Tables 31- 40. Classification Comparison between the PEDI-CAT(ASD) and Vineland-3 (*Parent/Caregiver Form*) Domains for the Full NDC Sample According to the Categories Described in the Manual (Left) and the Categories Used by the NDIA (Right)

Table 31. PEDI-CAT (ASD) Daily Activities and Vineland-3 Daily Living Skills – Manual Categories

		Vineland-3 (*Parent/Caregiver Form*) Daily Living Skills					
		High	Moderately High	Adequate	Moderately Low	Low	Total
PEDI-CAT (ASD) Daily Activities	Above Normal	0	0	0	0	0	0
	Normal High	0	0	0	0	0	0
	Normal	0	0	17	25	6	48
	Normal Low	0	0	2	14	17	33
	Below Normal	0	0	1	17	30	48
	Total	0	0	20	56	53	129

Note. 47% = Consistent Categories; 16% = Inconsistent Categories - Lower level of functioning according to PEDI-CAT (ASD); 37% = Inconsistent Categories - Lower level of functioning according to Vineland-3.

Table 32. PEDI-CAT (ASD) Mobility and Vineland-3 Motor Skills – Manual Categories

		Vineland-3 (*Parent/Caregiver Form*) Motor Skills					
		High	Moderately High	Adequate	Moderately Low	Low	Total
PEDI-CAT (ASD) Mobility	Above Normal	0	0	1	0	0	1
	Normal High	0	0	1	0	0	1
	Normal	0	0	19	26	3	48
	Normal Low	0	0	2	16	4	22
	Below Normal	0	0	0	14	2	16
	Total	0	0	23	56	9	88

Note. 42% = Consistent Categories; 18% = Inconsistent Categories - Lower level of functioning according to PEDI-CAT (ASD); 40% = Inconsistent Categories - Lower level of functioning according to Vineland-3.

Table 36. PEDI-CAT (ASD) Daily Activities and Vineland-3 Daily Living Skills – NDIA Categories

		Vineland-3 (*Parent/Caregiver Form*) Daily Living Skills					
		Above 1.49 *SD* Below	1.50-1.99 *SD* Below	2.00-2.49 *SD* Below	2.50-2.99 *SD* Below	3 *SD* Below or Less	Total
PEDI-CAT (ASD) Daily Activities	Above 1.49 *SD* Below	37	12	12	4	0	65
	1.50-1.99 *SD* Below	7	2	3	2	2	16
	2.00-2.49 *SD* Below	2	5	1	2	0	10
	2.50-2.99 *SD* Below	2	2	1	1	0	6
	3 *SD* Below or Less	5	2	9	6	10	32
	Total	53	23	26	15	12	129

Note. 40% = Consistent Categories; 32% = Inconsistent Categories - Lower level of functioning according to PEDI-CAT (ASD); 29% = Inconsistent Categories - Lower level of functioning according to Vineland-3.

Table 37. PEDI-CAT (ASD) Mobility and Vineland-3 Motor Skills – NDIA Categories

		Vineland-3 (*Parent/Caregiver Form*) Motor Skills					
		Above 1.49 *SD* Below	1.50-1.99 *SD* Below	2.00-2.49 *SD* Below	2.50-2.99 *SD* Below	3 *SD* Below or Less	Total
PEDI-CAT (ASD) Mobility	Above 1.49 *SD* Below	45	13	4	0	1	63
	1.50-1.99 *SD* Below	2	3	1	0	0	6
	2.00-2.49 *SD* Below	5	3	0	1	0	9
	2.50-2.99 *SD* Below	1	2	0	0	0	3
	3 *SD* Below or Less	1	4	0	0	2	7
	Total	54	25	5	1	3	88

Note. 57% = Consistent Categories; 20% = Inconsistent Categories - Lower level of functioning according to PEDI-CAT (ASD); 23% = Inconsistent Categories - Lower level of functioning according to Vineland-3.

Table 33. PEDI-CAT (ASD) Social/Cognitive and Vineland-3 Communication – Manual Categories

		Vineland-3 (*Parent/Caregiver Form*) Communication					
		High	Moderately High	Adequate	Moderately Low	Low	Total
PEDI-CAT (ASD) Social/ Cognitive	Above Normal	0	0	0	0	0	0
	Normal High	0	0	0	0	0	0
	Normal	0	0	12	27	6	45
	Normal Low	0	0	2	18	11	31
	Below Normal	0	0	0	25	28	53
	Total	0	0	14	70	45	129

Note. 45% = Consistent Categories; 21% = Inconsistent Categories - Lower level of functioning according to PEDI-CAT (ASD); 34% = Inconsistent Categories - Lower level of functioning according to Vineland-3.

Table 34. PEDI-CAT (ASD) Social/Cognitive and Vineland-3 Socialization – Manual Categories

		Vineland-3 (*Parent/Caregiver Form*) Socialization					
		High	Moderately High	Adequate	Moderately Low	Low	Total
PEDI-CAT (ASD) Social/ Cognitive	Above Normal	0	0	0	0	0	0
	Normal High	0	0	0	0	0	0
	Normal	0	0	12	27	6	45
	Normal Low	0	0	2	13	16	31
	Below Normal	0	0	0	15	38	53
	Total	0	0	14	55	60	129

Note. 49% = Consistent Categories; 13% = Inconsistent Categories - Lower level of functioning according to PEDI-CAT (ASD); 38% = Inconsistent Categories - Lower level of functioning according to Vineland-3.

Table 35. PEDI-CAT (ASD) Responsibility and Vineland-3 Daily Living Skills – Manual Categories

Table 38. PEDI-CAT (ASD) Social/Cognitive and Vineland-3 Communication – NDIA Categories

		Vineland-3 (*Parent/Caregiver Form*) Communication					
		Above 1.49 *SD* Below	1.50-1.99 *SD* Below	2.00-2.49 *SD* Below	2.50-2.99 *SD* Below	3 *SD* Below or Less	Total
PEDI-CAT (ASD) Social/ Cognitive	Above 1.49 *SD* Below	33	13	8	0	0	54
	1.50-1.99 *SD* Below	3	6	5	1	2	17
	2.00-2.49 *SD* Below	4	12	8	0	1	25
	2.50-2.99 *SD* Below	4	4	3	1	0	12
	3 *SD* Below or Less	2	3	2	3	11	21
	Total	46	38	26	5	14	129

Note. 46% = Consistent Categories; 31% = Inconsistent Categories - Lower level of functioning according to PEDI-CAT (ASD); 23% = Inconsistent Categories - Lower level of functioning according to Vineland-3.

Table 39. PEDI-CAT (ASD) Social/Cognitive and Vineland-3 Socialization – NDIA Categories

		Vineland-3 (*Parent/Caregiver Form*) Socialization					
		Above 1.49 *SD* Below	1.50-1.99 *SD* Below	2.00-2.49 *SD* Below	2.50-2.99 *SD* Below	3 *SD* Below or Less	Total
PEDI-CAT (ASD) Social/ Cognitive	Above 1.49 *SD* Below	33	13	4	2	2	54
	1.50-1.99 *SD* Below	4	2	5	5	1	17
	2.00-2.49 *SD* Below	5	5	9	4	2	25
	2.50-2.99 *SD* Below	1	4	5	2	0	12
	3 *SD* Below or Less	1	1	2	5	12	21
	Total	44	25	25	18	17	129

Note. 45% = Consistent Categories; 26% = Inconsistent Categories - Lower level of functioning according to PEDI-CAT (ASD); 29% = Inconsistent Categories - Lower level of functioning according to Vineland-3.

Table 40. PEDI-CAT (ASD) Responsibility and Vineland-3 Daily Living Skills – NDIA Categories

		Vineland-3 (*Parent/Caregiver Form*) Daily Living Skills					
		High	Moderately high	Adequate	Moderately low	Low	Total
PEDI-CAT (ASD) Responsibility	Above Normal	0	0	0	0	0	0
	Normal High	0	0	0	0	0	0
	Normal	0	0	17	29	7	53
	Normal Low	0	0	3	22	18	43
	Below Normal	0	0	0	5	28	33
	Total	0	0	20	56	53	129

Note. 52% = Consistent Categories; 6% = Inconsistent Categories - Lower level of functioning according to PEDI-CAT (ASD); 42% = Inconsistent Categories - Lower level of functioning according to Vineland-3.

		Vineland-3 (*Parent/Caregiver Form*) Daily Living Skills					
		Above 1.49 *SD* Below	1.50-1.99 *SD* Below	2.00-2.49 *SD* Below	2.50-2.99 *SD* Below	3 *SD* Below or Less	Total
PEDI-CAT (ASD) Responsibility	Above 1.49 *SD* Below	46	12	11	5	0	74
	1.50-1.99 *SD* Below	7	5	4	3	0	19
	2.00-2.49 *SD* Below	0	4	5	3	2	14
	2.50-2.99 *SD* Below	0	2	5	2	2	11
	3 *SD* Below or Less	0	0	1	2	8	11
	Total	53	23	26	15	12	129

Note. 51% = Consistent Categories; 16% = Inconsistent Categories - Lower level of functioning according to PEDI-CAT (ASD); 33% = Inconsistent Categories - Lower level of functioning according to Vineland-3.

Usability

Applicability

Objective 3.1: Determine the applicability of the PEDI-CAT (ASD) in determining impairment level.

When the PEDI-CAT (ASD) mean research composite and domain scores were examined for Assessment 1, all were considered within the lower half of the normal range with scores between 1-2 standard deviations below the mean for the normative sample (Haley et al., 2012). Four-fifths of cases had at least one PEDI-CAT (ASD) research composite or domain score in the lower half of the normal range, and just over a half of the cases had at least one PEDI-CAT (ASD) research composite or domain score in the below normal range (Table 41).

Table 41. Number and Proportion of Participants with at Least One Domain Score Rated at or Below Each Threshold of Standard Deviations Below the Mean for the PEDI-CAT (ASD) for the Full NDC Sample

Threshold	PEDI-CAT (ASD) Assessment 1 (*n*)
Total sample	130
1 *SD* below mean	108 (83%)
1.5 *SD* below mean	90 (69%)
2 *SD* below mean	71 (55%)
2.5 *SD* below mean	54 (42%)
3 *SD* below mean	39 (30%)

Caregiver Acceptability

Objective 3.2: Explore the important considerations or characteristics in an assessment of functioning tool from the perspective of caregivers.

Caregivers were asked to comment on what they perceived to be the most important considerations or characteristics in an assessment of functioning tool. Feedback was obtained from 53 caregivers and analysed thematically by a member of the research team. Many caregivers commented that an assessment of functioning for individuals with NDCs should be clear and “easy to understand”, which included multiple comments relating to using simple language “for those who don't understand jargon.” Caregivers also identified that an assessment of functioning tool should collect information using several approaches from multiple people who “know the child quite well”

to gather a holistic description of the person. The accuracy of an assessment of functioning tool was also considered important by multiple caregivers, and this could be improved with consideration of contextual factors, flexible response options on a “clear scale”, and ability to add comments. This is important because “in many cases with ASD - an answer might be ‘yes’, but only under some circumstances.” Furthermore, caregivers commented that the time required to complete an assessment was an important factor to optimise accuracy, and it needs to be “quick enough to get through, so you don't lose concentration.” Caregivers commented that an assessment tool aiming to measure functioning of individuals on the spectrum should comprehensively cover relevant areas of functioning specific to ASD “(cognitive, social skills, physical, anxiety, behaviour, psychological, emotional, family, peer groups, adaptability, executive functioning, school performance, group settings, language, community participation, tics, self-harming behaviour, psychosis, sexual behaviour).” Finally, an ideal assessment tool would ask age-appropriate questions “based on gender” and consider functioning within a broad range of “environments the tasks take place in (school, home, community) and differences of abilities in different environments … [and] depending on mental health, time of day/year, sensory issues, overwhelm etc.”

Objective 3.3: Investigate the acceptability of the PEDI-CAT (ASD) to caregivers.

Response to Reviewing PEDI-CAT (ASD) Results

Of the feedback surveys received, 46 participants had received their report and provided qualitative comments on their thoughts upon hearing the results. Two general themes of ‘Meeting Expectations’ and ‘Helpfulness’ emerged, comprising of both positive and negative responses.

Meeting Expectations

More than half (*n* = 29) of the caregivers stated that the PEDI-CAT (ASD) results were as expected and reflected their child’s level of functioning. These sentiments were captured in phrases such as: “I agree with these”, “I don’t feel surprised by the results”, “all I had understood in the past”, “spot on” , “similar to what I expected”, “that’s appropriate”, “fair assessment” and “wasn’t disappointing”. A small number of these caregivers reported that the results were consistent with previous assessments that their child had undergone, as captured in the following quotes: “Pretty standard when compared to usual assessments” and “pretty on par with developmental assessment done by hospital 12 months after diagnosis”. For some caregivers, the results not only provided confirmation of their child’s functioning, but also reassurance that clinicians “are thinking the same as us” and their child was “within the expected range for age”.

In contrast, 12 caregivers responded that the PEDI-CAT (ASD) results were not what they had anticipated. Two of these reported being surprised that their child's performance was below the expected range of functioning in all or some domains, one commenting that the assessment did not capture their child's abilities due to their age and limited verbal skills. However, the majority indicated that their child's functioning was over-estimated. One respondent suggested that his might have been because the assessment did not consider the type and level of support required:

> "Level of behaviour/functioning for all domains show[ed] as within expected range for age. I feel this is not a true reflection. I provide a lot of additional supports for [my child] and I can compare this to the supports I provide to my younger 3-year-old neurotypical boy. [My child's] behaviour/functioning needs assistance across all of the assessed domains. We constantly provide consistency in routine and use visuals for changes. My child requires constant reminders with high parental support to achieve daily activities."

Helpfulness

A number of caregivers stated that the PEDI-CAT (ASD) results were helpful to them. Specifically, the results enabled them to see progress and identify support needs, and could be used for their NDIS review and other intervention planning: "The results for the sections would be useful to support us if we needed to show she was poor in an area, to a therapist or school for example."

Other caregivers reported that they did not find the results helpful at all because they weren't very detailed or difficult to understand. For example, one respondent stated: "I have no idea what this is telling, useless", and another commented "the results table is a bit confusing. I needed explanation to understand it."

Accuracy

A total of 58 caregivers replied to the question: "How well do you think the [assessment tool] accurately measured [name]'s actual challenges and abilities in everyday life?", with mixed responses. The majority (*n* = 31) felt that the PEDI-CAT (ASD) measured their child's functioning with accuracy, reasoning that the accuracy reflected the detailed nature of the tool, the relevance of the questions and its ease of use. For example, one caregiver commented: "Accurately, I think it asks a lot of relevant questions".

Responses from 19 caregivers revealed a general feeling that the PEDI-CAT (ASD) did not accurately measure challenges and abilities in everyday life. Several reasons were given for this. Firstly, caregivers felt many questions lacked relevance or were not deemed appropriate for their

child's age or ASD diagnosis. Secondly, the tool, alone, was unable to comprehensively measure all aspects of functioning. For example, caregiver responses suggested it did not capture strengths; the impact of sensory, emotional and psychological challenges on functioning; fluctuations in functioning that can occur across different days and "the environment and the level of parental support required for small tasks and the repetitive routines required for success." Some caregivers felt the response categories were too broad and not sensitive enough to discriminate their child's challenges from abilities. This was reflected in the results which were provided as ranges. One caregiver explained that "normal range is too broad. When using an assessment like this, you're trying to pin down the child's specific needs, [but] this might lead to "oh they're ok" and they might not get funding." The remaining eight respondents indicated they had neutral feelings about the accuracy of the tool. For some, this was because they felt the results were inconsistent. Others felt unqualified to report on its accuracy: "Hard to say as don't have much understanding for what is typically developing".

Likes and Dislikes

PEDI-CAT (ASD)		
	Likes	**Dislikes**
Administration	• Quick and easy to complete • Computer-based – user friendly, can complete at own pace in own time • Can complete independently • The presence of an assessor for clarification (as they completed the assessment tool in the presence of an assessor)	• Difficult to complete while taking care of child • Computer slow to load
Structure/format	• Descriptions and examples provided • Visual images • Related questions presented in categories (domains) – allows focus on one area at a time which is less overwhelming • One question per page • Range of response options (including "I don't know" option) and multiple-choice format • Response options in 'Responsibility' section captures amount of responsibility assumed by parent and child	• Repetitive • Font difficult to read (too small) • Layout of questions on the screen (questions presented in same place making it difficult to sustain focus) • Response options – too few and not sensitive enough, unclear how to score noncompliance • No opportunity to provide additional information and explanations

Content	• Includes questions specific to ASD • Comprehensive, covers broad range of day-to-day functioning • Provided indication of expected level of functioning • Parent friendly language and easy to understand questions • Non-invasive questions • Questions task/activity focussed	• Too many questions • American terminology (e.g. money references) • Some descriptions needed extra explanation/clarification • Questions too general/vague • Many questions not age appropriate or otherwise irrelevant • No consideration of context and functioning across different environments • Not "inclusive" or "personalised" enough to capture differences, e.g. doesn't not consider alternative communication and mobility methods

Comparison based on Research Stream

Qualitative responses were compared between caregivers who completed (1) an APM clinic visit only; (2) both an APM clinic visit and an Autism CRC home visit; and (3) an Autism CRC home visit only. Caregivers perceptions about the PEDI-CAT (ASD) regarding accuracy, ease of use and the likelihood of recommending for clinical use tended to be more positive for those who had participated in an Autism CRC home visit only. One caregiver who had completed the PEDI-CAT (ASD) on the assessors computer during an Autism CRC home visit commented that this approach was "a lot easier" than completing the PEDI-CAT (Original) through a videoconference, and another caregiver stated that they "like seeing and being able to choose what is being recorded".

Comparison with Vineland-3

Caregivers tended to perceive the PEDI-CAT (ASD) to be easier to use than the Vineland-3, however they also tended to perceive the PEDI-CAT (ASD) as less accurate than the Vineland-3 and on balance were less likely to recommend the PEDI-CAT (ASD) for clinical use than the Vineland-3. Seven responses made a comparison between the PEDI-CAT (ASD) and the Vineland-3 through qualitative comments, with the majority (n = 5) in support of the Vineland-3 describing it as "better", "more accurate", "more consistent" and "more appropriate" with "more levels [subdomains]" than the PEDI-CAT (ASD). In contrast, two caregivers expressed a preference for the PEDI-CAT (ASD) with "this [Vineland-3] was my least favourite" and "I thought the PEDI-CAT [(ASD)] was better".

Clinical Utility

Objective 3.4: Explore the important considerations or characteristics in an assessment of functioning tool from the perspective of clinicians.

Clinicians discussed the important characteristics of assessment of functioning tools and processes. The overarching essence that "one tool, as the only way to assess a child's function, is inappropriate" was also captured with "the idea of one parent-completed [tool] in the hands of a non-health clinician dictating resources [is concerning]." Instead, the process needs to be evidence-based, age appropriate and comprehensive, with "a suite of assessments, both face-to-face and questionnaire-based, for clinical decision making" about functioning in individuals with NDCs. Standardised tools, such as the PEDI-CAT, should always be only "a piece of the broader puzzle." According to clinician feedback, a comprehensive assessment of functioning should consider contextual factors, for example, family and community impacts, existing supports, and fluctuations in functioning that might occur under different conditions, such as changes in physical and temporal environments. This was illustrated with: " If we [don't] focus on the family and the community, then the child's needs just get lost." To capture functioning within the broader contexts of an individual's life, where "no two people with autism are alike", clinicians expressed the importance of collecting information from multiple sources (e.g. caregivers, family members, partners, friends, occupational therapists, speech pathologists, psychologists, behaviour therapists, paediatricians, education staff) through different methods (e.g. self- and/or caregiver-report, interview, observation, review of reports, consultation with clinicians).

Other important characteristics identified by clinicians included ease of administration, scoring and reporting; cost effectiveness; and efficiency. While time taken to complete the assessment was important, it was accepted that this was the compromise for comprehensiveness. Clinicians highlighted the importance of appropriately trained and knowledgeable professionals (Bachelor degree in allied health and specific assessment training) in interpreting and reporting the findings, as scores from standardised assessments can be misinterpreted, particularly when taken out of context (which is vital to assessing functioning):

> "I do think whoever's assessing the child should have an understanding of normal child development, abnormal child development, behavioural presentations, trauma, that broader picture of where child development sits, as opposed to the idea that you can do a one-off snapshot of where 'needs intervention/doesn't need intervention' based on one tool…any tool is only as good as the person using it, and then the capacity to interpret the tool in a broader context."

Clinicians were very aware of the potential uses of their reports for the provision of supports, and felt a sense of responsibility as “gatekeepers” and “advocates”. Clinicians expressed the unmet need for an appropriate, practicable, accessible and acceptable assessment of functioning that identifies individual support needs, and the need to improve current processes to promote an equitable system due to the long-term implications for individuals with NDCs and their families.

Objective 3.5: Investigate the clinical utility of the PEDI-CAT (ASD) to clinicians.

Appropriateness

Effective

When asked about the effectiveness of the PEDI-CAT, clinicians discussed the structure (content and rating scale) and the accuracy. In term of the content, praise for the PEDI-CAT ranged from comments such as “I would say it’s no better or worse than any other tool in that space”, “it’s not ideal…but at least what it did do is cover all the areas that you might be interested in asking about” and it covers “quite a wide range of areas”, through to “it’s quite general, it's not just ASD specific. They’re...skills that everybody should acquire at some stage”, “it looks at a very comprehensive range of questions”, “I think those categories are really relevant categories to be asking about” and “I think it’s very relevant, I really like the domains actually of daily activities, mobility, social functioning and responsibility.” Specific mention was made of including mobility items for all ages, and the “staying safe” sub-domain was noted as important with “that’s one that our families don’t realise how much they support their child. If they weren’t there what would they be doing…So quite a common comment about how they’re not aware of danger. I get that a lot.” The PEDI-CAT items were considered to be “so functional, and especially the social cognitive [items]...it really captures the autistic kid who’s got no social sense, you know. Yes, they’re intelligent, but they just don’t make friends because they can’t do any of this”. Finally, “the fact you’ve got an age range, 0 to 21, means we’re not having to think about when we would use the PEDI-CAT”. This also applied for children who were not functioning at the same level as their typically developing peers, such as “if we’ve got a four-year-old who’s functioning more like the level of a two-year-old”.

However, concerns were expressed in relation to the CAT administration, with “because of the computer algorithm in the PEDI-CAT, you won’t get asked about all the aspects of self-care that you might want to know about in a clinical setting” or it may “miss the problem area” questions “where task performance is breaking down”. One clinician stated the original PEDI tool (without computerised adaptive testing) provided “better quality information…by parents ticking and flicking what their child was able to do at home across all of those different self-care tasks”. Concerns

were raised that items do “not appear to all be age/developmental[ly] appropriate, for example, in the responsibility section there were some [items]...about managing menstruation, and it's not relevant to that child, they’re not at that age. But the only options are the parent takes 100% responsibility. There's not ‘this is not applicable’”. Another clinician stated “feedback has been many of the mobility questions are inappropriate”. Finally, the following gap was noted: “I probably would just add something about the behavioural side of what gets in the way of the child being able to do the task day to day. So, there’s just something missing around behavioural adjustment, which is probably captured more in the other questionnaires, like the Vinelands”.

In terms of the rating scale, clinicians appreciated the PEDI-CAT questioning “what they can do”, rather than “just how often they do it”. This was further emphasised with “it's measuring the effort and intent”, “I quite like the rating scale in this in comparison to the Vinelands frequency. It is kind of nice to see how much difficulty they’re having with it, they might be able to do it but how hard is it” and “I really like the options of the answers that the PEDI-CAT gives you, which is, unable to do, can do with a little bit of help, can do with a lot of help” as it captures “lots of children which are sitting somewhere” in between completed dependence and independence. Clinicians perceived a shortfall of the PEDI-CAT was that it “doesn’t really have a capacity to capture…why the child not doing these things?” One clinician suggested “there should be a prompt when you add ‘have you tried’ or ‘when was the last time you offered this opportunity to your child’”.

In terms of accuracy, clinicians thought “it appears effective and assesses appropriate functional capacity”, with the caveat “if it's used with other tools”. Feedback on the psychometric properties presented was that it “does look positive”. Another clinician commented that a “really good thing about using it is...it has been really heavily used in research as well, from an evidence-based perspective”. Clinicians raised concerns regarding the accuracy of the PEDI-CAT, illustrated with “the scores… [were]n’t matching up with…other questionnaires that the family was completing” and there was “a mismatch between [clinical] impression and what the family was verbally telling you and what the scores were saying”. In this scenario, there was “no particular trend” in terms of the PEDI-CAT always under- or over-estimating functioning. There was also a sense that the PEDI-CAT “wasn’t really capturing the information, in particular, for below five-year-olds”, although they acknowledged the “bottom and the top of any assessment is not as sensitive or specific”. They also expressed concerns with: “I’m not sure it did a thorough job or a sufficient job of asking the questions that are really meaningful to a family of an individual with autism, or risk of autism, about what stops them from functioning day to day.”

A serious concern for clinicians was how the assessment results would be used, as "the PEDI-CAT is about current performance with supports in place. And then there's no corresponding what supports are in place that goes along with it". A funding related risk noted by the clinicians was that the PEDI-CAT "seems to be assessing the best of them. But maybe that's not helpful." This was particularly true if the response is "not representational possibly of their environments" where "the child isn't in the context of the family and [comfortable] environment". There was a concern that this would lead to inadequate funding for necessary supports.

> "The outcomes of underestimating the child when you're doing an assessment for resourcing is not terrible, it's much more concerning if you overestimate a child's skills when you're looking at resourcing. And what I find is often you ask a question and they go "oh I'm sure they could"…and that, in terms of negative implications for the child…is more likely to be a problem. Because those kids will look better than they are."

Relevant

Clinicians described "multiple utilities" for the PEDI-CAT:

1. Initial screening and diagnostic evaluations: "Very important as I work with children with ASD in my daily work. This would act as a screener to support diagnosis", "sometimes the criteria to the parents [does] not seem that clear…maybe it is really good in the functional [criteria], what [they] can do and what's challenging" and "showing what the child can do…like "they're here and, look at other kids their age".
2. Pre-planning and planning meetings: "It gives [parents] those sort of things that we should actually be thinking about…I think that perhaps captures that quite well" and "I think in those meetings…planners probably benefit from talking to the parents. If they can be familiar enough with the tool, of course, to talk to and ask the right questions so they can really capture the right information".
3. Strengths-based intervention goal setting: "Just going back to the strengths-based thing, potentially if you look at what the child could do and what they could do with the support, that can be a way of more focussing on different strengths...or potential strengths" and "I just think about the…link to intervention planning, which I think is fantastic".

Accessibility

Resources

Overall, the PEDI-CAT was described as “quick to administer”, “quick and easy“ and “really easy to use”. In particular, clinicians felt that it was time saving, as it could be completed independently by “families waiting for their assessments to start in the clinical waiting area” and “being able to download quickly into a report, to be able to get the score instantaneously, that is just so valuable to clinicians under time constraints.” These sentiments were surmised with: “One of its key features is the speed and the decreased demand on clinician time to get a good sense of where a young person might be sitting.”

Procurement

Clinicians described the PEDI-CAT license purchase cost as “relatively cheap compared to other tools” and “[comes] in at a reasonable budget”. Clinicians appreciated the “one-off cost”, as “once downloaded, [there is] no need to order forms/administration credits” and “no charge to generate a report, it can be printed and shared”. Purchasing the PEDI-CAT was considered “reasonably” to “very easy” and “accessible” to clinicians upon a description of the process.

Practicability

Functional

Clinicians believed that the PEDI-CAT comes with the complete materials and information required to use it, as illustrated by “I really liked that the manual comes with it and it’s all saved in one location on your computer”. Clinicians felt that the “iPad and computer” based administration was practical, including that “no internet” is required. Clinicians felt that although with a “tech base, there are some people it misses…parents are doing stuff on their phone, [so] it’s not a deterrent.” However, others raised concerns that the PEDI-CAT administration needs “resources…computer access”, including an iPad/Windows computer dedicated and available to use. Another commented “it's just tricky if you’ve got a Mac.” Although the PEDI-CAT manual allows for interview-based administration, clinicians did not perceive telephone administration to be acceptable.

Suitable

Aspects of the PEDI-CAT relating to suitability included ease of use, English literacy and family-friendly. In terms of ease of use, clinicians felt that the language used in the PEDI-CAT items was “straightforward” and “so accessible and easy for a family to understand the questions”, with the

inclusion of “pictures” perceived as helpful. The rating scale of “what’s easy or what’s hard” was summarised as “I don’t think it’s a complex thing for typical people to understand.” One clinician responded positively to a description of the changes to instructions in the PEDI-CAT (ASD) version to include the child’s performance using their primary mode of communication. In contrast, some clinicians indicated parents “might just find some of the language confusing”, such as lengthy descriptions of how to score items with inbuilt definitions.

In terms of literacy, one clinician commented “in our private practice, I think we wouldn’t have difficulty. We just might have an English as a second language cohort.” In contrast, other clinicians stated “the issues we raised were parental reading age”, with another clinician elaborating that the PEDI-CAT is aligned with “a high school reading age”. Poor computer literacy and “English as a second language” were reasons given for questioning the tool’s suitability. Cultural sensitivity was raised as a concern for those from “culturally diverse families of children who are below preschool age”, along with an observation of some items being “a bit odd in the way they were expressed or because it was not Australian”.

In terms of being family-friendly, clinicians stated the PEDI-CAT allows them “to really hear from families what’s happening from their perspective” and “it is in the child and parent's best interest to break down the individual components of ASD”. They perceived the PEDI-CAT “is not offensive at all” and it facilitates this increased awareness, illustrated with “looking [at] function without donging the family on the head with the idea of the diagnosis - so that seems a sensitive way to do it.” However, one criticism of the PEDI-CAT was the absence of a self-report version for adolescents and young adults.

Training

The association between training and clinical utility was explained with: “It is more acceptable if you know the person interpreting it is trained and is interpreting it appropriately” and “a tool is only as good as it’s user”. Clinicians perceived that “trained…healthcare professionals” would find it “fairly easy to pick up, use and understand” the PEDI-CAT, as long as they are “familiar with other standardised assessments and report writing” and “have all of that knowledge and ability to take … scores and put [them] into a report with context, with what supports are currently in place and what they need”. They expected “very little additional training [would be] required”, with a focus on “administering the assessment and scoring”, “how to interpret it”, goal setting and “what you could do based upon on these goals”. This could involve “online training”, “familiarising yourself with the manual, and the software, and I assume that’s not going to take very much time”, workshops and/or on-the-job experience (“I think once you’ve done one or two - taking the results and adding

it to a report, you know what you want to look for"). Clinicians suggested "my wish list would be a nice visual FAQ" to explain the "scaled scores versus t-scores, because…that's hard to explain to patients…so you need a visual tool". In terms of the scores, a clinician noted "the t-score was more helpful, in my experience". Furthermore, they advised of the need for:

> "A clear interpretation guide of some sort that was really easy to follow. I think if it was stumping some of our clinicians here, who are very experienced clinicians (having had used tools with both percentiles and normative standard scores and t-scores), then I can only imagine it might stump a planner who might not have the background training in use of tools of that type."

Acceptability

In conclusion, the clinicians felt that the PEDI-CAT was "possibly" to "very acceptable" to clients, clinicians and society. In relation to families, they stated that "clients are supportive of assessment and enjoy having reports as a result". From a clinician's perspective, they summarised "basically, our values and ethics are meeting our client's health needs. Any tool that allows us to progress meeting their health needs, that is a standardised and accepted test…I can't see any contra-indications".

	Likes	**Dislikes**
Appropriateness	• Covers a reasonable range of domains of functioning • Good age range (0-21years) • Rating scale is more strengths-focussed • Accuracy and psychometric properties appear adequate • Has numerous potential uses in clinical practice • Inclusion in NDIS processes enhances acceptability	• CAT administration may lead to key topics being missed • Some concerns about developmental appropriateness • Lacks questions on behavioural challenges • Does not explore reason behind functional challenges • Some discrepancies experienced between PEDI-CAT scores and other clinical measures/impressions • Concerns that rating performance with supports in place may lead to inadequate funding outcomes • Needs to be administered by a trained clinician to be acceptable
Accessibility	• Quick and easy to administer: - Parent can complete independently in clinic - Report generation simple • Inexpensive • Easy procurement process	• Cost effectiveness limited due to: - Time limitations - Inadequate reimbursement - Inability for parent to complete at home

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		• ASD version was not available to clinicians in early period after release (now resolved)

Practicability	• Comes with everything required, including PDF manual
	• Computer/iPad administration
	  - No internet required
	  - Parents are familiar with technology
	• Ease of use
	  - Straightforward language
	  - Inclusion of pictures
	  - Rating scale simple
	  - New instructions are autism specific
	• Literacy less of a concern in private practice
	• Family friendly
	  - Hear perspectives
	  - Sensitive approach
	• Training simple (e.g. review manual and practice) for a qualified health professional with pre-requisite knowledge and skills, with a focus on
	  - Administering
	  - Scoring
	  - Interpreting
	  - Goal setting
		• Need a Windows computer/iPad for administration
		  - Not able to use on an Apple computer
		  - Telephone interview not perceived as adequate
		• Language confusing
		  - Very specific items
		  - Lengthy descriptions
		• Literacy and cultural concerns
		  - Reading level
		  - Computer
		  - English as a second language
		  - Culturally diverse families
		  - Non-Australian terms
		• Deficit focus is confronting
		• Lack of training workshops
		• Confusing terminology for scores requires additional training and would pose risks for unqualified assessors

Acceptability	• Adequate for clients, clinicians and society when used in alignment with suggestions discussed above	

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Discussion

Reliability for the PEDI-CAT (ASD) was evaluated in relation to internal consistency, alternate forms reliability and test-retest reliability. **Internal consistency** coefficients were described as good to excellent, suggesting homogeneity of assessment items. Results from the **alternate forms reliability** analyses revealed that, although the PEDI-CAT (Original) and PEDI-CAT (ASD) had good correlation results, the mean research composite and Social/Cognitive domain scores were significantly lower when the PEDI-CAT (Original) was administered. This suggests that the Original version specifies a greater level of impairment overall (largely due to the modifications of items in the Social/Cognitive domain). This finding may be explained by the revisions made to the ASD version to reflect the specific needs of young people on the autism spectrum. The majority of new and revised items and instruction modifications were made to the Social/Cognitive domain, and included the permissibility of communication devices when considering functioning. Thus, with communication supports in place, scores in this domain would be expected to be higher than in the Original version. Furthermore, analysis of agreement in assigning manual and NDIS impairment categories revealed that the PEDI-CAT (ASD) assigned lower categories in 5-13% of cases, and PEDI-CAT (Original) classified 5-21% of cases to lower classifications of functioning. This confirms findings from statistical analysis that the Original version may specify a greater level of impairment than the PEDI-CAT (ASD) version for young people with NDCs. **Test-retest reliability** findings indicate that the PEDI-CAT (ASD) shows good to excellent levels of test-retest reliability, and these findings are comparable with the test-retest reliability of the Vineland-3 (Appendix D). **Inter-rater reliability** for the PEDI-CAT (ASD) was not possible as a consistent rater (caregiver) completed the assessment on multiple occasions. Comparing ratings from two caregivers would be a valuable objective for a future research project.

Validity for the PEDI-CAT (ASD) was evaluated in relation to concurrent validity with another widely used measure of adaptive functioning, the Vineland-3. **Concurrent validity** analyses revealed significant correlations between all domain relationships except those involving Maladaptive Behavior (Externalizing). Nearly three-quarters of the significant correlations were moderate to good in strength, however, approximately one quarter were classified as poorly correlated. Analysis of concurrent validity between the domains of the PEDI-CAT (ASD) and the Vineland-3 *Interview Form* showed a greater number of non-significant relationships (both the Internalizing and Externalizing Maladaptive domains) with a greater percentage of the significant correlations rated as poor. There were certain domains of the PEDI-CAT (ASD) and Vineland-3 that we expected to be more highly correlated due to face validity of greater conceptual alignment based on previous ICF linking (Chamberlain et al., 2019a, 2019b). While the PEDI-CAT (ASD)

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research composite and Vineland-3 Adaptive Behavior Composite were highly correlated, the poor to moderate (rather than good) relationships between conceptually similar domains likely reflects the slightly different focus of the domains of each measure. For example, conceptually, it was anticipated that the PEDI-CAT (ASD) Daily Activities and Responsibility domains would have a good correlation with the Vineland-3 Daily Living Skills domain. These expectations were validated for the Responsibility domain of the PEDI-CAT (ASD) when using the *Parent/Caregiver Form* only (although the correlation coefficient for the *Interview Form* was close to the threshold to be considered good), but not at all for the Daily Activities domain. One possible reason for the lower than expected alignment between the Daily Activities domain of the PEDI-CAT (ASD) and the Daily Living Skills of the Vineland-3 is that the former domain includes both self-care and domestic items, while the latter domain also includes community items (along with personal and domestic items). Our expectation that the PEDI-CAT (ASD) Mobility domain and Vineland-3 Motor Skills domain would have a good correlation was also not validated, with a moderate relationship identified using the *Parent/Caregiver Form* and a poor relationship associated with the *Interview Form*. An individual item analysis indicates that this may be because the PEDI-CAT (ASD) has a focus on gross motor items, while the Vineland-3 maintains a stronger focus on fine motor items (in addition to gross motor items). Furthermore, our expectation of good correlations between the PEDI-CAT (ASD) Social/Cognitive domain and Vineland-3 Communication and Socialization domains was not validated. Again, individual item analysis reveals that the single PEDI-CAT (ASD) domain includes both communication and social interaction items, along with self-management and everyday cognition items, while the Vineland-3 domains focus exclusively on communication (for Communication domain) or social (for Socialization domain) related functions. As the PEDI-CAT (ASD) and Vineland-3 domains do not map directly to each other, conceptual alignment was explored by determining the agreement in assigning impairment classifications between the PEDI-CAT (ASD) and Vineland-3 *Parent/Caregiver Form*. The findings revealed only a moderate level of agreement, with the Vineland-3 *Parent/Caregiver Form* classifying slightly more cases as lower functioning than the PEDI-CAT (ASD) according to NDIA categories and a substantially greater percentage as lower functioning according to manual categories. The absence of good concurrent validity between the PEDI-CAT (ASD) and Vineland-3 is likely to relate to the differing conceptual frameworks on which the assessments are based (Haley et al., 2017; Sparrow, 2016), along with the different scale used for administration; the PEDI-CAT (ASD) asks caregivers to consider difficulty with the usual performance of a task at the current time in a familiar context with support, whereas the Vineland-3 asks caregivers to consider the frequency that a task is performed without support (Chamberlain et al., 2019a, 2019b; Haley et al., 2017, 2019).

Usability for the PEDI-CAT (ASD) was evaluated in relation to the applicability in determining impairment levels, caregiver acceptability and clinical utility. Findings in relation to **applicability** in determining impairment levels revealed that, when compared to the normative sample, approximately one half of the cases (55%) met the criteria outlined in the PEDI-CAT manual (Hayley et al., 2017, 2019) of having 'Below Normal' functioning, based on the research composite and/or at least one domain score being more than two standard deviations below the normative mean. The remaining 45% of cases would be classified as having 'Normal' functioning according to the manual, with 28% of cases in the lower range of normal (between one to two standard deviations below the normative mean). **Caregiver acceptability** findings were mixed, with both positive and negative feedback provided about the PEDI-CAT (ASD). Caregivers reported more positive views on PEDI-CAT (ASD) accuracy, ease of use and recommendations for clinical use when they had completed the assessment a single time in a home setting with a clinician. Caregivers also felt that the PEDI-CAT (ASD) was less accurate and they were less likely to recommend the tool for clinical practice, when compared to the Vineland-3. Although the PEDI-CAT (ASD) was praised for being more user-friendly than the Vineland-3 due to the shorter administration time and easier format, it was not considered as comprehensive, accurate or clinically useful as the Vineland-3 (Appendix D). Caregivers were concerned that the PEDI-CAT (ASD) reported on the young person's highest level of functioning, and did not consider strengths, challenges, fluctuations, environmental contexts or support requirements. All of these characteristics were identified by participants as being vital components of an assessment of functioning tool, as well as obtaining information from multiple knowledgeable sources. **Clinical utility** findings were consistent with the perspective provided by caregivers, where clinicians reported that the PEDI-CAT (ASD) was quick and easy to use, but had concerns that young people may receive inadequate funding for reasonably and necessary supports due to the PEDI-CAT (ASD) findings reflecting their highest level of functioning. Clinicians also expressed concerns about relying on a caregiver report only, as this may lead to biased results and does not include the perspectives of the young person or a suitably trained clinician. The overall theme of the clinician feedback was that one standardised tool should not be used in isolation to assess functioning or determine funding, and that it should only be used in the context of a suite of assessment tools.

Limitations

There are several limitations of the research design that are important to highlight. Despite a randomisation process being employed, there was a difference in the final sample sizes for Assessment 2a and 2b. The first factor leading to this discrepancy is the lower retention rates for

caregivers randomised to Assessment 2a. This occurred between the consent process and Assessment 1 (72% retention rate for those randomised to Assessment 2a, compared to 85% for those randomised to Assessment 2b) and again between Assessment 1 and Assessment 2a (89%) versus Assessment 2b (97%). The second factor leading to this discrepancy was the decision to introduce the Wave 2 (advertised) recruitment strategy to increase the overall participant numbers, particularly those residing in Western Australia, whilst at the same time maximising the number of Assessment 3 completions through condensing the research process by removing Assessment 1.

Reliability findings may have been limited in a number of ways. It is possible the alternate forms reliability results were impacted by differences in administration approaches for the PEDI-CAT (ASD) (face-to-face) and PEDI-CAT (Original) (video conference). To mitigate this potential limitation, screen sharing technology was utilised. Test-retest analyses may have been affected by variations to the assessment contexts. The assessment process was designed to be as consistent as possible, whilst allowing for the two assessment streams to facilitate analyses of the broadest possible range of psychometric properties. The rater of the PEDI-CAT (ASD) remained the same across assessments, with data checking processes ensuring that only PEDI-CAT (ASD) results originating from a consistent caregiver were included for test-retest reliability analysis. Efforts were made for Assessment 1 and 2a to be conducted in an APM office with the same assessor (achieved in 89% of cases), but in a few circumstances this was not possible due to assessor and/or caregiver availability to attend an appointment at the original location within an acceptable time period. In total, there was one case where Assessment 2a was conducted by a different APM assessor, three cases where Assessment 2a took place in a different APM office and one case where Assessment 2a was completed remotely. The 62 cases included for test-retest reliability analysis using Assessments 2b data were conducted in a different location during a comprehensive home visit assessment, by a different assessor with more extensive qualification and training requirements. Given that the PEDI-CAT (ASD) is a caregiver report measure, the broad range of assessor qualifications and differences in location should not impact substantially on the quality of the data obtained. However, these environmental variations and processes may have resulted in some within-rater effects for the caregiver completing the PEDI-CAT (ASD), such as anxiety, fatigue or distractibility. In addition, facilitation of the PEDI-CAT (ASD) by different assessors may have resulted in varied instructions, clarifications and support provided. However, ICC values were only marginally lower for Assessment 2b cases, with this only impacting the descriptor for the Responsibility domain (good to excellent, although the combined sample ICC value was described as excellent).

There were several other features of the study design that are important to note when interpreting the findings. First, the Vineland-3 *Interview Form* was completed by telephone with a second Autism CRC assessor, rather than face-to-face during the Autism CRC home visit. The assessment method provided the advantage of reducing the duration of Assessment 2b, allowing the caregiver to complete the *Interview Form* without the young person being present and prevented home visit observations biasing the Vineland-3 scores. However, it is possible that telephone conversations are not an ideal interview setting for some individuals, and that this may have influenced the interview quality and concurrent validity findings. We also note that each individual assessment tool was completed within the context of a larger assessment session. It is possible that the burden of the larger session influenced caregiver feedback on the acceptability of each individual assessment tool. Whilst efforts have been made to differentiate these impacts through qualitative analysis, some residual bias may remain. Furthermore, we acknowledge that there was a time lapse between when caregivers completed a given assessment tool and when they provided feedback. To minimise any issues with recall, we provided screen shots and descriptions of each assessment tool, limited the time frames for Assessment 3 and differentiated these impacts through qualitative analysis.

The clinician workshops were conducted to receive feedback on the utlity of each tool from clinicians who are regularly administering assessments. Clinicians were only eligible to attend the workshop if they reported experience in assessing individuals with NDCs. However, we note the clinician familiarity with the PEDI-CAT (Original and ASD) was very limited, with only 17% having used the assessment previously, and more than half (52%) were of clinicians being unfamiliar with the assessment tool. This was addressed through providing detailed information about the PEDI-CAT (Original and ASD) during the workshop. There were also clinicians in attendance who had a clinical background (e.g., GPs), however it is not clear if they met the intended administrator requirements for the PEDI-CAT (Original and ASD) (e.g., education, early childhood education, paediatrics and/or rehabilitation background). While these factors may have influenced their views on the PEDI-CAT and other assessment tools, we note that all clinicians reported to currently assess ASD in their clinical practice, and so the clinican sample is representative of this particular clinical area in Australia.

Conclusion

This research project has provided empirical evidence regarding the psychometric properties and usability of the PEDI-CAT (ASD) within an Australian setting, and the findings can be used to inform the tools and processes used for intake and planning for individuals aged 20 years and younger with NDCs seeking to enter the NDIS. This research project determined that the PEDI-CAT (ASD) has:

1. Good to excellent internal consistency, indicating items within each subscale measure a similar concept;
2. Good alternate forms reliability with the PEDI-CAT (Original), noting that the Social/Cognitive domain of the PEDI-CAT (Original) specifies a greater level of impairment than the PEDI-CAT (ASD);
3. Good to excellent test-retest reliability, suggesting consistency in measurement over time;
4. Poor to good concurrent validity with the Vineland-3, suggesting measurement of similar adaptive behaviour concepts for some domains but different concepts for other domains; and
5. Adequate usability as one source of information about functioning in selected activities and life situations (when administered by a suitably trained clinician), but inadequate usability when used in isolation as a single source of information to determine functioning and support needs, due to concerns raised by both caregivers and clinicians that the score generated by the PEDI-CAT (ASD) may underestimate the level of disability of the young person being assessed.

In conclusion, the findings of this research project support the use of the PEDI-CAT (ASD) as part of a comprehensive assessment of functioning and support needs with an experienced clinician, where information is also collected through direct assessment (Whitehouse et al., 2018). The findings indicate that it may be possible to integrate the PEDI-CAT (ASD), alone or as part of a toolkit of assessment instruments, as an information source to guide NDIA decisions.

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Appendix A – PEDI-CAT (ASD) Item Bank (internal use only)

Daily Activity Items (Original)

DA002 Eating & Mealtime Swallows pureed/ blended/ strained foods
DA003 Eating & Mealtime Finger feeds small or bite-size pieces of food
DA004 Eating & Mealtime Holds and drinks from an open cup or glass
DA006 Eating & Mealtime Holds and eats a sandwich or burger
DA007 Eating & Mealtime Feeds self with spoon (minimal spilling)
DA008 Eating & Mealtime Drinks liquids using a straw
DA009 Eating & Mealtime Feeds self with fork (minimal spilling)
DA010 Eating & Mealtime Uses a knife to butter bread and spread jam
DA011 Eating & Mealtime Cuts vegetables or meat with a fork and table knife
DA012 Eating & Mealtime Inserts a straw into a juice box
DA013 Eating & Mealtime Pours liquid from a large carton into a glass
DA014 Eating & Mealtime Stirs to mix ingredients
DA015 Eating & Mealtime Empties food from mixing bowl to baking pan
DA016 Eating & Mealtime Pulls open a sealed bag of snack food
DA019 Eating & Mealtime Removes lid from plastic food containers
DA020 Eating & Mealtime Opens sealed cardboard
DA026 Eating & Mealtime Chops or slices hard fruits or vegetables
DA027 Eating & Mealtime Uses a can opener to open a can
DA028 Keeping Clean Rubs hands together to clean
DA030 Keeping Clean Wipes nose thoroughly with tissue
DA031 Keeping Clean Turns the water on and off at sink
DA034 Keeping Clean Puts toothpaste on brush and brushes teeth thoroughly
DA036 Keeping Clean Trims fingernails on both hands
DA039 Getting Dressed Fastens hairclips or barrettes (Females only)
DA040 Getting Dressed Puts hair up in a ponytail (Females only)
DA044 Keeping Clean Shaves face using electric or safety razor (Males only >12 years of age)
DA046 Getting Dressed Fastens watch band
DA047 Getting Dressed Fastens a necklace or chain
DA049 Keeping Clean Trims toenails on both feet
DA051 Keeping Clean Cleans body thoroughly in bath or shower
DA052 Keeping Clean Dries hair with a towel

DA054 Keeping Clean Obtains shampoo, washes and rinses hair

DA055 Keeping Clean Dries hair with a hair dryer

DA057 Getting Dressed Removes socks

DA058 Getting Dressed Takes off a t-shirt

DA060 Getting Dressed Puts on a t-shirt

DA061 Getting Dressed Puts on and buttons a front buttoning shirt

DA062 Getting Dressed Removes pants with elastic waist

DA064 Getting Dressed Puts on and fastens pants

DA065 Getting Dressed Fastens belt buckle

DA066 Getting Dressed Tucks in shirt or blouse

DA067 Getting Dressed Puts on socks

DA068 Getting Dressed Puts on slip-on shoes

DA069 Getting Dressed Connects and zips zippers that are not fastened at the bottom

DA070 Getting Dressed Ties shoelaces

DA072 Getting Dressed Inserts laces into sneakers or boots

DA073 Getting Dressed Puts on winter, sport, or work gloves

DA074 Getting Dressed Puts on bra and fastens in front or back (Females only and >12 years of age)

DA075 Getting Dressed Puts on tights or pantyhose (Females only)

DA079 Keeping Clean Wipes self with toilet paper after a bowel movement

DA081 Keeping Clean Opens, closes and latches public bathroom stall door

DA083 Home Tasks Uses a TV remote control

DA084 Home Tasks Operates a video game controller

DA086 Home Tasks Uses a computer mouse to click on icons or links

DA087 Home Tasks Uses a computer keyboard to type

DA089 Home Tasks Wipes a counter or table

DA091 Home Tasks Stacks breakable plates or cups

DA092 Home Tasks Opens door lock using key

DA093 Home Tasks Changes pillow case on pillow

DA094 Home Tasks Replaces (unscrews and screws) the bulb in a table lamp

DA095 Home Tasks Tightens loose screws using a screwdriver

DA096 Home Tasks Puts a bandage on a small cut on hand

DA097 Home Tasks Opens childproof medicine or vitamin containers

DA098 Home Tasks Presses buttons to operate a key-pad such as phone or ATM

DA100 Home Tasks Removes a single bill from wallet

Daily Activities Items (ASD)

Eating and Mealtime - Squeezes plastic bottles to obtain ketchup, syrup, etc.

Eating and Mealtime - Pulls open the tab on a soft drink can

Eating and Mealtime - Unscrews the lid on a tight or new jar

Keeping Clean - Shaves legs and underarms using either electric or safety razor

Getting Dressed - Puts on deodorant

Getting Dressed - Puts on sunglasses or glasses

Getting Dressed - Puts on and ties a tie

Mobility Items (Original)

MB002 Basic Movement & Transfers When lying on belly, turns head to both sides

MB003 Basic Movement & Transfers When lying on back, turns head to both sides

MB006 Basic Movement & Transfers When lying on back, reaches for toy

MB007 Basic Movement & Transfers When lying on belly, pushes up on elbows

MB008 Basic Movement & Transfers When lying on belly, pushes up on hands

MB009 Basic Movement & Transfers Gets onto hands and knees

MB012 Basic Movement & Transfers Sits on floor with pillow for support

MB014 Basic Movement & Transfers Lifts one arm overhead and reaches for a small toy while sitting on floor

MB016 Basic Movement & Transfers Sits on floor without support of pillow or couch

MB017 Basic Movement & Transfers Stands up from an adult size chair

MB019 Basic Movement & Transfers Sits in an adult-size chair with a back

MB022 Basic Movement & Transfers Rolls over in bed or crib

MB024 Basic Movement & Transfers Gets in and out of own bed

MB025 Basic Movement & Transfers Gets under sheet or blanket and arranges pillows for comfort in bed

MB027 Basic Movement & Transfers Stands up from the middle of the floor

MB030 Standing & Walking Stands for a few minutes

MB031 Standing & Walking Stands on tiptoes to reach for something

MB32 Basic Movement & Transfers Gets in and out of bathtub

MB033 Basic Movement & Transfers Steps in and out of shower stall

MB034 Basic Movement & Transfers Gets on and off an adult sized toilet

MB035 Standing & Walking While standing, bends over and picks up something from the floor

MB036 Standing & Walking Squats down and then stands back up

MB037 Standing & Walking Walks while holding onto furniture or walls

MB038 Standing & Walking Walks from room to room in home (no stairs)

MB041 Standing & Walking Walks in between a row of auditorium or movie theater seats

MB042 Standing & Walking Opens and closes door to enter and exit home

MB044 Standing & Walking Walks on wet, indoor slippery surfaces

MB045 Standing & Walking Walks and carries a full glass without spilling

MB046 Standing & Walking Walks while wearing a light backpack

MB047 Standing & Walking Walks while wearing a heavy backpack

MB048 Standing & Walking Pulls heavy wagon filled with toys or small child

MB049 Standing & Walking Walks and carries a food tray

MB050 Standing & Walking Walks and carries a full shopping bag with handles

MB051 Standing & Walking Pushes adult-size

MB055 Steps & Inclines Walks on a raised narrow surface (curb/low wall)

MB056 Steps & Inclines Walks up and down ramp

MB057 Steps & Inclines Hikes up hill 2-3 miles/3-5 kilometers

MB058 Standing & Walking Walks several hours at family or school outing such as zoo, amusement park or fair

MB059 Standing & Walking Walks fast enough to cross two-lane street safely

MB060 Running & Playing When running, is able to go around people and objects

MB065 Running & Playing Moves forward on ride-on toys without pedals (Only for children < 5 years of age)

MB066 Running & Playing Rides tricycle (Only for children < 6 years of age)

MB067 Running & Playing Rides bicycle without training wheels

MB068 Basic Movement & Transfers Gets in and out of a car

MB069 Steps & Inclines Gets on and off a public bus or school bus

MB070 Basic Movement & Transfers Gets in and out of van, truck or sport utility vehicle

MB071 Standing & Walking Stands while holding on in a moving vehicle (bus, train, trolley, boat/ferry)

MB072 Steps &Inclines Goes up and down stairs by crawling or scooting on bottom (Only for children < 6 years of age)

MB074 Steps & Inclines Walks up a flight of stairs without holding onto handrail

MB075 Steps & Inclines Goes up and down an escalator

MB076 Steps & Inclines Walks up and down bleacher steps in gym or stadium

MB077 Steps & Inclines Walks up a flight of stairs holding onto handrail

MB078 Steps & Inclines Walks down a flight of stairs holding onto handrail

MB079 Steps & Inclines Walks down a flight of stairs without holding onto handrail

MB083 Steps & Inclines Carries full laundry basket with 2 hands up a flight of stairs

MB085 Running & Playing Kicks a rolling ball while standing

MB086 Steps & Inclines Jumps down off a single step MB088 Running & Playing Jumps 10 times in a row with a jump rope

MB090 Basic Movement & Transfers Sits on infant playground swing while swing is pushed (Only for children < 3 years of age)

MB092 Running & Playing Pumps legs and swings on playground swing

MB095 Running & Playing Climbs up ladder of a slide

MB096 Running & Playing Climbs on and off a climbing structure

MB097 Running & Playing Moves across monkey bars

MB098 Steps & Inclines Climbs indoor step ladder

MB099 Running & Playing Climbs out of swimming pool using pool ladder

MB100 Running & Playing Pulls self out of swimming pool not using ladder

MB125 Basic Movement & Transfers Climbs onto couch or adult size chair

MB126 Standing & Walking When walking, is able to go around people and objects

MB127 Steps & Inclines Climbs over 2 foot high obstacle such as a baby gate

MB128 Steps & Inclines Climbs step ladder to put a heavy box on a high shelf

MB129 Standing & Walking Walks 3 miles/5 kilometers

MB130 Standing & Walking Walks 50 feet/15 meters while carrying 25 pound/11 kilogram bag

MB132 Steps & Inclines Runs up 2 flights of stairs

MB102D Standing & Walking with Device Walks with walking aid (e.g. cane, crutches, walker) from room to room in home (no stairs)

MB104D Standing & Walking with Device Walking with walking aid (e.g. cane, crutches, walker), keeps place in a line of moving people

MB107D Standing & Walking with Device Walks with walking aid (e.g. cane, crutches, walker) on wet, indoor slippery surfaces

MB108D Standing & Walking with Device Walks with walking aid (e.g. cane, crutches, walker) on grass, mulch or gravel

MB109D Steps & Inclines with Device Steps up and down curbs using walking aid (e.g. cane, crutches, walker)

MB111D Steps & Inclines with Device Walks with walking aid (e.g. cane, crutches, walker) up and down ramp

MB112D Standing & Walking with Device Walks with walking aid (e.g. cane, crutches, walker) several hours at family or school outing such as zoo, amusement park or fair

MB113D Wheelchair Uses manual wheelchair to move from room to room in home

MB115D Wheelchair Keeps place in a line of moving people while using manual wheelchair

MB116D Wheelchair Opens and closes door to enter and exit home while using manual wheelchair

MB119D Wheelchair Uses manual wheelchair outdoors on grass, mulch or gravel

MB120D Wheelchair Goes up and down curbs with manual wheelchair

MB121D Wheelchair Goes up and down ramp with manual wheelchair

MB124D Wheelchair Pushes manual wheelchair for several hours at family or school outing such as zoo, amusement park or fair

MB133D Steps & Inclines with Device Walks up a flight of stairs with a walking aid (e.g. cane, crutches, walker) without holding onto handrail

MB134D Steps & Inclines with Device Using walking aid (e.g. cane, crutches, walker), gets on and off a public bus or school bus

MB135D Steps & Inclines with Device Walks down a flight of stairs with walking aid (e.g. cane, crutches, walker) without holding onto handrail

MB138D Wheelchair Moves from manual wheelchair to adult size chair

MB139D Wheelchair Uses manual wheelchair to move quickly indoors to answer a telephone or doorbell

MB140D Wheelchair Fastens manual wheelchair seat belt

MB141D Wheelchair Puts manual wheelchair brakes on and off

MB142D Wheelchair Gets into manual wheelchair from floor

Social/Cognitive Items (Original)

SC001 Communication Uses words, gestures or signs to ask for something SC002 Communication Uses several words or signs together such as "go home now" and "daddy go"

SC004 Communication Uses words or signs to ask questions such as "Where's Mommy?" or "What's that?"

SC005 Interaction Carries on a conversation with a familiar person by listening and responding appropriately

SC008 Communication Teaches another person a new game or activity by giving examples and explanations

SC010 Interaction Greets new people appropriately when introduced

SC011 Everyday Cognition Follows directions given by adult leader of a small group (4-5 children or teenagers)

SC012 Interaction Asks permission before using someone else's property

SC013 Everyday Cognition Attends to and follows direction given by a coach or teacher while in a large group (20-30 children or teenagers)

SC014 Interaction Uses language appropriate to the situation such as formal language at a job interview or informal language when hanging out with friends

SC016 Interaction Asks for a change in plans or responsibilities in a respectful way such as asking a teacher to extend a deadline

SC018 Interaction Follows gaze of another person to look at the same place or object

SC019 Interaction Plays peek-a-boo or pat-a-cake

SC020 Interaction Interacts briefly with a peer during play

SC021 Interaction Asks one or more peers to play using words or gestures

SC022 Interaction Takes turns sharing a favorite toy with peers

SC023 Interaction Participates in role-playing activities such as playing school or acting out famous characters

SC024 Interaction Plays with one or more children of the same age for several hours on their own

SC025 Interaction Takes turns and follows rules while playing simple board, card, or video games

SC026 Interaction Uses strategy and follows strict rules while playing complex board, card, or video games

SC028 Interaction Shows positive reactions to friends' success such as congratulating a peer for scoring a goal or doing well on a test

SC029 Interaction Works with friends to reach an agreement when they have different ideas

SC030 Interaction Maintains friendships that involve give-and-take, compromises and loyalty

SC031 Interaction Tries to resolve a conflict with friends or classmates SC032 Everyday Cognition Recognizes his/her printed name

SC033 Everyday Cognition Prints first and last name legibly

SC035 Everyday Cognition Writes a legible 3-4 item list

SC036 Communication Writes short notes or sends text messages or email

SC037 Everyday Cognition Communicates ideas in a 2-3 page written assignment or report

SC038 Everyday Cognition Recognizes numbers such as on a clock or phone

SC039 Everyday Cognition Counts out the correct coins to pay for an item that costs $1 or less

SC040 Everyday Cognition Understands signs in the community such as Restrooms or EXIT

SC041 Everyday Cognition Counts out the correct amount of bills and/or coins to pay for an item costing $20-$40

SC042 Everyday Cognition Uses a map to plan a route to a new place

SC043 Everyday Cognition Finds a phone number or address using the phone book or computer

SC044 Everyday Cognition Follows written directions of 2-3 steps

SC045 Everyday Cognition Follows complex written instructions such as to set up new computer software or complete a school project

SC047 Communication Uses the words yesterday/ tomorrow/ today correctly

SC048 Everyday Cognition Associates days of the week with their typical activities such as football practice on Tuesday, chores on Saturday

SC049 Everyday Cognition Associates a specific time with a specific activity such as a favorite TV show starting at 3 pm

SC051 Everyday Cognition Uses a watch or clock to be ready for an activity such as catching school bus or watching TV show

SC056 Self-Management Accepts the need to wait an hour or two before a request can be met

SC057 Self-Management When upset, responds without punching, hitting, or biting

SC058 Self-Management Accepts advice or feedback from a teacher, coach, or boss without losing temper

SC059 Self-Management Keeps unsafe objects and household materials out of mouth

SC060 Self-Management Behaves safely when falling is possible, such as on a playground slide or near stairs

SC063 Everyday Cognition Checks traffic in both directions and knows when to cross street

SC064 Everyday Cognition Shows interest in objects held close by looking, touching, or listening

SC065 Everyday Cognition Tries to make toys work by pressing, pushing, or squeezing

SC066 Everyday Cognition Puts together an unfamiliar 5-10 piece puzzle with interlocking pieces

SC067 Everyday Cognition Uses toys in simple pretend play such as putting doll to bed or driving a toy truck

SC068 Everyday Cognition Builds simple structures from objects such as building a tower or a house from blocks

SC071 Communication Uses single words, gestures or signs to show what he/she wants

SC072 Communication Describes what help is needed to solve a problem such as approaching store staff to locate item or asking a friend to borrow a book needed for homework

SC073 Everyday Cognition Tries to do things a different way when not successful such as turning a puzzle piece in a different direction or trying a different route in a video game

SC074 Everyday Cognition Uses a calendar or datebook to record and keep track of appointments, assignment or events

SC076 Communication Explains reasons behind actions or such as why he/she spent money on a particular item

SC077 Self-Management Stays quiet in public places when expected

SC078 Communication Provides own address and telephone number when asked

SC079 Self-Management Transitions from one familiar activity to another such as playground to classroom, bath time to bed time

Social / Cognitive Items (ASD)

Communication - Uses words, gestures, or signs that non-family members generally understand to ask for something*. When responding to these items, consider your child's performance using their primary mode of communication. This could include augmentative communication devices (AAC), sign language, or use of the Picture Exchange Communication System (PECS).

Communication - Uses words, gestures or signs to express feelings such as happy or mad* When responding to these items, consider your child's performance using their primary mode of communication. This could include augmentative communication devices (AAC), sign language, or use of the Picture Exchange Communication System (PECS).

Communication - Uses unique sounds or body language that caregiver understands to indicate a general need or want; others may not understand** Remember, if your child no longer

demonstrates a particular skill because he/she is now beyond this level, choose “easy” as your response.

Communication - Provides own address and telephone number when asked** When responding to these items, consider your child’s performance using their primary mode of communication. This could include augmentative communication devices (AAC), sign language, or use of the Picture Exchange Communication System (PECS).

Communication - Lets others know that he/she is in pain or does not feel well* May point to place on the body, or tell others what feels wrong. When responding to these items, consider your child’s performance using their primary mode of communication. This could include augmentative communication devices (AAC), sign language, or use of the Picture Exchange Communication System (PECS).

Communication - Tells others when she/he does not understand what they are saying, and asks for clarification*

Communication - Uses several words or signs together such as "go home now" and "daddy go"** When responding to these items, consider your child’s performance using their primary mode of communication. This could include augmentative communication devices (AAC), sign language, or use of the Picture Exchange Communication System (PECS).

Communication - Uses words or signs to ask questions such as "Where's Mommy?" or "What's that?"** When responding to these items, consider your child’s performance using their primary mode of communication. This could include augmentative communication devices (AAC), sign language, or use of the Picture Exchange Communication System (PECS).

Interaction - Respects others' personal space during interactions* Includes not standing too close and using touch that is appropriate to the situation.

Interaction - Goes along with peers' ideas for play*

Interaction - Carries on a conversation with a familiar person by listening and responding appropriately** For example, does not force the conversation back to the child's own area of interest; ends conversation in an appropriate manner.

Interaction - Engages in simple social games with another person (such as tickling, making faces, peeka-boo)** Remember, if your child no longer demonstrates a particular skill because he/she is now beyond this level, choose “easy” as your response.

Interaction - Interacts briefly with a peer during play** More than brief eye contact.

Interaction - Turns head toward familiar people in response to voice, sight, or touch.

Interaction - Greets new people appropriately when introduced** If your child uses social scripts or other strategies to communicate and interact with others, select the response that best describes how easy or difficult it is for him/her to communicate when using those strategies. Social scripts are specific words taught to help your child communicate in specific situations.

Everyday Cognition - Communicates ideas in a 2-3 page written assignment or report** The report can be handwritten, typed, or created using voice dictation/recognition software.

Self-Management - Handles stimulating situations such as a shopping mall or party for 1-2 hours without losing control* Stimulating situations also include a community fair or watching a movie in a theater. Losing control includes behaviors and actions that are not easily redirected.

Self-Management - Accepts changes in routine without losing temper and crying* Includes change in typical setting or usual schedule.

Self-Management - When upset, responds without punching, hitting, or biting** Includes aggression or other behaviors that inflict harm or damage to self or others.

Self-Management - Transitions from one familiar activity to another such as playground to classroom, bath time to bed time** This is part of a routine that is familiar to your child.

Responsibility Items (Original)

RS001 Organization & Planning Getting ready in the morning on time Getting up; Getting dressed; Grooming and hygiene activities; Eating breakfast; Completing on time

RS002 Organization & Planning Keeping track of time throughout the day Arriving on time to scheduled activities or appointments; Coming back home at planned time; Ending an activity on time to stay on schedule

RS004 Organization & Planning Planning and following a weekly schedule so all activities get done when needed Identifying what needs to be done during a week; Determining how much time each activity will need and when it should be done; Carrying out plan; Making necessary adjustments due to unexpected delays or events

RS005 Organization & Planning Having all items that will be needed before leaving home for the day Determining what will be needed (e.g. money, homework, cell phone, lunch); Checking to make sure those things are in backpack, purse, etc.

RS006 Health Management Managing routine health appointments and related activities Making and keeping appointments with doctors or dentists; Refilling prescriptions

RS007 Taking Care of Daily Needs Eating and drinking appropriate foods to maintain health and energy Avoiding undernourishment, over-eating and dehydration; Selecting a variety of foods

RS008 Health Management Following health and medical treatment requirements Taking prescribed medication as directed; Following dietary restrictions; Adhering to exercise or other treatment routines

RS009 Health Management Taking care of minor health needs Caring for minor cuts and burns; Taking over the counter medication for fever, cold, and flu when appropriate

RS010 Health Management Seeking medical help for serious illness or injury when needed Recognizing when medical help is required; Contacting appropriate professionals; Knowing emergency phone numbers

RS011 Staying Safe Staying safe in a familiar location that is known to be safe such as friend's home or local park Avoiding strangers, objects, behavior or situations that may be dangerous

RS012 Staying Safe Determining the safety of a new location such as an unfamiliar neighborhood or a large event with many people, and responding appropriately to stay safe Identifying and avoiding potentially dangerous situations (e.g., dark street, construction site, crowded concert); Judging the safety of a person before seeking assistance (e.g. policeman, store owner)

RS013 Organization & Planning Choosing and arranging own social interactions Planning and getting together with friends; Accepting invitations to social events or inviting others; Incorporating social plans into schedule; Arranging transportation

RS014 Taking Care of Daily Needs Fixing simple meals that do not involve cooking such as cereal or a sandwich Identifying what is available to eat; Selecting the needed food and utensils; Preparing by mixing, pouring, etc.

RS015 Taking Care of Daily Needs Following a recipe or cooking instructions that includes 3-4 ingredients and steps such as macaroni and cheese or brownies Identifying and obtaining the needed ingredients in the correct amounts; Assembling the recipe in correct order; Timing the steps appropriately

RS016 Taking Care of Daily Needs Managing kitchen appliances such as stove, microwave, or dishwasher safely Using precautions around hot surfaces or electricity; Monitoring appliances when in use; Identifying potentially unsafe situations and adjusting behavior accordingly

RS017 Taking Care of Daily Needs Using utensils such as a knife or grater safely during food preparation Using precautions around sharp objects; Avoiding cuts; Identifying potentially unsafe situations and adjusting behavior accordingly

RS018 Taking Care of Daily Needs Managing food needs for the entire week Obtaining food at grocery stores or restaurants; Fixing meals as needed

RS019 Taking Care of Daily Needs Using safe food handling practices in the kitchen Washing hands and cleaning surfaces, dishes, and utensils thoroughly; Disposing of expired or rotten foods

RS020 Taking Care of Daily Needs Maintaining cleanliness and upkeep of living space Cleaning spills and wiping up food crumbs; Scrubbing sink and tub; Emptying trash; Replacing or repairing broken fixtures or objects

RS022 Organization & Planning Putting items and objects away after use Knowing where objects are stored; Organizing belongings and objects so they can be found when needed

RS023 Taking Care of Daily Needs Selecting clothing that is appropriate given the weather, daily schedule, and activities Identifying dress codes or expectations for different events; Seeking information about weather for the day

RS025 Taking Care of Daily Needs Recognizing when appearance or hygiene needs attention and taking steps to correct Cleaning dirt, food, and other stains off body, face, and clothing; Managing odor by washing, brushing teeth, using deodorant, and wearing clean clothes; Maintaining appearance by smoothing hair, tucking in shirt, arranging clothing after using the bathroom

RS026 Taking Care of Daily Needs Cleaning and caring for clothes Determining when clothes need to be cleaned; Washing clothing according to the fabric care instructions; Ironing clothes when needed; Ensuring clean clothes are available when needed

RS027 Organization & Planning Developing and following a plan to reach a specific goal (e.g. buying a bike, earning a place on a team) Identifying a goal; Planning out small steps needed to reach the goal; Carrying out plan and adjusting plan as needed

RS028 Organization & Planning Prioritizing and coordinating multiple goals at the same time such as keeping up grades as well as after school activities

RS029 Staying Safe Supervising or caring for another person (e.g., sibling or other child, grandparent) Ensuring another person's safety and well being; Providing assistance to another person when needed

RS030 Taking Care of Daily Needs Managing bowel and bladder through the night Avoiding accidents by using toilet or incontinence products

RS031 Taking Care of Daily Needs Managing bowel and bladder through the day Avoiding accidents by using toilet or incontinence products

RS033 Taking Care of Daily Needs Managing menstrual cycle Having available or buying feminine hygiene products; Using feminine hygiene products in a safe and hygienic manner

RS034 Health Management Taking precautions to avoid sexually transmitted diseases and/or unwanted pregnancies Abstaining from sexual activity; Using contraceptives; Seeking information from a health professional

RS036 Organization & Planning Tracking spending and managing money Remembering or recording money spent; Planning a budget; Saving or putting aside money for expenses; Recognizing when budget is exceeded and adjusting spending accordingly

RS037 Organization & Planning Paying bills and other accounts on time Using check, cash, money order, or online payment; Identifying due date and making payment on time

RS038 Organization & Planning Managing daily expenses Anticipating events or needs for the day and their costs; Obtaining needed money from bank or ATM; Paying with cash, debit or credit card

RS039 Organization & Planning Completing legal and/or other personal paperwork Applying for a license or permit; Completing employment or insurance application

RS040 Staying Safe Taking precautions to protect the privacy of personal information Providing personal information (e.g. social security number, address) only when appropriate

RS041 Organization & Planning Locating needed services or supports (e.g. finding a community program or repair business) Identifying need; Contacting person or organization that could meet that need

RS042 Organization & Planning Resolving errors in personal business such as billing, registration and other accounts Identifying and contacting appropriate persons; Communicating effectively to explain problem

RS043 Organization & Planning Organizing important papers and information and finding them when needed Recognizing which papers need to be saved (e.g. completed tax form, contracts, passport); Storing in a secure location

RS045 Staying Safe Traveling safely within the community Identifying and following a safe route; Using available methods of transportation (e.g. walking, driving, public transportation)

RS047 Staying Safe Eating safely without choking or burning self Chewing food adequately; Taking appropriate-sized bites; Testing temperature; Pacing self

RS048 Taking Care of Daily Needs Packing all the items needed for an overnight stay Determining what will be needed (e.g. toothbrush, clothing for the next day); Checking to make sure those things are in luggage, bag, etc.

RS049 Taking Care of Daily Needs Buying clothing at a store, from a catalog or online Purchasing clothing, including outerwear and undergarments

RS050 Organization & Planning Keeping personal electronic devices in working order (e.g., cell phone, computer) Having devices charged and available when needed; Updating software

RS051 Health Management Coping with stress, worry, or anger Evaluating current emotional state; Identifying and using coping strategies (e.g. taking a deep breath, taking a break)

RS052 Health Management Communicating health needs and seeking information and services as needed Identifying questions for health professionals; Understanding basic health terms; Identifying problems and potential solutions

RS053 Health Management Making healthy choices to maintain health and well-being Exercising regularly; Avoiding substance abuse or exposure to environmental hazards

RS054 Organization & Planning Seeking out and joining a club, community organization, or other social group for fun, leisure, and social networking Finding available groups; Selecting and joining groups or organizations that match interests

RS055 Organization & Planning Voting in local and national elections Identifying correct polling location; Understanding the voting process and rights; Requesting absentee ballots as needed

RS057 Staying Safe Using the internet safely Recognizing scams and inappropriate approaches from strangers; Avoiding posting inappropriate images; Evaluating safety of files before downloading

RS058 Staying Safe Testing and adjusting water temperature before taking a shower or bath Ensuring water is a comfortable temperature; Avoiding contact with very hot water

RS059 Organization & Planning Informing home, school, or work when he or she will be late or absent Requesting schedule changes in advance; Anticipating what contact information would be needed in case of emergencies

Responsibility Items (ASD)

Health Management - Washing hands after using the bathroom Turning water on/off; Getting soap; Thoroughly scrubbing hands with soap; Drying hands If your child uses hand sanitizer as an alternative to washing hands with soap and water, rate based on that behavior

Taking care of daily needs - Following a recipe or cooking instructions that includes 3- 4 ingredients and steps such as macaroni and cheese or brownies Identifying and obtaining the needed ingredients in the correct amounts; Assembling the recipe in correct order; Timing the steps appropriately

Taking care of daily needs - Keeping oneself and surrounding area neat when eating Using napkins; Cleaning up spilled food; Wiping face and clothes as needed

Staying safe - Staying near parents or other caregiver when not given permission to go off on his/her own Staying in eyesight of parent/caregiver, requesting permission before going someplace else Responsibility Organization and planning Keeping track of personal belongings throughout the day Managing wallet, backpack, lunchbox, coat and other personal and valuable items

Staying safe - Recognizing and responding appropriately if others try to take advantage of him/her Saying "no" or "stop" in unfair or upsetting situations (e.g., bullying, teasing, being dared to do or say socially inappropriate or dangerous things). May be in response to peers or adults

Staying safe - Maintaining the security of his/her home Making sure the doors and windows are locked before leaving home; Knowing when it is safe to let someone in the home/building Home refers to any place of residence including apartment buildings

Organization and planning - Keeping track of and completing homework assignments Bringing home needed materials; Turning in assignments on due dates; Making progress on multistep assignments If child does not have homework, this item also applies to bringing home permission slips and school notices, and providing those materials to parent/caregiver

Appendix B – Vineland-3 Item Bank (internal use only)

Looks towards parent or caregiver when hearing parent's or caregiver's voice

Looks toward parent of caregiver who is gesturing to get his/her attention

Responds upon hearing his/her name called (for example, turns towards speaker, smiles)

When parent or caregiver looks or points at something, looks in that direction.

Understands at least 10 words

Responds appropriately to at least three basic gestures (for example, head nod for yes, head shake for no, hand out for give me, reaching, waving, clapping)

Understands the meaning of no

Responds appropriately to at least three facial expressions being made by others (for example, frown, smile, surprised look, angry face)

Understands the meaning of yes

Follows instructions requiring only one action (for example, “sit down”; “come here”).

Identifies at least three actual objects when asked (for example, points to a dog, cup, key etc.)

Understands at least 50 words

Responds to the tone of spoken words (for example, approaches eagerly when “come here” is spoken lovingly, but hesitantly when “come here” is spoken sharply)

Identifies at least three body parts on self when asked (for example, point to own nose, mouth, hands, feet, etc.)

Follows instructions with one action and one object (for example, “bring me the book”; “close the door”)

Responds appropriately to at least three more advanced gestures (for example, motioning come here, fingers over lips meaning to be quiet, hands apart to show this big)

Identifies at least three objects pictured in a book, magazine, or electronic screen when asked (for example, points to a dog, car, cup, key, etc.)

Identifies at least three body parts pictured in a book, magazine or electronic screen when asked (for example, points to a nose, a mouth, hands, feet, etc.)

Responds to questions that use what (for example, when asked “what is this?” replies “a ball”)

Responds to questions that use who (for example, when asked “who is that?” replies “aunty Kesha”)

Identifies at least three basic actions pictured in a book, magazine, or electronic screen when asked (for example, points to someone eating, sitting, jumping, etc.)

Responds to questions that use where (for example, when asked “where did Felipe go?” points to where Felipe went)

Follows instructions with two related actions (for example, “pick up those toys and put them away”; “get your coat and put it on”

Follows instructions with one action and two objects (for example, “bring me the crayons and the ball” ; “put on your shirt and your shoes”)

Follows instructions in “if-then” form (for example, “if you’re thirsty, the get a drink”; “if you are cold, then get a sweatshirt”)

Pays attention to a story for at least 15 minutes

Responds to questions that use why (for example, when asked “why are you crying?” replies “my toy broke”)

Follows instructions with two unrelated actions (for example, “turn off the tv and get my keys”)

Responds to questions that use when (for example, when asked “when do you eat breakfast?” replies “in the morning”)

Pays attention to a show for at least 30 minutes and understands what is happening

Identifies left and right on own body (for example, hands, feet, arms)

Follows instructions requiring three actions (for example, “get dressed, eat breakfast, and brush your teeth)

Pays attention to a show for at least 60 minutes and understands what is happening

Understands sarcasm (for example, understands when a comment such as “that’s just great!” really means “that’s awful!”)

Pays attention to a 15 minute informational presentation and understands what is being said

Follows instructions involving left and right “for example, “Go to the left”; “look to the right”

When instructed to do something up to an hour later, remembers to do it (for example, “When your show is over, put your dishes in the sink”)

When instructed to do something several hours later, remembers to do it (for example, “when you get home from school, let the dog out”)

Pays attention to a 30-minute informational presentation and understands what is being said.

Makes sounds of pleasure (for example, coos, laughs)

Cries or fusses when uncomfortable (thirsty, hungry, wet, etc.)

Vocalises or gestures (for example, cries or waves arms) to get parents or caregivers attention

Makes at least three one-syllable speech sounds (for example, “mah”; “bah”; “Ee”; “oh”

Babbles in strings of sounds (for example, “ba-ba-ba-ba,” “Ma-ma-ma-ma”

Vocalises or gestures if he/she wants an activity to keep going or stop (for example, says “again,” shakes head no)

Says “Dada,” “Mama,” or another name for parent or caregiver (including parents or caregivers first name or nickname)

Uses at least three basic gestures (for example, head nod for yes, head shake for no, reaching or pointing toward something desired, waving, clapping)

Repeats or tries to repeat common words immediately upon hearing them

Says “No”; must actually mean no, not just repeat the word

Names at least three objects (for example, ball, dog, favourite toy)

Says one-word requests (for example, “want,” “More,” “Open”)

Names at least 10 objects

Says “Yes”; must actually mean yes, not just repeat the word

Names at least three actions (for example, drink/drinking, eat/eating, play/playing)

Calls brothers, sisters, or friends by their name or nickname

Says at least 50 words

Uses phrases with a noun and a verb (for example, “Mommy stay,” “give ball”)

Says own first name or nickname

Uses pronouns to refer to self; grammar need not be correct (for example, “give me,” “ me want,” “ mine toy”)

Uses simple adjectives to describe things (for example, firstly, pretty, big, loud)

Says what he/she is doing using simple sentences; grammar need not be correct (for example, “Ginger and me play,” “Dan read me a book”)

Uses at least three more advanced gestures (for example, motioning come here, finger over lips meaning be quiet, hands apart to short this big)

Uses negatives in sentences; grammar need not be correct (for example, “I wont drink it,” “Me no go”)

Says correct age when asked; holding up correct number of fingers counts.

Uses possessives in phrases or sentences; grammar need not be correct (for example, “this is mine,” “your book,” “this is Carols desk”)

Uses and in phrases or sentences (for example, “Mom and Dad,” “I wasn’t ice cream and cake”)

Asks questions beginning with who (for example, “Who’s that?”; “who went to the store?”); just asking “who?” (one word) doesn’t count

Uses plural nouns (for example, “two cats,” “More crackers,” “those flowers”)

Uses pronouns to refer to others; pronoun gender and grammar need no be correct (for example, “you want?”; “her happy”; “him ball”)

Uses in, on, and under correctly in phrases or sentences (for example, “in the box,” “Ball go under table”)

Asks questions beginning with why (for example, “why do I have to go?”; “Why did you put my stuff away?”); just asking “why?” (one word) doesn’t count

Says first and last name when asked; saying first name only doesn’t count

Uses pronouns correctly; pronoun gender and grammar must be correct (for example, “I want,” “Their ball,” “Call her”)

Asks questions beginnings with when (for example, “when is dinner?”; “when can we go home?”); just asking “When?” (one word) doesn’t count

Uses because in phrases or sentences (for example, “because I want to,” “Kathy went home because she was sick”)

Says his or her age at next birthday correctly when asked; holding up correct number of fingers

Uses past tense verbs (for example, walked, baked)

Tell the basic part of a familiar story or book or movie plot

Use behind, in front of, and between correctly in phrases or sentences (for example, “Terrell is behind you,” “I walked in front of her,” “the ball went between the cars”)

Gives simple directions involving one or two steps (for example, how to make, find or do something)

Uses compound sentences joined by and or but (for example, “She asked me, and I told her no: ; “Jerome wanted to go, but I didn’t”)

Uses own knowledge or opinions to comment on things, situations, and emotions (for example, “I think he’s mad at her because she said mean things about him”)

Tells about everyday (i.e. routine) experiences in detail (for example, when asked what he/she did with a fiend today, tells who was involved, where the activity took place etc.)

Tell about one-time (i.e. non-routine) experiences in detail (for example, when asked to describe a trip, tells who was involved, where the activity took place, etc.)

Says both the month and day of his/her birthday when asked

Clarifies by restating with different words when he/she is not fully understood at first

Says complete home address correctly when asked (that is, street or rural route, apartment number, city, and state, with or without zip code)

Gives complex directions involving three or more steps in logical order (for example, to a distant location, for a recipe requiting many steps)

Holds a book correctly for reading and turns the pages from front to back

Recognises one or more simple signs and icons/symbols (for example, STOP signs, bathroom door signs, arrows, smiley face)

Identifies one or more alphabet letters

Recognises own name in printed form

Identifies at least 10 alphabet letters

Understands what direction his/ger language is written in (for example, from left to right in English; in other languages from right to left or top to bottom)

Copies own first name without mistakes

Copies simple words from an example without mistakes (for example, cat, see, go); copying name doesn’t count.

Identifies all alphabet letters, both uppercase and lowercase

Writes alphabet letters using the correct orientation (that is, not reversed or upside down)

Reads at least 10 words

Writes own first and last name from memory; writing first name only doesn’t count

Reads simple sentences of three or more words out loud

Copies phrases or sentences of four or more words without mistakes

Writes at least 10 simple words from memory (for example, hat ball, the)p; may make small spelling errors.

Reads simple stories out loud

Writes simple sentences of three or more words; may make small errors in spelling or grammar

Writes at least 20 words from memory; may make small spelling errors

Reads and understands material of a second-grade level or higher

Writes simple notes, letters, emails, or texts that include at least three sentences (for example, thank you notes, postcards, invitations); may use abbreviated words and make small errors in spelling or grammar

Finds or sorts things in an alphabetical order (for example, finds a name in an alphabetized address book or list of phone numbers, finds a word in a dictionary, alphabetizes a list of words or movie titles)

Accurately interprets information presented in simple tables, graphs, or charts

Writes short reports or summaries (for example, a summary of something read) at least three sentences long; must use own words rather than simply borrowing or copying from other sources.

Accurately interprets vidual instructions (for example, assembly instructions, directions shown on a map)

Uses a table of contents or index to find information within a book or electronic resource

Reads and understands material of a fourth-grade level or higher

Writes emails, stories, letters, journal entries, etc.at least 10 sentences long; may use abbreviated words and make small errors in spelling or grammar

Uses the internet or a library to find information for writing a paper or completing a job assignment

Writes reports, papers, or essays at least one page long; must use own words rather than si8mply borrowing or copying from other sources

Writes or draws instructions for others (for example, how to do something, how to get somewhere)

Edits or corrects own written work before handing it in (for example, checks punctuation, spelling, grammar, etc.)

Accurately completes paper or electronic forms of one page or less (for example, forms for school or work)

Reads and understands material of a sixth grade level or higher

Writes reports or compositions at least three pages long; must use own words rather than simply borrowing or copying from other sources

Reads and understands material of a ninth-grade level or higher

Accurately completes paper or electronic forms of two pages or more (for example, a job, college or credit application)

Writes business or application letters (for example, requests information, makes a complaint, applies for a job or to a school)

Opens moth when food is offered

Drinks from a bottle or spill-proof drinking cup (often called a “sippy cup”); must hold the bottle or cup himself/herself

Sucks or chews on finger food (for example, crackers, cookies, toast)

Eats solid foods (for example, cooked vegetables, chopped meats)

Cooperates actively in undressing and dressing (raises arms for removing top, holds feet for putting on pants or shoes, etc.)

Cooperates actively in washing of hands and face (holds out hands, turns face toward parent or caregiver, etc)

Feeds self with spoon; may spill

Removes shoes and socks

Drinks from a regular cup or glass (sippy cups don't count); some spilling may occur

Feeds self with a fork; may spill

Removes clothing that opens in the from (for example, a coat or jacket); does not have to unbutton or unzip the clothing.

Lets someone know when he/she has wet or soiled diaper or pants (for example, points, vocalises, pills at diaper)

Pulls up clothing with elastic waistbands (for example, underwear, sweatpants)

Drinks from a regular cup or glass without spilling (sippy cups don't count)

Urinates in a toilet or potty chair; parent or caregiver may initiate

Washes hands using soap and water and dries them; does not need to turn the water on and off or adjust the temperature

Feeds self with a spoon without spilling

Removes pullover garments (for example, T-shirt, sweatshirt, dress)

Puts on shoes; may be on the wrong feet and does not need to tie or fasten

Puts on clothing that opens I the front (for example, a coat or jacket); does not need to zip or button

Defecates in a toilet or potty chair; parent or caregiver may initiate

Is toilet-trained during the day; may require help with undressing, flushing, wiping, or washing hands, but must initiate using the toilet

Puts on pullover garments (for example, T-shirt, sweatshirt, dress)

Wipes or blows nose using tissue, napkin, toilet paper, or other appropriate material

Washes and dries face; does not need to turn the water on and off or adjust the temperature

Wipes or cleans face and hands as needed during or after meals

Puts clothing on with the right side forward and correct side out

Is toilet-trained during the night; may require help with undressing, flushing, wiping, or washing hands, but must initiate using the toilet

Covers mouth and nose when coughing or sneezing

Uses the toilet during the day and at night without help; must wipe, flush, and wash hands by himself/herself

Fastens snaps

Brushes teeth; must put toothpaste on toothbrush, brush adequately, and rinse

Buttons large buttons, in the correct buttonholes (for example, coat buttons)

Changes clothing that has become dirty, wet, muddy or smelly

Connects and zips zippers that are not already fastened at the bottom (for example, on a coat or jacket)

Bathes or showers and dries self; does not need to turn the water on and off or adjust the temperature

Puts shoes on the correct feet and securely ties or fastens them

Spreads food with a table knife (for example, butter, jam, mustard)

Buttons small buttons, in the correct buttonholes (for example, shirt buttons)

Shows awareness that some foods are healthier than others (for example, states that fruits and vegetables are healthier than foods high in sugar or fat)

Finds and uses an appropriate restroom when away from home

Turns faucets on and adjusts the water temperature

Selects appropriate clothing during wet or cold weather (for example raincoat, boots, sweater)

Cuts east-to-cut food with a table knife (for example, fish, pancakes, butter)

Shows awareness that physical exercise is good for people (for example, states that exercise is healthy, that people should exercise, etc.)

Washes and rinses hair; does not need to turn the water on and off or adjust the temperature

Chooses to exercise for health and/or enjoyment

Uses the toilet before going out if uncertain about the availability of a restroom

Make healthy eating choices (eats a balanced diet, eat unhealthy foods in moderation, etc.)

Cuts harder-to-cut food with a sharp knife (for example, meat, raw vegetables)

Plans for change in weather by taking along an umbrella, a sweater, etc.

Takes own temperature when needed

Takes medicine as directed on his/her own

Goes to the doctor when needed (that is, when illness or injury requires professional care)

Monitors supply of medications (non-prescription and prescription) and replaces them as needed

Is careful around hot objects (for example, the stove or oven, an open fire)

Is careful when using sharp objects (for example, scissors, knives)

Wipes up own spills; must get wiping material and clean the spill adequately

Puts dirty clothes in the proper place to be washed (for example, a laundry basket or chute)

Removes dirty shoes or wipes them on a doormat before entering a residence

Puts away his/her books, toys, etc. when done using them

Washes hands before preparing food

Fully clears own dishes, utensils, napkins, cups etc. after eating

Does at least two simple household chores (for example, dusts, empties trash cans, feeds pet)

Prepares a simple snack or meal (for example, a sandwich, cheese and crackers, microwave foods)

Understands what to do in dangerous situations (for example, when to get help, when to call 000, how to distance self from danger)

Hangs wet towel on a towel rack or hook, or puts in the proper place to be washed

Puts clean clothes away where they belong (for example, in drawers or closet, on hooks)

Uses at least two simple kitchen appliances (for example, toaster, microwave, electric can opener)

Washes fruits or vegetables before eating or cooking them

Secures home against intruders when home (keeps doors locked, finds out who is at the door before opening it etc.)

Uses at least three kitchen utensils to prepare food (for example, vacuum cleaner, lawnmower, iron, power tools)

Prepares and eats leftovers

Uses household products currently (for example, laundry detergent, furniture polish, glass cleaner)

Puts dishes away when clean and dry

Secures home against intruders when leaving home (locks doors, closes windows, turns on alarm etc.)

Washes dishes (either by hand, or by loading and running the dishwasher when needed)

Cleans floors thoroughly (sweeps, vacuums, mops etc.)

Puts leftover food away (for example, in plastic bags or wrap, in containers)

Uses the stove or oven for cooking or baking (turns burners on and off, sets oven temperature, etc.)

Recognises when simple maintenance tasks need to be done and does them (for example, replaces light bulbs, batteries, filters, or vacuum cleaner bag)

Cleans bathroom (toilet, sink, tub or shower etc.)

Does laundry; must wash, dry, and fold/hand

Prepares a full meal consisting of three or more food items

Talks to a familiar person using a phone, computer, or other electronic device; does not need to place the call

Understands that money is used to buy things

Counts at least 10 objects, one by one

Remains within safe distance or caregiver when in public places; being carried, pushed in a stroller, etc. doesn’t count

Understands and follows safety precautions while riding in a car (for example, keeps seat belt on, refrains from unnecessarily distracting the driver)

Understands that a clock is used to tell time

Operates at least two technology devices for entertainment (for example, a television, DVD player, music player, handheld game, computer used for entertainment)

Uses appropriate manners when eating in public (for example, uses utensils, sits properly, doesn't disrupt others)

Says all seven says of the week in order when asked

Looks both ways when crossing streets or roads

Respects the right to personal privacy for self and others (for example, while using the restroom or changing clothes; not opening others mail)

Names a penny, nickel, dime, and quarter when asked, does not need to know the value of the coin

Says the current day of the week when asked

Understands that some items cost more than others (for example, might say "I have enough money to buy stickers but not a book"; "which pens cost less)

Knows what phone number to call in an emergency and how to make the call (for example, knows how to call 000 or an emergency contact)

Obeys traffic light and walk/don't walk signs when crossing streets or roads

Tells time using a digital clock or watch

Understands and follows community rules and laws (for example, rules and laws regarding littering, pet control, respecting others property etc.)

Makes calls to others using a phone, computer, or other electronic device

Knows the difference between bills of different values ($5, $10 etc.)

Understands signs or symbols used to indicate danger (for example, skull and crossbones for poison, circle with slash for "don't do")

Identifies a specific date (either the current date or another) on a calendar when asked

Says the value of a penny, nickel, dime, quarter when asked

Chooses to avoid dangerous or risky activities or situations (for example, walking in an unsafe area, jumping off high places, picking up a hitchhiker)

Makes small purchases at a store (for example, candy, stickers)

Combines coins to equal specific amount (for example, 87 cents)

Follows safety precautions in work and/or leisure activities (for example, wears safety equipment, uses caution when operating tools and machinery)

Watches or listens to TV or radio uses the internet to obtain current information (for example, news, weather report, traffic conditions)

Uses a clock to keep track of when to do something (for example, watch TV show, meet a friend)

Sets a short-term goal and achieves it (for example, completes all homework by Thursday night in order to have the weekend free)

Finds a needed phone number (for example, uses a contact list, the internet and a phone book)

Keeps personal belongings secure (wallet, purse, phone etc.) when away from home (for example, when shopping, eating out, or travelling)

Gets up on time when needed (For example, sets an alarm, arranges to be awakened)

Carries or stores money/debit card/credit card safely, without losing (for example, in a wallet, purse, or money belt)

Operates technologies to accomplish at least two kinds of tasks (for example, writing documents, school-related email, organising information, finding information on the internet)

Understands right to vote

Uses at least two social interaction technologies (for example, personal email, texting, social media, Skype; telephone calls don't count)

Checks change to make sure it is correct after buying something

Evaluates quality and price when deciding what to buy

Understands the right to begin or discontinue services (for example, telephone or internet services)

Understands the right to report legitimate problems with products, services, living situation, etc.

Notifies an appropriate person when he/she will be late or absent from school, work, an appointment, etc.

Sets a goal that can be done in six months or more and achieves it (for example, works and saves money to buy something expensive, gets in better physical shape)

Travels at least one mile to a familiar destination when needed (using public transportation, walking, biking, driving, etc.)

Has worked to earn money outside the home (for example, babysitting or yard work for a neighbour, having a job)

At a restaurant, gets seating, chooses what to order, places order, and pays for meal.

Understands the right to access records and information (for example, school or medical records, credit history)

Travels at least one mile to an unfamiliar destination when needed (using public transportation, walking, biking, driving, etc.)

Sets a long-range goal requiring two years or more and achieves it (for example, makes a sports or academic team, gets into college)

Uses a city, highway, bus, or electronic map (or GPS) to figure out how to reach a destination when needed

Buys groceries and household supplies when needed

Manages daily expenses responsibly (for example, meals, bus fares)

Uses a bank account responsibly (keeps money in the account, keeps tracks of the balance, doesn't overdraw, etc.)

Has held a job (10 hours or more per week) for at least one month

Uses a credit or debit card in his/her name responsibly (for example, rent, utilities)

Pays bills on time

Has held same job (10 hours or more) for at least one year

Looks at the face of parent or caregiver

Smiles in response to a smile or a friendly voice

Recognises family members or other significant people

Smiles or makes sounds when approached by a familiar person

Shows at least three different emotions (for example, happiness, sadness, surprise, fear)

Tries to interact with others (for example, smiles of makes noises at someone, reaches for someone)

Reaches for familiar person when that person holds out arms to him/her

Shows affection to familiar people (for example, touches, hugs, kisses, cuddles)

Shows interest in children the same age, other than brothers or sisters (for example, watches them, smiles at them)

Looks around from time to time to check that parent, caregiver, or other familiar person in nearby.

Identifies self while looking at own image in mirror or photo

Smiles in response to praise or compliments (for example, “Good Job,” “that’s a nice shirt”)

Imitates or ties to imitate parents or caregivers facial expressions (for example, when parent or caregiver makes a happy, sad, or surprised face

Recognises emotions in others (for example, might say “you look sad” or “Rachel is happy”)

Imitates relatively complex actions as they are being performed by another person (for example, shaving, putting on makeup, vacuuming, hammering nails)

Uses actions or words to show happiness, sympathy, or concern for other on own initiative (for example, hugs, holds hands, asks “are you okay?)

Tries to make friends with others his/her age (that is, shows particular interest in interacting with certain other children)

Says the relationship of family members to self (for example, “that’s my mom,” “he’s my brother”); simply calling parents Mom, Dad, or equivalent doesn’t count

Uses words to express own emotions (for example, “I’m happy,” “I’m scared,” “I don’t like him”)

Maintains culturally appropriate eye contact during social interactions

Answers politely when familiar adults make small talk (for example, if asked “how are you?” says “I’m fine” ; if told “you look nice,” says “thank you”)

Imitates relatively complex actions several hours after watching someone else perform them (for example, shaving, putting on makeup, vacuuming, hammering nails)

Speaks using a loudness, speed, and level of excitement that is appropriate for the conversation

Does things to try to please others on own initiative (for example, makes someone a card or gift, helps without being asked)

Has a best friend or a few good friends

Maintains an acceptable distance between self and others in social situations (for example, does not get too close to another person when talking)

Is a good friend: treats his/her friends fairly and with respect, is supportive, etc.

Talks with others about shared personal interests (for example, sports, TV shows, summer plans)

Maintains friendships over time (for example, has had the same good friend for over a year)

Recognises that the likes and dislikes of others can differ from his/her own (for example, might say “Kelly likes pizza, but I don’t”; “I liked that movie, but Gretchen hated it”)

Starts small talk when he/she meets people he/she knows (for example, says “How are you?”; “What’s up?”)

Chooses friends with good qualities: Friends who treat him/her with respect, are supportive, stay out of trouble, etc.

Moves easily from one topic to another in conversation when needed; does not “get stuck” on one topic

Talks with others without interrupting or being rude

Tells others what he/she is thinking and feeling instead of assuming that they know

Stays on topic in conversations when needed; does not digress

Responds positively to the good fortune of others on own initiative (for example, congratulates a friend who receives an award)

Gives cards and/or gifts to immediate family members on “special days” on own initiative

Will engage in activities suggested by friends, even if not preferred.

Starts conversations with others by talking about things that interest them (for example, “Tyrone tells me you like cars”)

Participates in conversations on a topic not of interest to him/her

Responds to hints or indirect cues in conversation (for example, knows that a yawn may mean “I’m bored,” an abrupt change of subject may mean “I don’t want to talk about that,” looking at the time may mean “I need to end this conversation”)

Provides additional explanation when needed in order for someone to follow what he/she is saying (for example, “in case you missed what I said…,” “What we were talking about was…”)

Responds when parent or caregiver is playful (for example, smiles, laughs, claps hands)

Shows interest in surroundings (for example, looks or moves around, touches objects or people)

Plays simple interaction games with others (for example, peek-a-boo, patty-cake)

Plays near another child, each doing different things

Copies the play of a child playing nearby with little or no interaction between the two

Plays interactively with one or more children for at least 5 minutes with someone older supervising

Chooses to join other children who are playing rather than watching them or playing alone

Uses common household objects or other objects for make-believe activities (for example, pretends a block is a car or a box is a house)

Shares toys or possessions when told to do so

Joins in with a group when verbal cues indicate that he/she is welcome

Plays interactively with one or more children for at least 30 minutes with someone older supervising

Protects self by moving away from those who try to hurt others or destroy things (those who bite, hit, throw things, smash things, etc.)

Plays simple make-believe activities with other children (for example, plays “dress-up), pretends to be superheroes)

Plays with others at simple outdoor group games with no score (for example, tag, jump rope, catch)

Seeks out others for play or companionship (for example, asks other to play or spend some time together)

Plays with other children with minimal supervision

Takes turns when asked while playing games or sports

Engages with other children in elaborate make-believe activities involving more than one role (for example, plays “school” or “restaurant,” enacts a TV show or movie)

Shares toys or possessions without having to be told to do so.

Joins in with a group when nonverbal curs indicate the he/she is welcome

Takes turns without having to be asked while playing games or sports

Plays with others at simple indoor or outdoor fames where the players keep score (for example, tic-tac-toe, kickball, card games)

Follows rules in games or sports without being told to do so

Plays with others at simple card or board games based only on chance (for example, Candyland, the card game “war”)

Refrains from entering a group when verbal cues indicate the he/she is not welcome

Asks permission before using things that belong to or are being used by another

Shows good sportsmanship in games or sports: plays fair, is not overly aggressive, congratulates winning players, does not act mean when he/she loses, etc.

Gets together with two or more peers at someone’s home

Refrains from entering a group when nonverbal cues indicate that he/she is not welcome

Goes places with peers during the day or evening with someone supervising (for example, shopping, a movie, a sports event)

Plays with others at two or more board, card, or electronic games requiring skill and decision making (for example, Monopoly, scrabble, poker, interactive video games)

Plans ahead to do things with peers on his/her own

Obtains schedule information for movies, sports events, concerts, etc. (for example, looks at a newspaper or on the internet, phones a movie theatre)

Goes places with peers during the day without someone supervising (for example, a shopping mall, park, community centre)

Plans fun activities with more than two things to be arranged (for example, birthday party, group outing)

Goes places with peers in the evening without someone supervising (for example, a concert, lecture, sports event, movie)

Seeks comfort from parent, caregiver, or other when hurt or upset

Looks or moves toward parent or caregiver when approached by an unfamiliar person

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Separates easily from parent or caregiver when left with another person (this is, does not have a temper tantrum, sulk, etc. when parent or caregiver leaves or attempts to leave)

Transitions easily from one activity to another

Responds politely when given something (this is, expresses thanks either verbally or nonverbally)

Is polite when asking for something (that is, uses please or an appropriate nonverbal gesture)

Handles changes in routine without becoming overly distressed

Recovers quickly from a minor setback or disappointment (for example, doesn't pout for long after losing a game or not getting something that he/she wants)

Uses words or gestures to express distress rather than screaming, hitting, throwing something etc.

Apologizes for small, unintentional mistakes (for example, burping, bumping into someone)

Acts appropriately when introduced to new people (for example, smiles, shakes hands, says "happy to meet you")

Requests help when encountering a problem beyond own capability to solve (for example, a computer problem, fixing something)

Changes behaviour intentionally depending on how well he/she knows another person (for example, acts more formally with someone new than with a friend or family member)

Accepts helpful suggestions or solutions from others

Apologizes with sincerity for hurting another's feelings

Copies appropriate behaviour of others when in new situation and unsure how to act

Is willing to compromise in order to get along with peers

Controls anger or hurt feelings when plans change for reasons that cant be helped (for example, an event cancelled die to bad weather, a trip postponed due to car trouble)

Follows time limits imposed by parent or caregiver (for example, amount of time allowed to watch TV, play a game, use the internet, or play outside)

Understands that when someone does or says something that hurts, it may be accidental rather than intentional

Adjusts behaviour to keep from disrupting other nearby (for example, is quiet near others who are working, listening to a show, etc.)

Controls anger or hurt feelings when he/she does not get his/her own way (for example, when not allowed to watch television or attend a party, when a suggestion is rejected by a friend or supervisor)

Keeps promises

Controls anger or hurt feelings when given constructive criticism (for example, correction of misbehaviour, discussion of a test score or grade, a performance review).

Understands that a friendly appearing person may actually intend harm

Respects others time (for example, doesn't keep others waiting or interrupt others who are busy)

When possible, avoids or leaves harmful relationships or situations (for example, being bullied, coerced into breaking the law, taken advantage of sexually or financially)

Avoids being manipulated, dominated, or taken advantage of by others

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Thinks through the consequences of his/her actions before acting (for example, refrains for acting impulsively, considers relevant information)

Obeys curfews (that is, comes home when he/she is told to, during the day or at night)

Is aware of and uses caution when encountering risky social situations (for example, internet solicitations, a strangers offer of a ride or money, “binge” drinking parties, social media, personal ads)

Informs parent or caregiver about his/her plans when he/she goes out (for example, what time he/she is leaving and returning, where he/she is going)

Recognises that advertising messages may not be accurate

Sits supported (for example, in a chair, with pillows, etc.) for at least 1 minute

Rolls over from back onto stomach

Sits unsupported for at least 1 minute

Moves, scoots, or crawls across the floor

Sits unsupported for at least 10 minutes

Stands holding on to a stable object for at last 5 seconds

Pulls self up to standing position

Stands supported with one hand and reaches for an object with the other hand without falling

Takes steps while supporting self using furniture or another stable object

Crawls up stairs

Stands unsupported for at least 1 minute

Takes at least two steps without support

Stands unsupported and reaches for an object without falling

Walks to get around; does not need to hold on to anything

Safely climbs on and off low objects (for example, child’s chair, step stool, low bench)

Goes down stairs by crawling backwards or scooting on bottom

Squats or bends down to pick up objects without falling

Throws a ball with one hand, accuracy not important

Safely gets on and off an adult-sized chair

Runs without falling; may be awkward and uncoordinated

Walks up stairs, putting both feet on each step; may use railing

Kicks a ball while standing; accuracy not important

Walks two or more blocks without having to rest or needing physical support

Walks down stairs, facing forward, putting both feet on each step; may use railing

Jumps off the ground with both feet without falling

Runs smoothly without falling

Safely climbs up and down high objects (for example, jungle gym, ladder tree)

Walks carefully on a sidewalk or road that is slippery or uneven

Jumps forward at least three times with both feet without falling

Runs smoothly, changing speed and direction (for example, when playing tag or sports, or chasing a pet)

Catches a beach ball-sized ball from a distance of 2 or 3 feet

Walks up stairs, alternating feet; may use railing

Walks down stairs, alternating feet; may use railing

Climbs up a flight of eight or more stairs at a normal pace; may use railing

Pedals a tricycle or other three-wheeled vehicle for at least 6 feet

Hops on one foot at least once without falling; may hold on to something for balance

Pedals a tricycle or other three wheeled vehicle around corners

Catches a beach ball-sized ball from at least 6 feet away.

Hops forward on one foot with ease without holding on (for example, during hopscotch)

Catches a tennis ball- or baseball- sized ball from a distance of 2 or 3 feet, using one or both hands extended away from body

Rides a balance bike or bicycle with training wheels for at least 10 feet

Catches a tennis ball from a distance of at least 10 feet, moving to catch it if necessary

Rides a regular bicycle without training wheels without falling

Reaches for a toy or object (how often does he/she reach to try to grab a toy or other object?)

Picks up objects; may use both hands (how does he/she pick up things like a toy or a ball?)

Moves an object from one hand to the other (What about moving an object from one hand to the other)

Removes an object (for example, a block or small toy) from a box or other container with no lid (How about taking something out of a box or other container?)

Picks up small objects (no larger than 2 inches on any side) with thumb and fingers (for example, raisins, heads, small blocks). (How does he/she pick up small objects?)

Picks up a small toy or object with one hand and hands it to someone without dropping it. (How does he/she pick up something small and hand it to someone?)

Puts an object (for example, a block or small toy) into a box or other container with no lid (How about putting something into a box or other container?)

Marks on paper with a crayon, pen, or pencil; method of grasping the crayon, pen, or pencil is not important. (What about making marks on paper with a crayon, pen or pencil)

Opens doors that require only pushing or pulling (for example, cabinet, refrigeratior, sliding or swinging doors) (What about opening doors that only need to be pushed or pulled like cabinet doors or sliding doors?)

Stacks at least four small blocks or other small objects; alignment need not be perfect, but the stack must remain upright (how many blocks or other small objects does he/she stack before they fall?)

Turn book or magazines one by one; books with cardboard pages don't count

Unwraps small objects (for example, gum or candy)

Opens doors by turning a doorknob or handle

Uses a twisting hand-wrist motion (for example, winds up a toy or music box, screws/unscrews the lid of a jar)

Holds a crayon, pen, or pencil in proper position (that is using a tripof grasp not with fist) for writing or drawing

Presses buttons accurately on a small keyboard or touch screen (for example on a calculator, cell phone or other handheld device)

Opens and closes scissors with one hand; does not have to cut with them

Draws a circle freehand while looking at an example

Colors simple shapes or animals; more colouring is inside the lines than outcomes

Draws more than one recognisable form (for example, a person, house, tree)

Pour liquid from one container to another with little or no spilling (for example, pouring milk or juice in a glass)

Draws a square freehand while looking at an example

Uses scissors to cut along a straight line across a standard sheet of paper

Draws a triangle freehand while looking at an example

Uses an eraser without tearing the paper

Cuts out simple shapes (circles, squares, rectangles, etc.)

Colours simple pictures with all colouring inside the lines

Colours a full page drawing or scene using two or more colours; all colouring is inside the lines

Draws a straight line using a ruler or straightedge

Ties a knot

Cuts out complex shapes (for example stars, animals, alphabet letters)

Ties a secure bow (for example, shoe laces, gift wrapping)

Manipulates very small objects (for example, sets hands on a watch, threads a sewing needles, glues miniature model parts)

Assembles, builds or creates complex building toy structures, model sets, homemade jewelry, arts and crafts, etc.

Is overly needy or dependent (for example, insists on help even when he/she does not need it, clings to parent or teacher)

Has eating problems (for example, overeats, refuses to eat, will only eat one of two things, hoards food)

Has sleep problems (for example, walks in his/her sleep, has a lot of nightmares, sleeps way more or less than others his/her age)

Refuses to go to school or work, or has to come home, because of worrying, sadness, nervousness, etc

Is extremely anxious or nervous

Cries or is sad for no clear reason

Avoids interacting with others (withdraws, prefers to be alone, etc.)

Lacks interest in doing things that he/she enjoys or used to enjoy

Is extremely fearful of one or more common objects or situations (for example, heights, snakes, elevators)

Worries for no clear reason

Is very irritable or moody

Feels helpless or hopeless (for example, says that things are bad and will never get better)

Complains of feeling sick, exhausted or in pain, even though there is no medical reason

Has temper tantrums: screams, cries, kicks etc

Disobeys those in authority

Bullies others physically or with words

Lies, cheats or steals

Is physically aggressive (for example, hits, kicks, bites)

Is stubborn or argues

Is verbally abusive (that is, hurts others on purpose with insults, put downs, etc)

Breaks rules or laws because of peer pressure

Is much more active or restless than others his/her age (for example, moves all the time, cannot sit still, fidgets)

Takes or uses school or work property when not allowed (for example, books, office supplies)

Destroys his/her own or someone else's possessions on purpose

Gets fixated on objects or parts of objects (for example, stares at spinning wheels or fan bladed, lines up objects, flips light switches over and over)

Talks about hearing voices that others do not hear or seeing things that others do not see

Harms himself/herself (for example, bangs his/her head, hits or bites self, cuts self, tears at skin, pulls out his/her hair).

Uses strange or repetitive speech (for example, has conversations with himself/herself in public, says things that make no sense, repeats the same thing over and over)

Loses awareness of what is happening around him/her (for example, seems to be "in a fog", "zones out").

Repeats physical movements over and over (for example, rocks back and forth, spins, flaps hands).

Has toileting accidents (that is, wets or soils self when not in diapers).

Eats non-food items such as dirt, paste or soap

Engages in compulsive behaviour (for example, repeated hand washing, repeatedly checking and rechecking something, other compulsive rituals)

Shows far more interest in weapons or extreme violence than others his/her age

Harms animals (for example, tortures or kills pets or wild animals)

Has beliefs that are not true (for example, believes he/she has a “true” identity or “special” powers, believes that others secretly want to cause harm)

Gets so fixated on a particular topic that it annoys others (for example, trains, reptiles, maps, subway systems)

Talks about killing himself/herself or has tried to kill self

Has no response to pain (for example, does not cry or seek help when cut, bruised or badly hurt)

Wanders, darts away or takes off from home, school or someone watching him/her without regard for safety

Threatens to hurt or kill someone

Is tricked by others into doing something that could seriously harm him or her or someone else

Gets fixated on a person in a way that is annoying or intrusive to that person

Engages in unwanted sexual behaviour (for example, unwanted comments, unwanted physical contact, exposing himself/herself, masturbating in public, having sex at school or work).

Appendix C – Caregiver Interview Questions

1. What do you feel are important considerations or characteristics in an assessment of functioning tool?

Repeat for each assessment:

Do you recall when we completed the [name of assessment] (show screen capture)?

The results from this assessment found [insert brief summary of findings].

2. What are your thoughts on hearing those results?

3. How well do you think this assessment tool accurately measured [name of young person within their care]'s actual challenges and abilities in everyday life? [initially ask as an open-ended question, then present scale]

1	2	3	4	5
Very inaccurately	Inaccurately	Neutral	Accurately	Very accurately

4. What did you like about this assessment tool?

5. What did you not like about this assessment tool?

6. Are there any improvements you can suggest for this assessment tool?

7. How easy to understand did you find this assessment tool? [present scale]

1	2	3	4	5
Very hard to understand	Hard to understand	Neutral	Easy to understand	Very easy to understand

8. How likely is it that you would recommend this assessment tool to a clinician? [present scale]

1	2	3	4	5
Very unlikely	Unlikely	Neutral	Likely	Very likely

Appendix D – Additional Psychometric Properties and Usability for Vineland-3

Reliability

Internal Consistency

Objective: Determine the internal consistency of the Vineland-3 *Parent/Caregiver Form* and Vineland-3 *Interview Form*.

Internal consistency is a type of reliability where the homogeneity of assessment items is established (Portney & Watkins, 2009). McDonald's Omega (ω) was used to calculate the internal consistency coefficients of the items included in the Vineland-3 (*Parent/Caregiver* and *Interview Form*s) domains and sub-domains (McDonald, 1999). The McDonald's Omega was chosen over the more frequently used Cronbach's Alpha, due to criticisms that psychological scales, such as the Vineland-3, violate the necessary assumptions of the coefficient alpha, specifically unidimensiality and specificity (Dunn et al., 2014). The magnitude of the internal consistency coefficient is described according to the following categories (Cicchetti, 1994):

- Below .70 = unacceptable (pink)
- Between .70 to .79 = fair (orange)
- Between .80 to .89 = good (light green)
- Above .90 = excellent (dark green).

Item level data were extracted from the Q-global software for all Assessment 1 and 2b cases into two separate Microsoft Excel files, and excluded cases were deleted. Irrelevant variables were deleted prior to importing into R for analysis. Variable labels exported with the spreadsheet identified the associated domain.

The Vineland-3 uses start points, along with basal and ceiling rules, that change the items completed for each examinee and reduces the number of valid cases for analysis. Consequently, McDonald's Omega could not be calculated for the composite score of either the *Parent/Caregiver* or *Interview Form*s, nor for any of the domains. It was possible to calculate McDonald's Omega in relation to the Vineland-3 *Parent/Caregiver Form* (Assessment 1) for the sub-domains, apart from

the Communication – Written and Daily Living Skills – Community sub-domains (Table 42). In relation to the Vineland-3 *Interview Form* (Assessment 2b), it was possible to calculate McDonald's Omega for all sub-domains, apart from Communication – Written, although some of the standard errors were greater than 0.05 (Table 43). The McDonald's Omega coefficients indicate good to excellent internal consistency for the included sub-domains for the *Parent/Caregiver Form* (Assessment 1) and unacceptable to excellent internal consistency for the included sub-domains for the *Interview Form* (Assessment 2b). Please note that the number of items that were utilised for the McDonald's Omega calculations represented a relatively small proportion of the overall question bank.

Table 42. Internal Consistency Results for the Assessment 1 *Vineland-3 Parent/Caregiver Form* Sub-domains for the Full NDC Sample

Domain / Subdomain	Sample Size	No. Items	McDonald's Omega	Lower CI	Upper CI	Standard Error	Mean#	Standard Deviation#
Adaptive Behavior Composite	136	0	Not able to calculate				0.96	0.78
Communication	136	0	Not able to calculate				1.05	0.82
Receptive	136	17	0.92	0.89	0.94	0.01	1.13	0.75
Expressive	136	11	0.94	0.92	0.95	0.01	10.9	0.81
Written	136	0	Not able to calculate				0.92	0.90
Daily Living Skills	136	0	Not able to calculate				0.89	0.80
Personal	136	13	0.90	0.85	0.92	0.02	1.05	0.80
Domestic	136	13	0.89	0.85	0.91	0.02	0.69	0.72
Community	136	0	Not able to calculate				0.84	0.82
Socialization	136	0	Not able to calculate				0.96	0.73
Interpersonal Relationships	136	31	0.91	0.88	0.93	0.01	1.01	0.73
Play	136	22	0.93	0.91	0.95	0.01	0.95	0.75
Coping	136	28	0.92	0.89	0.94	0.01	0.90	0.70
Motor Skills	93	0	Not able to calculate				1.24	0.81
Gross Motor	93	8	0.81	0.64	0.88	0.05	1.32	0.78
Fine Motor	93	9	0.85	0.79	0.90	0.03	1.17	0.82

Maladaptive Behavior	131	0	Not able to calculate				0.66	0.76
Internal	131	13	0.88	0.85	0.90	0.01	0.91	0.78
External	131	11	0.85	0.79	0.88	0.02	0.71	0.76
Critical	131	20	0.85	0.81	0.88	0.02	0.46	0.69

Note. Below .70 = unacceptable (pink); Between .70 to .79 = fair (orange); Between .80 to .89 = good (light green); Above .90 = excellent (dark green).

Table 43. Internal Consistency Results for the Assessment 2b *Vineland-3 Interview Form* Sub-domains for the Full NDC Sample

Domain / Subdomain	**Sample Size**	**No. Items**	**McDonald's Omega**	**Lower CI**	**Upper CI**	**Standard Error**	**Mean#**	**Standard Deviation#**
Adaptive Behavior Composite	100		Not able to calculate				0.95	0.89
Communication	100		Not able to calculate				1.11	0.90
Receptive	100	23	0.87	0.45	0.92	0.09	1.22	0.85
Expressive	100	11	0.91	0.88	0.93	0.01	1.14	0.88
Written	100	0	Not able to calculate				0.94	0.94
Daily Living Skills	100		Not able to calculate				0.87	0.90
Personal	100	14	0.87	0.81	0.90	0.02	1.04	0.89
Domestic	100	16	0.80	0.38	0.88	0.09	0.68	0.85
Community	100	2	0.41	0.27	0.59	0.08	0.83	0.91
Socialization	100		Not able to calculate				0.91	0.86
Interpersonal Relationships	100	21	0.86	0.81	0.90	0.02	0.98	0.87
Play	100	14	0.84	0.76	0.89	0.04	0.92	0.88
Coping	100	22	0.87	0.78	0.91	0.05	0.81	0.83
Motor Skills	55		Not able to calculate				1.35	0.87
Gross Motor	55		0.86	0.18	0.95	0.19	1.44	0.85
Fine Motor	55		0.92	0.87	0.95	0.02	1.27	0.88

Maladaptive Behavior	99		Not applicable				0.66	0.78
Internal	99	13	0.79	0.71	0.85	0.04	0.94	0.82
External	99	11	0.83	0.74	0.87	0.03	0.62	0.74
Critical	99	20	0.73	0.52	0.81	0.07	0.49	0.72

Note. Below .70 = unacceptable (pink); Between .70 to .79 = fair (orange); Between .80 to .89 = good (light green); Above .90 = excellent (dark green).

Alternate Forms Reliability

Objective: Determine the alternate forms reliability of the Vineland-3 *Parent/Caregiver Form* with the Vineland-3 *Interview Form*.

Alternate forms reliability is concerned with determining the equivalence of two or more versions of an assessment (Portney & Watkins, 2009). The Vineland-3 *Parent/Caregiver* and *Interview Form*s were compared statistically using correlation coefficients (Pearson's *r*, 2-tailed) and paired t-tests (Portney & Watkins, 2009). Agreement between the two forms was also explored through comparing if classifications remained consistent within the same manual and NDIS impairment category. The magnitude of the correlation coefficient is described according to the following categories (Portney & Watkins, 2009):

- Below .50 = poor (pink)
- Between .50 to .75 = moderate (orange)
- Above .75 = good (green, this also represents non-significant t-values).

Alternate forms reliability between the Vineland-3 *Parent/Caregiver* and *Interview Form*s was explored statistically (Table 44) using 31 – 52 assessments completed during Assessment 1 and Assessment 2b (mean = 26 days later). All correlation coefficients were significant and moderate to good, ranging from 0.52 – 0.83. Results from t-tests showed no statistically significant difference in means for the Daily Living Skills and Motor Skills domains. However, the Adaptive Behavior Composite, and Communication and Socialization domain scores were significantly lower when measured with the *Interview Form*, indicating that this administration type specifies a greater level of impairment than the self-report *Parent/Caregiver Form*. There was a significant but small difference for the Maladaptive Behavior (Internalizing and Externalizing) domains, with less concern associated with the scores in the *Parent/Caregiver Form*. Limits of agreement showed a wide range of differences between scores, in particular for the Communication, Daily Living Skills, Socialization and Motor Skills domains, where the range exceeded three standard deviations on the norm-referenced scale. Scatter and Bland-Altman plots (Figure 4) visually demonstrates a systematic bias in measurement error between the two forms that is related to the magnitude of the scores for the Adaptive Behavior Composite, Communication, Daily Living Skills and Socialization domains.

Further analyses investigated whether impairment classifications were consistently assigned when administered via the two forms of the Vineland-3. These data are presented in Tables 45-54, with

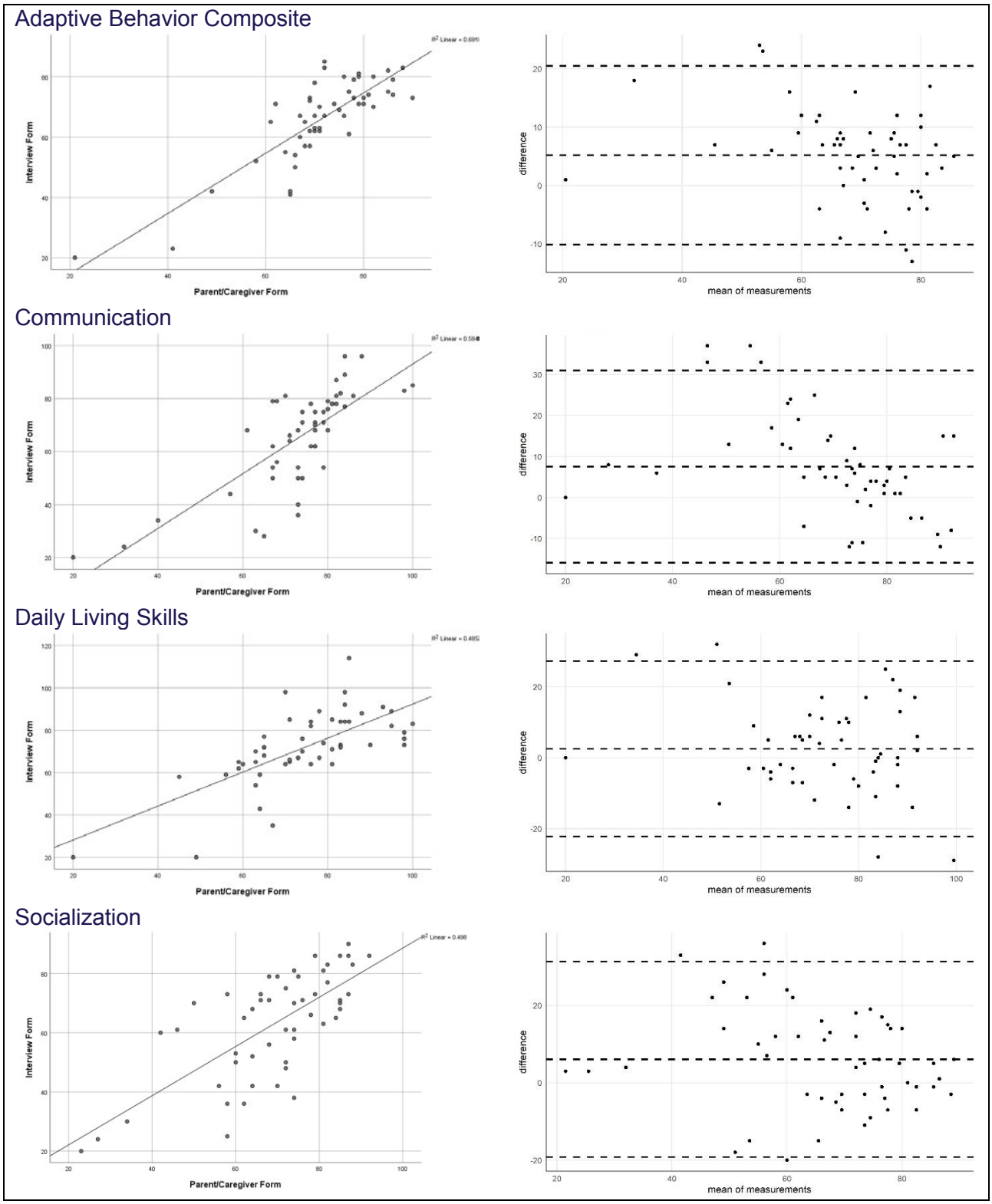
the Maladaptive Behavior domains described separately. There was 54-71% agreement in assigning categories according to the manual (Tables 45-49), with 8-15% with a lower level of functioning according to the *Parent/Caregiver Form* and 19-35% with a lower level of functioning according to the *Interview Form*. When the results were compared using the larger number of categories suggested by the NDIA (Tables 50-54), there was 27-52% agreement in assigning categories, with 10-23% with a lower level of functioning according to the *Parent/Caregiver Form* and 35-52% with a lower level of functioning according to the *Interview Form*. The Maladaptive Behavior domains have different qualitative descriptors, with only three categories outlined in the manual: Average (1 to 17), Elevated (18 to 20) and Clinically Significant (21 to 24). Given the nature of the items contained within the Maladaptive Behavior domains it was not deemed appropriate to consider other categories beyond those provided in the manual. There was 67-78% agreement in assigning Maladaptive Behavior domain categories according to the manual (Tables 55-56), with 0-8% of cases identified as having more concerns according to the *Parent/Caregiver Form* and 22-25% of cases with more concerns according to the *Interview Form*.

Table 44. Pearson Correlations, Paired T-Tests and Limits of Agreement between Vineland-3 *Parent/Caregiver* and *Interview Form*s for the Full NDC Sample

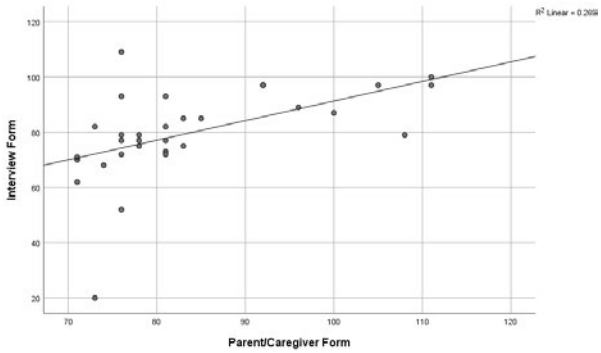
		Pearson Correlations	Dependent T-Tests (Paired Samples)			95% Limits of Agreement (LOA)		
Domain	***n***	***r***	**T-Value**	**Mean Form**	**Mean Interview**	**Mean Difference**	**Lower LOA**	**Upper LOA**
Adaptive Behavior Composite	52	0.83**	4.98**	71.60	66.23	5.37	-9.88	20.61
Communication	52	0.76**	4.79**	73.67	65.81	7.87	-15.35	31.09
Daily Living Skills	52	0.70**	1.47	74.44	71.85	2.60	-22.36	27.56
Socialization	52	0.71**	3.45**	69.23	63.02	6.21	-19.24	31.66
Motor Skills	31	0.52**	1.52	83.68	79.71	3.97	-24.60	32.54
Maladaptive Behavior (Internalizing)	51	0.81**	-5.86**	20.75	21.63	-0.90	-3.06	1.25
Maladaptive Behavior (Externalizing)	51	0.79**	-3.07**	19.04	19.65	-0.65	-3.60	2.31

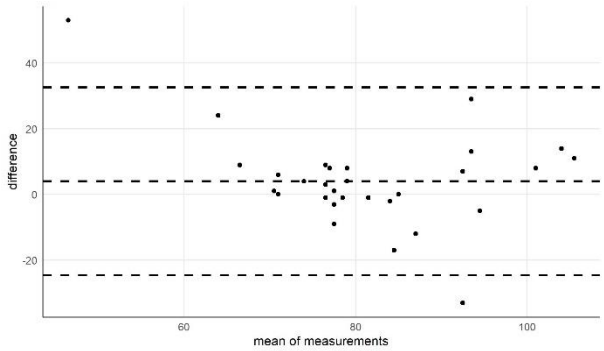
**Correlation is significant at the 0.01 level (2-tailed).
Note. Between .50 to .75 = moderate (orange); Above .75 = good (green); Non-significant t-values indicate no difference (green).

Figure 4. Correlation Scatter Plots (Left) and Bland-Altman Plot with 95% Limits of Agreement (Right) between Vineland-3 *Parent/Caregiver* Form and *Interview Form* for the Full NDC Sample

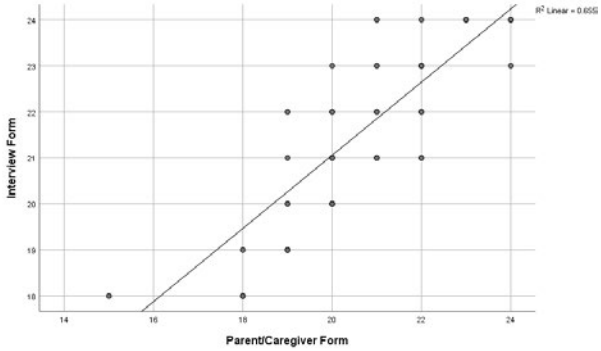


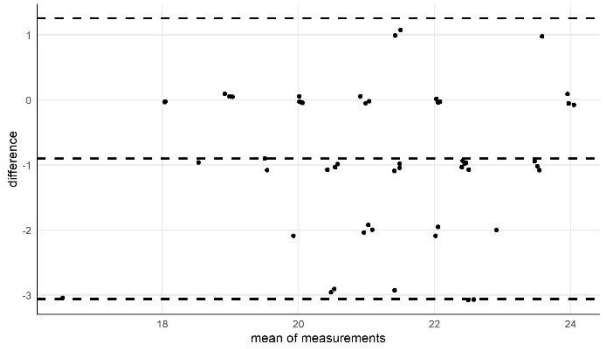
Motor



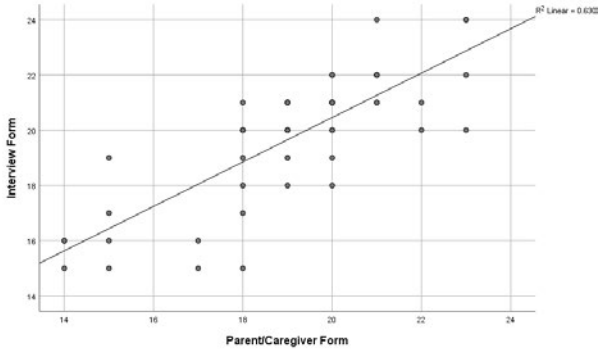


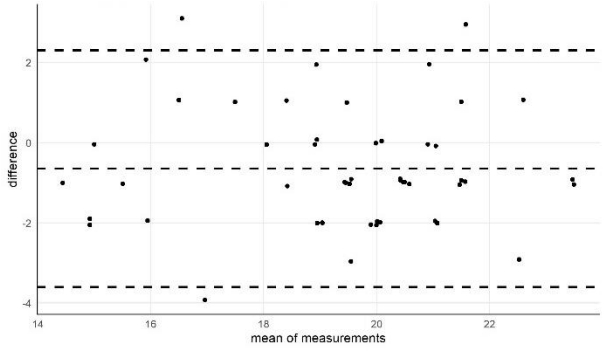
Maladaptive Behavior (Internalizing)





Maladaptive Behavior (Externalizing)





Tables 45-54. Classification Comparison between the Vineland-3 *Parent/Caregiver Form* and *Interview Form* for the Full NDC Sample for the Various Domains According to the Categories Described in the Manual (Left) and the Categories Used by the NDIA (Right)

Table 45. Vineland-3 Adaptive Behavior Domain – Manual Categories

		Interview Form					
		High	Moderately High	Adequate	Moderately Low	Low	Total
Parent/Caregiver Form	High	0	0	0	0	0	0
	Moderately High	0	0	0	0	0	0
	Adequate	0	0	0	4	0	4
	Moderately Low	0	0	0	17	8	25
	Low	0	0	0	4	19	23
	Total	0	0	0	25	27	52

Note. 69% = Consistent Categories; 8% = Inconsistent Categories - Lower level of functioning according to Parent/Caregiver Form; 23% = Inconsistent Categories - Lower level of functioning according to Interview.

Table 46. Vineland-3 Communication Domain – Manual Categories

		Interview Form					
		High	Moderately High	Adequate	Moderately Low	Low	Total
Parent/Caregiver Form	High	0	0	0	0	0	0
	Moderately High	0	0	0	0	0	0
	Adequate	0	0	1	3	0	4
	Moderately Low	0	0	3	16	15	34
	Low	0	0	0	3	11	14
	Total	0	0	4	22	26	52

Note. 54% = Consistent Categories; 12% = Inconsistent Categories - Lower level of functioning according to Parent/Caregiver Form; 35% = Inconsistent Categories - Lower level of functioning according to Interview.

Table 50. Vineland-3 Adaptive Behavior Domain – NDIA Categories

		Interview Form					
		Above 1.49 *SD* Below	1.50-1.99 *SD* Below	2.00-2.49 *SD* Below	2.50-2.99 *SD* Below	3 *SD* Below or Less	Total
Parent/Caregiver Form	Above 1.49 *SD* Below	7	8	1	0	0	16
	1.50-1.99 *SD* Below	3	3	5	2	0	13
	2.00-2.49 *SD* Below	1	2	4	5	5	17
	2.50-2.99 *SD* Below	0	1	1	0	1	3
	3 *SD* Below or Less	0	0	0	0	3	3
	Total	11	14	11	7	9	52

Note. 33% = Consistent Categories; 15% = Inconsistent Categories - Lower level of functioning according to Parent/Caregiver Form; 52% = Inconsistent Categories - Lower level of functioning according to Interview.

Table 51. Vineland-3 Communication Domain – NDIA Categories

		Interview Form					
		Above 1.49 *SD* Below	1.50-1.99 *SD* Below	2.00-2.49 *SD* Below	2.50-2.99 *SD* Below	3 *SD* Below or Less	Total
Parent/Caregiver Form	Above 1.49 *SD* Below	13	5	1	0	1	20
	1.50-1.99 *SD* Below	1	4	5	3	5	18
	2.00-2.49 *SD* Below	3	0	0	2	4	9
	2.50-2.99 *SD* Below	0	0	1	0	1	2
	3 *SD* Below or Less	0	0	0	0	3	3
	Total	17	9	7	5	14	52

Note. 38% = Consistent Categories; 10% = Inconsistent Categories - Lower level of functioning according to Parent/Caregiver Form; 52% = Inconsistent Categories - Lower level of functioning according to Interview.