The scale has also been used to identify both children extremely withdrawn and with aggressive behaviours, who are "at risk" for later psychological difficulties.</p> <p>Researchers have used the POS to study behavioural associations with temperament, attachment relationships, parenting, and children's peer relationships.</p> <p>Investigators have also used the POS in studies of disabled and learning disabled children.</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: Rubin, 2001
Validity	Data not available
Training required	Data not available

Time/Sessions	15 minutes a minimum (time-sampling methodology within each 10 seconds segments)
Setting	Familiar; naturalistic; Indoors or outdoors
Toy materials	No
References	<p>Bar-Haim, Y., & Bart, O. (2006). Motor function and social participation in kindergarten children. <i>Social Development, 15</i>(2), 296-310.</p> <p>Barnett, L. A. (1991). The playful child: measurement of a disposition to play. <i>Play and Culture, 4</i>(1), 51-74.</p> <p>Coplan, R. J., & Rubin, K. H. (1998). Exploring and assessing nonsocial play in the preschool: the development and validation of the Preschool Play Behavior Scale. <i>Social Development, 7</i>(1), 72-91.</p> <p>Parten, M. B. (1932). Social participation among preschool children. <i>Journal of Abnormal Psychology, 27</i>, 243-269.</p> <p>Piaget, J. (1962). <i>Play, dreams, and imitation in childhood</i>. New York, US: Norton.</p> <p>Rubin, K. H., Maioni, T. L., & Hornung, M. (1976). Free play behaviors in middle- and lower-class preschoolers: Parten and Piaget revisited. <i>Child Development, 47</i>, 414-419.</p> <p>Rubin, K. H. (1982). Non-social play in preschoolers: Necessary evil? <i>Child development, 53</i>, 651-657.</p> <p>Rubin, K. H., Fein, C. G., & Vandenberg, B. (1983). Play. In E. M. Hetherington (Ed.), <i>Handbook of child psychology (Vol. 4), Socialization, personality, and Social development</i> (pp. 693-774). New York, US: Wiley.</p> <p>Rubin, K. H. (1989). <i>The play observation scale (POS)</i>. University of Waterloo.</p> <p>Rubin, K. H. (2001). <i>The play observation scale (POS)</i>. College Park, US: University of Maryland.</p>
Notes	<p>The tool can be downloaded at this address: http://www.rubin-lab.umd.edu/CodingSchemes/POS%20Coding%20Scheme%202001.pdf</p>

Parten Scale Adapted (PSA)

Author	Keith D. Ballard
Year	1981
Origin	New Zealand
Translations	Data not available
Context	Psychology
Target population	3- to 6-year-old typically developing children 3- to 7-year-old children with autism
Objectives	Play assessment
Short description	<p>The Parten Scale categorizes children's free play in accordance with Piaget's developmental theory, and defines six categories of play:</p> <ul style="list-style-type: none"> - Unoccupied - Solitary independent play - Onlooker - Parallel play - Associative play - Cooperative play <p>The child's play behaviours are observed and scored through a six point scale (1 point if he/she is unoccupied, 6 points if is showing cooperative play abilities). The final Play Score is calculated by multiplying the number of occurrences in each category by its weighting, summing these scores, and dividing by the total number of occurrences.</p> <p>In Ballard's system social interaction is conceptualized as a dyadic interchange between two individuals. The adapted system captures reciprocal interactions and sharing behaviour, distinguishes between interactions with adults and interactions with peers, and also codes negative versus positive responses of the target child to others' initiations.</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: Ballard, 1981
Validity	Some indications of validity are retrievable here: Ballard, 1981
Training required	Data not available
Time/Sessions	5-12 sessions
Setting	Familiar
Toy materials	Data not available

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Revised Knox Preschool Play scale (RKPPS)

Author	Susan Knox
Year	1968; 1974; 1997; 2008
Origin	United States of America
Translations	Brazilian Portuguese (Pacciulioet al., 2010); Hebrew (Waldman-Levi & Weintraub, 2015)
Context	Occupational therapy
Target population	0- to 6-year-old children with and without disabilities
Objectives	Play assessment
Short description	<p>The RKPPS is an observational assessment tool addressed to give a developmental description of typical play behaviour. The items are grouped into four dimensions and 12 categories of play behaviour:</p> <p>space management (gross motor and interest); material management (manipulation, construction, purpose, and attention); pretense-symbolic (imitation, and dramatisation); participation (type, co-operation, humour, and language).</p> <p>Play is described in 6-months increments from 0 to 3 years, and in yearly increments for ages 4 through 6 years. The score sheet allows to obtain an overall play age and a play profile, with useful information to plan and implement intervention.</p> <p>Children are observed in their natural setting, with peers, both indoors and outdoors.</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: Bledsoe & Shepherd, 1982; Jankovich et al., 2008
Validity	Some indications of validity are retrievable here: Bledsoe & Shepherd, 1982; Harrison & Kielhofner, 1986
Training required	No
Time/Sessions	Two 30-minute sessions (indoors and outdoors)
Setting	Familiar; Naturalistic; Indoors and Outdoors
Toy materials	No
References	<p>Jankovich, M., Mullen, J., Rinear, E., Tanta, K., & Deitz, J. (2008). Revised Knox Preschool Play Scale: Interrater agreement and construct validity. <i>American Journal of Occupational Therapy</i>, 62, 221–227.</p> <p>Knox, S. (2008). Development and current use of the Revised Knox Preschool Play Scale. In D. L. Parham & L. S. Fazio (Eds.), <i>Play in Occupational Therapy for Children</i> (pp. 55-70). Amsterdam, NL: Elsevier.</p> <p>Pacciulio, A. M., Pfeifer, L. I., & Santos, L. F. (2010). Preliminary Reliability and Repeatability of the Brazilian Version of the Revised Knox Preschool Play Scale. <i>Occupational Therapy International</i>, 17, 74–80.</p> <p>Waldman-Levi, A., & Weintraub, N. (2015). Efficacy of a crisis intervention in improving mother–child interaction and children’s play functioning. <i>American Journal of Occupational Therapy</i>, 69, 1-11.</p>
Notes	<p>The Scale is retrievable here:</p> <p>http://www.susanlroberts.com/uploads/6/7/4/9/6749414/15_knox_preschool_play_scale.pdf</p>

Social Play Continuum (SPC)

Author	Pat Broadhead
Year	1997; 2004
Origin	United Kingdom
Translations	Data not available
Context	Education
Target population	3- to 6-year-old typically developing children
Objectives	Play-based assessment
Short description	<p>The Social Play Continuum is an observational tool based on the socio-cultural theories, with an alignment with Zones of Proximal Development (ZPD; Vygotskij, 1962), for interpreting children’s contextually situated meanings and actions and their agency as social actors and as co-constructors of learning.</p> <p>It has been designed to observe and assess children’s social play. The emphasis in the observations is on the children’s activity and use of language, with a stress on continuity and progress as play moves across four domains.</p> <p>The 40 items, describing the degree of reciprocity in verbal exchanges and in play actions, are subdivided into 4 domains representing a continuum (Broadhead, 1997): associative play (similar to parallel play), social play, highly social, cooperative play.</p> <p>Conventional toys are used: large and small construction materials, small worlds (miniatures), water, sand.</p> <p>Play actions, degree of reciprocity in the interaction and language are observed in order to determine the child’s progress in the play continuum.</p> <p>This tool also provides information on the social and cognitive development as well as on language skills.</p>
Normative sample	Data not available
Reliability	Data not available
Validity	Data not available
Training required	Data not available
Time/Sessions	Observation length and session number may vary; the authors recommend to have extended observations
Setting	Familiar; naturalistic
Toy materials	No

References	<p>Broadhead, P. (1997). Promoting sociability and cooperation in nursery settings. <i>British Educational Research Journal</i>, 23(4), 513-531.</p> <p>Broadhead, P. (2004). <i>Early years play and learning: developing social skills and cooperation</i>. Developing social skills and cooperation. London, UK: Routledge Farmer.</p> <p>Broadhead, P. (2006). Developing an Understanding of Young Children's Learning through Play: The Place of Observation, Interaction and Reflection. <i>British Educational Research Journal</i>, 32(2), 191-207.</p> <p>Broadhead, P. (2009). Conflict resolution and children's behaviour: observing and understanding social and cooperative play in early years educational settings. <i>Early years</i>, 29(2), 105-118.</p> <p>Broadhead, P., Howard, J., & Wood, E. (2010). <i>Play and learning in the early years: From research to practice</i>. London, UK: Sage.</p>
Notes	<p>The tool can be downloaded at these addresses:</p> <p>http://cw.routledge.com/textbooks/0415303397/resources/pdf/side1and2.pdf</p> <p>http://cw.routledge.com/textbooks/0415303397/resources/pdf/4domains.pdf</p>

The Smilansky Scale for Evaluation of Dramatic and Sociodramatic Play (SSEDSP)

Author	Sara Smilansky
Year	1990
Origin	Israel
Translations	English (Smilansky & Shefatya, 1990)
Context	Psychology, education
Target population	3- to 8-year-old children
Objectives	Play assessment
Short description	<p>Smilansky Scale for Evaluation of Dramatic and Sociodramatic Play has been first developed to assess play skills in children at risk coming from low-income Israeli families. It is a criterion referenced assessment tool designed to assess the dramatic and sociodramatic play of young children both quantitatively and qualitatively.</p> <p>This assessment tool is based on play classification encoded by the authors: functional play, constructive play, symbolic play and games with rules.</p> <p>The Smilansky Scale assesses the stage and the maturity of a child's dramatic and sociodramatic (Parker-Rees & Willian, 2006) through six elements of dramatic play, four are specific to solitary play and two are only for sociodramatic play (Poidevant & Spruill, 1993). This instrument measures the presence or absence of utilization of these six elements, reported as subscales.</p> <p>Imitative role play: the child undertakes a make-believe role and expresses it in imitative action and/or verbalization (IRP).</p> <p>Make-believe with regard to objects: movements or verbal declarations are substituted for real objects (MBO).</p> <p>Make-believe with regard to actions and situations: verbal descriptions or declarations are substituted for actions and situations (MBS).</p> <p>Persistence in role-play: the child continues within a role or play theme for a period of time at least 10 minutes long (P).</p> <p>Interaction: at least two players interact within the context of the play episode (IN).</p> <p>Verbal communication: there is some verbal interaction related to the play episode (VC).</p> <p>The level of a child's play was evaluated with regard to the presence, or absence of each elements, where each element has from 0 to 3 points (0 the element is absent, 1 present in the play for a limited period of time, 2 moderately present and 3 consistently present in numerous situations during the time of play).</p> <p>Equipment available during observation should include play materials relating to housekeeping, dress-up clothes, tool kit, unstructured equipment, grocery store, doctor-nurse utensils.</p>
Normative sample	Data not available
Reliability	Some indications of reliability are retrievable here: Poidevant & Spruill, 1993; Smilansky & Shefatya, 1990
Validity	Some indications of reliability are retrievable here: Poidevant & Spruill, 1993; Smilansky & Shefatya, 1990

Training required	Data not available
Time/Sessions	20-minute period divided into four intervals, or 30-minute period divided into six intervals.
Setting	Familiar; Naturalistic; Indoor
Toy materials	No
References	<p>Parker-Rees, R. & Willian, J. (2006). <i>Early Years education. Major themes in education</i>. London, UK & New York, US: Routledge.</p> <p>Pecjak, S., & Kranjic, S. (1999). Symbolic play as a way of development and learning of preschool children in preschool institutions. <i>European Early Childhood Education Research Journal</i>, 7(1), 35-44.</p> <p>Poidevant, J. M. & Spruill, D. A. (1993). Play activities of at-risk and non-at-risk elementary students: Is there a difference? <i>Child Study Journal</i>, 23(3), 173-186.</p> <p>Smilansky, S. (1968). <i>The Effects of Sociodramatic Play on Disadvantaged Preschool Children</i>. New York, US: Wiley & Sons.</p> <p>Smilansky, S. & Shefatya, L. (1990). The Smilansky Scale for Evaluation of Dramatic and Sociodramatic Play. In S. Smilansky (Ed.), <i>Facilitating play. A Medium for Promoting Cognitive, Socio-Emotional and Academic Development in Young Children</i>. Silver Spring, US: Psychosocial and Educational Publications.</p> <p>Umek, L. M., Musek, P. L., & Smilansky, S. (1990). Sociodramatic play: Its relevance to behavior and achievement in school. In E. Klugman & S. Smilansky (Eds.), <i>Children's play and learning. Perspectives and Policy Implications</i> (pp. 18-42). New York, US: Teachers College Press.</p>

Test of Environmental Supportiveness (ToES)

Author	Anita Bundy
Year	1999; 2008
Origin	United States of America
Translations	Data not available
Context	Occupational therapy
Target population	6-month-old to 18-year-old children with and without disabilities
Objectives	Play assessment
Short description	The ToES is an observational tool developed to assess the extent of environmental support to the child's motivation to play. It measures both the influence of human factors (e.g. behaviours displayed by parents, teachers, caregivers, playmates) and non-human factors related to the play context (e.g. objects used for play, play spaces, safety, sensory stimulation provided by the environment) by evaluating the presence and the extent of environmental barriers or facilitators, through the use of 17 items. This tool is designed to be administered in conjunction with the Test of Playfulness (ToP) and it allows to plan interventions aimed at improving the quality of the child's play experience.
Normative Sample	Data not available
Reliability	Some indications of reliability are retrievable here: Bronson & Bundy, 2001; Hamm, 2006
Validity	Some indications of validity are retrievable here: Bronson & Bundy, 2001; Hamm, 2006
Training required	No
Time/Sessions	15 minutes at least for each setting (the number of sessions depends on the number of settings)
Setting	Naturalistic
Toy materials	No
References	<p>Bronson, M., & Bundy, A. C. (2001). A Correlational Study of a Test of Playfulness and a Test of Environmental Supportiveness for Play. <i>OTJR: Occupation, Participation and Health</i>, 21(4), 241-250.</p> <p>Bundy, A. C. (1999). <i>Test of Environmental Supportiveness</i>. Ft Collins, US: Colorado State University.</p> <p>Skard, G., & Bundy, A. (2008). Test of playfulness. In L. D. Parham & L. S. Fazio (Eds.), <i>Play in Occupational Therapy for Children</i> (pp. 71-94). St-Louis, US: Mosby Elsevier.</p> <p>Hamm, E. M. (2006). Playfulness and the Environmental Support of Play in Children With and Without Developmental Disabilities. <i>OTJR: Occupation, Participation and Health</i>, 26(3), 88-96.</p>

Test of Playfulness (ToP)

Author	Anita Bundy
Year	1997; 2008
Origin	United States of America
Translations	Hebrew (Waldman-Levi & Weintraub, 2015)
Context	Occupational therapy
Target population	6-month-old to 18-year-old children with and without disabilities (i.e.: motor disabilities, autism, sensory processing dysfunction, ADHD)
Objectives	Play assessment
Short description	The ToP is an observational tool of a child's play and playfulness (the disposition to play), defined by four different elements: intrinsic motivation; internal control; suspension of reality; framing (ability to read and give cues in play interactions). These four elements, once combined, define the degree of playfulness of a play behaviour. The ToP is suitable for the assessment of play in children from 6 months to 18 years in outdoor and indoor play settings. In its latest version (4.0), this test comprises a set of 29 items that can be scored by direct observation of free play, without videotaping, which was first used. Each item is scored by evaluating its intensity, its time extension or the skill demonstrated by the child on a 4-point scale (0 to 3). This test has to be administered in at least two different familiar settings. It can be used to measure the outcomes of play based programs.
Normative Sample	Yes
Reliability	Some indications of reliability are retrievable here: Bundy et al., 2001
Validity	Some indications of validity are retrievable here: Bundy et al., 2001
Training required	No
Time/Sessions	15 minutes at least for each setting (the number of sessions depends on the number of settings).
Setting	Familiar; indoor and outdoor
Toy materials	No
References	Brentnall, J., Bundy, A. C., Catherine, F., & Kay, S. (2008). The effect of the length of observation on test of playfulness scores. <i>OTJR: Occupation, Participation and Health</i> , 28(3), 133-140. Bundy, A. C., Nelson, L., Metzger, M., & Bingaman, K. (2001). Validity and reliability of a test of playfulness. <i>The Occupational Therapy Journal of Research</i> , 21(4), 276-292. Bundy, A. C., Shia, S., Long, Q., & Miller, L. J. (2007). How does sensory processing dysfunction affect play?. <i>The American Journal of Occupational Therapy</i> , 61(2), 201-208.

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Test of Pretend Play (ToPP)

Authors	Vicky Lewis & Jill Boucher
Year	1997, 1998
Origin	United Kingdom
Translations	French (Vandenplas-Holper et al., 2004); Turkish (Aydin, 2012)
Context	Psychology
Target population	1- to 6-year-old typically developing children and up to 8-year-old children with communication difficulties
Objectives	Play assessment
Short description	<p>The ToPP is the standardized version of the Warwick Symbolic Play test (Doswell et al., 1994). It is an evaluation tool developed to assess symbolic play by observing the occurrence of those play behaviours in four sections:</p> <p>Self with everyday objects: the child refers to an absent object when supported by everyday objects (e.g. eat food when provided with a bowl and spoon).</p> <p>Toy and nonrepresentational materials: the child uses a doll and one or more nonrepresentational materials for pretend objects (e.g. box, stick, cotton wool...).</p> <p>Toy alone: the child uses a teddy bear with no other materials and has to make the teddy bear do something</p> <p>Self alone: the child is not provided with any materials and is asked to be something else or do something with an imaginary object.</p> <p>Structured (bowl and spoon, doll, teddy bear) and unstructured standardized play materials (bottle top, cotton wool, wooden box, cotton reel) are used.</p> <p>This test has a non-verbal and a verbal version. The non-verbal version is intended to be administered to typically developing children up to 3 years of age and with older children with language impairments. In this version, symbolic play is elicited by modelling techniques. In the verbal version, symbolic play is also modelled and simple language is used to instruct the child to demonstrate symbolic play actions and to elicit it. ToPP raw scores can be converted to age equivalents using the test manual. The ToPP can be used for screening and diagnostic purposes as well as a tool to measure play based interventions' outcomes.</p>
Normative Sample	Yes
Reliability	Some indications of reliability are retrievable here: Clift et al., 1998
Validity	Some indications of reliability are retrievable here: Clift et al., 1998
Training required	No
Time/Sessions	One single session
Setting	Familiar
Toy materials	No

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Transdisciplinary Play-Based Assessment (TPBA)

Author	Tony Linder
Year	1990; 1993; 2008
Origin	United States of America
Translations	Data not available
Context	Education
Target population	0- to 6-year-old typically developing children, children at risk and children with disabilities
Objectives	Play-based assessment
Short description	<p>Transdisciplinary Play-Based Assessment (TPBA) involves observing the child in play situations with structured and unstructured facilitation of developmental domains such as: sensorimotor, social-emotional, language and communication, cognition. It has been designed to assess children's developmental and cognitive, social, emotional and communication stages. The assessment is meant to be carried out by a multidisciplinary team (this methodology has been defined as "arena format") through the observation of free and facilitated play sessions. Videotaped play sessions are then scored by the team through specific guidelines, identifying the child's strengths and his/her areas in need of intervention. Preliminary information on the child's global functioning are gathered through interviews to parents and caregivers.</p> <p>TPBA-2 differs from the original TPBA in the details of the content area rather than in the administration. The subcategories have been updated to reflect current research, theory, and practice on each of the developmental domains (sensorimotor, emotional and social, communication, and cognitive), which have not been changed. The tool brings together parents and professionals and gives clinicians the opportunity to evaluate young children in a natural environment of structured and unstructured play. TPBA-2 provides developmental guidelines to analyze the developmental level, learning style, interaction style, adaptive behaviours, and other relevant developmental behaviours.</p>
Normative Sample	Yes
Validity	Some indications of validity are retrievable here: DeBruin, 2005; Kelly-Vance & Ryalls, 2005; Linder & Linas, 2009; Linder, 2008; Linder et al., 2007; Myers et al, 1996
Reliability	Some indications of reliability are retrievable here: Linder, 1993; Friedli, 1994; Linder, 2008
Training required	Yes
Time/Sessions	60-90 minutes, one single session
Setting	Familiar; clinical; indoor and outdoor
Toy materials	Yes

References	<p>Athanasiou, M. S. (2000). Play-based approaches to preschool assessment. In: B. A. Bracken (Ed.), <i>The Psychoeducational Assessment of Preschool Children</i> (pp. 412-427). Boston, US: Allyn and Bacon.</p> <p>Kelly-Vance, L., Ryalls, B. O., & Glover, K. G. (2002). The use of play assessment to evaluate the cognitive skills of two- and three-year-old children. <i>School Psychology International</i>, 23(2), 169-185.</p> <p>Kelly-Vance, L., & Ryalls, B. O. (2005). A systematic, reliable approach to play assessment in preschoolers. <i>School Psychology International</i>, 26, 398-412.</p> <p>Kelly-Vance, L., & Ryalls, B. O. (2008). Best practice in play assessment and intervention. In: J. Grimes & A. Thomas (Eds.), <i>Best practices in school psychology</i> (pp. 549-560). Silver Springs, US: National Association of School Psychologists.</p> <p>Linder, T. W. (1990). <i>Transdisciplinary play-based assessment: A functional approach to working with young children</i>. Baltimore, US: Brookes.</p> <p>Linder, T. W. (1993). <i>Transdisciplinary play-based assessment: A functional approach to working with young children (2nd ed)</i>. Baltimore (USA): Brookes.</p> <p>Linder, T., & Linas, K. (2009). A functional, holistic approach to developmental assessment through play: The transdisciplinary play-based assessment, second edition. <i>Zero to Three</i>, 30(1), 28-33.</p> <p>Lowenthal, B. (1997). Useful early childhood assessment: Play-based, interview and multiple intelligences. <i>Early Child Development and Care</i>, 129, 43-49.</p> <p>Myers, C. L., McBride, S. L., & Peterson, C. A. (1996). Transdisciplinary, play-based assessment in early childhood special education: An examination of social validity. <i>Topics in Early Childhood Special Education</i>, 16(1), 102-126.</p> <p>Rutheford, M. D., Young, G. S., Hepburn, S., & Rogers, S. J. (2007). A longitudinal study of pretend play in autism. <i>Journal of Autism and Developmental Disorders</i>, 37(6), 1024-1039.</p> <p>Thomas, N., & Smith, C. (2004). Developing play skills in children with autistic spectrum disorders. <i>Educational Psychology in Practice</i>, 20(3), 195-206.</p>
Notes	<p>A description of the tool is available here: https://prezi.com/co38wmds1-vy/transdisciplinary-play-based-assessment-tpba/</p> <p>The tool can be purchased at this address: http://products.brookespublishing.com/Transdisciplinary-Play-Based-Assessment-Second-Edition-TPBA2-P215.aspx</p>

3.5 Categorization of the tools

In what follows, a series of tables is reported: the reasoned categorization of the tools is meant to facilitate the readers selecting the instrument to best suit their needs, according to the target population (Table 3.2), the type of assessment (Table 3.3), the main facets of play taken into account (Table 3.4) and the necessity to pass a training to use the instrument (Table 3.5). For the tools age range, please refer to Table 3.1.

Table 3.2. Target population

CHILDREN	NORMATIVE SAMPLE	
	Yes	Data not available
Typically developing		CBI, p. 73 I-PAS, p. 79 PH, p. 86 SPC, p. 98
With disabilities or at risk	PIPPS, p. 91	ALB, p. 63 APS, p. 65 OPPUS, p. 82
With and without disabilities or at risk	APS, p. 66 CDPI, p. 70 CLASS, p. 77 CPS, p. 78 MCP, p. 80 ToP, p. 103 ToPP, p. 105 TPBA, p. 107	APS-P, p. 68 CAPE, p. 71 ChIPPA, p. 75 MPI, p. 81 PAC, p. 83 PAS, p. 85 PIECES, p. 88 PIP, p. 89 POS, p. 93 PSA, p. 95 RKPPS, p. 97 SSEDS, p. 100 ToES, p. 102

Table 3.3. Type of assessment

ASSESSMENT	Play	Play-based
Observation	ALB, p. 63	APS, p. 66
	CDPI, p. 70	APS-P, p. 68
	ChiPPA, p. 75	I-PAS, p. 79
	PAS, p. 85	OPPUS, p. 82
	PIECES, p. 88	PIPPS, p. 91
	POS, p. 93	SPC, p. 98
	PSA, p. 95	TPBA, p. 107
	RKPPS, p. 97	
	SSEDS, p. 100	
	ToES, p. 102	
	ToP, p. 103	
	ToPP, p. 105	
	Self-report	CAPE, p. 71
CLASS, p. 77		
MPI, p. 81		
PAC, p. 83		
PIP, p. 89		
Other-report	APS, p. 65	
	CBI, p. 73	
	CPS, p. 78	
	MCP, p. 80	
	PH, p. 86	

Table 3.4. Main facets of play (see Chapter 2, Ray-Kaesler et al., 2018)

FACETS OF PLAY	
Play skills	APS, p. 66 APS-P, p. 68 CDPI, p. 70 ChIPPA, p. 75 I-PAS, p. 79 MCP, p. 80 OPPUS, p. 82 PAC, p. 83 PAS, p. 85 PIECES, p. 88 PH, p. 86 POS, p. 93 PSA, p. 95 RKPPS, p. 97 SPC, p. 98 SSEDS, p. 100 ToPP, p. 105 TPBA, p. 107
Play activities	CAPE, p. 71 ChIPPA, p. 75 CLASS, p. 77 MCP, p. 80 MPI, p. 81 PH, p. 86 PIP, p. 89
Play preferences	ALB, p. 63 CLASS, p. 77 MCP, p. 80 PAC, p. 83 PIP, p. 89 PIPPS, p. 91
Playfulness	ALB, p. 63 CBI, p. 73 CPS, p. 78 ToP, p. 103
Physical and social environment	APS, p. 65 CLASS, p. 77 MCP, p. 80 PH, p. 86 ToES, p. 102

Table 3.5. Training required

TRAINING REQUIRED	
Yes	APS, p. 66 APS-P, p. 68 CDPI, p. 70 ChIPPA, p. 75 OPPUS, p. 82 PIECES, p. 88 TPBA, p. 107
No	ALB, p. 63 APS, p. 65 CAPE, p. 71 CBI, p. 73 CLASS, p. 77 CPS, p. 78 I-PAS, p. 79 MCP, p. 80 MPI, p. 81 PAC, p. 83 PAS, p. 85 PIP, p. 89 RKPPS, p. 97 ToES, p. 102 ToP, p. 103 ToPP, p. 105
Data not available	PH, p. 86 PIPPS, p. 91 POS, p. 93 PSA, p. 95 SPC, p. 98 SSEDSP, p. 100

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Authors' biography

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Serenella Besio is Full Professor of Special education at the Università degli Studi di Bergamo (I). Her prevailing research interests concern: play for children with disabilities; the use of educational and assistive technologies for persons – in particular children – with disabilities; cultures and representations of disability in the media and the arts. She has a multifaceted professional experience, combining the work as a rehabilitation professional (speech therapist in the first years, then consultant psychologist in the field of Assistive Technologies as a support to learning) and her research activities – often within European projects – as well as her publications have accompanied these various interests. She is Chair of the COST Action “LUDI – Play for Children with Disabilities” (2014-2018), including 32 European countries and more than 100 members, of which this book is one of the results.

Nicole Bianquin

Nicole Bianquin is a pedagogist and support teacher in primary school. She accomplished her Ph.D. studies in “Quality of education: development of knowledge and differences” at the Università degli Studi di Firenze (I) in 2012. She is currently Fellow Researcher at the Department of Human and Social Sciences of the Università della Valle d’Aosta (I). She’s currently Adjunct Professor of Special Didactics and Teaching Assistant for the course of Special Education at the Università della Valle d’Aosta (I). Her main research interests concern the inclusive processes within the school system, and in particular the methods of evaluation and self evaluation of the school inclusion quality, and the inclusive education and didactics.

Daniela Bulgarelli

Daniela Bulgarelli is a developmental psychologist. She accomplished her Ph.D. studies in Social and Developmental Psychology at the Università degli Studi di Torino (I) in 2005. Her main research interests concern the development of play and communicative competences from early infancy up to school age, both in typical and atypical populations, and the effect of early child care on children’s cognitive and linguistic outcomes. Daniela Bulgarelli is Fellow Researcher at the Department of Human and Social Sciences of the Università della Valle d’Aosta (I), Adjunct Professor of Observational Techniques at the Department of Psychology of the Università degli Studi di Torino (I) and Member of the CHILD at the Collegio Carlo Alberto (Moncalieri, I). She is Communication Manager of the COST Action TD1309 “LUDI – Play for Children with Disabilities (years 2014-2018)”. She has participated to the European Large Scale Project “Changing Families and sustainable societies (call CP_FP7-SSH-2012.3.2-1; years 2013-2017)” within the Work Package 6 “Childcare arrangements: determinants and consequences”.

Francesca Caprino

Francesca Caprino, psychologist, is currently a researcher at INDIRE (National Institute for Documentation, Innovation and Educational Research) a public research institute based in Florence, Italy. Her general research areas are special educational needs and inclusive education. In recent years, she has focused on assistive technologies, educational robotics, play and disability, universal design for learning, accessibility, educational use of WHO's ICF (International Classification of Functioning, Disability and Health). She took part to several national and international projects including EU4ALL (European Unified Approach for Accessible Life Long Learning), IROMECA (Interactive RObotic social MEdiators as Companions), LUDI – Play for Children with disability.

Sandra Châtelain

With a Master in Clinical and Health Psychology and a “Master of Advanced Study” in Neuropsychology, Sandra Châtelain is interested in the fields of neurodevelopmental disorders and cognitive disorders in the context of physical disabilities. Besides clinical activities, she is working as a research and teaching assistant in the field of neurodevelopmental disorders in the School of Social Work and Health Sciences (EESP, Lausanne).

Vardit Kindler

Vardit Kindler is a paediatric Occupational Therapist since 1975. Her clinical work is focused on children with developmental delays, with specific emphasis on children with cerebral palsy. She graduated from the Hebrew University in Jerusalem, Israel with a Bachelor's degree in Occupational Therapy in 1980 and a Master degree in Special Education in 1991. Since 1991, Vardit Kindler has directed the team of occupational therapists at the Dvora Agmon Preschool Development Centre in Jerusalem. Her team consists of 9 occupational therapists, one volunteer and one rehabilitation aide. Vardit Kindler is also a member of OMER – the Israeli centre for Alternative and Augmentative Communication (AAC) and Assistive Technology (AT). She presents her work at numerous national and international conferences, courses and workshops. Her special emphasis is always on the value and importance of collaborative and multidisciplinary team (including families) work. Vardit Kindler is an expert on applying the use of Assistive Technology with children with severe motor limitations, visual limitations and/or complex communication needs. She lives in Jerusalem, Israel.

Paola Molina

Paola Molina (Ph.D. in Psychology at the university Louis Pasteur - Strasbourg, F), is full Professor of Developmental Psychology at the University of Turin (I), where she teaches Behavioral Observation Techniques; at the same University, she is responsible of the Behavioral Observation Laboratory. Her research interests are mainly aimed at

early childhood development in different educational contexts: she translated and validated numerous development assessment tools, and conducted research on the use of observation as a professional tool for educators. She carries out training activities for early infancy professionals. She is the author of numerous scientific papers published in national and international journals, and of the volumes “The Child, Reflection, Identity: Mirror Image and Building Self-Consciousness” (1995), “The early infancy professional work” (1995, with Barbara Ongari), “Childhood and Child Care Services Research” (2008), “The Development of Emotional Understanding and Evaluation” (2013, 2nd ed., with Ottavia Albanese) and “Mental state understanding: individual differences in typical and atypical development” (2017, with Daniela Bulgarelli and Anne Henning).

Ana Muntean

Ana Muntean teaches and run research projects in Developmental Psychology within the Faculty of Sociology and Psychology in the West University of Timisoara, Romania. Her doctoral research focused on the connection between language acquisition and space-time orientation in typical and atypical development. She did clinical work within Neuropsychiatric Hospital for children and adolescents in Timisoara. Immediately following the fall of the Iron Curtain, she set up the first Rehabilitation Centre for children with disabilities in Romania, under the umbrella of the Speranta [“Hope”] Parents’ Association in the city of Timisoara.

Sylvie Ray-Kaeser

Sylvie Ray-Kaeser is an Occupational Therapist (OT, MSc). She has worked for over 20 years in clinical and community-based child and family intervention teams, specialising in children with neurodevelopmental disorders and their occupations. In 2008, she joined the University of Applied Sciences and Arts of Western Switzerland, School of Social Work and Health, Occupational Therapy Department in Lausanne as Associate Professor. She coordinates the “OT with children” program. Her teaching interests are in the assessment of children’s abilities, activities and participation, in methods of intervention and application of knowledge to practice. Her research is primarily concerned with the screening and play assessment of children with developmental coordination disorder and with the cross-cultural adaptation of instruments; she authored many papers and book chapters on these topics. Sylvie Ray-Kaeser is a management committee member of the LUDI COST Action (2014-2018). During this mandate, she co-authored chapters in the book “Play Development in Children with Disabilities” (2017). She currently is co-editing the “LUDI guidelines for the play of children with disabilities” and the “Toys and games Usability Evaluation Tool” (TUET).

Eleanor Schneider

Dr. Eleanor Schneider is an occupational therapist who has worked in both academic and clinical frameworks. As a faculty member in the Department of Occupational Therapy at the University of Haifa, she taught students and practitioners about the importance of play for child development and methods to evaluate play. Her research included the development of parent questionnaires for examining the play characteristics of children with and without disabilities, as well as the implications for intervention. In her teaching and clinical work she has provided knowledge and guidance to practitioners and parents on how to nurture and promote children's play.

Vaska Stancheva-Popkostadinova

Dr. Vaska Stancheva-Popkostadinova is Associate Professor in Child Mental Health and Head of Department of Medical Social Sciences, Faculty of Public Health, Health Care and Sports. Her experience and publications are in the field of child mental health: early childhood development, mental health promotion, play in children with disabilities and child abuse and neglect-prevention and interventions. She is a member of International Society for Early intervention, International Society for Prevention of Child abuse and Neglect, International Association of Child and Adolescent Psychiatry and Allied Professions, Bulgarian Union of Scientists (member of Ethical Committee). She was involved in various research and educational projects as a scientific coordinator for Bulgaria and expert in EU funded projects (FP6, FP7, DAPHNE, COST, Structural Funds). She has more than 70 publications in national and international journals. Vaska Stancheva-Popkostadinova is Management Committee member of Bulgaria in the COST Action TD1309 "LUDI – Play for Children with Disabilities" (2014-2018), and Leader of the Working Group 1 "Children's play in relation to the types of disabilities".