

Cross-Cultural Adaptation and Psychometric Properties of the Greek Vineland Adaptive Behavior Scales, Second Edition: Parent/Caregiver Rating Form (VABS II-Gr)

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Abstract

Background: Vineland adaptive behavior scales-parent/caregiver rating form (VABS II) is a questionnaire used to examine adaptive behavior in individuals, whose age ranges from birth to 90 years old. The purpose of this study was to translate and assess the psychometric properties of the Greek version VABS II-parents/caregiver, in children. **Method:** Three samples of participants within the ages 5 - 10 years were analyzed; including two groups of developmental disorders (N = 116) and control group (N = 90). The questionnaire was translated into Greek by two bilingual translators. The pre-final version was pilot tested in 30 mothers of typical and atypical development children, aged 3 - 10 years. The final version was submitted in 206 subjects, twice, in different ways for reliability testing. A split-half reliability test was employed for the reliability of scores for two halves of the test, to evaluate the reliability and internal consistency, of the VABS II-Gr. The spearman-brown formula was used to determine correlations between the domains. A known-group method was utilized, to estimate construct validity, exploring the differences between the two groups. **Results:** Across the age groups, overall, the domain reliability estimates are quite high, with a value of .83 to .95. Equivalence reliability (correlation) was found to be excellent ($r = .90$). **Conclusion:** The Greek version of VABS-II is an appropriate scale for assessing adaptive

behaviors in a Greek context, as it meets the standard of the original version of VABS. This scale was found to be acceptable, understandable, valid and reliable by Greek parents and may thus be used in cross-cultural clinical practice and research.

Keywords

Adaptive Behavior, Children, Developmental Disorders, Reliability, Psychometric Properties, Cross-Cultural Adaptation, Vineland II (VABS II)

1. Introduction

Adaptive behavior is regularly used to measure the daily functioning of the individual (Nash, Rounds, & Bowen, 1992). Adaptive skills are clearly very important for the functioning of persons with Developmental Disorders, Autism Spectrum Disorder (ASD) and Intellectual Disability (ID), reflecting limitations in the areas of intellectual or cognitive testing (Carpentieri & Morgan, 1996; Dacey, Nelson, & Stoeckel, 1999; Sparrow, Balla, & Cicchetti, 1984; Sparrow, Cicchetti, & Balla, 2005). According to DSM-5 (American Psychiatric Association, 2013), impairments in the field of adaptive behavior are incorporated in the definition of intellectual disability. Adaptive behavior is considerably crucial for the diagnostic process (e.g., as a core criterion for the diagnosis of ID), and for determining the therapeutic and research planning.

The present report studies the VABS II (Sparrow et al., 2005) which is a popular assessment form, measuring the adaptive behavior of individuals whose age ranges from 0 to 90 years old. The form is directly completed by the parents/caregivers, but no interviewing is required.

Comprehensive assessment of adaptive skills is an important element in the diagnosis and treatment of almost all individuals with developmental or intellectual disabilities or other mental health conditions. By using a standardized adaptive skills measurement tool, such as the VABS, clinicians are equipped with a means of gathering information about the individual's functioning in several domains. This allows the individual's strengths and weaknesses to be identified while guiding the assessment and treatment process, as well as measuring change. However, due to the distinctive characteristics of some diagnostic categories the application of the questioner might be discouraged. For example, in the case of subjects with ASD, who face difficulties in the area of communication, social interactions, transitions from one situation to another and general motivation, it is often difficult to obtain assessment data using traditional tests (Minshawi, Ashby, & Swiezy, 2009).

The assessment of adaptive behaviour, with a measurement tool such as the VABS, is also useful for students with an average intelligence quotient (IQ). A student may have an average IQ and do well academically, but have deficits in communication, daily living skills and socialization, as is the case of individuals

with developmental disabilities, so a tool that assesses adaptive behavior is necessary (Lee & Park, 2007; Myles et al., 2007). Moreover, adaptive behavior is a critical area of intentional planning for individuals who have developmental disabilities, facilitating the transition from school to work and community settings (Klin & Volkmar, 2000).

VABS can also be used to examine adaptive behavior which secondarily signals the quality of daily performance in terms of coping with environmental needs (American Association on Intellectual and Developmental Disabilities, 2013).

Finally, VABS II (Sparrow et al., 2005) is particularly useful in assessing abilities in ASD, where accurate assessment of intelligence using standardized instruments is difficult both because of the unique social and communication difficulties that these children encapsulate and of the behavioral problems that might be present as a comorbidity (Manohari, Raman, & Ashok, 2013).

The previous edition of Vineland Adaptive Behavior Scales (VABS), (Stinnett, Harvey, & Oehler-Stinnett, 1994) was considered valid for the accurate discrimination of performance deficits in the area of daily living skills (Altman & Mills, 1990; Douhitt, 1992; Rosenbaum et al., 1995; Stinnett, Harvey, & Oehler-Stinnett, 1994; Voelker et al., 1990). The validity and reliability of VABS, (Sparrow et al., 1984) validity and reliability was high, for the assessment of the individual's adaptive behavior since it was first published in 1984 (Balboni et al., 2001; DeBildt et al., 2005; Freeman, Del'Homme, Guthrie, & Zhang, 1999) is high. The instrument, originated from the revision of the Vineland Social Maturity Scale (VSMS) published by Doll (1936). It was then revised for second time, leading to its second edition, VABS II (Sparrow et al., 2005). VABS II, is considered sufficiently reliable and valid and it has been widely used for measuring the adaptive skills of children and adults in a variety of developmental and chronic mental health conditions (Sikora et al., 2012).

Most of the studies, have used the Survey Interview Form instead of using the parent/carer form. However, the two Survey Forms namely the Survey Interview Form and the Parent/Caregiver Rating Form, have identical content, but a relatively different form of administration (Sparrow et al., 2005). Comparability analysis among these forms revealed that: 1) the two forms have equal raw score means and standard deviations across age groups, 2) the two forms produce equally reliable measures of performance, 3) scores from the two forms are highly correlated and 4) individual items serve similar functions on the two forms (Sparrow et al., 2005). Part of this analyses was conducted using a sample of 760 individuals who had been assessed under both, the semi-structured interview method and the rating method. The other part relied on the entire standardization sample. VABS II, Parent Caregiver Rating Form, is completed by parents as a gradation-likert type scale. This alternative process is chosen when there is limited time or restricted access. VABS II, can also be used for research purposes because of its adequate psychometric properties (Burack & Volkmar, 1992; Krai-

jer, 2000; Paul et al., 2004; Volkmar et al., 1987).

The overall structure of the questioner includes three main domains: 1) Communication, 2) Daily Living Skills and 3) Socialisation, which correspond to the three general areas of adaptive functioning, defined by the American Association of Intellectual and Developmental Disabilities, (2013) which are the conceptual, practical and social domains. Additionally, there is a further domain, the Motor Skills Domain, which accesses the Gross and Fine Motor Skills, in children up to six years old and also important criteria for the Maladaptive Behavior that provides more in depth information for children over five years old.

More in detail, the questionnaire includes four individual domains that are defined as: 1) Communication, 2) Daily Living, 3) Social Skills and Relationships and 4) Physical Activity. Each domain is divided into several sub-domains (see **Table 1**). The optional Maladaptive Behavior is divided into two parts, A) Problem Behaviors Part 1 (Domain A, Domain B, Domain C) and B) Problem Behaviors Part 2 (Domain D). While the age range of the VABS II, is 0 - 90 years old, the Motor Planning norms are only available for children under six years old. VABS II (Sparrow et al., 2005), includes 433 questions in total and it requires 20 - 60 minutes to be completed.

The scores are calculated separately for every item and are then transferred in a Standard score and a Composite score, for the Adaptive Behavior Composite (a mean of 100 and standard deviation of 15). Since the standard deviation is 15, scores that range from minus-plus 15 that is 85 to 115 are considered normal. Scores ranging from 70 and below correspond to a range of limited ability (lower scores and grades = greater limitation). The interpretation of the scores, reflect

Table 1. Domain and subdomain of the adaptive behavior-VABS II-parents/caregiver rating form.

Domain	Subdomain
Communication	Listening and Understanding
	Talking
	Reading and Writing
Daily Living	Caring for Self
	Caring for Home
	Living in the Community
Social Skills and Relationships	Related to Others
	Playing and Using Leisure Time
	Adapting
Physical Activity	Using Large Muscles
	Using Small Muscles
Problem Behaviors Part 1	Section A
	Section B
	Section C
Problem Behaviors Part 2	Section D

(Sparrow et al., 2005).

every separate sector and the total adaptive behavior score (every separate sector receives a score that can be combined for a total Adaptive Behavior Composite score). These are the Standard scores with mean = 100 and standard deviation = 15 ($M = 100$; $SD = 15$), in percentage, levels of adaptation and age equivalents. Subdomains, include V-scale scores ($M = 15$, $SD = 3$), adaptive levels, age equivalents.

According to the Sparrow et al. (1984) standardization sample, the internal-consistency reliabilities and test-retest reliabilities of the VABS document is good, while the interrater reliabilities are adequate. Eleven clinical groups were composed, and data were collected as evidence for the validity of the VABS II in identifying adaptive behavior deficits in population with developmental disorders. These studies support the excellent psychometric properties of VABS II (Sparrow et al., 2005; DeBildt et al., 2005). The standardization of VABS-II Parent/Caregiver Rating Form, commenced in March 2003 and finished in October 2004 Sparrow et al. (2005: p. 89), using a norm sample of 3.695 individuals (from a pool of over 25.000 individuals), ages ranged from birth to 90 years old, and it was administered in 242 areas, in 44 different cities in Columbia District.

The psychometric properties of the VABS II Parent/Caregiver Rating Form, (Sparrow et al., 2005), are excellent. Reliability refers to the dependability or reproducibility of test scores. The reliability of this specific questioner was controlled through three methods: First, with the Consistency reliability test, that is the split-half method, for every domain and subdomain and for the overall adaptive behavior, in each of the 20 age groups. Second, with the Test-Retest reliability: that is the consistency of scores obtained at different times from the same respondent using the same administration method in its four age ranges. Third, with the interrater reliability: that is the consistency of scores obtained by the same method and examiner, but from different respondents who may have different levels of familiarity with the individual's behavior, in four age ranges (Sparrow et al., 2005).

2. Method

The Cross-Cultural adaptation of the Vabs II (Parent/Caregiver Rating Form) (VABS II), (Sparrow et al., 2005) in the Greek Language, followed the standardized process that is proposed by the International Society for Quality of Life Assessment (Beaton et al., 2000).

Translation of the VABS II

The methodology that informed the cross-cultural adaptation was split into two different stages: During the first stage the questioner was translated from its original language, that is English into the Greek Language. The Greek translation was conducted by two bilingual translators, that had an excellent knowledge of the English dialect. The first translator (1) and the second one (2) created two Greek versions of the questionnaire that is (T1) and (T2) and they both completed a separate report acknowledging the problems faced during the transla-

tion process (see **Table 2**).

In the second stage, both translators discussed and combined the results of the translation. Within this process, the translators had to overcome their initial differential viewpoints until they reached a final version for their translation. They then settled to a final common version which was labeled T12.

In the third stage of the back translation, the synthesis of the initial translation was again transferred into English. The three translators then went over their initial disagreements among the first questionnaire and the T12 and then issued a semi-finalized edition. The third stage was followed by another one where a pilot study occurred administering the questioner into a relatively small sample of volunteers.

Pilot Study 1. The semi-final edition of the VABS II Parent/Caregiver Rating Form, was implemented in the pilot group A composed of 30 individuals. The questionnaire was administered in 20 mothers of children with typical development and 10 mothers with children with several developmental disabilities such as children with autism spectrum disorders (ASD), Down syndrome (DS), Learning disabilities, attention deficit hyperactivity disorder (ADHD), from different social and economic backgrounds (see **Table 3**). The sample was comprised of children aged from 3 - 10 years old (see **Table 4**). This way, the finalized format of the questionnaire was composed. Furthermore, this strategy allowed for securing issues of comprehension that was made apparent during this stage. The main goal of this stage was that further information could be collected by the examiner with regards to the comprehension of the individual questions by the respondents.

Table 2. Problems during the translation process of the VABS II.

Domain	Subdomain	Question	Original	Greek translation
Communication	Talking	36	Uses regular past tense verbs (for example, “walked”, “baked”, etc.) may use irregular past tense verbs ungrammatically (for example, I runned away” etc.)	Χρησιμοποιεί ρήματα στον αόριστο (π.χ. περπάτησα, έψησα κτλ.), χωρίς το δεύτερο μέρος ότι “χρησιμοποιεί ανώμαλα ρήματα ακόμη και αν δεν είναι σωστά γραμματικά”
Communication	Talking	38	Pronounces words clearly without sound substitutions (for example, does not say “wabbit” for “rabbit”, “Thally” for Sally”, etc.	Προφέρει τις λέξεις καθαρά χωρίς αντικαταστάσεις (π.χ. δε λέει “τλώω” αντί “τρώω”, “φάλασσα” αντί “θάλασσα”, “βώρο” αντί “δώρο” κτλ.
Communication	Talking	50	Uses irregular plurals correctly (for example, children, geese, mice, women, etc.)	Χρησιμοποιεί σωστά ανώμαλους πληθυντικούς (π.χ. γιαγιά-γιαγιάδες, πατέρας-πατεράδες, αλεπού-αλεπούδες, μαϊμού-μαϊμούδες κτλ.
Communication	Reading and Writing	7	Prints at least three simple words from example, (for example, cat, see, bee, etc.)	Γράφει τουλάχιστον τρεις απλές λέξεις, όταν του δίνεται ένα παράδειγμα (π.χ. γάτα, μήλο, νερό, κότα κτ.λ.)
Επικοινωνία	Reading and Writing	10	Prints at least 10 simple words from memory (for example, hat, ball, the, etc.)	Γράφει από μνήμης τουλάχιστον 10 απλές λέξεις (π.χ. το, και, τόπι, γάλα κτλ.)

Table 3. Demographic characteristics of child participants in the process of the semi-final greek version of VABS II, understanding.

A/A	Age Year/month	Child's gender N (30)		Typical Development (TD) Atypical Development
		Boys (B) = 18,	Girls (G) = 12	
1	3.2	B		TD
2	3.5	G		TD
3	3.8	B		Down Syndrome
4	4.4	G		TD
5	4.5	B		TD
6	4.8	G		TD
7	5	B		ASD
8	5	B		ASD
9	5.3	G		TD
10	5.3	B		TD
11	5.4	B		TD
12	5.8	B		TD
13	6.2	B		TD
14	6.3	G		TD
15	6.10	B		TD
16	7.1	G		TD
17	7.3	B		Learning Disabilities
18	8	B		High Functioning ASD
19	8.3	G		TD
20	8.3	B		ASD
21	8.4	G		TD
22	8.8	B		TD
23	8.7	B		Down Syndrome
24	9	B		TD
25	9.5	G		TD
26	9.5	B		ADHD
27	9.11	G		Learning Disabilities (Dyslexia)
28	10	B		High Functioning ASD
29	10.1	B		TD
30	10.3	G		TD

Table 4. Participant's (Mothers') education level for understanding process.

Caregivers	Mothers' education level				
	Primary Education	Secondary Education	Technical school	Vocational education and training	Higher Education
N(30)	1	8	1	6	14

A specialized computer software was utilized for scoring the VABS II Parent/Caregiver Rating Form result, was conducted by the use of a specialized computer software the Vineland-II Assist-TM (Scoring and Reporting System), which is a specialized tool for scoring and reporting. The software processes the raw scores of the subdomain, or the individual scores and converts them into derivative results (Sparrow et al., 2005). In the next stage the processed results were inserted in the SPSS 20, for statistical analysis.

Equivalence Reliability

Pilot Study 2. The Equivalence Reliability control was conducted with no separate administration styles, for collecting VABS II data, in 30 parents of children representing three groups of parents. The first group consisted of 10 parents of children with ASD, the second group consisted of 10 parents of children with DS and the final group consisted of 10 parents with typical developing children. The data sampling was then piloted in two manners. The parents received the questionnaire and completed them while being isolated. They thereafter repeated the process two weeks later over the presence of the researcher, following a personal appointment which offered a series of separate actions such as: interviews, questions, queries and further explanations (Limperopoulos, Majnemer, Steinbach, & Shevell, 2006).

Construct Validity

The questionnaires construct validity, was investigated according to the known group's method, which contains the comparing of the participants (Galanis, 2013).

Internal Consistency reliability

The Internal Consistency reliability of the VABS II Parents/Caregiver Rating Form was also tested for reliability and Internal Consistency across all domains, with the split-half method, corresponding for its specific age range. The Spearman-Brown formula was also used to determine correlations of the domains, like Sparrow et al. (2005) for the specific rating form.

3. Results

The most pressing issues that occur during the translation phase were in the "Communication" domain: In the subdomain of "Talking", question 36, the translation was: "Χρησιμοποιεί ρήματα στον αόριστο (π.χ. περπάτησα, έψησα κτλ.)", without the second part "χρησιμοποιεί ανώμαλα ρήματα ακόμη και αν δεν είναι σωστά γραμματικά (for example, I runned away" etc.), because there is no equivalent grammatical phenomenon in the greek language. Similarly in the question 38, in the same subdomain, these words were substituted following a consultation with greek speech therapists, considering aspects of phonological awareness.

In the 50 questions in the same subdomain, speech pathologists and special education teachers advised that the above words be substituted with words indicating "inconsistence" plural existing in the Greek dialect. The next two ques-

tions that were again considered by both first level special education and typical education teachers were on the subdomain entitled “Reading and Writing”. Specifically, in question number 7, the greek adaptation of the words (cat, see, bee, etc) was as indicated: “π.χ. γάτα, μήλο, νερό, κότα κτλ.”. Also in question number 10, (for example, hat, ball, the, etc.), the Greek word adaptation was: “π.χ. το, και, τόπι, γάλα κτλ.”. This is analytically represented in **Table 2**.

The demographical characteristics of the participating children are shown in **Table 3**. 10 questioners were provided in the mothers of children with developmental disabilities. Three of the questioners were issued for boys with ASD, two questioners for boys with Asperger Syndrome, two questioners for boys with DS, one questioner for a nine-year-old boy with ADHD, one questioner for a seven year old boy with learning difficulties and the last questioner for a ten year old girl with dyslexia.

The educational level of the participating mothers (in the Greek VABS II) included all ranges (**Table 4**).

The vocational background of the mothers participating in the semifinal Greek edition of the VABS II, are shown in **Table 5**.

Equivalence Reliability

The correlation among the results of the Equivalence Reliability, was significantly high. No differences were pointed in the completion process with either method. A high level of agreement was noted producing a correlation score, $r = .90$.

Construct Validity

The Construct Validity of VABS II scale, endures high validity. However, differences were reported among children with typical development and children with ASD and DS as argued by Katsiana et al. (2019).

Internal Consistency reliability

The internal consistency reliability of the VABS II Parents/Caregiver relied on the split-half method, for the domains which fall into the same groupings. The spearman-brown formula was used to determine correlations of the domains. The sample was consisted by the mothers of 206 children with ASD (61), DS (55) and typical development (90), 5 - 10 years old. The mean age for the children with ASD was 6.5 years old noting a standard deviation of 1.30, mean age for children with Down was 7.3 years noting a standard deviation 1.51 and finally the mean age for the typically developing children was 7.2 years with ordinal deviation 1.36 (** $p < .01$). On relation to the frequency distribution (absolut and relative frequencies) reported in relation to gender, most of the ASD children (52) was boys (85.2%), while only 9 individuals (14.8%) were girls, as expected due to higher prevalence of autism in male children against female ones (Kogan et al., 2009). In the case of the children with DS 33 subjects (60%) were male, while 22 (40%) were female. Finally, the group of the typical developmental was built out of 40 (44.4%) male individuals and 50 (55.6%) females. The differences between the groups were $\chi^2 = 25.38^{***}$ (** $p < .001$). The mothers' education level is reported in **Table 6**.

Table 5. Professions of participating mothers in the process of the semi-final version understanding.

Professions	N (30)
Teachers (Kindergarden: 3, Primary school: 2, Gymnasium Teacher: 1, Sports teacher: 2)	8
Private employees	5
Household	5
Freelance employees	2
Hairdressers	2
Nurses	2
Veterinarians	1
Pediatricians	1
Bakers	1
Computer	1
Judicial Employ	1
Lawyer	1

Table 6. Participant's (Mothers') education level for internal consistency.

		Mothers' education level				χ^2
		Primary education	Secondary education	Vocational education and training	Higher education	
ASD	61	3 (4.9%)	18 (29.5%)	14 (22.9%)	26 (42.7%)	16.37**
Down	55	2 (3.6%)	15 (27.3%)	17 (30.9%)	21 (38.2%)	
Typical	90	1 (1.1%)	13 (14.4%)	16 (17.8%)	60 (66.7%)	

** $p < .01$.

The internal Consistency in all domains was over .80. This result was equivalent to the results produced by the original Vineland II (Sparrow et al., 2005) study as shown in Table 7, which compares the values between the current and the original study.

4. Discussion

The current paper presented the cross-cultural adaptation of VABS II Parents/Caregiver Rating Form in the Greek language (VABS II-Gr), which was conducted through the globally accepted process of back-translation and pilot study. The initial translation for English to Greek administered by two translators, encountered one main difficulty on the level of non-compatible grammatical phenomena within the two languages. Some of the difficulties reported was on "irregular" verbs which appeared on the "Talking" subdomain (question 38) or some similar words that were difficult to translate while corresponded to higher

Table 7. (a) Internal Consistency (Spearman-Brown) for the reliability of the VABS II domains using the split-half method, by age groups; (b) Internal Consistency (Spearman-Brown) for the reliability of the VABS II domains using the split-half method, by age groups—Sparrow et al. (2005) and current study.

(a)					
Age	Domains				
	N	Communication	Daily Living Skills	Social skills and relationships	Motor Skills
5 - 6	45	.891	.884	.950	.887
6 - 7	35	.932	.877	.830	.917
7 - 8	43	.931	.947	.947	-
8 - 9	48	.925	.899	.942	-
9 - 10	34	.946	.940	.927	-

(b)								
Age	Domains							
	Communication	Daily Living Skills	Social Skills and Relationships	Motor Skills	Communication	Daily Living Skills	Social Skills and Relationships	Motor Skills
5 - 6	.89	.92	.88	.91	.95	.93	.89	.83
6 - 7	.93	.93	.88	.93	.83	.95	.92	.87
7 - 8	.93	.94	.95	.92	.95	.93	-	-
8 - 9	.93	.93	.90	.93	.94	.94	-	-
9 - 10	.95	.94	.94	.91	.93	.92	-	-

developmental levels for example question 7 “Reading and Writing” subdomain (e.g., bee “μέλισσα”). The problems were adequately dealt through circular discussion with language pathologists and teachers in order to more efficiently adapt them to the Greek dialect.

During the back translation stage, the translation process restarted from the beginning. The back translation is an accepted control method for the conceptual validity/content validity of the translated edition of the questionnaire. Thus, it is used to control the content of the question in terms of imposing the same question either in the first or in the second language. This method most often highlights ambiguities in the formulation of the translated edition. However, the absolute concordance between the original edition and its back translation does not provide any guaranty for the initial translation since it might hinder mistakes during the back translation phase. For this reason, the semi-final version was administered through a pilot study.

The pilot administration of the semi-final version, in 30 mothers of typical and atypical developing children, aged 3 - 10 year, did not reveal any comprehension matters allowing for the formulation of the final version VABS II-Gr. The cross-cultural adaptation appeared highly efficient and comprehensible from

the Greek mothers.

An Equivalence Reliability test was again conducted, with two different modes of administration, of data collection for the VABS II on 30 parents of children representing each group of the participating children, (with ASD, DS and typically developing children). Data collection was piloted in two ways. Specific parents initially received the questionnaires and completed them individually, repeating the process after a period of two weeks under the presence of the researcher. An individual appointment preceded the completion which offered a variety of auxiliary actions including interviews, questions, queries and explanations directly with the researcher. The correlation of results was very good. No differences appeared amongst the completion of the questionnaire either by one method or the other, leading to almost identical results. A degree of agreement, with a correlation value, $r = .90$ was reported (Limperopoulos, Majnemer, Steinbach, & Shevell, 2006). The overall process attended was like the one used in the cross-cultural adaptation of the Greek version of Sensory Profile Questionnaire (Katsiana et al., 2020).

The results of the internal consistency reliability of the Greek VABS II Parents/Caregiver through the split-half method, for all domains, and the corresponding ages were almost excellent. The reported levels of internal consistency, with few exceptions, are clinically significant in the good to excellent range by the criteria of Cicchetti (1994) in which: $<.70$ = Poor; $.70 - .79$ = Fair; $.80 - .89$ = Good; and $>.90$ = Excellent. In the present study which relied on the method of split-half, the Spearman-Brown was over $.80$ for all domains while most of them scored higher than $.90$. The internal consistency results from the current study were equivalent to similar ratings in the original Vineland II study (Sparrow et al., 2005) as reported in Table 7, when compared to the original values (Sparrow et al., 2005).

Construct validity was tested by using the method of known-group comparison and exploring the differences between the scores of parents of children developing typically or atypically as indicated by Katsiana et al. (2019) study and is again aligned with the similar studies conducted by Sparrow et al. (2005).

This study was limited based on a convenience sample of caregivers. It is intended to schedule a more extended study upon the Greek population, using a more representative stratified sample, in order to extract normative data and investigate the correlations and associations into a wider spectrum of individual and cultural factors. A further limitation of this study is that the data were obtained solely by caregivers reports, even though this is a common collective method in developmental disorder populations. This, however, might jeopardize part of the results of this study. Moreover, the present study relied on the cultural adaptation of the VABS II based on a narrow age range that is children among 5 - 10 years old. It is therefore suggested that future studies expand the age range to enrich the overall data sample. Finally, like Qadir et al. (2020) study, it is opined that future studies validate the VABS II against other similar instruments, and

the criterion related validity.

5. Conclusion

The Greek version of VABS-II was found to have an acceptable level of internal consistency reliability, similar to the original version of VABS, and construct validity. Internal consistency levels of the VABS-Gr domains were shown to be quite high, and this scale was found to be acceptable, understandable, valid and reliable by Greek parents and may thus be used in cross-cultural clinical practice and research.

Conflicts of Interest

The authors declare no conflicts of interest.

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