TRANSLATION AND VALIDATION OF VANDERBILT ATTENTION DEFICIT AND HYPERACTIVITY DISORDER (ADHD) DIAGNOSTIC PARENT RATING SCALE (VADPRS) IN TAMIL LANGUAGE ANDDETERMINATION OF ITS PSYCHOMETRIC PROPERTIES

DISSERTATION SUBMITTED FOR

Partial Fulfillment of the Rules and Regulations

DOCTOR OF MEDICINE

BRANCH - XVIII (PSYCHIATRY)

INSTITUTE OF MENTAL HEALTH

MADRAS MEDICAL COLLEGE,

THE TAMIL NADU DR. M. G. R. MEDICAL UNIVERSITY,

CHENNAI, INDIA

APRIL 2016

CERTIFICATE

This is to certify that the dissertation titled, **TRANSLATION AND VALIDATION OF VANDERBILT ATTENTION DEFICIT AND HYPERACTIVITY DISORDER (ADHD) DIAGNOSTIC PARENT RATING SCALE (VADPRS) IN TAMIL LANGUAGE ANDDETERMINATION OF ITS PSYCHOMETRIC PROPERTIES"** is the bonafide work of **Dr. NEELAKANDAN.S,** in partial fulfillment of the requirements for the M.D. Branch – XVIII (Psychiatry) examination of The Tamilnadu Dr. M. G. R. Medical University, to be held in April 2016. The period of study was from April 2015 – Sep 2015.

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CERTIFICATE OF THE GUIDE

This is to certify that the dissertation titled, "**TRANSLATION AND VALIDATION OF VANDERBILT ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) DIAGNOSTIC PARENT RATING SCALE (VADPRS) IN TAMIL LANGUAGE AND DETERMINATION OF ITS PSYCHOMETRIC PROPERTIES**" is the original work of **Dr. NEELAKANDAN. S,** done under my guidance submitted in partial fulfillment of the requirements for M.D. Branch – XVIII [Psychiatry] examination of The Tamilnadu

Dr. M. G. R. Medical University, to be held in April 2016.

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DECLARATION

I, **Dr. NEELAKANDAN. S**, solemnly declare that the dissertation titled, **"TRANSLATION AND VALIDATION OF VANDERBILT ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) DIAGNOSTIC PARENT RATING SCALE (VADPRS) IN TAMIL LANGUAGE AND DETERMINATION OF ITS PSYCHOMETRIC PROPERTIES"** is a bonafide work done by me at the Madras Medical College, Chennai, during the period from April 2015 - Sep 2015 under the guidance and supervision of **Prof. Dr. SHANTHI NAMBI, MD,** Professor of Psychiatry, Institute of Child Health and Hospital for Children Madras Medical College. The dissertation is submitted to The Tamilnadu Dr. M. G. R. Medical University towards part fulfillment for M.D. Branch XVIII (Psychiatry) examination.

Place:

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ACKNOWLEDGEMENTS

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CERTIFICATE OF APPROVAL

To
Dr.Neelakandan.S.
Post Graduate in MD (Psychiatry)
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Dear Dr.Neelakandan.S.

The Institutional Ethics Committee has considered your request and approved your study titled " **TRANSLATION AND VALIDATION OF VANDERBILT ATTENTION DEFICIT AND HYPERACTIVITY DISORDER (ADHD) PARENT RATING SCALE IN TAMIL LANGUAGE AND DETERMINATION OF ITS PSYCHOMETRIC PROPERTIES** " NO.32042015.
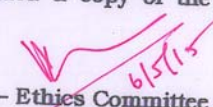
The following members of Ethics Committee were present in the meeting hold on 07.04.2015 conducted at Madras Medical College, Chennai 3

1. Prof.C.Rajendran, MD — :Chairperson
2. Prof.R.Vimala,MD.,Dean,MMC,Ch-3 — : Deputy Chairperson
3. Prof.B.Kalaiselvi,MD.,Vice Principal,MMC,Ch-3 — : Member Secretary
4. Prof.B.Vasanthi,MD.,Prof.of Pharmacology,MMC — : Member
5. Prof.Raghumani,MS.,Prof.of Surgery,MMC — :Member
6. Prof.S.Baby Vasumathi, Director, Inst. of O&G,MMC — : Member
7. Prof.K.Ramadevi,MD., Director ,Inst.of Bio-Chem.MMC: Member
8. Prof.Saraswathy,MD.,Director,Pathology, MMC — : Member
9. Prof.K.Srinivasagalu,MD.,Director, I.I.M , MMC — : Member
10. Thiru S.Rameshkumar, B.Com., MBA. — : Lay Person
11. Thiru S.Govindasamy, BA., BL., — : Lawyer
12. Tmt.Arnold Saulina, MA., MSW., — : Social Scientist

We approve the proposal to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study and SAE occurring in the course of the study, any changes in the protocol and patients information/informed consent and asks to be provided a copy of the final report.

Member Secretary – Ethics Committee
MEMBER SECRETARY
INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE
CHENNAI-600 003

Sys 2

1

INTRODUCTION AND BACKGROUND

Attention Deficit Hyperactivity Disorder (ADHD) is a neuro behavioural disorder characterised by a pattern of reduced attention span and increased impulsivity and /or hyperactivity mostly affecting preschoolers, children, adolescents and even the adults around the world.

The children with ADHD present not only with gross lack of sustained attention and hyperactivity but also with problems in other areas of functioning like behavioural, cognitive, emotional and social interactions. These impairments in their functioning at all three places namely school, family and social environments make the children and parents distressed a lot.

ADHD is one of the most commonly encountered disorders in

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INTRODUCTION AND BACKGROUND

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ADHD is one of the most commonly encountered disorders in child psychiatry clinics, making upto 50 % of the attendance. It has a prevalence range of about 3 – 12 % in any given population. According to a community study done in primary school children in Tamil Nadu by Venkata & Pauiker, the prevalence of ADHD was found to be 11.32%. It is the commonest cause of poor scholastic performance and so, mostly referred from the schools for evaluation and treatment.

CONTENTS

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ADHD is one of the most commonly encountered disorders in child psychiatry clinics, making upto 50 % of the attendance. It has a prevalence range of about 5 – 12 % in any given population. According to a community study done in primary school children in Tamil Nadu by Venkata & Paniker, the prevalence of ADHD was found to be 11.32%. It is the commonest cause of poor scholastic performance and so, mostly referred from the schools for evaluation and treatment.

Almost 60-85 percent of these children continue to be symptomatic into adolescence and nearly 60 percent happen to be suffering into

adulthood also. Furthermore ADHD is frequently associated with comorbid disorders including oppositional defiant disorder, mood disorders, anxiety disorders and learning disorders which are very incapacitating.

ADHD has been historically described in 1900 s as "minimal brain damage syndrome"; in the 1960s as "minimal brain dysfunction" and as "hyperkinetic syndrome of childhood" in the International Classification of Diseases (ICD-9) and second edition of DSM. In DSM –III (1980) it was renamed as "Attention Deficit Disorder (ADD)" and in the 1994 IV edition of the DSM, its text revision DSM -IV-TR (2000) and the current DSM-V (2013) as ADHD with equal importance to both the core features viz. Inattention and hyperactivity, each revision /edition refining the concepts of etiology, criteria, risk profiles and impairments over the course of development.

The diagnosis of ADHD is mainly by the history of the parent and atleast one other adult caregiver like the teacher or coach and as we know for other psychiatric disorders there are no simple confirmatory biochemical, genetic or imaging investigations to screen, diagnose and follow up the course of this disorder . The available diagnostic criteria are only qualitative measures to diagnose ADHD and not useful for quantifying the various dimensions and severity. So, we need to adapt

reliable clinical rating scales to quantify the individual symptom components to be used for screening, confirming diagnosis and assessing treatment responses during follow up.

Of the various rating scales, the Institute of Child health uses the gold standard Vanderbilt ADHD Diagnostic Parent Rating Scale (VADPRS). The Vanderbilt Assessment scales are designed to assist clinicians in providing co-ordinated and integrated care for children with ADHD and used for the confirmation, assessment of severity and follow up ratings for medication dose titration.

The Vanderbilt ADHD scales include a parent informant and teacher informant assessment scale of the behaviour of the child corresponding to the DSM-IV criteria for the Inattention and Hyperactivity / Impulsivity domains and also consisting of scale items to screen for other mood and anxiety symptoms as well as performance scale for impairment in school, home and the community settings. It is available in English and Spanish only. (Mark Wolraich et al. 2002).

Since most of the children attending the Institute of Child Health and Hospital for Children, Chennai, TamilNadu, India with their parents are from rural TamilNadu, they have difficulty in understanding and conceptualising the VADPRS scale items and each of the attending

Residents and Psychologists find it difficult to guide these parents to rate the scales in an uniform manner to enable the Consultants to assess and treat the children effectively.

As the majority of the population attending the tertiary care hospital is Tamil speaking, with lower educational background, there is need for a standardized Tamil version, so as to have uniformity in the Diagnosis, assessment and follow up of ADHD children, simultaneously ensuring its comparability internationally. Thus the Tamil version is important for both clinical diagnosis and management as well as for research purposes.

REVIEW OF LITERATURE

Findings from cross-cultural research worldwide have many implications for the health care delivery professionals including physicians, nurses, psychologists and primary level health workers because the delivery of quality health care depends on the accurate assessment and better understanding of the patient's cultural, linguistic and educational backgrounds. There is a definite need for clinical rating scales in native language to evaluate the disorders in a better way. This review of literature will highlight these aspects of translating, adapting and validating the original English version into the target language, "Tamil" in our study. The literature sources are grouped into the following categories namely:

- ADHD history and nosology

- Translation guidelines /protocols for cross-cultural research

- VADPRS development and validation in original English version

- Assessment of Psychometric properties of an instrument

HISTORY AND NOSOLOGY

Though it was Sir Alexander Crichton (1798),a Scottish physician, through his observations in the second chapter of his book II regarding Mental illness, mentioning ADHD as "The incapacity of attending with a necessary degree of constancy to any object" (Crichton, Cadell T Jr.2008) and the German physician Heinrich Hoffmann (1844) mentioning about ADHD through his cheerful illustrated stories for children with characterisation of "Fidgety Phil", it was Sir George Frederic Still, a British Paediatrician who in his Goulstonian lectures in 1902 mentioned about ADHD as a disorder of "Defect of Moral Control". This was considered by many authors as the scientific starting of the history of ADHD. He elaborately wrote about these children who were inattentive, restless and impulsive with intense affective responses and conduct issues and believed that both organic as well as environmental factors played roles in this disorder resulting in inattention and a lack of impulse control (Still, 1902) .

Following Still's lectures, the assumptions of Tredgold in 1908 and from the reports of the survivors of the Influenza pandemic and epidemic of Encephalitis lethargica from 1917 t0 1928, several children who developed severe behaviour problems were thought to suffer from organic brain damage and the disorder was termed "minimal brain

damage syndrome". But it neither had imaging proof nor any other proven etiological mechanisms.

In 1937, it was Charles Bradley published a report on the first treatment of hyperactivity with d,l-amphetamine reducing the restlessness and improved concentration in these children. But his findings were ignored for almost 30 years, possibly due to the wide influence of psychoanalysis at that time.

Keith Conners and Leon Isenberg proved the efficacy of d-amphetamine in a double blind placebo controlled trial. In the early 1960, it was renamed as "Minimal Brain Dysfunction (MBD), yet not proven. (Conners et al. 1998)

In late 1960, the International Classification of Diseases (ICD-9) and the DSM-II classified it into "Hyperkinetic Syndrome of Childhood", reflecting Hyperactivity as the core feature of ADHD.(APA, 1968)

In 1980s, the concept changed as the major disability of lack of sustained attention and impulsivity whereas hyperactivity was a secondary feature as depicted in the DSM-III as "Attention Deficit Disorder" (ADD) and was of three subtypes: ADD with hyperactivity, without hyperactivity and residual type (APA,1980). The 1987 DSM III TR had a single criterion list, onset by 7 years; duration of minimum 6

months and no sub groups and renamed it as "Attention Deficit-Hyperactivity Disorder". (APA,1987)

In 1994 DSM-IV AND ITS 2000text revision, due to the reorganisation of the concepts of ADHD; the development of Diagnostic structured interviews and the many multicentric trials in that period, three subtypes of ADHD were identified by validation of the diagnosis(APA 1994). The 2000 text revision DSM-IV TR helped better define the validity of the ADHD diagnosis and also to maintain the currency of the DSM-IV text to give directions for betterment in the DSM-V.

IMPORTANCE OF RATING SCALES

Guidelines of both child psychiatry (Dulcan, 1997) and pediatrics (American Academy of Pediatrics 2000, 2001) encourage clinicians to employ criteria of the *Diagnostic and Statistical Manual of Mental Disorders, 4thEd.* (DSM-IV) (American Psychiatric Association [APA], 1994) in making the diagnosis.

Behavior rating scales have been one method for obtaining information from parents and teachers efficiently. Most earlier scales, such as the Conners Rating Scales (Goyette, Conners, & Ulrich, 1978) and the Child BehaviorChecklist (Achenbach & Edelbrook, 1983), differ from DSM-IV in several ways:

(a)   They were more broad based,

(b)   They did not include all the specific DSM criteria required to make a diagnosis, and

(c)   They derived their categories based on deviations from the norm.

Scales specific for ADHD utilizing the 18 core symptoms have been developed (Conners, Sitarenios, Parker, & Epstein,1998; DuPaul et al., 1997; Molina, Smith, & Pelham, 2001; Swanson, Nolan, & Pelham, 1982; Wolraich, Feurer, Hannah, Pinnock, & Baumgaertel, 1998) for parents and/or teachers. In addition to the ADHD core symptoms, some of the scales include symptoms for at least the other disruptive behaviors.

VADPRS

The Vanderbilt Assessment scales were one of the gold standard toolkits designed to assist clinicians in providing quality care for children with ADHD and it may be used for screening, referrals, diagnosis, monitoring progress and evaluating outcomes. It includes both teacher informant and parent informant assessment scales that corresponds to the DSM-IV criteria for ADHD, as well as screening scale items for mood and anxiety symptoms, school performance and behaviour in various

settings. The Vanderbilt ADHD Diagnostic Parent Rating Scale (VADPRS) is available only in English and Spanish languages and validated mainly in African American children with Cronbach's alpha of greater than 0.90 indicating good internal consistency and high concurrent validity of 0.79 on comparison with the Computerized Diagnostic interview Schedule for Children (C-DISC-IV). (Wolraich. M.L.2003)

TRANSLATION, ADAPTATION AND VALIDATION OF INSTRUMENTS OR SCALES

Although there are well established methodological approaches for translating, adapting and validating instruments for use in cross-cultural health care research, a great variation in the use of these **approaches** continues to prevail in the health care literature. A recent review of 47 methodological studies focusing on the translation and validation of instruments for cross-cultural research reported that the quality and methodological approaches of the reviewed studies varied greatly. There was no clear consensus among researchers on how the approaches should be used or combined, a great variation on the qualifications of translators, and a lack of detailed information about the translation, back-translation, validation, testing, and revision and refinement of the instruments.(Valmi D Sousa,2011)

Sperber reported that many researchers do not give importance to the translation, adaptation and cross cultural validation; often use only forward translations and insisted that the procedure should consist of a comprehensive process that involves not only translation of the instruments but thorough evaluation of its adaptation and cross-cultural validation. (Ami D Sperber,2004)

The author observed that methodology has not been clearly presented in a user-friendly manner and he recommends the "symmetrical category" approach over asymmetrical one because it refers to faithfulness of meaning and colloquialness in both source and target languages and not to a literal translation (Jones et al,1980). The symmetrical translation is the only method that aids comparison of responses between the two languages and determine the cross-cultural semantic and conceptual equivalence along with technical, criterion and content validity**.**

The most recommended user friendly stepwise approach to facilitate adoption, consistency and use are as follows:

STEP 1: Translation of the original instrument into the target language (forward translation) or one way translation, by two bilingual and bicultural translators to produce two forward-translated versions

STEP 2: Comparison of the two translated versions by a committee approach or a third independent translator to formulate a composite version which rectifies any ambiguities or discrepancies, called "Synthesis I " (Prefinal version).

STEP 3: Blind backtranslation to the source language by two independent bilingual translators one of them should be knowledgeable about health terminologies.

STEP 4: Comparison of the two back-translated versions of the instrument by discussing about any ambiguities or discrepancies and resolved.

STEP 5: Pilot testing of the prefinal version in the target language with a monolingual sample by the process of "Cognitive Debriefing" in which the participants rating the items are asked to correct the items which are unclear in a response format. To further determine th conceptual and content equivalence of the items use of an expert panel is highly recommended.

STEP 6: Preliminary psychometric testing of the pre-final version with a bilingual sample by rating the translated target language version first and then the original source language version .

STEP 7: Full psychometric testing of the pre-final version of the translated instrument in a sample of the target population

Sperber highlights about cross-cultural research having specific methodological problems, mostly relating to the quality of translation and the comparability of results in different cultural and ethnic settings .He emphasizes that it is not enough to do a literal translation alone but to take additional challenge for adaptation in a culturally relevant and comprehensible form while maintaining the semantic and conceptual nuances. Sperber expresses caution regarding difficulty in handling colloquial phrases, slang and jargons, idiomatic expressions and emotionally evocative terms.

The translation method as recommended by Sperber consists of two phases. (Sperber AD, 1994)

Phase 1 – consisting of the translation processes, namely forward and backward translation

Phase 1 - Translation process - forward and backward translations
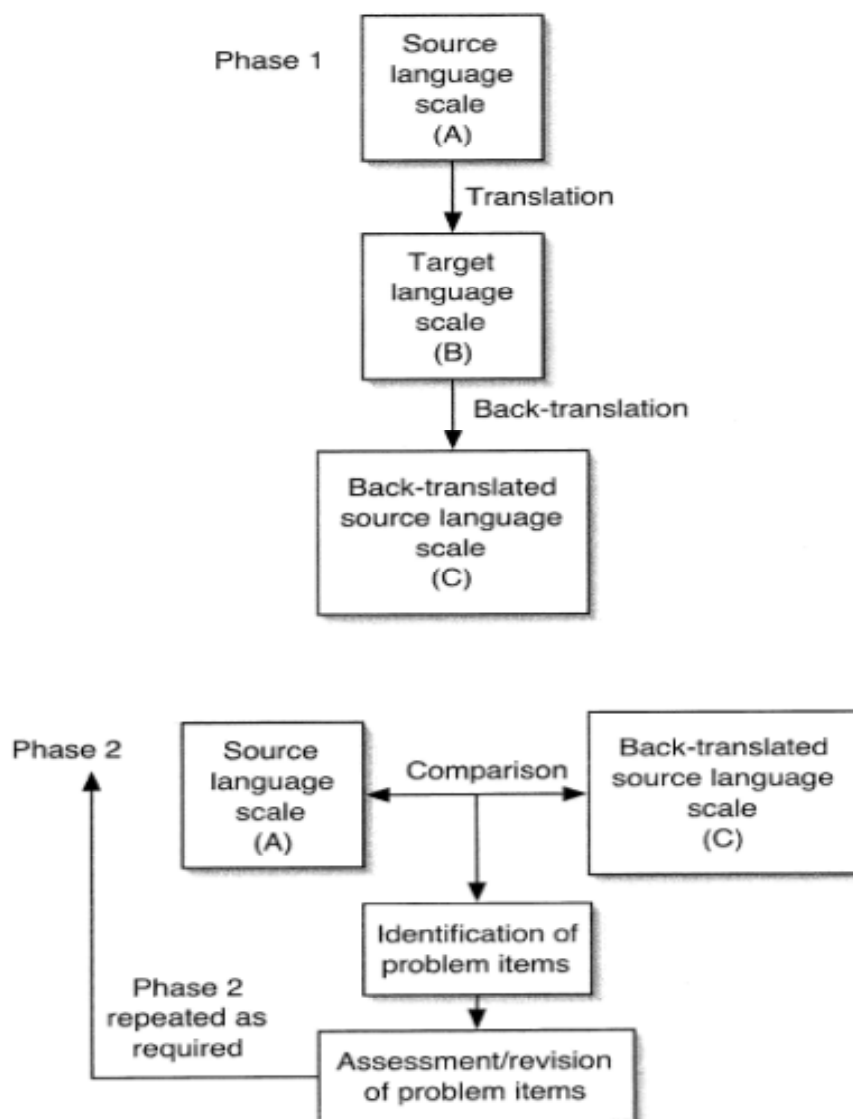
Figure 1. Flow diagram of the translation (phase 1) and validation (phase 2) processes. The mean comparison scores at each stage determine the number of times that phase 2 is repeated.

Phase 2 – Validation processes – comparison using two measures

of evaluating the success of the translation namely

i)   Testing comparability of language

ii)   Testing similarity of interpretability

Comparability of language refers to the formal similarity of words, phrases and sentences. Similarity of interpretability refers to the degree to which the two versions elicit the same response even if the words are not the same.

The rating of these measures was assessed using Likert scales ranging from 1 (extremely comparable / similar) to 7 (not at all comparable /not at all similar)

Table 1. Comparability/Interpretability Rating Sheet[15]

Please circle the response which most closely represents how you would rate the following pairs of items in terms of:
(A) Comparability of language (how comparable is the formal wording?) and
(B) Similarity of interpretation (would the paired items be interpreted similarly, even if the wording is different?).
Please circle only one response for (A) and one response for (B) for each pair of items.

Original English version	Back-translated English version	(A) COMPARABILITY OF LANGUAGE						
		EXTREMELY COMPARABLE		MODERATELY COMPARABLE			NOT AT ALL COMPARABLE	
		1	2	3	4	5	6	7
		(B) SIMILARITY OF INTERPRETATION						
		EXTREMELY SIMILAR		MODERATELY SIMILAR			NOT AT ALL SIMILAR	
		1	2	3	4	5	6	7

Adapted from Sperber AD et al.[15]

On conclusion, Sperber points out that cross-cultural research has to be relevant to the Clinicians; though translation is the most common method, it has pitfalls and detrimental effects on study results. The

specific validation method adopted is less important than an appropriate and rigorous translation process.

Catherine et al conducted a literature for the European Regulatory Issues and Quality of Life Assessment (ERIQA) group and the Mapi Research Trust, France; Pfizer, UK; The Netherlands Cancer Institute, Netherlands with the main objective of obtaining answers for two main questions regarding the translation procedures for cross-cultural research worldwide:

1.   What do the methods have in common (and how do they differ)?

2.   Is there any evidence of the superiority of one method over the other?

They identified 45 articles selected from the data bases with 23 articles representing 17 methods of translation and 22 reviews. Each group proposes its own sequence of translation procedures and there exist evidence to demonstrate a rigorous and multistep approach that leads to better translations (Catherine Aquadro, 2008).

We review here few of the guidelines/approaches which are having novel features as guidance and evidence for our research:

1. AAOS (American Association of Orthopaedic Surgeons) Guidelines proposed by Guillemin and Beaton in 1993 and followed up in 2000.

2. The Mapi Research Institute's approach

3. Swaine and Verdier's article

4. World Health Organisation(WHO)

5. The Geneva Method

AAOS GUIDELINES (1993-2000)

➢ Using bilingual translators

➢ Two translators work independently for forward translations

➢ Synthesis done by translators

➢ Back translations by two independently working translators who have no knowledge of the underlying concepts.

➢ Recommends review by methodologist, health professionals, language experts and the translators.

➢ Specifies clear justification for the stepwise approach and its documentation.

MAPI RESEARCH INSTITUTE (1995)

- ✓ Has labelled the process as "Linguistic Validation" and recommends 15 translators per language to work as a committee in a collaborative manner with the author.

- ✓ Forward translations by two independent translators and synthesis of the composite version with the consultation of the developer.

- ✓ Back translation by one translator having no knowledge about the original version.

- ✓ Review and pretesting in two parallel phases : Clinical Review (by users) and Cognitive Debriefing with a sample of 5-10 respondents

- ✓ Recommends "International Harmonization" process if it is translated in more than one language.

SWAINE-VERDIER et al.(2004)

- Argue that the forward-backward translation approach is controversial.

- Describe an alternate method involving the **"Dual Translation Panel Approach".**

- Recommends recruiting 5-7 translators with adequate language proficiency, at least one with the native language.

- Back translations not recommended.

- Pretesting in a lay panel of 5-7 people with well described inclusion criteria.

WHO (1994)

❖ Team members with motivation for requirements must be recruited and two forward translators to work together.

❖ Bilingual panel "reviews" the translation and a monolingual panel "tests" the instrument; bilingual panel then "modifies" the translation.

❖ One back translation only is recommended

❖ A bilingual panel assesses equivalence

❖ Forward and backward translations administered to a bilingual group

❖ Advises combination of an ETIC Approach (addressing common ground between cultures) and an EMIC Approach (targeting culture specific issues).(Sartorius N,1994; Skevington,2002)

The "GENEVA" Method

Perneger et al. proposed the 'Geneva method' in which neither a back translation nor an expert review was done. This method includes:

- Recruiting three translators from the medical/health field, with different speciality.

- Producing three forward translations.

- Synthesising the three translations into a single version by a panel of experts from various fields like language and health

- Testing the final version for acceptability ion two sample groups belonging to the target population.(Perneger TV,1999)

Catherine Acquadro et al. concludes that we need more research on translation methodologies and several points emerge from this review. First, producing high-quality translations is labor-intensive. Secondly, the availability of standardised guidelines and centralised review procedures improves the efficiency of the production of translations. Although no evidence was found for superiority of any one method in particular, the authors strongly advise researchers to adopt **a multistep approach**.

Dorcas E. Beaton et al.observed that if measures are to be used across cultures, the items must not only be translated well linguistically, but also must be adapted culturally to maintain the content validity of the instrument at a conceptual level across different cultures (Ferraz MB,1997). The process of cross cultural adaption tries to produce

equivalency between source and target based on content. The assumption is that this process will ensure retention of psychometric properties but in a new culture the properties like validity and reliability may change. Further testing of the psychometric properties is mandatory after the translation process. (Beaton, D.E., 2000)

Beaton and Guillemin et al. (1993) emphasise that after the stepwise process of translation is completed, the composition of the expert committee is crucial to the achievement of cross-cultural equivalence. The committee has to ensure in achieving equivalence between the source and target language versions in four different areas:

i. **Semantic Equivalence**: regarding the meaning of words used multiple meanings for some words and the grammatical difficulties.

ii. **Idiomatic Equivalence:** to look into the problems in translation of idioms, phrases and colloquialisms and formulate equivalent expressions in the target language.

iii. **Experiential Equivalence:** to see whether items are seeking to capture the experience of daily life.

iv. **Conceptual Equivalence:** for words **that** hold different conceptual meaning between cultures.

The committee must examine the source and the back translated version for all such equivalences and consensus to be reached on the items and if needed the translation procedures should be repeated.
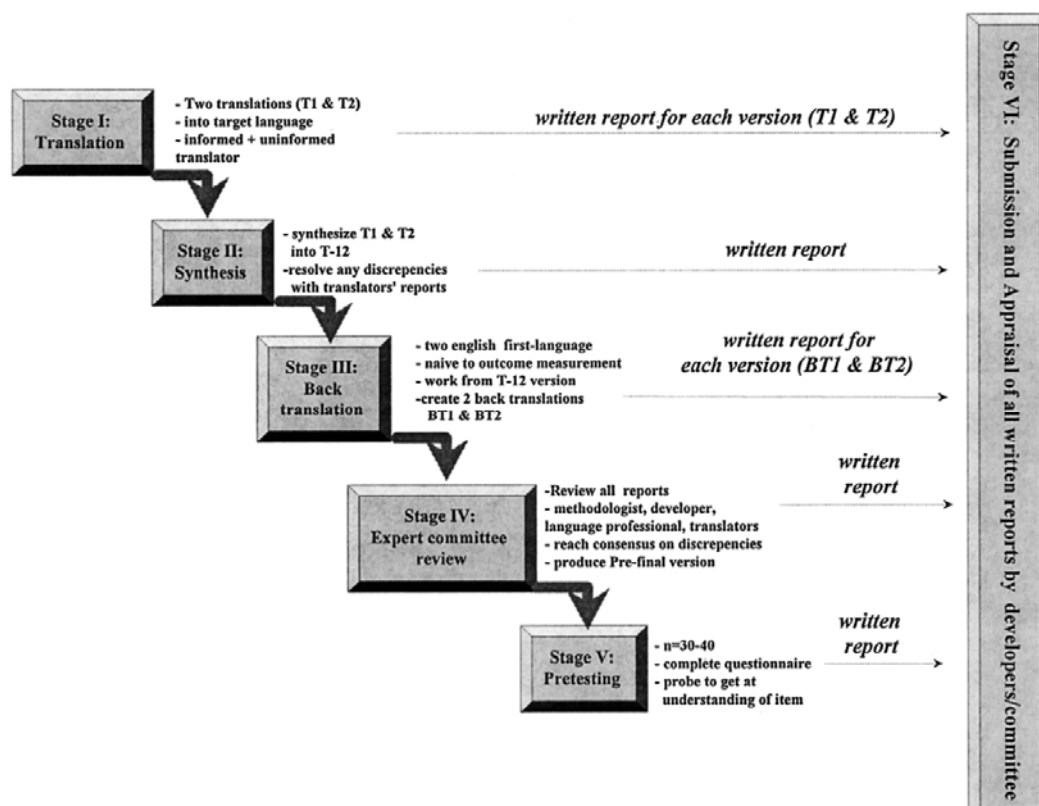
Graphic representation of the stages of cross-cultural adaption recommended by Beaton et al.in the SPINE volume 25, 2000.

PSYCHOMETRIC PROPERTIES OF THE SCALES

The VADPRS in English

Mark Wolraich et al. Conducted this study from 1998-1999 to determine the psychometric properties of the Vanderbilt Attention

Deficit/Hyperactivity Disorder Parent Rating Scale (VADPRS), which utilizes information based on the *Diagnostic and Statistical Manual of Mental Disorders, 4th Ed.* (DSM-IV). The VADPRS was created to collect uniform patient data and minimize the time burden of lengthy interviews.

In First interview, the parents who participated (N = 288) completed a fully structured Computerized Diagnostic Interview Schedule for Children (C DISC-IV; National Institute of Mental Health, 1997) interview in person by researchers. The second wave, approximately 6 months later, included a second interview (by phone) utilizing the parent rating scale (VADPRS) with the parents of 261 of the children (90.6%). The third wave, 6 months after the second interview, included a phone interview using the ADHD section of the C-DISC-IV and the VADPRS with 256 (95.2%) of the remaining 269 parents.

Analysis of the VADPRS appears under five headings:

(a)   Internal consistency reliability,

(b)   Item analysis,

 (c)   Factor structure

 (d)   Concurrent validity, and

 (e)   Co morbid scales for factor structure, reliability, and validity

The internal consistency reliability compared the VADPRS with the VADTRS and the C-DISC-IV and found to have overall Cronbach's alpha of >0.90 in every case. The concurrent validity measures the correlation between VADPRS and the C-DISC-IV which is high (r=0.79), suggesting it measures much the same as the C-DISC-IV. Item analysis examines item correlations and also item reliabilities with part-whole correlations. Factor structure is done to assess the consistency with DSM-IV measurement model for ADHD, comprising two separate but correlated components: Inattention and Hyperactivity/Impulsivity. In addition to the two ADHD scales, the VADPRS has two comorbity scales to assess internalising problems (anxiety and depression) and externalizing problems (ODD and CD) that often complicate ADHD. In this study these were 8% and 23% respectively. Results suggest that the internal consistency and factor structure of the VADPRS were acceptable and consistent with DSM-IV and other accepted measures of ADHD. (Wolraich, 1998 and 2003)

CARS in Brazil (CARS-BR)

The methodology used by Alessandra Pereira et al. (2006-07) to produce adequate version in Brazilian language included translation, backtranslation and evaluation of semantic equivalence. The CARS-BR was administered to 60 consecutive patients with Autism aged between 3

and 17 years to check the psychometric properties (internal consistency, validity and reliability) and found the internal consistency was high with Cronbach's alpha of 0.82; convergent validity the Autistic Traits Assessment Scale exhibited a Pearson coefficient of r=0.89 and 0.75 with the Global Assessment of Functioning Scale; Test-retest reliability with a kappa coefficient of 0.90. (Pereira A, 2008)

CHINESE VERSION OF SNAP-IV Teacher form

Susan Shur-Fen Gau et al. Examined the Chinese version of the SNAP-IV in a school sample of 3,653(I-VIII grades) and in a hospital sample of 190 children with ADHD (6-15years). Teachers completed the Chinese version of SNAP-IV. And Strengths and Difficulties Questionnaire. The confirmatory analysis revealed a four-factor structure (inattention, hyperactivity, impulsivity and opposition) with an adequate fit; the internal consistency (cronbach's alpha=0.88-0.95) and concurrent validity (Pearson correlations=0.61-0.84) were satisfactory.(Susan, 2009)

Portuguese version of DEPRESSIVE COGNITIVE SCALE (DCS)

Valmi D.Sousa et al. conducted this study to determine the semantic equivalence and psychometric properties of the Portuguese version of the Depressive Cognition Scale. For field testing of the DCS and its Portuguese version ECD, a convenient sample of 40 bilingual

adults were recruited in a major Brazilian city. Psycho metric testing of the DCS and ECD involves determining the initial estimates of reliability (internal consistency and homogeneity) and construct validity. Analyses of the characteristic of the sample were determined by computing frequencies for categorical variables and descriptive statistics (i.e., means and standard deviations) for continuous variables. Reliability analyses were done with evaluation of Cronbach's alphas, inter-item correlations, and item-to-total scale correlations. Validity testing was done using the paired t tests and Pearson's correlations between the English and Portuguese item scores and total scores.(Sousa, V.D., 2005)

Turkish version of the CULTURE SHOCK QUESTIONNAIRE (CSQ)

Ayşegül Somçelik-Köksal et al. Translated the Culture Shock Questionnaire (CSQ) formulated in England to Turkish to be administered to bilingual Turkish students (sample no=119) of the university in Isthanbul. They adapted three processes 1) the translation/back translation procedures, 2) Discussion on the challenges of the translation steps and 3) tested the psychometric properties of the instrument (adaptaion of the CSQ).

To test for linguistic equivalence, the authors calculated mean difference in scores for pairs of responses to each item (cf. Mumford, Tareen, Bajwa, Bhatti, & Karim, 1991). The results of this can be seen with the 95% confidence interval of the differences. Mumford et al. (1991) argued that mean differences of 0.25 are acceptable and our mean differences are both less than this, leading us to concluded that these differences are acceptable. The mean score on QA was 5.74 for the Turkish and 5.47 for the English. The mean score on QB was 3.62 for the Turkish and 3.34 for the English. Overall, it is concluded that there is linguistic equivalence between the Turkish and English versions of the questions. (Ayesgul, S.K., 2014)

To examine conceptual equivalence, the item to total correlations between each item and its appropriate subscore were calculated. For QA, the correlation coefficients ranged from 0.317 to 0.712. For QB, the correlation coefficients ranged from 0.079 to 0.429. The difference was not bigger than 0.1 in any instances.

For scale equivalence two things were calculated, the means and the Cronbach's alpha. The calculated similarity in the magnitude of the means and the overall Cronbach's alpha for the English scale as 0.808 and fir the Turkish version as 0.829 suggested scale equivalence between these two versions.

ROLAND-MORRIS Questionnaire in Brazilian-Portuguese

Nusbaum & Natour conducted this study to translate, adapt and validate the Roland-Morris questionnaire(English version) used to assess lowback pain into Brazilian-Portuguese language. The translations were done following the recommendations of Guillemin et al. To establish the cultural equivalence of the English version. The Spearman's coefficient (SCC) and Intraclass coefficient(ICC) were computed to assess test-retest reliability (0.88 and 0.94 respectively) and cross-sectional construct validity was evaluated using the SCC. The correlation coefficient was 0.80 with the Pain Scale and 0.79 with the Visual Analog scale (VAS). (L.Nusbaum, 2001)

HOSPITAL ANXIETY AND DEPRESSION SCALE (HADS)

Translation and Validation Study of the Iranian version

Ali Montazeri et al. Translated the HADS from English to Persion(Iranian language) and aimed to test the reliability and validity of the translated version. HADS is a widely used instrument to measure psychological morbidity in cancer patients. The translated version was found to be acceptable to 99% of the patients with the mean Anxiety score 10.6(SD=4.1) and the mean depression score was 6.2(SD=4.5). The internal consistency of the HADS as evaluated by Cronbach' alpha

coefficient was found to be 0.78 for Anxiety sub-scale and 0.86 for depression sub-scale indicating satisfactory reliability of the Persion version. Convergent validity was assessed using the Pearson's correlation coefficient which varied in the range 0.47-0.83 for Anxiety and 0.48-0.86 for depression sub-scales. Also there was significant inter-correlation between anxiety and depression subscales with Pearson's r scores of 0.72, $P < 0.0001$. (Montazer, A. 2003)

NULL HYPOTHESIS

➢ The translated Tamil version of the Vanderbilt ADHD Diagnostic
   Parent rating scale is not similar and comparable cross culturally
   and linguistically to the original English version

➢ The Psychometric properties of the Tamil version of the VADPRS
   are not equivalent to the original English version.

AIMS AND OBJECTIVES

a) To translate and standardize the Tamil Language version of the Vanderbilt ADHD Diagnostic Parent Rating Scale (VADPRS)

b) To determine the psychometric properties of the translated Tamil language version.

METHODOLOGY

To translate and standardize the Tamil language version of Vanderbilt Attention Deficit Hyperactivity Disorder Diagnostic Parent Rating Scale (VADPRS)

PRIMARY OBJECTIVE

1. To translate the original English version of the Vanderbilt Attention Deficit Hyperactive Disorder Diagnostic Parent Rating Scale (VADPRS) into Tamil language as per standard guidelines

2. To determine the psychometric properties of the translated Tamil language version

STUDY CENTRE

The study was conducted at the Child Guidance Clinic of the Dept of Child Psychiatry, Institute of Child Health & Hospital for Children, Madras Medical College, Chennai, Tamil Nadu, India.

DURATION OF STUDY

The duration of the study was for a period of six months from April 2015 to September 2015.

STUDY DESIGN

The study design was of a cross sectional translation and validation study.

MATERIALS AND METHODS

i.   THE TRANSLATION PROCESS

The Vanderbilt ADHD Diagnostic Parent Rating Scale

The Vanderbilt ADHD Diagnostic Parent Rating Scale (VADPRS) is a gold standard tool to assist clinicians especially Paediatricians and Psychiatric consultants in Child Psychiatry settings worldwide in providing quality care to children with Attention Deficit Hyperactivity Disorder (ADHD) by providing a basis for coordinated and integrated approach. (Appendix 1)

This scale is widely used as it assesses five dimensions, namely three domains of ADHD- Inattention, Hyperactivity and Impulsivity as also the comorbidities like Disruptive Behaviour disorders (Oppositional Defiant and Conduct Disorders) and the Mood symptoms (Anxiety / Depression). Assessment information could be used for screening, referrals, diagnosis, monitoring progress and evaluating outcomes. It includes a parent and Teacher informant versions. The parent rating

version is selected for this study as they are the primary care givers and accompany the children to the hospital. This scale does not need any special skills to administer / rate. It is available only in English and Spanish so far.(Appendix 2) Hence it is selected for our translation process into Tamil language which is the native language in this part of the country, Tamil Nadu, India.

TRANSLATION PROCEDURE

Permission

Permission from the author Dr.Mark Wolraich, Professor of Developmental and Behavioural Paediatrics, Oklahoma University Health Centre, Oklahoma city, USA was obtained through Email: mark-wolraich@ouhsc.edu on the 9th December 2014. (Appendix 3)

ETHICS COMMITTEE APPROVAL

The proposal for conducting the translation and validation study was presented to the Instituional Ethics committee, at the Madras Medical College, Chennai on the 7th April 2015 and the same was approved.

FORWARD TRANSLATIONS

The instrument in the source (original) language-English was translated by two independent bilingual consultant psychiatrists who were both knowledgeable and experienced in working in tertiary care hospitals

as teachers and familiar with the colloquial phrases and slangs of the native language. The translators generated two independent translated versions in Tamil language viz., TL-1 and TL-2 (Appendix 4 and 5 respectively).

COMPOSITE VERSION: SYNTHESIS I

Both the forward translated versions TL-1 and TL-2 were compared among themselves and with the original English version of the instrument by a third independent translator who was an eminent Retired Professor in the field of Child Psychiatry. Comparisons were made regarding the semantic and conceptual equivalence between the versions and some ambiguities and discrepancies of words, sentences and meanings were resolved and rectified to generate a pre final composite version in the Tamil language. (Appendix 6)

This preliminary version was tested in a small sample of bilingual parents (ten in number) of children newly diagnosed with ADHD in the child psychiatry outpatient department in the Institute, first with the translated Tamil version and followed by the original English version and their input regarding the ease of understanding the language and meaning along with feedbacks to improvise the difficult to interpret items were sought. This was discussed with the third translator and necessary changes were made to the pre-final version to produce the final composite version - **Synthesis I.** (Appendix 7)

BACK-TRANSLATIONS

This process is called "blind backward translation" or "blind double translation" to ensure the linguistic correctness and interpretability of the translated version (Synthesis-I). The composite version (Synthesis-I) was subjected to two back-translations by two independent translators – one being a health care professional knowledgeable about medical terminologies and another translator, a language expert, recruited through a private language support service firm who had no prior knowledge about the nature of items of the scale, but he was knowledgeable about the cultural and linguistic nuances of the source (English) and the target (Tamil) languages as well.(Appendix 8 and 9)

COMPARISON OF BACK-TRANSLATIONS

The two back translated English versions were compared and rated by the language experts of the support service and the best rated version of the two was selected for expert reviews. The expert review consisted of six consultants of Psychiatry at the Institute of Mental Health, Chennai, Tamilnadu, India and four Assistant professors of clinical psychology. They rated all the scale items numbering one to fifty five individually on a Likert Scale from 1-7, ranging from "extremely comparable / similar" to "not at all comparable/similar" in a scoring sheet. (Appendix 10)

TRANSLATION PROCESS – FLOW DIAGRAM

```
                    ┌─────────────────────┐
                    │   VADPRS original   │
                    │   English version   │
                    └─────────────────────┘
                               │
            ┌──────────────────┴──────────────────┐
┌─────────────────────┐                 ┌─────────────────────┐
│   Forward Tamil     │                 │   Forward Tamil     │
│ translation 1 (TL-1)│                 │ translation 1 (TL-2)│
└─────────────────────┘                 └─────────────────────┘
            └──────────────────┬──────────────────┘
                    ┌─────────────────────┐
                    │  Composite Tamil    │
                    │ Translation (pre-final│
                    │     version)        │
                    └─────────────────────┘
                               │
                    ┌─────────────────────┐
                    │   Pilot testing &   │
                    │ Rectification in a small│
                    │    sample (n=10)    │
                    └─────────────────────┘
                               │
                    ┌─────────────────────┐
                    │  Final Tamil version│
                    │     Synthesis I     │
                    └─────────────────────┘
                               │
            ┌──────────────────┴──────────────────┐
┌─────────────────────┐                 ┌─────────────────────┐
│ Back Translation – 1│                 │ Back Translation – 2│
│     (English)       │                 │     (English)       │
└─────────────────────┘                 └─────────────────────┘
            └──────────────────┬──────────────────┘
                    ┌─────────────────────┐
                    │ Expert review of the best│
                    │  back translation on│
                    │ Likert scale scoring│
                    └─────────────────────┘
                               │
                    ┌─────────────────────┐
                    │ Adaptation in the whole│
                    │  sample (n=202) and │
                    │  Determination of   │
                    │ Psychometric properties│
                    └─────────────────────┘
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SETTING

The study was carried out in two settings.

1. First one was the community setting which was done in a school sample in the city of Chennai with the parents of children in the age group of 5-13 years.

2. The second setting was at the Child Psychiatry out-patient department of the Institute of Child Health and Hospital for Children where consecutive children who were diagnosed with ADHD were selected along with their parents.

SAMPLE SIZE CALCULATION

The sample size was determined on the basis of the reference study, Venkata J A, and Panicker AS, "The Prevalence of Attention Deficit and Hyperactivity Disorder in Primary School Children"; Indian Journal of Psychiatry 2013, in which the prevalence was measured at 11.32%. The minimum sample size was calculated as per the calculation given as 154.(Appendix 11)

SAMPLE SELECTION PROCESS

The sample selections were done first in the community (school) setting and then at the Hospital setting.

The first sample was selected from two schools in Chennai city from 1 to 8 standards, by randomly selecting 8 classes from each school. Out of the 556 and 482 students from School 1 and 2 respectively, 50 students from each school whose parents were available for interview and also given consent to participate were selected and included in this study.

The second sample was selected from the outpatient department of the Child Guidance Clinic of the Institute of Child Health from April to June 2015 with the total census of 726. Of these children, all 140 consecutive children with ADHD were selected and 38 were excluded for various reasons (with co morbid Seizure disorder – 12; Intellectual disability – 9; Autism spectrum disorder- 2; Uneducated and unwilling parents – 3; not giving consent – 7; did not turn up-5). The remaining 102 children with ADHD who fulfilled the inclusion criteria were included and were grouped into two –1) Bilingual (both English and Tamil knowing; n=30) and 2) Monolingual (only Tamil knowing; n=102).

SAMPLE SELECTION

SAMPLE SELECTION

SCHOOL

HOSPITAL

School - 1
one class
in each
Gr I - VIII

School - 2
one class
in each
Gr.I - VIII

Total census from April 2015
to June 2015
n=762

Total 556
students

Total
482

Selected Consecutive 140
children diagnosed as ADHD

Selected 50 students from
Each School whose parents
available & consented
to participate

Included
n = 102

Excluded
n = 38

Grouped
into

Comorbid
seizure
disorder
(n=12)

Total School
sample
n = 100

With Bilingual
parents
(n=30)

With Mono
lingual
(only Tamil
knowing)
n=72

Intellectual
Disability (n=9)

ASD (n=2)

Uneducated
parents (n=3)

Not willing (n=7)

Did not turnup
(n=5)

ETHICAL ISSUES

The children with their parents attending the out-patient department of the Institute's Child Guidance Clinic were seen as per the routine regular procedure of the department (registration, detailed interview and clinical examination) and after satisfying the inclusion criteria, details of the study were explained to the parents in the local language and also through the written informed consent forms (Appendix 12 and 13) including regional language and their consent obtained. The parents were also informed that the purpose of the study was for research purpose to provide quality care and better services to their children and confidentiality was ensured. It was assured to them that their status of participation or non-participation in the study will not affect their care or treatment and they can opt out of the study anytime during the process.

ASSESSMENTS

SCHOOL SAMPLE: The parents were explained about the study and after obtaining consent, were interviewed to collect data in the semi structured proforma for socio demographic profile of the child. They were asked to fill the translated Tamil version first in the morning when they came to school to leave their children and were asked to fill the

original English version in the evening on the same day, when they came back to school to take their wards back home.

HOSPITAL SAMPLE**:** The investigator under guidance of the consultants evaluated each child who fulfilled the inclusion criteria and whose parents consented for participation in the study.

The assessment tools used were:

1.   Sociodemographic profile and clinical assessment

A semi-structured proforma for socio-demographic details (Appendix 14) for Age, sex, religion, type of family, socioeconomic status, parental education and occupation, no. of siblings, birth order, family history of mental retardation/mental illness, antenatal, perinatal and neonatal details, gestation, birth weight, maternal separation, school details etc. was obtained, followed by a detailed clinical examination and mental status examination as per the department's case sheet proforma.

2.   Kiddie-sads-present and lifetime version 1.0 (K-SADS-PL)

K-SADS-PL is a semi-structured interview administered with parent(s), the child and other possible sources of information and requires completing:

1)   An unstructured introductory interview;

2)   Diagnostic Screening interview;

3)   The supplement check list;

4)   The appropriate Diagnostic supplement for ADHD

          Under the Supplement#4: Behavioral Disorders.

The scores of the ADHD supplement were given in a scale from 0-no information to 3- very often or threshold for the behavior items 1-17 and 0-no information to 2-not present from item 18 to 20.(Appendix 15)

3.   DSM-IV criteria

The DSM-IV criteria for ADHD was used for every patient and were assessed for the presence of adequate criteria for the diagnosis of each subtype (6 out of 9 for Inattention and 6 out of 9 for Hyperactivity/Impulsivity), onset, duration and the sub typing were done accordingly. (Appendix 16)

4.   Vanderbilt ADHD Parent Rating Scale (VADPRS)

The VADPRS was then given to the parents after explaining how to score the items individually on a scale 0-never to 3- mostly for the first forty seven items which depict appropriate scale items

1 – 9: for Inattention

10 – 15: for Hyperactivity

16 – 18: for Impulsivity

19 – 26: for ODD

27 – 40: for Conduct Disorder

41 – 47: for Mood/Anxiety symptoms

and also Academic performance (1-3) items and Class room Behaviour (1-5) items to assess their impairments in these areas of functioning. Both Tamil and English versions were given according to the groups.

DATA ANALYSIS

➢ All the data obtained were entered in the Microsoft Office Excel sheets to prepare the Master Charts for the entire sample size.

➢ Normal distribution of the data of the individual groups was checked.

➢ The sociodemographic details were analyzed using the descriptive statistics.

➢ Chi square tests were performed between the descriptive parameters of the three groups

➢ The scale items of both versions (English and Tamil) were grouped into five domains namely, Inattention, Hyperactivity/Impulsivity, Disruptive Behaviors, Mood/Anxiety symptoms and Performance in both community and hospital samples and their intra correlation within each category and inter-correlation between the English and Tamil versions category wise in the appropriate groups were done using Pearson's correlation coefficient measures.

➢ **The convergent validity** was checked between the categories of both versions with the K-SADS-PL ADHD supplement scores and with DSM-IV criteria scores.

➢ **The Internal consistency** using the Cronbach's alpha and other Reliability Statistics were analysed for the ADHD scores for the two sub-types namely Inattention (Items 1-9) and Hyperactivity (Items 19-18) for both versions with their corresponding total ADHD item (1-18) scores for the entire sample size of 202, to check the internal consistency of the translated Tamil version compared to the original English version.

➢ **Split-Half Analyses** for consistency were done for both language versions of the scale, between the Inattention scores (1-9) and Hyperactivity/ Impulsivity scores (10-18) alone, for the entire sample size.

- ➤ The scores of experts on the Likert scales for the comparisons and simililarities between the original and backtranslated versions were done using mean and standard deviations for the individual items.

- ➤ The statistical analyses were done using the standard procedures with the guidance from the Dept. of Epidemiology, The T.N.Dr.MGR Medical University, Chennai.

RESULTS

Descriptive Analysis

Totally 202 samples were collected for the purpose of the study. Among them Community (School) sample was 100 and clinical study sample (Hospital) was 102 with bilingual (both English and Tamil knowing) parents 30 and monolingual (only Tamil knowing) 72.

Table 1: AGE DISTRIBUTION

AGE	Community (n=100)		Bilingual (n=30)		Tamil (n=72)	
	Frequency	%	Frequency	%	Frequency	%
5-7 yrs	22	22	14	46.7	21	29.2
8-10 yrs	40	40	8	26.7	37	51.4
11-13 yrs	38	38	8	26.7	14	19.4

AGE DISTRIBUTION

5-7 yrs   8-10 yrs   11-13 yrs

Community (n=100): 22%, 40%, 38%
Bilingual (n =30): 46.70%, 26.70%, 26.70%
Tamil (n=72): 29.20%, 51.40%, 19.40%
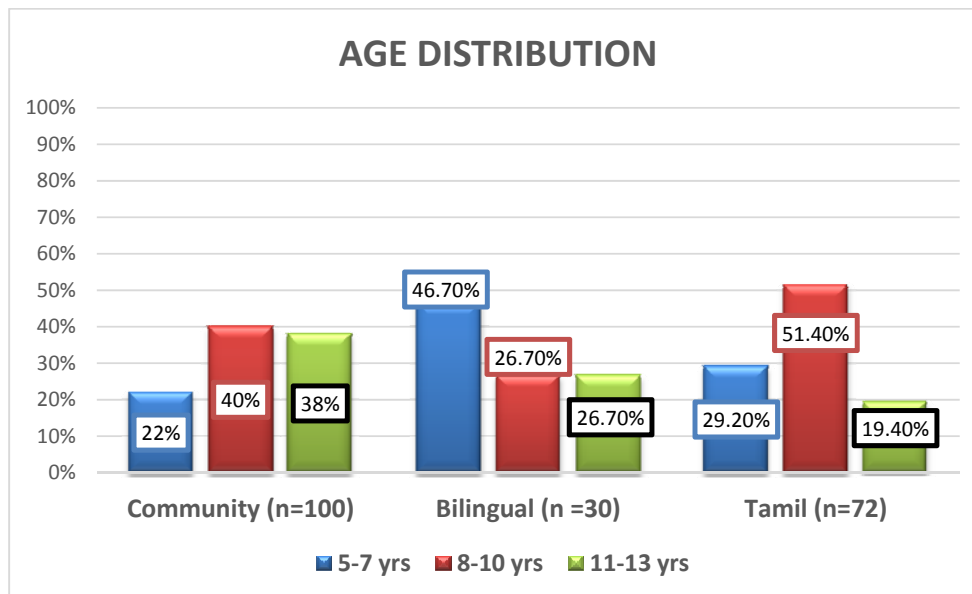
Age distribution in the community School sample(n=102) is 22% in the 5-7 years age group; 40 % in the 8-10 years and 38% in 11-13 years age group.

In the clinical study sample (n=102), it is 35% in 5-7years, 45% in the 8-10years and 20% in the 11-13 years age group.

Table 2: SEX DISTRIBUTION

Sex	Community N=100		Bilingual N=30		Tamil N=72	
	Frequency	%	Frequency	%	Frequency	%
Male	52	52	19	63.3	58	80.6
Female	48	48	11	36.7	14	19.4
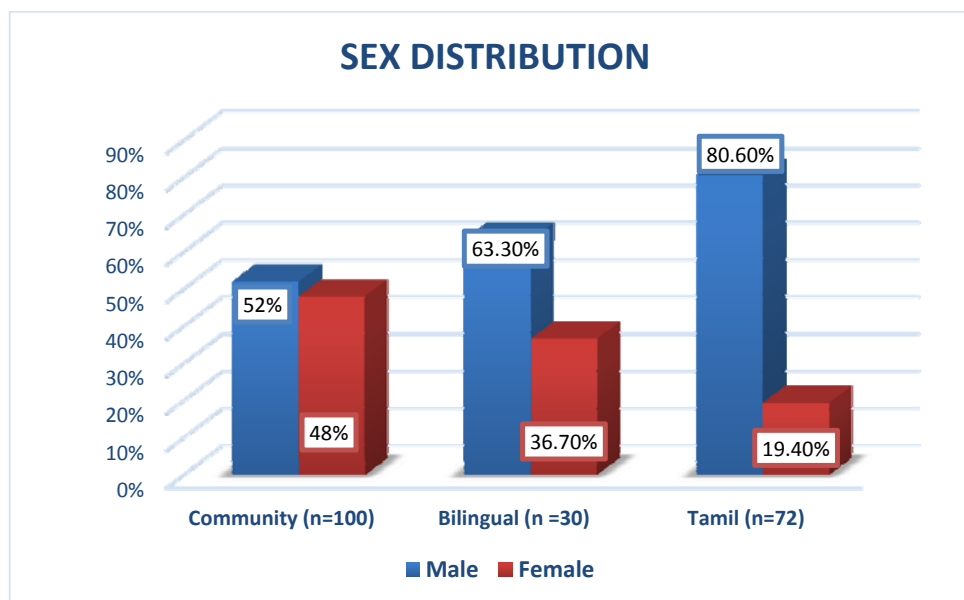
- Sex distribution is almost equal in the community school sample with 52% boys and 48% girls.

- In the Clinical study Bilingual sample of children with ADHD, boys were 63.3% and girl children 36.70% and in the monolingual Tamil sample boys were 80.60% and girls 19.40%.

- The clinical study sample shows a male preponderance.

Table 3: SOCIO ECONOMIC STATUS

SES	Community N=100		Bilingual N=30		Tamil N=72	
	Frequency	%	Frequency	%	Frequency	%
Upper	40	40	8	26.7	2	2.8
U.middle	50	50	22	73.3	28	38.9
L.middle	10	10			42	58.3

SOCIO ECONOMIC STATUS

	Community (n=100)	Bilingual (n =30)	Tamil (n=72)
Upper	40%	26.70%	2.80%
U.middle	50%	73.30%	38.90%
L.middle	10%	0%	58.30%
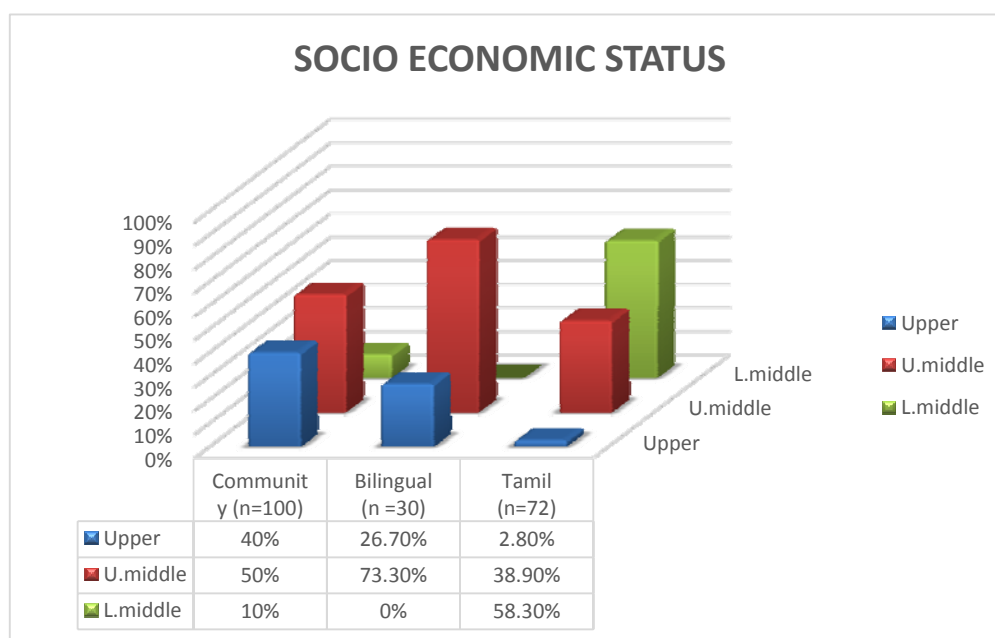
Socio economic status as assessed with the Modified Kuppusamy scale showed that the upper middle class predominating in the two groups – school sample(50%) and the bilingual(73.30%) whereas the lower middle class in the Monolingual Tamil group(58.30%). Upper class was seen mainly in the School and Bilingual sample.

Table 4: MOTHERS' EDUCATION STATUS

Mothers Education	Community N=100		Bilingual N=30		Tamil N=72	
	Frequency	%	Frequency	%	Frequency	%
Illiterate					1	1.4
Below H.School					2	2.8
High school	8	8	5	16.7	19	26.4
Hr.Sec	30	30	10	33.3	33	45.8
Graduate	48	48	15	50	9	12.5
Post graduate	14	14			8	11.1
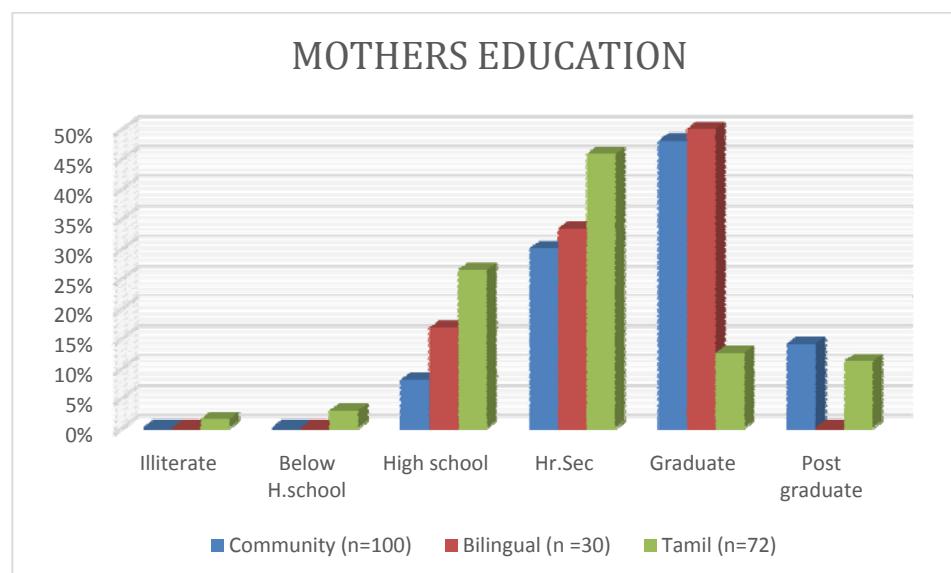
In the school sample most of the mothers were educated – Higher secondary 30%, Graduates 48% and Post graduates 14%. In bilingual sample it was 16.7%, 33.3% and 50% respectively. In the monolingual sample most of the mothers were of Higher secondary education level

Table 5: MOTHERS' OCCUPATION STATUS

Mothers' occupation status	Community N=100		Bilingual N=30		Tamil N=72	
	Frequency	%	Frequency	%	Frequency	%
Full time	10	10	7	23.3	1	1.4
Part time(<6hrs)	10	10	11	36.7	5	6.9
Not working	80	80	12	40	12	16.7
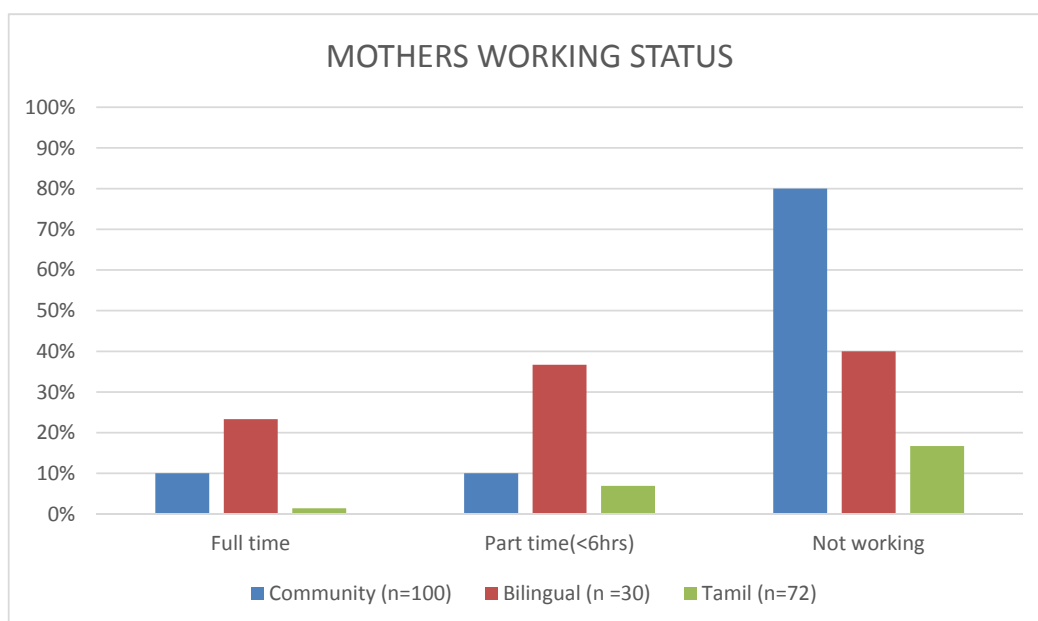
Most of the mothers in the community school sample were home makers (not working-80%), whereas the working mothers were more in the bilingual and monolingual groups.

Table 6:

FATHERS' EDUCATION STATUS

	Community N=100		Bilingual N=30		Tamil N=72	
	Frequency	%	Frequency	%	Frequency	%
Expired					1	1.4
Illiterate					1	1.4
Below H.school					6	8.3
High school					28	38.9
Hr.Sec	14	14	4	13.3	21	29.2
Graduate	66	66	12	40	10	13.9
Post graduate	20	20	14	46.7	6	8.3

FATHERS EDUCATION
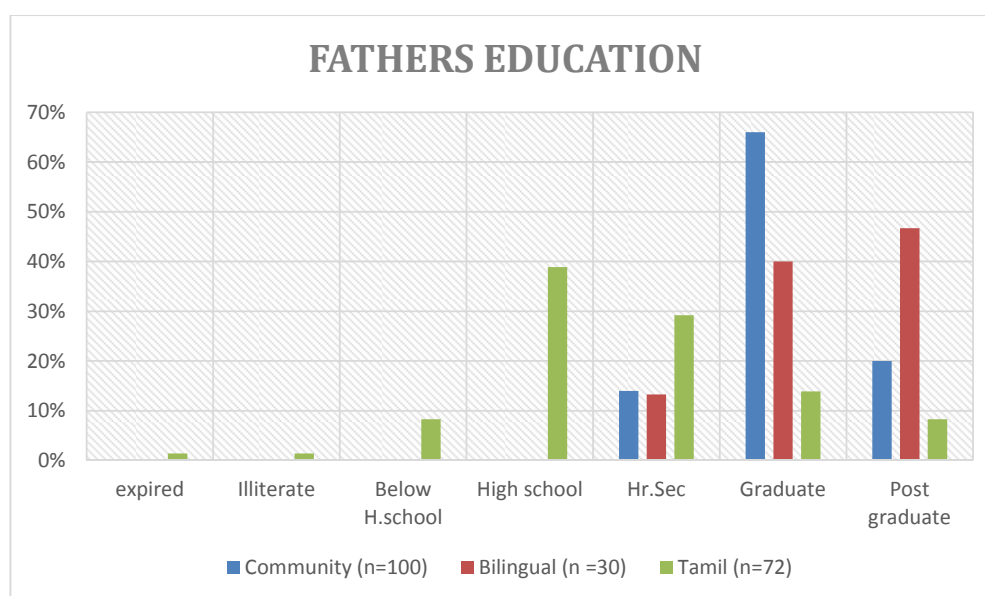
➢ Fathers were well educated in Group 1 (School sample) and Group 2 (Bilingual) with graduates – 66% and 40% respectively; postgraduates – 20% and 46.7% respectively.

Table 7 : FATHERS' WORKING STATUS

	Community N=100		Bilingual N=30		Tamil N=72	
	Frequency	%	Frequency	%	Frequency	%
Expired					2	2.8
Full time	100	100	21	70	67	93.1
Part time(<6hrs)			9	30	2	2.8
Not working					1	1.4
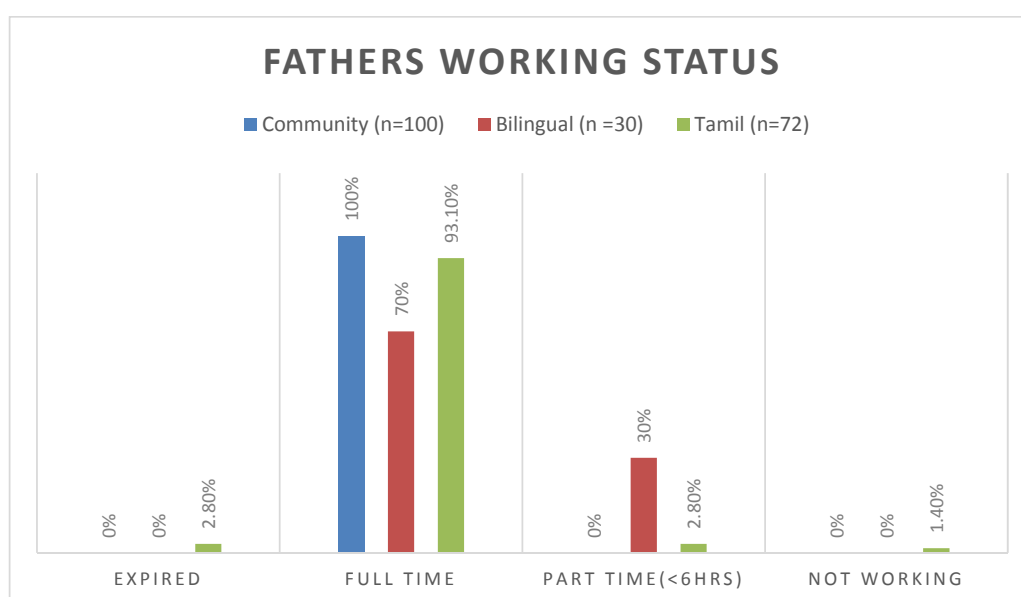
> ➤ Educational status was comparatively less in the Tamil monolingual sample with maximum percentage 38.9% finished up to high school only.

> ➤ Fathers were working full time in all the three groups (100% in school sample, 70% in bilingual sample and 93% in the monolingual sample).

Table8: NUMBER OF SIBLINGS

No. Of Siblings	Community N=100		Bilingual N=30		Tamil N=72	
	Frequency	%	Frequency	%	Frequency	%
0	32	32			7	9.7
1	66	66	30	100	54	75
2	2	2			7	9.7
3					4	5.6
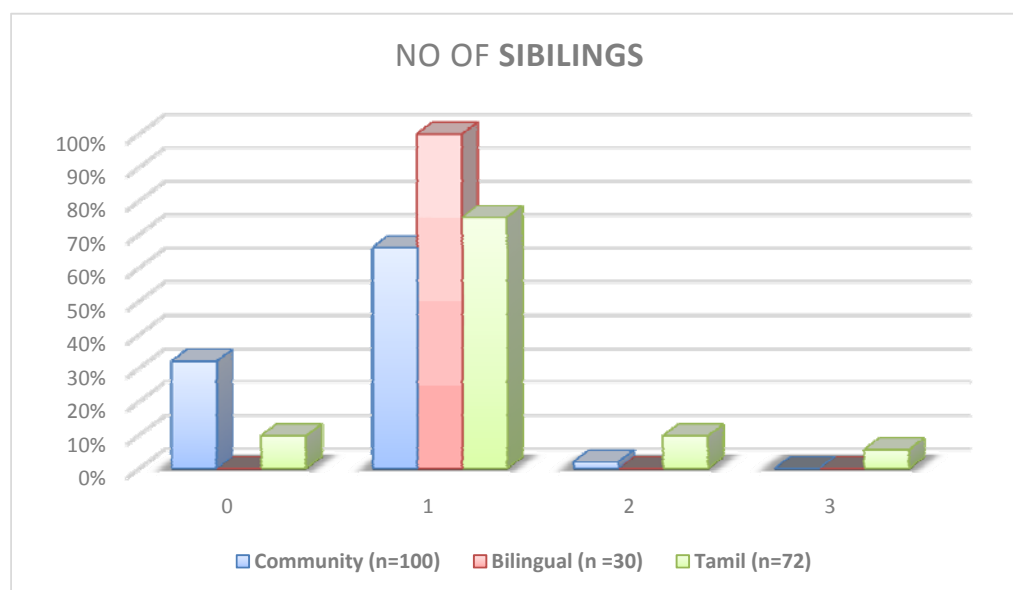
✓ In the school sample single child was 32% and with one sibling was 66%.

✓ In the hospital samples, single child was 9.7% in Tamil sample and with one sibling was 100% in bilingual and 75% in monolingual Tamil sample.

Table 9: BIRTH ORDER

Birth Order	Community N=100		Bilingual N=30		Tamil N=72	
	Frequency	**%**	**Frequency**	**%**	**Frequency**	**%**
I	62	62	20	66.7	44	61.1
II	38	38	10	33.3	27	37.5
III					1	1.4
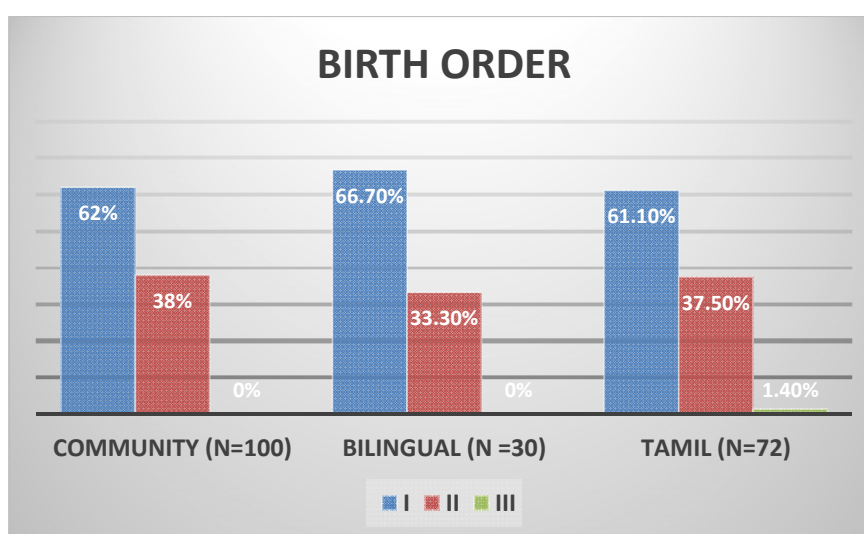
- In the community school sample, the I order birth 62% and II order birth was 38%.

- In the clinical study sample (hospital), the children were I order - 66.7% in bilingual and 61.10% in Tamil group and II order birth – 33.3% and 37.5%.

- Analysis of onset, duration and types of ADHD was done in the whole clinical study sample(n=102) comprising of both bilingual (n=30) and Tamil (n=72).

Table 10: ONSET OF ADHD

ONSET(years)	Frequency	Percent
4	12	11.8
5	48	47.1
6	37	36.3
7	5	4.9
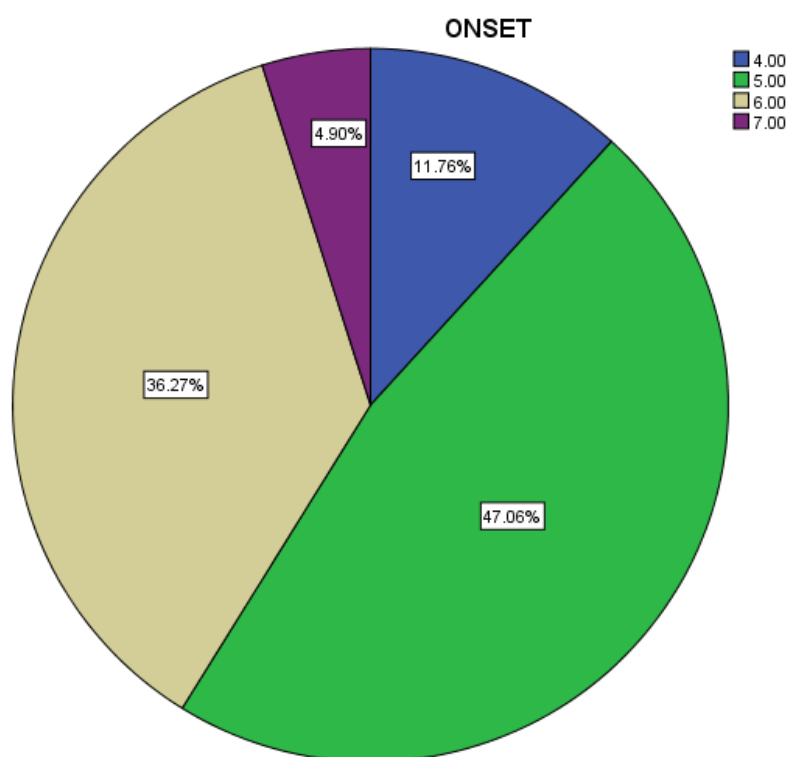
ONSET

The onset of ADHD in the hospital sample was more at 5 years of age (47%) and at 6 years (36.3%)

Table 11 : DURATION OF ADHD

DURATION (YEARS)	Frequency	Percent
1	5	4.9
2	36	35.3
3	29	28.4
4	15	14.7
5	13	12.7
6	4	3.9
Total	102	100
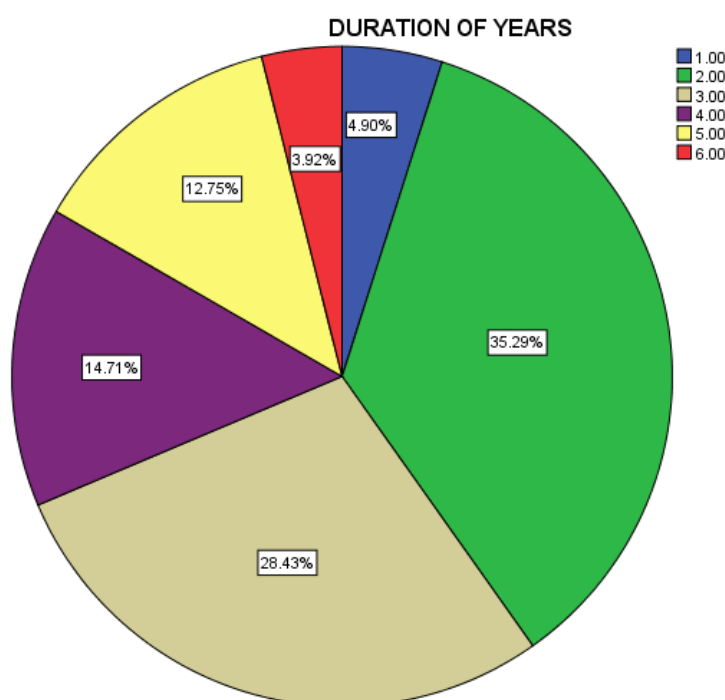
DURATION OF YEARS

The duration of symptoms were seen mostly for 2 years (35.3%)

followed by 3 years (28.4%) in this study sample .

Table 12: TYPE OF ADHD

TYPE	Frequency	Percent
1(Inattention)	1	1
2 (Hyperactivity)	12	11.8
3(combined)	89	87.3
Total	102	100

TYPE

■ 1.00
■ 2.00
□ 3.00

0.98%   11.76%

87.25%
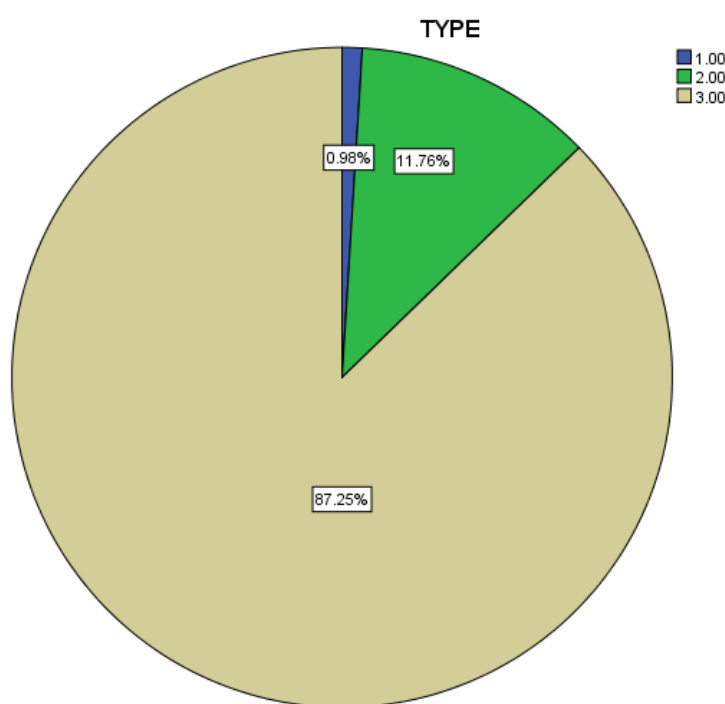
The type of ADHD mostly seen in this clinical study sample was combined type (87.3%) ; then Hyperactivity type (11.8%) and Inattention type only 1% .

Table 13: SCHOOL SAMPLE: INTRA-CORRELATION

ANALYSIS WITHIN ENGLISH AND TAMIL VERSION

DOMAINS	ITEM to ITEM Correlations	OTHER CORRELATION RANGES significant at the 0.01 level (2-tailed)	
		ENGLISH VERSION	TAMIL VERSION
Inattention (Q-1 to Q-9)	1	0.260 – 0.661	0.257 - 0.554
Hyperactivity/impulsivity (Q-10 to Q-18)	1	0.282 – 0.624	0.257 – 0.556
Disruptive behaviour (Q-19 to Q-40)	1	0.260 – 0.767	0.257 – 0.605
Mood symptoms (Q-41 to Q-47)	1	0.337 – 0.585	0.342 – 0.608
Academic Performance/ classroom behaviour (1 – 8)	1	0.277 – 0.411	0.300 – 0.445

In the school sample the intra correlation table shows item to item correlation with Pearson correlation coefficient of 1 with corresponding scale items in both English and Tamil versions. Other significant correlations also exist between the items in all the domains of the scale in Tamil version compared to the original English version at the 0.01 level significance values as depicted in this table.

Table 14: SCHOOL SAMPLE: INTER-CORRELATIONS BETWEEN ENGLISH AND TAMIL IN INATTENTION DOMAIN

		T1	T2	T3	T4	T5	T6	T7	T8	T9
E1	Pearson Correlation	.889**	.193	.106	.427**	.091	.155	.139	.284**	.051
	P value	.000	.054	.295	.000	.367	.123	.167	.004	.612
E2	Pearson Correlation	-.023	.859**	.252*	.213*	.257**	.148	.349**	.231*	.420**
	P value	.817	.000	.011	.033	.010	.143	.000	.021	.000
E3	Pearson Correlation	.173	.353**	.939**	.061	.430**	.500**	.331**	.433**	.025
	P value	.085	.000	.000	.549	.000	.000	.001	.000	.802
E4	Pearson Correlation	.311**	.258**	.096	.837**	.087	.535**	-.204*	.112	.331**
	P value	.002	.010	.342	.000	.392	.000	.042	.268	.001
E5	Pearson Correlation	.129	.383**	.471**	.115	.771**	.356**	.279**	.592**	.200*
	P value	.200	.000	.000	.255	.000	.000	.005	.000	.046
E6	Pearson Correlation	-.059	.006	.359**	.529**	.262**	.777**	-.321**	.066	.080
	P value	.561	.953	.000	.000	.008	.000	.001	.513	.431
E7	Pearson Correlation	.188	.317**	.179	-.171	.112	-.199*	.696**	.093	.187
	P value	.061	.001	.075	.090	.267	.047	.000	.358	.063
E8	Pearson Correlation	.215*	.144	.223*	.052	.587**	.072	.101	.809**	.063
	P value	.032	.153	.026	.605	.000	.477	.319	.000	.537
E9	Pearson Correlation	.001	.389**	.101	.501**	-.062	.179	.110	-.026	.799**
	P value	.996	.000	.318	.000	.537	.075	.274	.797	.000
*. Correlation is significant at the 0.05 level (2-tailed).										
**. Correlation is significant at the 0.01 level (2-tailed).										

In the Inattention domain, high Item (English) to Item (Tamil) correlations were significantly present at 0.01 level ranging from 0.696(E7 to T7) to 0.939(E3 to T3). Other significant correlations exist in comparison to the English to English version in the same sample in the range of 0.257 to 0.592 (E5 to T8) in the corresponding scale items.

Table 15: SCHOOL SAMPLE : INTER CORRELATIONS IN HYPER ACTIVITY DOMAIN

	T-10	T-11	T-12	T-13	T-14	T-15	T-16	T-17	T-18	
E-10	.804**	.433**	.247*	.197*	.385**	.033	.415**	.200*	.063	Pearson Correlation
	.000	.000	.013	.050	.000	.743	.000	.046	.533	Sig. (2-tailed)
E-11	.493**	.787**	.335**	.121	.357**	-.040	.335**	.124	.142	Pearson Correlation
	.000	.000	.001	.231	.000	.693	.001	.219	.160	Sig. (2-tailed)
E-12	.321**	.271**	.876**	.252*	.462**	.066	.426**	.107	.299**	Pearson Correlation
	.001	.006	.000	.011	.000	.514	.000	.291	.003	Sig. (2-tailed)
E-13	.235*	-.040	.166	.848**	.322**	-.108	.279**	.043	-.080	Pearson Correlation
	.019	.691	.099	.000	.001	.287	.005	.673	.431	Sig. (2-tailed)
E-14	.705**	.313**	.390**	.307**	.711**	.054	.413**	.185	.225*	Pearson Correlation
	.000	.002	.000	.002	.000	.596	.000	.066	.025	Sig. (2-tailed)
E-15	.226*	.038	.170	-.042	.240*	.777**	.279**	.433**	.428**	Pearson Correlation
	.024	.704	.092	.675	.016	.000	.005	.000	.000	Sig. (2-tailed)
E-16	.573**	.366**	.382**	.403**	.455**	.277**	.926**	.417**	.103	Pearson Correlation
	.000	.000	.000	.000	.000	.005	.000	.000	.309	Sig. (2-tailed)
E-17	.280**	.197*	.200*	.300**	.284**	.398**	.559**	.771**	.212*	Pearson Correlation
	.005	.049	.046	.002	.004	.000	.000	.000	.034	Sig. (2-tailed)
E-18	.144	.149	.335**	-.081	.342**	.216*	.078	.258**	.552**	Pearson Correlation
	.152	.140	.001	.422	.000	.031	.441	.010	.000	Sig. (2-tailed)

In the Hyperactivity domain, high Item to item correlations were seen at significant 0.01 level ranging from 0.552(E-18 to T-18) to 0.926 (E-16 to E-T-16). Significant correlations were also present with other items of the scale at 0.01 levels ranging from 0.279 to 0.705 (E-14 to T-14).

TABLE 16: SCHOOL SAMPLE: INTER CORRELATIONS

DISRUPTIVE BEHAVIOR DOMAIN

		T19	T20	T21	T22	T23	T24	T25	T26	T27	T28	T29
E19	Pearson Correlation	.592**	.000	.248*	.161	-.140	.057	-.093	.186	.235*	.137	-.114
	P value	.000	1.000	.013	.111	.165	.570	.358	.064	.019	.174	.258
E20	Pearson Correlation	.015	.690**	-.181	.073	-.099	.230*	.155	.139	-.063	-.042	.067
	P value	.884	.000	.072	.471	.326	.021	.124	.167	.533	.679	.510
E21	Pearson Correlation	.256*	-.179	.828**	.395**	.187	.111	.228*	.126	.100	.095	.362**
	P value	.010	.074	.000	.000	.062	.274	.023	.212	.321	.345	.000
E22	Pearson Correlation	.223*	.264**	.433**	.866**	.192	.173	.200*	.330**	.332**	-.011	.025
	P value	.026	.008	.000	.000	.056	.085	.046	.001	.001	.913	.808
E23	Pearson Correlation	-.087	-.096	.200*	-.012	.814**	.173	.500**	.040	.185	.265**	.394**
	P value	.388	.342	.046	.909	.000	.085	.000	.693	.065	.008	.000
E24	Pearson Correlation	.050	.424**	.196	.066	.139	.858**	.182	-.095	-.144	-.150	-.038
	P value	.624	.000	.051	.514	.168	.000	.071	.347	.154	.135	.709
E25	Pearson Correlation	.187	.236*	.436**	.610**	.489**	.216*	.736**	.131	.349**	.273**	.175
	P value	.063	.018	.000	.000	.000	.031	.000	.194	.000	.006	.082
E26	Pearson Correlation	.192	.007	-.045	.058	-.096	-.191	.023	.782**	-.046	.700**	.073
	P value	.056	.943	.653	.569	.342	.057	.822	.000	.650	.000	.472
E27	Pearson Correlation	.251*	.089	.237*	.417**	.210*	-.066	.030	.427**	.690**	.149	-.088
	P value	.012	.380	.017	.000	.036	.513	.769	.000	.000	.140	.386
E28	Pearson Correlation	.102	.019	.208*	.374**	.268**	-.070	.156	.219*	.539**	.294**	.187
	P value	.312	.853	.038	.000	.007	.488	.121	.029	.000	.003	.062
E29	Pearson Correlation	.057	-.075	.000	.110	.068	-.224*	.101	.663**	.093	.874**	.198*
	P value	.571	.458	1.000	.276	.500	.025	.320	.000	.357	.000	.048
**. Correlation is significant at the 0.01 level (2-tailed).												
*. Correlation is significant at the 0.05 level (2-tailed).												

In this Disruptive behavior domain also statistically significant correlations were seen at the 0.01 level in the item to item inter-correlation analysis ranging from 0.294 to 0.866. Other correlations in comparison to the English version intra correlations in the same sample were in the range from 0.265 to 0.874.

Table 17: SCHOOL SAMPLE :
INTER-CORRELATION IN THE MOOD DOMAIN

		T-41	T-42	T-43	T-44	T-45	T-46	T-47
E-41	Pearson Correlation	.713**	-.121	.169	-.013	-.071	.136	.021
	Sig. (2-tailed)	.000	.229	.092	.897	.486	.178	.832
E-42	Pearson Correlation	-.172	.698**	-.073	.309**	-.250*	-.295**	.089
	Sig. (2-tailed)	.088	.000	.472	.002	.012	.003	.379
E-43	Pearson Correlation	-.063	-.041	.678**	.251*	585**	.308**	.150
	Sig. (2-tailed)	.531	.683	.000	.012	.000	.002	.136
E-44	Pearson Correlation	-.178	.249*	.090	.738**	-.054	-.125	-.072
	Sig. (2-tailed)	.077	.013	.374	.000	.596	.216	.475
E-45	Pearson Correlation	.070	.037	.464**	.279**	.750**	.286**	.171
	Sig. (2-tailed)	.487	.712	.000	.005	.000	.004	.088
E-46	Pearson Correlation	.010	-.457**	.405**	.061	.464**	.790**	.212*
	Sig. (2-tailed)	.920	.000	.000	.548	.000	.000	.034
E-47	Pearson Correlation	-.203*	.188	.255*	-.006	.140	.194	.682**
	Sig. (2-tailed)	.043	.061	.010	.949	.166	.053	.000

In the Mood symptoms domain , there were high correlations in the item to item analysis, with Pearson's correlation coefficients significant at the 0.01 level ranging from 0.682 to 0.790 (E-46 to T-46) .

Other comparative correlations with the English version's intra correlations were significant in the range of 0.286 to 0.585.

Table 18: HOSPITAL BILINGUAL SAMPLE: INTRA

CORRELATION ANALYSIS WITHIN

ENGLISH AND TAMIL VERSION

DOMAINS	ITEM to ITEM Correlations	OTHER CORRELATION RANGES significant at the 0.01 level (2-tailed)	
		ENGLISH VERSION	TAMIL VERSION
Inattention (Q-1 to Q-9)	1	0.467 – 0.622	0.466 - 0.751
Hyperactivity/impulsivity (Q-10 to Q-18)	1	0.478 – 0.701	0.542 – 0.705
Disruptive behaviour (Q-19 to Q-40)	1	0.463 – 0.755	0.487 – 0.578
Mood symptoms (Q-41 to Q-47)	1	0.557 – 0.802	Nil significant
Academic Performance/ classroom behaviour (1 – 8)	1	Nil significant	Nil significant

In the hospital bilingual sample, the intra correlation analysis showed an "Item to Item" correlation of 1 (Pearson coefficient) in both English and Tamil versions and also significant correlations were seen in each domain with other scale items in the range mentioned above at the 0.01 level(2-tailed). The other correlations in the Tamil version were:

- 0.466 – 0.751 for Inattention domain

- 0.542 – 0.705 for the Hyperactivity/Impulsivity domain

- 0.487 – 0. 578 for the Disruptive behavior domain and

- No significant correlations for the mood symptoms and the Performance scales

Table19:HOSPITAL BILINGUAL SAMPLE :

INTER-CORRELATIONS IN THE INATTENTION

DOMAIN BETWEEN-ENGLISH & TAMIL

		T1	T2	T3	T4	T5	T6	T7	T8	T9
E1	Pearson Correlation	.464**	.210	.516**	.406*	-.063	.118	.465**	.271	.460*
	P value	.010	.266	.004	.026	.742	.533	.010	.148	.011
E2	Pearson Correlation	-.025	.599**	-.013	.063	.155	.022	.220	.519**	.074
	P value	.894	.000	.946	.743	.414	.910	.243	.003	.696
E3	Pearson Correlation	.458*	.199	.231	.016	.121	.245	.390*	.336	.475**
	P value	.011	.291	.219	.932	.524	.191	.033	.069	.008
E4	Pearson Correlation	.241	-.078	.521**	.701**	.311	.522**	.270	.294	.464**
	P value	.199	.683	.003	.000	.094	.003	.150	.115	.010
	N	30	30	30	30	30	30	30	30	30
E5	Pearson Correlation	.222	.573**	.448*	.242	.749**	.424*	.067	.258	.025
	P value	.239	.001	.013	.197	.000	.020	.724	.168	.896
E6	Pearson Correlation	.613**	.376*	.681**	.369*	.414*	.677**	.242	.143	.538**
	P value	.000	.041	.000	.045	.023	.000	.198	.452	.002
E7	Pearson Correlation	.339	.461*	.495**	.219	.253	.189	.447*	.197	.201
	P value	.067	.010	.005	.244	.177	.316	.013	.296	.288
E8	Pearson Correlation	.341	.176	-.034	.075	.323	.058	.383*	.835**	.430*
	P value	.065	.351	.856	.695	.082	.761	.036	.000	.018
E9	Pearson Correlation	.603**	-.170	.305	.095	-.026	.305	.275	-.007	.488**
	P value	.000	.370	.102	.619	.891	.101	.142	.969	.006
**. Correlation is significant at the 0.01 level (2-tailed).										
*. Correlation is significant at the 0.05 level (2-tailed).										

- Intercorrelation between corresponding scale items (E-1 to T-1, E-2 to T-2 etc.) in the Inattention domain were seen in the Pearson's correlation coefficient range of 0.447 – 0.835.

- Other scale items correlation were also significant in the range of 0.464 – 0.613 at the 0.01 level (2-tailed)

Table 20 : HOSPITAL BILINGUAL SAMPLE:INTER-CORRELATIONS IN THE HYPERACTIVITY DOMAIN BETWEEN ENGLISH AND TAMIL										
		T10	**T11**	**T12**	**T13**	**T14**	**T15**	**T16**	**T17**	**T18**
E10	Pearson Correlation	**.815**[**]	.236	.369[*]	.020	.211	.053	.260	.012	.149
	P value	.000	.209	.045	.916	.264	.781	.165	.950	.432
E11	Pearson Correlation	**.473**[**]	.217	.161	.033	.231	.271	.071	-.369[*]	.100
	P value	.008	.250	.395	.865	.220	.148	.711	.045	.600
E12	Pearson Correlation	.410[*]	.267	**.501**[**]	-.437[*]	-.245	.123	.122	**.496**[**]	.265
	P value	.024	.153	.005	.016	.192	.519	.520	.005	.157
E13	Pearson Correlation	.431[*]	.388[*]	.172	.148	.052	**.731**[**]	-.017	.344	.351
	P value	.017	.034	.364	.435	.786	.000	.929	.063	.057
E14	Pearson Correlation	**.485**[**]	.171	.175	.111	.279	.189	.040	.232	.097
	P value	.007	.367	.355	.559	.135	.317	.833	.218	.609
E15	Pearson Correlation	**.447**[*]	.118	**.380**[*]	-.307	.105	.203	.167	-.298	-.101
	P value	.013	.534	.038	.098	.579	.281	.379	.110	.596
E16	Pearson Correlation	.456[*]	.290	.218	.007	.329	.366[*]	.310	.065	**.587**[**]
	P value	.011	.120	.248	.971	.076	.047	.095	.733	.001
E17	Pearson Correlation	**.481**[**]	.398[*]	**.469**[**]	-.229	-.081	**.645**[**]	.055	**.641**[**]	**.607**[**]
	P value	.007	.029	.009	.224	.669	.000	.772	.000	.000
E18	Pearson Correlation	**.581**[**]	.044	-.116	.219	.072	.237	.062	-.068	.212
	P value	.001	.818	.543	.245	.706	.206	.745	.721	.260
**. Correlation is significant at the 0.01 level (2-tailed). # E - in the rows denote English Questions										
*. Correlation is significant at the 0.05 level (2-tailed). # T - in the columns denote Tamil Questions										

Inter-correlation between Tamil and English versions in the Hyperactivity domain were seen in the range of 0.501 to 0.815 for [E-10 &T-10], [E-12 & T-12] and [E-17 & T-17]. Other significant correlations were observed between E 11 – T 10(0.473) ; E 12 – T 17(0.496) ;

E 13- T 15(0.731); E 14 – T 10(0.485) ; E 16 – T 18(0.587): E 17 with T 10(0.481), T 12(0.469), T 15(0.645) and T 18(0.607) and E 18 – T 10(0.581) at the 0.01 level. Only E-15 (Talks too much) had weak correlations with T-10(0.447) and T-12(0.380) at the 0.05 level (2-tailed)

		AP1-T	AP2-T	AP3-T	CB1-T	CB2-T	CB3-T	CB4-T	CB5-T
				Table 21:					
			HOSPITAL BILINGUAL SAMPLE: INTER-CORRELATIONS IN PERFORMANCE SCORES BETWEEN TAMIL AND ENGLISH						
Academic Perfotmance -1 English	Pearson Correlation	**.809**[**]	.030	-.053	.039	-.237	.243	.327	-.179
	P value	.000	.875	.780	.840	.208	.196	.077	.343
Academic Perfotmance -2 English	Pearson Correlation	-.063	**.760**[**]	.027	.183	.133	.425[*]	-.265	-.079
	P value	.740	.000	.886	.333	.482	.019	.156	.676
Academic Perfotmance -3 English	Pearson Correlation	.134	.085	**.545**[**]	.109	.011	.084	-.090	.056
	P value	.479	.655	.002	.566	.953	.658	.635	.768
Classroom Behaviour-1 English	Pearson Correlation	-.063	.280	-.300	**.623**[**]	.133	.255	.372[*]	-.079
	P value	.740	.134	.107	.000	.482	.174	.043	.676
Classroom Behaviour-2 English	Pearson Correlation	-.211	-.027	.244	.376[*]	**.786**[**]	-.011	.113	.265
	P value	.263	.889	.194	.040	.000	.953	.551	.157
Classroom Behaviour-3 English	Pearson Correlation	.084	.347	-.025	.357	.281	**.692**[**]	-.113	.053
	P value	.658	.060	.894	.053	.132	.000	.551	.781
Classroom Behaviour-4 English	Pearson Correlation	.464[**]	-.133	.084	.357	.068	.125	**.842**[**]	-.053
	P value	.010	.482	.660	.053	.723	.511	.000	.781
Classroom Behaviour-5 English	Pearson Correlation	-.042	-.293	-.244	.064	-.146	-.102	.099	**.583**[**]
	P value	.825	.115	.194	.739	.442	.591	.602	.001

*. Correlation is significant at the 0.05 level (2-tailed).　　# **T** – denotes Tamil in the Column headings

. Correlation is significant at the 0.01 level (2-tailed).　　# **AP-Academic performance; **CB** –Classroom Behaviour

In the Performance scores, the item to item inter correlations were significantly observed in the range from 0.545 to 0.842 at the 0.01 level.

No significant correlations existed between the Disruptive behavior scores and Mood symptom scores of the Tamil and English versions in this Bilingual clinical(ADHD) study sample.

		T1	T2	T3	T4	T5	T6	T7	T8	T9
Table 22: Hospital Bilingual Sample: Correlations- Inattention scores of K-SADS & VADPRS- Tamil Inattention scores										
K-SADS ADHD Sup. Scale item -1	Pearson Correlation	**1.000**[**]	.175	**.751**[**]	.222	**.493**[**]	.459[*]	.185	.205	**.578**[**]
	P value	.000	.356	.000	.239	.006	.011	.329	.278	.001
K-SADS ADHD Sup. Scale item -2	Pearson Correlation	**.491**[**]	.412[*]	**.695**[**]	.242	.199	.397[*]	-.045	-.057	.288
	P value	.006	.024	.000	.198	.291	.030	.814	.764	.123
K-SADS ADHD Sup. Scale item -3	Pearson Correlation	.178	0.000	.450[*]	**.812**[**]	.120	.378[*]	.406[*]	-.035	.334
	P value	.346	1.000	.013	.000	.526	.039	.026	.856	.071
K-SADS ADHD Sup. Scale item -4	Pearson Correlation	.413[*]	.300	.365[*]	.056	**.908**[**]	**.483**[**]	.173	.301	.093
	P value	.023	.107	.047	.767	.000	.007	.362	.106	.625
K-SADS ADHD Sup. Scale item -5	Pearson Correlation	**.491**[**]	.174	**.695**[**]	.443[*]	.199	.397[*]	.179	-.229	.288
	P value	.006	.357	.000	.014	.291	.030	.344	.224	.123
K-SADS ADHD Sup. Scale item -6	Pearson Correlation	.178	.312	.244	.167	.361	.400[*]	.452[*]	.193	.303
	P value	.347	.093	.194	.378	.050	.029	.012	.308	.103
K-SADS ADHD Sup. Scale item -7	Pearson Correlation	**.603**[**]	.177	.415[*]	.150	.037	.349	.208	.160	**.679**[**]
	P value	.000	.350	.023	.429	.846	.059	.270	.399	.000
**. Correlation is significant at the 0.01 level (2-tailed).										
*. Correlation is significant at the 0.05 level (2-tailed).										

➢ K-SADS-ADHD supplement item-1correlates with T-1(1.000), T-3(0.751),T-5(0.493) and T-9(0.578).

➢ Item-2 has significant correlations with T-1(0.491) and T-3(0.695)

➢ Item-3 has a correlation value of 0.812 with T-4

➢ Item-4 is correlating well with T-5(0.908) and T-6(0.483)

➢ Item-5 correlates significantly with T-1(0.491) and T-3(0.695)

➢ Item-6 has correlation with T-7(0.452) at 0.05level

➢ Item-7 correlates significantly with T-1(0.603) and T-9(0.679)

Table 23: Hospital Bilingual Sample: Correlations between Hyperactivity scores of K-SADS & VADPRS Tamil scale items

		VADPRS –TAMIL SCALE ITEMS					
		T10	T11	T12	T13	T14	T15
K-SADS ADHD Sup. Scale item-9	Pearson Correlation	.030	.164	**.591****	-.445*	.182	.055
	P value	.875	.385	.001	.014	.335	.774
K-SADS ADHD Sup. Scale item-10	Pearson Correlation	.146	.232	.181	.235	**.667****	.019
	P value	.440	.217	.338	.212	.000	.921
K-SADS ADHD Sup. Scale item-11	Pearson Correlation	.030	.101	-.358	**.755****	.125	.102
	P value	.875	.596	.052	.000	.509	.593
K-SADS ADHD Sup. Scale item-15	Pearson Correlation	-.247	-.304	.093	-.400*	-.147	-.394*
	P value	.189	.102	.626	.029	.439	.031
K-SADS ADHD Sup. Scale item-16	Pearson Correlation	.149	.184	**.438***	-.222	-.012	.155
	P value	.432	.331	.015	.238	.951	.413

**. Correlation is significant at the 0.01 level (2tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
' T' in column headings denote Tamil scale items

- ➢ K-SADS supplement item-9 has correlates with T-12(0.591) significantly at 0.01 level
- ➢ Item-10 has a significant Pearson's correlation coefficient with T-14(0.667).
- ➢ Item-11 correlates with T-13 (0.755)
- ➢ Item-15 has no significant correlation with any of these VADPRS scale items.
- ➢ Item-16 correlates with T-12 with a correlation coefficient of 0.438

Table 24: Hospital Bilingual Sample: Correlations between

Impulsivity scores of K-SADS & VADPRS Tamil scale items

		T16	T17	T18
K-SADS ADHD Sup. Scale item-12	Pearson Correlation	**.630****	-.031	.291
	P value	.000	.873	.118
K-SADS ADHD Sup. Scale item-13	Pearson Correlation	-.218	**.540****	.022
	P value	.247	.002	.908
K-SADS ADHD Sup. Scale item-14	Pearson Correlation	-.167	.069	**.596****
	P value	.379	.718	.001
**. Correlation is significant at the 0.01 level (2-tailed).				

➢ The Impulsivity scale items of K-SADS ADHD supplement has correlations with VADPRS Tamil version scale item K-SADS Item-12 with T-16(0.630) and K-SADS Item-13 with T-17(0.540).

➢ The K-SADS Item-14 correlates with T-18(0.596) significantly at 0.01 level

Table 25 : HOSPITAL BILINGUAL SAMPLE: CORRELATION OF DSM-4 INATTENTION CRITERIA WITH CORRESPONDING VADPRS TAMIL VERSION SCALE ITEMS(T-1 TO T-9)

		VADPRS TAMIL INATTENTION DOMAIN SCALES								
		T1	**T2**	**T3**	**T4**	**T5**	**T6**	**T7**	**T8**	**T9**
DSM-4 Inattention Criteria-1	Pearson Correlation	**.937****	.081	**.473****	.059	.439*	.352	.099	.294	**.544****
	P value	.000	.669	.008	.756	.015	.056	.605	.115	.002
DSM-4 Inattention Criteria-2	Pearson Correlation	-.184	**.771****	-.093	-.050	.124	.156	.195	.321	.124
	P value	.331	.000	.626	.792	.513	.410	.301	.083	.513
DSM-4 Inattention Criteria-3	Pearson Correlation	-.068	-.044	-.034	.168	-.138	.058	-.031	.199	.200
	P value	.720	.817	.856	.375	.466	.761	.870	.292	.290
DSM-4 Inattention Criteria-4	Pearson Correlation	.111	-.143	.308	**.659****	.225	.365*	.278	.258	.368*
	P value	.560	.451	.098	.000	.232	.047	.137	.168	.045
DSM-4 Inattention Criteria-5	Pearson Correlation	.145	.290	.337	.143	**.764****	.357	.040	.084	-.091
	P value	.445	.120	.069	.452	.000	.053	.835	.657	.631
DSM-4 Inattention Criteria-6	Pearson Correlation	**.491****	.174	**.695****	.443*	.199	**.397***	.179	.114	.453*
	P value	.006	.357	.000	.014	.291	.030	.344	.547	.012
DSM-4 Inattention Criteria-7	Pearson Correlation	.111	-.143	.308	**.545****	.225	.365*	**.530****	.065	.368*
	P value	.560	.451	.098	.002	.232	.047	.003	.735	.045
DSM-4 Inattention Criteria-8	Pearson Correlation	.368*	.178	-.093	.075	**.497****	.156	.195	**.750****	.331
	P value	.046	.347	.626	.692	.005	.410	.301	.000	.074
DSM-4 Inattention Criteria-9	Pearson Correlation	**.735****	.326	.371*	-.050	.248	.351	.335	.214	**.641****
	P value	.000	.078	.043	.792	.186	.057	.070	.256	.000
**. Correlation is significant at the 0.01 level (2-tailed).										
*. Correlation is significant at the 0.05 level (2-tailed).										

This correlation table shows significant "Item to Item" correlations between the DSM-4 criteria for Inattention and the VADPRS Inattention scale items of the Tamil version (T-1 to T-9) in the Pearson's correlation coefficient range from 0.397 to 0.937.

Other significant correlations between the variables were seen in the range of o.473 to 0.735 at the 0.01 level.

Table 26: HOSPITAL BILINGUAL SAMPLE: CORRELATION OF DSM4 HYPERACTIVITY/IMPULSIVITY CRITERIA WITH CORRESPONDING VADPRS TAMIL VERSION SCALE ITEMS (T-1 TO T-9)

		Correlations					
		T10	T11	T12	T13	T14	T15
DSM-4 H3	Pearson Correlation	.293	.361*	.860**	-.548**	-.023	.304
	P value	.116	.050	.000	.002	.904	.102
DSM-4 H4	Pearson Correlation	.149	.184	-.254	.632**	.340	.155
	P value	.432	.331	.176	.000	.066	.413
DSM-4 H5	Pearson Correlation	.224	.276	.311	.179	.861**	-.058
	P value	.235	.140	.094	.343	.000	.760
	N	30	30	30	30	30	30
*. Correlation is significant at the 0.05 level (2-tailed).							
**. Correlation is significant at the 0.01 level (2-tailed).							

Correlations				
		T16	T17	T18
DSM4 H7	Pearson Correlation	1.000**	-.031	.291
	P value	0.000	.873	.118
DSM-4 H8	Pearson Correlation	-.089	.710**	.234
	P value	.640	.000	.214
**. Correlation is significant at the 0.01 level (2-tailed).				
b. Cannot be computed because at least one of the variables is constant.				

These two tables show the correlations between the DSM-4 criteria for hyperactivity and impulsivity with the corresponding VADPRS scale items in Tamil version at significant 0.01 level ranging from 0.632 to 1.000.

Table 27: HOSPITAL MONOLINGUAL (TAMIL)

SAMPLE ANALYSES

HOSPITAL MONOLINGUAL (TAMIL) SAMPLE : INTRA-CORRELATION ANALYSIS WITHIN TAMIL VERSION		
DOMAINS	**ITEM to ITEM correlations**	**OTHER CORRELATION RANGES Significant at the 0.01 level(2-tailed)**
Inattention (Q-1 to 9)	1	0.303 – 0.444
Hyperactivity/ Impulsivity (Q-10 to 18)	1	0.304 – 0.388
Disruptive Behaviour (Q-19 t0 29)	1	0.375 – 697
Mood symptoms (Q-41 to 47)	1	0.388 – 0.692
Academic Performance/ Class Behaviour (1 to 8)	1	0.348 – 0.466

In the hospital Monolingual Tamil sample item to item intra-correlations had a Pearson's correlation coefficient of 1 for all the five domains significant at 0.01 level. Significant correlations were seen between other items of the scale in each domain at the same levels:

- 0.303 to 0.444 in Inattention domain

- O.304 to 0.388 in Hyperactivity domain

- O.375 to 0.697 in Disruptive behavior domain

- O.388 to 0.692 in Mood symptoms domain

- 0.348 to 0.466 in Performance scores

Table 28: HOSPITAL MONOLINGUAL(TAMIL) SAMPLE:
CORRELATION BETWEEN DSM.4 INATTENTION SCORES
AND VADPRS TAMIL VERSION SCORES

Correlations - INATTENTION		T1	T2	T3	T4	T5	T6	T7	T8	T9
DSM-4 Inattention Criteria-1	Pearson Correlation	.461**	.317**	.289*	.152	.014	.172	-.060	.273*	.081
	P value	.000	.007	.014	.201	.908	.150	.618	.020	.498
DSM-4 Inattention Criteria-2	Pearson Correlation	.219	.717**	.076	.339**	.239*	.479**	.140	.126	.126
	P value	.064	.000	.525	.004	.043	.000	.241	.292	.290
DSM-4 Inattention Criteria-3	Pearson Correlation	.099	-.065	.596**	.032	.081	.093	.011	.133	-.021
	P value	.408	.587	.000	.791	.497	.437	.928	.267	.864
DSM-4 Inattention Criteria-4	Pearson Correlation	.150	.308**	.103	.645**	.466**	.474**	.215	.205	.315**
	P value	.209	.009	.387	.000	.000	.000	.070	.084	.007
DSM-4 Inattention Criteria-5	Pearson Correlation	-.047	.353**	.194	.461**	.701**	.434**	.253*	.154	.064
	P value	.694	.002	.103	.000	.000	.000	.032	.197	.592
DSM-4 Inattention Criteria-6	Pearson Correlation	.201	.317**	.192	.441**	.536**	.659**	.151	.053	.054
	P value	.091	.007	.107	.000	.000	.000	.204	.661	.652
DSM-4 Inattention Criteria-7	Pearson Correlation	-.076	.114	.038	-.074	.002	.041	.762**	.142	.134
	P value	.524	.339	.754	.539	.988	.733	.000	.235	.261
DSM-4 Inattention Criteria-8	Pearson Correlation	.236*	.305**	.314**	.345**	.164	.163	.283*	.563**	.257*
	P value	.046	.009	.007	.003	.168	.172	.016	.000	.029
DSM-4 Inattention Criteria-9	Pearson Correlation	-.013	.182	.093	.045	.176	.006	.071	.151	.583**
	P value	.913	.125	.436	.706	.138	.961	.551	.206	.000
**. Correlation is significant at the 0.01 level (2-tailed). # 'T' denote Tamil scale items										
*. Correlation is significant at the 0.05 level (2-tailed).										

This table shows correlations between DSM-4 criteria and the VADPRS Tamil version scores in the monolingual sample (n=72) significantly in the range of 0.461 to 0.762 in the item to item correlations. Other correlations in the range of 0.305 to 0.536 at the 0.01 level were also present in this correlation between the Inattention domains.

Table 29: Correlations - HYPERACTIVITY		T10	T11	T12	T13	T14	T15
DSM-4 Hyperactivity Criteria-1	Pearson Correlation	.217	**.387**[**]	.186	.265[*]	-.053	.230
	P value	.067	.001	.117	.025	.656	.052
DSM-4 Hyperactivity Criteria-2	Pearson Correlation	**.446**[**]	**.484**[**]	.260[*]	.263[*]	.075	**.312**[**]
	P value	.000	.000	.028	.026	.531	.008
DSM-4 Hyperactivity criteria3	Pearson Correlation	.147	.101	**.755**[**]	.002	-.021	-.034
	P value	.218	.399	.000	.988	.863	.777
DSM-4 Hyperactivity Criteria-4	Pearson Correlation	.135	.027	-.065	**.534**[**]	.137	-.080
	P value	.259	.825	.590	.000	.147	.503
DSM-4 Hyperactivity Criteria-5	Pearson Correlation	.125	.136	.301[*]	-.032	**.338**[**]	.302[*]
	P value	.295	.255	.010	.787	.004	.010
DSM-4 Hyperactivity Criteria-6	Pearson Correlation	.011	.121	-.062	-.013	.268[*]	**.329**[**]
	P value	.926	.313	.604	.913	.023	.005
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

Table 30: Correlations-IMPULSIVITY		T16	T17	T18
DSM4 Impulsivity Criteria-7	Pearson Correlation	**.636**[**]	.024	.334[**]
	P value	.000	.843	.004
DSM4 Impulsivity Criteria-8	Pearson Correlation	.163	**.610**[**]	.157
	P value	.170	.000	.189
DSM4 Impulsivity Criteria-9	Pearson Correlation	.246[*]	-.006	**.459**[**]
	P value	.038	.960	.000
*. Correlation is significant at the 0.05 level (2-tailed).				
**. Correlation is significant at the 0.01 level (2-tailed).				

These two tables show correlations between the hyperactivity / Impulsivity domains of both DSM-4 criteria and the Tamil version of the VADPRS scale items in the range of 0.329 and 0.755 in the Hyperactivity domain and between o.334 and 0.636 range in the Impulsivity domain

CORRELATION BETWEEN K-SADS ADHD SCORES AND

TAMIL VADPRS SCORES IN WHOLE HOSPITAL SAMPLE

(Bilingual and Monolingual n=102)

Table 31: K-Sads Inattention scores(KS-1 to KS-7) Vs Tamil

VADPRS Scores(T-1 to T-9)

		T1	T2	T3	T4	T5	T6	T7	T8	T9
KS1	Pearson Correlation	.355**	.003	-.008	-.006	.049	.212*	.016	.092	.080
	p value	.000	.972	.940	.955	.625	.032	.871	.360	.425
KS2	Pearson Correlation	-.107	.004	.273**	.073	.054	.234*	.018	-.061	.088
	p value	.286	.970	.006	.466	.590	.018	.858	.543	.380
KS3	Pearson Correlation	.069	.239*	.271**	.424**	.224*	.242*	.258**	.260**	.163
	p value	.493	.015	.006	.000	.024	.014	.009	.008	.102
KS4	Pearson Correlation	.068	.185	.268**	.095	.403**	.169	.064	.206*	.097
	p value	.498	.062	.007	.343	.000	.090	.523	.038	.334
KS5	Pearson Correlation	.097	.200*	.310**	.227*	.027	.417**	.105	.178	.185
	p value	.331	.044	.002	.022	.790	.000	.294	.074	.063
KS6	Pearson Correlation	-.160	.055	-.097	.029	.059	.188	.357**	.076	.156
	p value	.108	.582	.331	.773	.558	.058	.000	.448	.117
KS7	Pearson Correlation	.019	-.031	.030	.056	-.028	.177	.161	.093	.277**
	p value	.846	.754	.766	.576	.776	.076	.105	.355	.005
**. Correlation is significant at the 0.01 level (2-tailed).										
*. Correlation is significant at the 0.05 level (2-tailed).										

Table shows correlations between the K-SADS ADHD (KS 1 to KS 7) Inattention scores and the Tamil version VADPRS Inattention scores (T1 - T9) in the significant range of 0.258 to 0.424 Pearson r values at the 0.01 level item to item wise as well as other correlation between them.

Table 32:Correlations between K-SADS Hyperactivity /

Impulsivity scores and that of Tamil VADPRS scores

		T10	T11	T12	T13	T14	T15
KS8	Pearson Correlation	.024	-.020	.036	-.054	-.032	.011
	p value	.807	.841	.716	.588	.751	.912
KS9	Pearson Correlation	.155	.033	.121	-.042	.059	-.047
	p value	.119	.745	.226	.675	.555	.638
KS10	Pearson Correlation	.149	.087	.031	.076	**.491****	-.109
	p value	.135	.384	.760	.445	.000	.275
KS11	Pearson Correlation	-.001	.034	-.037	.160	-.050	.122
	p value	.989	.733	.713	.108	.618	.222
KS15	Pearson Correlation	.053	-.094	.070	-.158	.098	-.013
	p value	.594	.348	.481	.112	.326	.894
KS16	Pearson Correlation	-.084	-.157	.001	-.110	-.047	**.226***
	p value	.400	.116	.992	.270	.638	.022
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

		T16	T17	T18
KS12	Pearson Correlation	**.256****	.131	**.374****
	p value	.009	.189	.000
KS13	Pearson Correlation	.075	**.306****	.159
	p value	.451	.002	.110
KS14	Pearson Correlation	**.297****	.116	.243*
	p value	.002	.247	.014
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

These tables show correlations between the hyperactivity / Impulsivity scores of K-SADS ADHD supplement (KS-8 to KS-16) and the Tamil VADPRS scores in the range of 0.226 to o.374 with better correlations in the impulsivity domain than hyperactivity.

Table 33: SPLIT HALF ANALYSES FOR
THE WHOLE SAMPLE (n=202)

		T-10	T-11	T-12	T-13	T-14	T-15
	Correlations-Inattention and Hyperactivity						
T-1	Pearson Correlation	.689**	.663**	.531**	.633**	.642**	.429**
	P value	.000	.000	.000	.000	.000	.000
T-2	Pearson Correlation	.786**	.661**	.600**	.638**	.727**	.555**
	P value	.000	.000	.000	.000	.000	.000
T-3	Pearson Correlation	.729**	.798**	.734**	.632**	.736**	.545**
	P value	.000	.000	.000	.000	.000	.000
T-4	Pearson Correlation	.624**	.578**	.570**	.651**	.623**	.389**
	P value	.000	.000	.000	.000	.000	.000
T-5	Pearson Correlation	.650**	.637**	.582**	.516**	.621**	.518**
	P value	.000	.000	.000	.000	.000	.000
T-6	Pearson Correlation	.700**	.677**	.620**	.733**	.681**	.501**
	P value	.000	.000	.000	.000	.000	.000
T-7	Pearson Correlation	.588**	.556**	.446**	.474**	.558**	.463**
	P value	.000	.000	.000	.000	.000	.000
	N	202	202	202	202	202	202
T-8	Pearson Correlation	.768**	.725**	.653**	.624**	.697**	.637**
	P value	.000	.000	.000	.000	.000	.000
T-9	Pearson Correlation	.511**	.450**	.481**	.547**	.493**	.423**
	P value	.000	.000	.000	.000	.000	.000

**. Correlation is significant at the 0.01 level (2-tailed).

\# **T- 1 to T-9** – denote the VADPRS scale items 1 – 9 for the Inattention domain.

\# **T-10 to T-15** – denote the VADPRS scale items 10-15 for the hyperactivity domain**.**

Table 34: SPLIT HALF ANALYSES FOR

THE WHOLE SAMPLE (n=202)

Correlations- Inattention and Impulsivity		T16	T17	T18
T1	Pearson Correlation	.530**	.384**	.466**
	P value	.000	.000	.000
T2	Pearson Correlation	.594**	.573**	.603**
	P value	.000	.000	.000
T3	Pearson Correlation	.543**	.543**	.532**
	P value	.000	.000	.000
T4	Pearson Correlation	.558**	.447**	.485**
	P value	.000	.000	.000
T5	Pearson Correlation	.531**	.534**	.484**
	P value	.000	.000	.000
T6	Pearson Correlation	.572**	.612**	.559**
	P value	.000	.000	.000
T7	Pearson Correlation	.492**	.462**	.385**
	P value	.000	.000	.000
T8	Pearson Correlation	.672**	.623**	.674**
	P value	.000	.000	.000
T9	Pearson Correlation	.374**	.384**	.467**
	P value	.000	.000	.000
	N	202	202	202
**. Correlation is significant at the 0.01 level (2-tailed).				

\#   **T- 1 to T-9** – denote the VADPRS scale items 1 – 9 for the Inattention domain

\#   **T-16 to T-18** – denote the VADPRS scale items 16-18 for the Impulsivity domain

The Split- Half Analyses of the two domains of the VADPRS ADHD core symptoms namely the Inattention (1-9 scale items) and the Hyperactivity/Impulsivity (10 – 18scale items) for the reliability of the Tamil version (T-1 to T-9 and T-10 to T-18) shows 'r' values in the range of **0.374 to 0.798 [Pearson's correlation coefficient 'r']** significant at the 0.01 level .

Table 35 : RELIABILITY STATISTICS FOR THE TAMIL VERSION

OF THE VADPRS FOR THE WHOLE SAMPLE (n=202)

RELIABILITY STASTICS		VALUES
CRONBACH'S ALPHA	PART I : INATTENTION SCORES T-1 to T-9	**0.925**
	PART II : HYPERACTIVITY / IMPULSIVITY SCORES T-10 to T-18	**0.935**
CORRELATION BETWEEN FORMS	PART I and PART II	**0.904**
SPEARMAN-BROWN COEFFICIENT	EQUAL LENGTH	**0.950**
	UNEQUAL LENGTH	**0.950**
GUTTMAN SPLIT-HALF COEFFICIENT	PART I and II	**0.948**

The reliability statistical analysis shown in this table was as follows:

➢ The Cronbach's alpha score – 0.925 – 0.935 for both domains of the scale's Tamil version

➢ The correlation between forms as 0.904

➢ The Spearman-Brown coefficient of both equal and unequal lengths as 0.950.

➢ Guttmann Split-Half coefficient for both parts as 0.948

LIKERT SCALE ANALYSIS OF THE EXPERT REVIEWS OF THE BACK TRANSLATION Vs ORIGINAL VADPRS

Table 36 : FOR "VADPRS" SCALE ITEMS 1-18

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18
Mean	3.30	2.30	1.50	2.70	3.30	1.90	1.70	1.40	3.60	2.30	2.00	1.50	2.70	2.30	1.80	1.40	1.30	1.50
Std. Deviation	.823	.823	.527	1.059	1.160	.994	.823	.516	1.350	1.252	.943	.972	1.337	1.160	1.033	.699	.483	.707
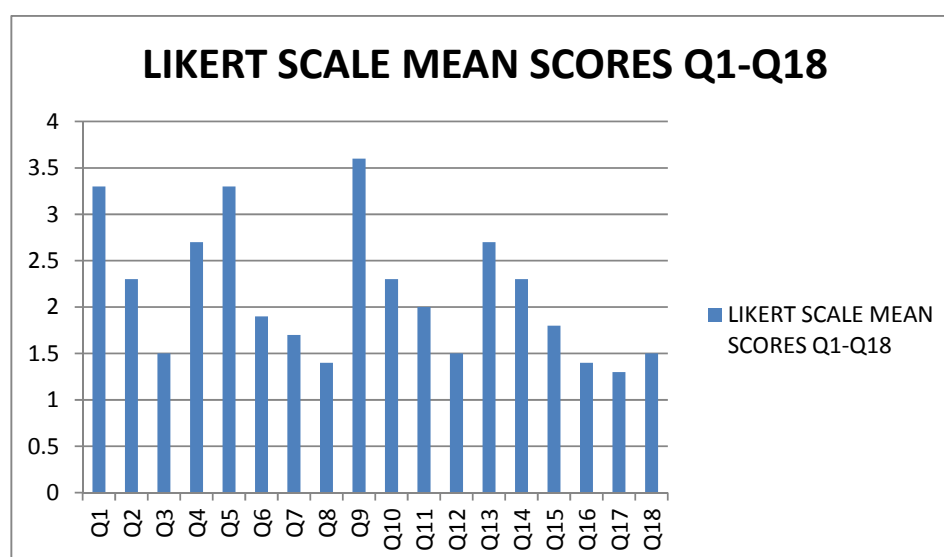
Scores 1-2 = extremely comparable/similar; 3-5 = moderately comparable/similar; 6-7 = Not at all comparable/similar

The expert reviews on a 7-point Likert scale for the comparability and similarity of the Back translated English version and the original English version of the VADPRS was done and these table shows the mean scores and standard deviations represented graphically also . The best mean score in these 18 items was 1.30 (Extremely comparable/similar) for Question-17 and the maximum mean score 3.60(moderately comparable/similar) for Question -9.

LIKERT SCALE ANALYSIS OF THE EXPERT REVIEWS OF THE BACK TRANSLATION Vs ORIGINAL VADPRS

Table 37 : FOR VADPRS SCALE ITEMS 18-36

	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36
Mean	2.10	2.20	1.90	1.90	1.50	1.90	2.20	2.10	3.30	3.10	1.90	1.70	1.50	2.30	1.60	1.90	2.50	2.20
Std. Deviation	.738	1.229	1.101	.994	.850	1.197	1.135	.876	1.252	1.101	.994	.823	.707	1.567	1.075	1.101	1.269	1.317
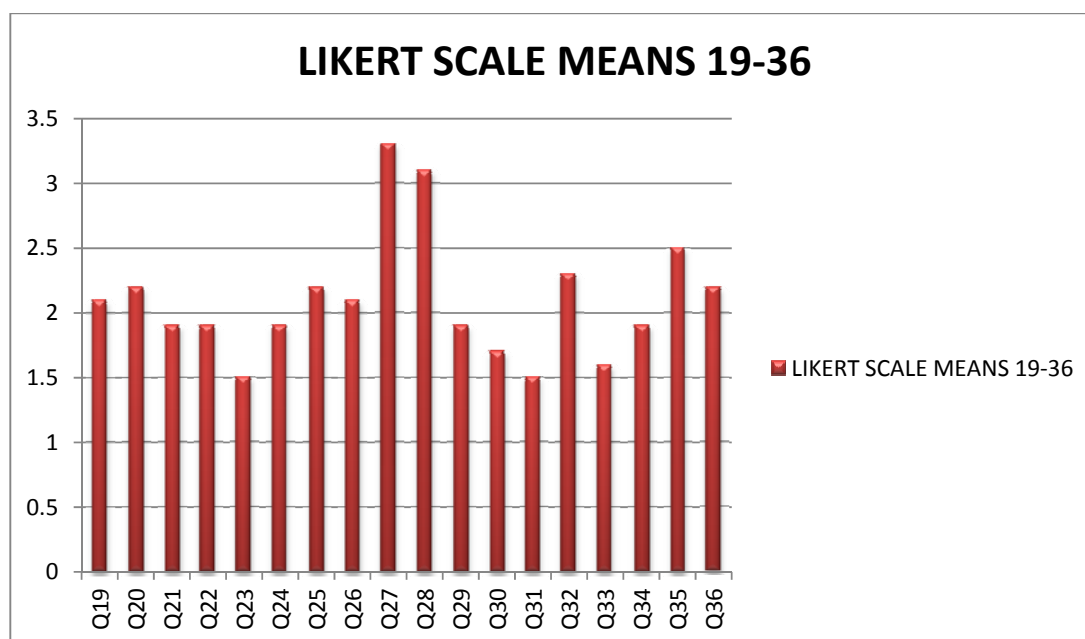
Scores 1-2 = extremely comparable/similar;   3-5 = moderately comparable/similar; 6-7 = Not at all comparable/similar

The likert scale mean scores for the scale items 19-36 [Q-19 to Q-36] shows the best score (1.50) for items 23 and 31(Q-23 and Q-31) and the maximum score is for the item Q- 27 which is 3.30.

LIKERT SCALE ANALYSIS OF THE EXPERT REVIEWS OF
THE BACK TRANSLATION Vs ORIGINAL VADPRS

Table 38 : FOR "VADPRS" SCALE ITEMS 37-55

	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54	Q55
Mean	2.40	2.20	2.00	2.80	1.70	1.30	1.30	1.90	1.70	1.30	2.60	1.70	1.50	1.60	1.80	1.40	1.40	1.60	1.50
Std. Deviation	1.174	1.033	.816	1.033	.483	.483	.483	1.101	1.059	.675	1.174	.949	.527	.516	.632	.516	.516	.699	.527
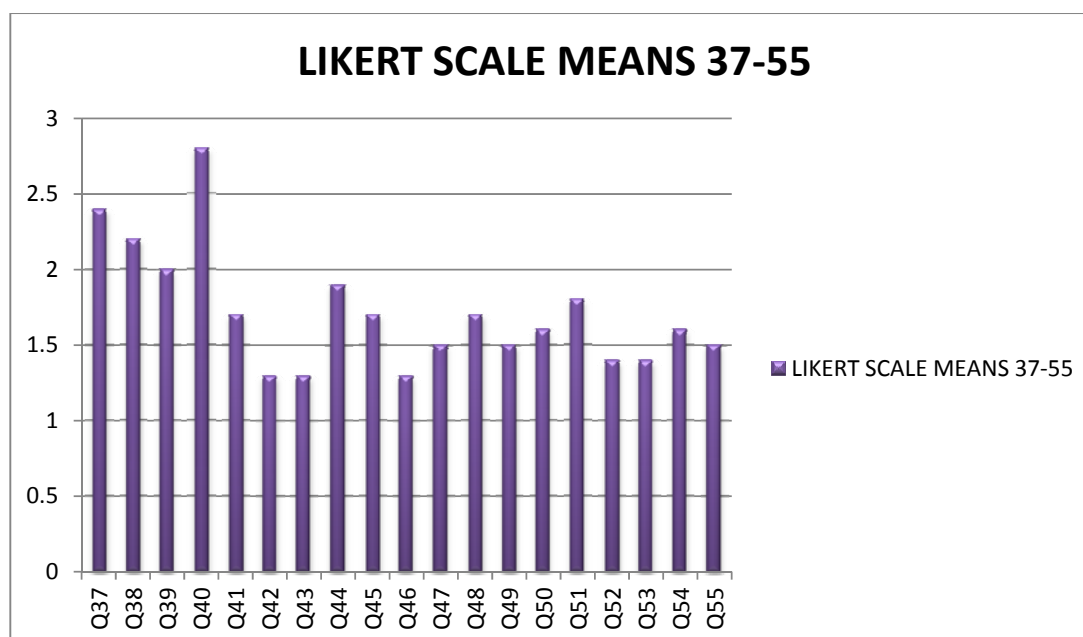
Scores 1-2 = extremely comparable/similar; 3-5 = moderately comparable/similar; 6-7 = Not at all comparable/similar

The Likert scale mean scores for the scale items 37 to 55(Q-37 to Q-55) are shown in this table with the best score of 1.30 [Q-42,Q-43,Q-46] and the maximum score of 2.80 for the item 40 [Q-40].

DISCUSSION

ADHD is one of the most commonly encountered neuro behavioural disorder in any child psychiatry setting worldwide. With the awareness in the society, peacially among parents, teachers, paediatricians and primary care physicians even in developing countries like India, the referral of children to tertiary care hospitals are on the increasing trend. The prevalence of ADHD is 5-12 % in any global setting with a 11.32% prevalence among primary school children in Tamil Nadu (Venkata 2014) and it comprises almost one third of the census of the child psychiatric clinics.

Like any psychiatric disorder, there are no confirmatory biochemical, genetic or neuro imaging techniques to ascertain the diagnosis of ADHD. We have to rely on internationally followed criteria of classificatory systems to confirm diagnosis and then quantitatively assess severity in each of the domains of ADHD and also the common comorbidities using validated and standardised clinical rating scales like the VADPRS.

There are difficulties in understanding and uniformly administering the scale due to cross cultural and linguistic barriers. Hence this translation and validation study was carried out in the Department of

Child Psychiatry, Institute of Child Health and Hospital for Children, Madras Medical College . Chennai.

TRANSLATION

The translation procedures were followed as per standard guidelines prescribed worldwide in the translation studies. (Ami D Sperber 2004; Valmi D souse 2010; Catherine Aquadro 2008) in the multi step approach consisting of

- ➢ Two independent forward translations (Tamil)

- ➢ Synthesis of a composite Prefinal and Final version (Tamil) after pilot testing and expert reviews.

- ➢ Two independent backward translations (English) by a clinician and a language experts panel.

- ➢ Comparison of the best back translation with the original English version to verify the appropriateness of the Tamil Translation was done with an expert review on a 7-point Likert scale and analysing the mean scores. The mean scores were mostly in the range of "extremely comparable/similar" and the average of the mean scores was 2, signifying good comparability and similarity. (Likert R. 1932; Gail 2013)

- ➢ Subjecting the translated final version to full Psychometric testing in the whole sample of the study.

While testing the psychometric properties a preliminary evaluation of the Sociodemographic profile of the children and a routine clinical exam and an interview with parents and children done

SOCIODEMOGRAPHIC PROFILE

Most of the children in the study sample were in the age group of 8-10 years, with male preponderance which is similar to the study statistics of Venkatesh et al.2012.

There was no specific pattern in the socioeconomic status of the family observed in the clinical sample with more upper middle class in the bilingual ADHD sample and lower middle class in the Monolingual (Tamil) ADHD sample.

Most of the children in the whole sample had one sibling this shows the two child norm. In birth order significant proportion of children with ADHD were first born as assessed in the study by Venkatesh et al.2012.

The combined type was the most commonly observed in our study sample in accordance with previous study.

PSYCHOMETRIC EVALUATION

Intracorrelations within the versions:

In the community school sample , the intra correlation within the Tamil and English versions showed high correlations within the items and also other correlations in all the domains of the scale which fall in the moderate (0.5-0.7) to high (0.7-0.9) positive correlation range.

In the Hospital bilingual sample, there is better intra correlations of the Tamil version comparable to the English in the three domains of Inattention, Hyperactivity and Disruptive behaviour.

Intracorrelation table within the Tamil version of the mono lingual sample showed significant 'r' values ranging from 0.303 to 0.692 in all the 5 domains.

This shows that the translated Tamil version has similar intracorrelations as that of the English version.

Inter-correlations between Tamil and English Versions:

In both the community and the bilingual hospital sample the results showed greater significant intercorrelations between the English and Tamil versions in all the four domains. There was not much difference in the correlation coefficient values between both samples. This is due to the

higher parental educational status and hence their better understanding of both the languages. This also shows that the Tamil version is akin to the original English version in conceptual and linguistic equivalence.

Convergent validity assessments

The convergent validity was assessed by comparing the VADPRS Tamil version scores with the APA's Diagnostic and Statistical Manual DSM-4 criteria and other standardised tools of Diagnosis like the K-SADS PL version 1.0.

With DSM-4 CRITERIA

The correlation scores of the VADPRS Tamil version with DSM-4 were high. In the hospital bilingual ADHD sample the Pearson correlation 'r' was in the range of 0.397 to 0.937 in the Inattention criteria and 0.632 to 1.000 in the Hyperactivity/Impulsivity criteria. In the monolingual (Tamil) ADHD sample, the range was 0.461 to 0.762 in Inattention and 0.329 to 0.755 in the Hyperactivity/Impulsivity criteria. This shows that the translated Tamil version has good convergent validity with the DSM-4 ADHD criteria.

With K-SADS PL VERSION 1.0

The correlations between the K-SADS ADHD supplement scores and the In attention and hyperactivity/Impulsivity scores of the VADPRS

Tamil version assessed for the entire hospital sample (both bilingual n=30 and Monolingual n=72) showed significant positive values depicting satisfactory validity with K-SADS also, especially in the Inattention and Impulsivity domains.

The correlations in the Hyperactivity domain was less compared to the other two domain values.

SPLIT-HALF ANALYSIS

This is a measure of internal consistency of the scale item. It was done between the Tamil scores of Inattention and Hyperactivity / Impulsivity for the sample as a whole (Hospital & community – n=202). This analysis shows high correlation coefficient values not only in item-item scores but also with all other scale items. This emphasises good internal consistency of the translated Tamil version.

In addition to this, the Guttman-Split half coefficient between the first (Inattention) and the second half (Hyperactivity) was 0.948 which show very high positive correlations.

RELIABILITY STATISTICS

The reliability statistics for the Tamil version of the VADPRS in the full sample (n=202) shows Cronbach's alpha values >0.9 in both Inattention and Hyperactivity .

The Spearman-Brown coefficient was 0.950 which concludes that the Tamil version of VADPRS had significant internal consistency in both equal and unequal lengths.

These consistency values were on par with the original English version as determined by the author of the VADPRS (Mark Wolraich et al. 2013).

CONCLUSION

❖ VADPRS is a gold standard clinical rating scale for ADHD based on the DSM-4 criteria and a well validated diagnostic tool. This study was done to translate this original English version to the tamil language version for its easier and uniform utility in the native tamil population using standard guidelines.

❖ The expert reviews on the likert's scale itemwise meanscore analysis of the back translated English version emphasises its comparability (linguistic equivalence) and similarity (conceptual equivalence) to the original English version. This concludes the appropriateness of the final version of the tamil translation.

❖ The determination of the psychometric properties of the tamil version showed highly significant person correlations in the English to tamil intercorrelations and convergent validity with the DSM-4 criteria (domain wise).

❖ Reliability statistics of this study showed high significance in the internal consistency value of more than 0.9 Cronbach's alpha; 0-948 Guttman's splithalf coefficient; 0.950 Spearman brown coefficient clearly conclude beyond reasonable doubt that the tamil translated version of VADPRS is equivalent in all significant psychometric parameters to the original English version.

❖ So this study rejects the Null hypothesis.

❖ The translation methods adapted, the precautions taken during this process and the significant psychometric assessment empower us to conclude that this is a valid and reliable instrument to screen, diagnose and assess severity of ADHD in the Tamil population.

LIMITATIONS AND RECOMMENDATIONS

- This translation and validation study was conducted in an urban setting in the city of Chennai in Tamilnadu, India and includes only a few cases from the rural population. So, future research should aim at multicentric studies at different tertiary care settings and communities throughout the state.

- Though the sample size was optimal, further studies can be done in a bigger sample both in the community as well as in the clinical sample.

- Test retest reliability, a measure of external consistency of the diagnostic instruments was not evaluated in this study. Future research can include this assessment also.

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VANDERBILT ADHD DIAGNOSTIC PARENT RATING SCALE

Patient Name: _____   Today's Date: _____

Date of Birth: _____   Age: _____

Grade: _____

Each rating should be considered in the context of what is appropriate for the age of your child.

Frequency Code: 0 = Never; 1 = Occasionally; 2 = Often; 3 = Very Often

1.	Does not pay attention to details or makes careless mistakes, such as in homework	0	1	2	3
2.	Has difficulty sustaining attention to tasks or activities	0	1	2	3
3.	Does not seem to listen when spoken to directly	0	1	2	3
4.	Does not follow through on instruction and fails to finish schoolwork (not due to oppositional behavior or failure to understand)	0	1	2	3
5.	Has difficulty organizing tasks and activities	0	1	2	3
6.	Avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort	0	1	2	3
7.	Loses things necessary for tasks or activities (school assignments, pencils, or books)	0	1	2	3
8.	Is easily distracted by extraneous stimuli	0	1	2	3
9.	Is forgetful in daily activities	0	1	2	3
10.	Fidgets with hands or feet or squirms in seat	0	1	2	3
11.	Leaves seat when remaining seated is expected	0	1	2	3
12.	Runs about or climbs excessively in situations when remaining seated is expected	0	1	2	3
13.	Has difficulty playing or engaging in leisure activities quietly	0	1	2	3
14.	Is "on the go" or often acts as if "driven by a motor"	0	1	2	3
15.	Talks too much	0	1	2	3
16.	Blurts out answers before questions have been completed	0	1	2	3
17.	Has difficulty waiting his or her turn	0	1	2	3
18.	Interrupts or intrudes on others (butts into conversations or games)	0	1	2	3
19.	Argues with adults	0	1	2	3
20.	Loses temper	0	1	2	3
21.	Actively defies or refuses to comply with adults' requests or rules	0	1	2	3

VANDERBILT ADHD DIAGNOSTIC PARENT RATING SCALE

Each rating should be considered in the context of what is appropriate for the age of your child.

Frequency Code: 0 = Never; 1 = Occasionally; 2 = Often; 3 = Very Often

22. Deliberately annoys people	0	1	2	3
23. Blames others for his or her mistakes or misbehaviors	0	1	2	3
24. Is touchy or easily annoyed by others	0	1	2	3
25. Is angry or resentful	0	1	2	3
26. Is spiteful and vindictive	0	1	2	3
27. Bullies, threatens, or intimidates others	0	1	2	3
28. Initiates physical fights	0	1	2	3
29. Lies to obtain goods for favors or to avoid obligations ("cons" others)	0	1	2	3
30. Is truant from school (skips school) without permission	0	1	2	3
31. Is physically cruel to people	0	1	2	3
32. Has stolen items of nontrivial value	0	1	2	3
33. Deliberately destroys others' property	0	1	2	3
34. Has used a weapon that can cause serious harm (bat, knife, brick, gun)	0	1	2	3
35. Is physically cruel to animals	0	1	2	3
36. Has deliberately set fires to cause damage	0	1	2	3
37. Has broken into someone else's home, business, or car	0	1	2	3
38. Has stayed out at night without permission	0	1	2	3
39. Has run away from home overnight	0	1	2	3
40. Has forced someone into sexual activity	0	1	2	3
41. Is fearful, anxious, or worried	0	1	2	3
42. Is afraid to try new things for fear of making mistakes	0	1	2	3
43. Feels worthless or inferior	0	1	2	3
44. Blames self for problems, feels guilty	0	1	2	3

Vanderbilt ADHD Diagnostic Parent Rating Scale

Each rating should be considered in the context of what is appropriate for the age of your child.

Frequency Code: 0 = Never; 1 = Occasionally; 2 = Often; 3 = Very Often

45. Feels lonely, unwanted, or unloved; complains that "no one loves" him or her	0	1	2	3
46. Is sad, unhappy, or depressed	0	1	2	3
47. Is self-conscious or easily embarrassed	0	1	2	3

Performance

	Problematic		Average	Above Average	
Academic Performance					
1. Reading	1	2	3	4	5
2. Mathematics	1	2	3	4	5
3. Written expression	1	2	3	4	5
Classroom Behavior					
1. Relationships with peers	1	2	3	4	5
2. Following directions/rules	1	2	3	4	5
3. Disrupting class	1	2	3	4	5
4. Assignment completion	1	2	3	4	5
5. Organizational skills	1	2	3	4	5

VANDERBILT ASSESSMENT SCALES

Author:	Mark Wolraich, M.D.
Date:	2002
Construct:	Child and Family Health, Child Development, Parenting skills
Standardized:	Yes
Instrument Type(s):	Pre-post surveys from parent informants and teacher informants

Uses of Information: The Vanderbilt Assessment Scales are part of a toolkit designed to assist clinicians in providing quality care for children with attention-deficit/hyperactivity disorder (ADHD) by providing a basis for coordinated, integrated, and multidisciplinary care.

Assessment information may be used for screening, referrals, diagnosis (in combination with other tools), monitoring progress and evaluating outcomes.

Environment: Classrooms, home based intervention, and family-focused intervention.

Description: The Vanderbilt Assessment Scales include a Parent Informant and Teacher Informant initial assessment scale of child behavior that corresponds to the DSM-IV criteria for ADHD, as well as a screen for mood and anxiety symptoms, performance in school and relationships at home, school and community. Follow-up scales for Parent and Teacher Informants are also available.

References: Wolraich, M.L., Feurer, I., Hannah, J.N., Pinnock, T.Y., & Baumgaertel, A. (1998). Obtaining systematic teacher reports of disruptive behavior disorders utilizing DSM-IV. *Journal of Abnormal Child Psychology, 26,* 141-152.

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Cost: Each separate scale (Vanderbilt Assessment Scale – Parent Informant; Vanderbilt Assessment Scale – Teacher Informant; Vanderbilt Assessment Scale Follow-up – Parent Informant; and Vanderbilt Assessment Scale Follow-up – Teacher Informant) is available for $19.95 from the American Academy of Pediatrics.

The Vanderbilt Assessment Scales are available through several websites identified below.

VANDERBILT ASSESSMENT SCALES

Availability of Test Manual: Yes. Contact Agency for Healthcare Research and Quality.

Contact Information: Agency for Healthcare Research and Quality: www.qualitytools.ahrq.gov

American Academy of Pediatrics: www.aap.org

Bright Futures Tools for Professionals: www.brightfutures.org

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Oklahoma University Health Sciences Center
1100 Northeast 13th Street
Oklahoma City, OK 73117
Phone: 405-271-6824
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Instructions: The Vanderbilt Assessment Scales (both Parent and Teacher Informant) are used at intake to establish the frequency of behaviors. The Assessment Follow-up Scales (both Parent and Teacher Informant) are used post-intervention to evaluate the effectiveness of treatment, or used periodically to monitor progress.

Administration: The Vanderbilt Assessment Scales are completed by Parents or Teachers with paper-and-pencil at their convenience.

Qualification: No special skills are required for administration

Training Required: The Vanderbilt Assessment Scales should be interpreted by those with professional training in child and adolescent development including pediatric physicians, child and adolescent psychologists and psychiatrists, and child development specialists. Interdisciplinary teams (including parents, educators, and professionals) are especially helpful in interpreting results.

Administration Time: Administration of the Vanderbilt Assessment Scales is not timed.

Respondents: Parents and teachers of children ages 6 to 12 years.

Scales/Item Options: The Vanderbilt Assessment Scales are scored from 0 (Never) to 3 (Very Often) for five dimensions: Inattention; Hyperactivity/ Impulsivity; Combined (Inattention and Hyperactivity/ Impulsivity); Oppositional defiant and conduct disorders; and Anxiety or depression symptoms.

Examples of items from the Teacher Informant form include:

- Is easily distracted by extraneous stimuli.
- Blurts out answers before questions have been completed.

VANDERBILT ASSESSMENT SCALES

- Has stolen items of nontrivial value.

Examples of items from the Parent Informant form include:

- Loses things necessary for tasks or activities (toys, assignments, pencils or books.)
- Interrupts or intrudes on others' conversations and/or activities.
- Lies to get out of trouble or to avoid obligations (i.e., "cons" others).

Academic, Child Behavioral Performance, and Relationships are also assessed on a scale from 1 (excellent) to 5 (problematic).

Scoring: Scores are tallied for the dimensions listed above. Cut-off scores for each area indicate if a child has some impairment in that area. Scores should *not* be used alone to make any diagnosis, but should be considered in combination with multiple data sources (e.g., observations, family and clinical interviews, and other assessments).

Languages: English and Spanish.

Psychometric Properties: Longitudinal data were collected on 1,536 children in grades kindergarten through fourth grade. Fifty-two percent of the normative sample was African American. Chronbach's alpha was .90 or greater indicating good internal consistency. Concurrent validity was calculated based on a comparison of the Vanderbilt Assessment Scales and the Computerized Diagnostic Interview Schedule for Children (C-DISC-IV). A relatively high concurrent validity (.79) indicates that the instruments measure similar but not the same attributes and behaviors.

Request permission for Translation & validation of VADPRS - reg

Inbox   x   **APPENDIX – 3**

Subramanian Neelakandan <subsneel2013@gmail.com>   Dec 9 (2 days ago)
to Prof.MARK

Respected Sir ,

　　　This is Dr.Subramanian Neelakandan, doing M.D. psychiatry post graduation course from Institute of Mental Health , Madras Medical College , Chennai , in South India ' after my pediatric post graduation . I am very much interested in Child Psychiatry and planning to undertake my thesis research paper in ADHD . Ours is a hospital which caters to the poor and downtrodden people of north Tamilnadu in South India .

　　　I have tentatively selected the gold standard VADPRS for translation and validation in our language " Tamil " , a widely used ancient language of India , so that the scale could be used in a much better way and easily understandable by the non-English speaking parents of our region.

　　　Hence I humbly request your kind permission for translating the VADPRS to our regional language Tamil and enable us to carry out the validation by administering to the children with ADHD attending the Department of Child Psychiatry of the Institute of Child Health , attached to our Madras Medical College , India .

　　　kindly help us to do this study and we are eagerly awaiting your positive reply at the earliest . Thank you Sir
Yours Sincerely
Dr.S.Neelakandan,
098401 09347

Wolraich, Mark L. (HSC)   Dec 9 (2 days ago)
to me

You may use them. You need to both trabslate and back translate them and please send me a copy of the translations.

From: Subramanian Neelakandan [subsneel2013@gmail.com]
Sent: Monday, December 08, 2014 12:50 PM
To: Wolraich, Mark L. (HSC)
Subject: Request permission for Translation & validation of VADPRS - reg

APPENDIX – 4

TAMIL VERSION – I

<u>வேண்டர்பில்ட் ஏ.டி.எச்.டி (ADHD) பெற்றோர் அளவை</u>

0 – ஒரு பொழுதும் இல்லை
1 – சில பொழுதுகளில் உண்டு [அ] எப்பொழுதாவது
2 – அடிக்கடி உண்டு
3 – பெரும்பாலும் உண்டு

[ஒவ்வொரு கேள்விக்குரிய அளவையும் உங்கள் குழந்தையின் வயதையும் முதிர்ச்சியையும் மனதில் கொண்டு கவனிக்கவும்]

1. கவனக்குறைவாக இருத்தல் [அ] வீட்டு பாடத்தில் கவனப்பிழைகள் இடுதல்

2. தான்செய்யும் செயல்களில் தொடர்கவனம் செலுத்துவதற்கு சிரமப்படுதல்

3. நேரடியாக பேசும்பொழுது கவனிக்காதது போல் இருத்தல்

4. பள்ளி பாடங்களை முழுமையாக செய்து முடிப்பது இல்லை [அ] தனக்கு இடப்பட்ட செயல் கட்டளைகளை நிறைவேற்றி முடிப்பது இல்லை [கீழ்படியாமையினாலோ புரியாமையினாலோ அல்ல]

5. தன் செயல்களை ஒழுங்குபடுத்துவதில் அல்லது உறுப்பினைப்பதில் சிரமம்.

6. தளராது நீடித்த மனக்கவனம் தேவைப்படும் செயல்களை தவிர்ப்பது அல்லது விரும்புவது இல்லை

7. தன் செயல்களுக்கு தேவையான பொருட்களை தவறவிடுவது [பென்சில், பேனா முதலியன]

8. ஒரு செயலை செய்து கொண்டிருக்கும்பொழுதே தொடர்பில்லாத [அ] புறம்பான விஷயங்களின்பால் கவனம் சிதறுதல்

9. அன்றாட நடவடிக்கைகளை செய்வதற்கு மறந்துவிடுதல்

10. இருக்கையில் உட்கார்ந்திருக்கும்பொழுதிலும் நிலை கொள்ளாமல் கையையோ காலையோ அசைத்துக் கொண்டிருப்பது

11. அமர்ந்திருக்க வேண்டும் என்ற இடங்களிலும் கூட இருக்கையிலிருந்து எழுந்துவிடுவது

12. இருக்கையில் அமர்ந்திருக்க வேண்டிய சூழல்களிலும்கூட எழுந்து நடமாடுவது அல்லது எகிறுவது

13. பொழுதுபோக்கு அல்லது விளையாட்டில் அமைதியாய் ஈடுபடுவதில் சிரமம்

14. நிலைகொள்ளாமல் இருத்தல் அல்லது அடிக்கடி ஒரு மோட்டாரை / விசைப் பொறியை போல இயங்கிக் கொண்டே இருப்பது

15. மிகவும் அதிகமாக பேசுவது

16. கேள்வியை கேட்டு முடிப்பதற்கு முன் பதிலுக்கு முந்துதல்

17. தன்னுடைய முறைக்கு காத்திருப்பதில் சிரமம்

18. மூக்கை நுழைப்பது [பிறர் பேசிக் கொண்டிருக்கும்பொழுது அல்லது விளையாடிக் கொண்டிருக்கும்பொழுது]

19. பெரியவர்களிடம் வாதிடுவது

20. மட்டு நடை இழந்து [உணர்ச்சிவசப்பட்டு] கோபமுறுதல்

21. முதிர்ந்தவர்களின் வேண்டுகோளுக்கோ, கட்டளைகளுக்கோ முரண்படுவது அல்லது கீழ்படியாமலிருப்பது

22. வேண்டுமென்றே பிறரை தொல்லைபடுத்துவது

23. தன் தவறுகளுக்கு பிறரை பழி சொல்லுவது

24. பிறரால் எளிதில் எரிச்சலடைவது

25. கோபத்துடன் அல்லது சீற்றத்துடன் இருப்பது

26. வன்மம் கொள்ளுவது அல்லது பழிவாங்கும் இயல்புடன் இருப்பது

27. பிறரை அச்சுறுத்துவது அல்லது மிரட்டுவது

28. கைக்கலப்பு சண்டைகளை ஆரம்பிப்பது

29. தனது பொறுப்புகளை தட்டிக்கழிப்பதற்கோ அல்லது தனக்கு வேண்டியதை அடைவதற்கு பொய் பேசுதல் [பிறரை ஏமாற்றுதல்]

30. அனுமதி இல்லாமல் பள்ளிக்கு செல்லாமல் இருப்பது

31. கொடூரமாக நடப்பது [உடல்ரீதியாக]

32. விலை மதிப்புள்ள பொருட்களை திருடுவது

33. வேண்டுமென்றே பிறருடைய பொருட்களை உடைப்பது

34. கொடுங்கேடு விளைவிக்கவல்ல ஆயுதங்களை பயன்படுத்தியிருப்பது [கத்தி, மட்டை, செங்கல், துப்பாக்கி முதலியன]

35. பிராணிகளிடம் கொடூரமாக நடந்துகொள்வது

36. நாசமுண்டாக்கும் நோக்கத்துடன் நெருப்பு பற்றவைப்பது

37. பிறருடைய வீடு, கடை, சீருந்து ஆகியவற்றை உடைத்து உட்பிரவேசித்தல்

38. அனுமதியின்றி இரவில் வெளியே தங்குதல்

39. ஒரு இரவு முழுவதும் வீட்டைவிட்டு ஓடிப்போய் விடுவது

40. பிறருடன் பாலியல் சம்பந்தமான செயல்களில் வலுக்கட்டாயமாக ஈடுபட்டிருப்பது

41. பயத்துடன், பதட்டத்துடன், கவலையுடன் இருப்பது

42. தவறு நேருமோவென்ற எண்ணத்தில் புது விஷயங்களை செய்வதற்கு அச்சப்படுவது

43. தன்னைக்குறித்து மதிப்பில்லாமல் அல்லது தாழ்வு மனப்பான்மையுடன் இருப்பது

44. பிரச்சனைகளுக்கு தன்னையே குற்றப்படுத்துவது அல்லது சுயபழி சாற்றுவது

45. தான் தனித்திருப்பதாக, வேண்டப்படாததாக, நேசிக்கப்படாததாக உணருவது அல்லது "என்னை யாரும்நேசிக்கவில்லை" என்று வருத்தம் வெளியிடுவது

46. துயருடன், துன்புற்று அல்லது மன அழுத்தத்துடன் இருப்பது

47. அதீத தன்னுணர்வுடன் இருப்பது அல்லது எளிதில் வெட்கப்படுவது

செயல்திறன் அளவை

கல்வி சார்ந்த செயல்திறன்

1. படித்தல் [அ] வாசித்தல்

2. கணிதம்

3. எழுதுவது

வகுப்பறையில் நடத்தை

1. ஒப்பானவர்களுடன் [அ] வகுப்பு தோழர்களுடனான உறவு

2. வழிமுறை /விதிமுறைகளை பின்பற்றுதல்

3. வகுப்பை எடைமறிப்பது

4. பணியை முடிப்பது

5. உறுப்பிணைப்பு திறமை / ஒழுங்கமைப்பு திறன்

1&2   -   சிக்கலுக்குறியதாக

3   –   சராசரி

4&5   -   சராசரிக்கு மேலாக

APPENDIX – 5

<u>TAMIL VERSION – II</u>

<u>வேண்டர்பில்ட்டின் பெற்றோருக்கான</u>
<u>ஏ.டி.எச்.டி (ADHD) கணிப்பு அளவுகோல்</u>

பாதிக்கப்பட்டவர் பெயர் :   தேதி :

பிறந்த தேதி   :   வயது :

படிக்கும் வகுப்பு   :

ஒவ்வொரு கேள்விக்கான பதிலும் உங்கள் குழந்தையின் வயதுக்குப் பொருத்தமானதாக இருத்தல் வேண்டும்.

0   –   எப்போதும் இல்லை

1   –   எப்போதாவது

2   –   அடிக்கடி

3   –   பெரும்பாலும்

1.   வீட்டுப் பாடங்கள் செய்வது போன்ற விஷயத்தில் அக்கறை இல்லாமலும் கவனக்குறைவாகவும் இருப்பது.

2.   செய்யும் செயல் அல்லது காரியங்களில் தொடர்ந்து கவனம் செலுத்த முடியாமல் கஷ்டப்படுவது

3.   நேரடியாகப் பேசும்போது காது கொடுத்துக் கேட்பது இல்லை

4.   சொல்லுகிற வழிமுறைகள் (?) எதையும் கடைப்பிடிக்காது வீட்டுப் பாடங்களை முடிக்க முடியாது இருப்பது [எதிர்த்து செய்வதாலோ அல்லது சொல்வதைப் புரிந்துகொள்ளாமல் இருப்பதால் அல்ல]

5.   செய்ய வேண்டிய அல்லது முடிக்க வேண்டிய காரியங்களை ஒழுங்குப்படுத்தி அமைக்கத் தெரியாது இருத்தல்

6.   தொடர்ந்து ஈடுபட்டு முடிக்க வேண்டிய காரியங்களை தவிர்ப்பது, விரும்பாதிருப்பது அல்லது தயக்கத்துடன் செய்வது

7.   செய்து முடிக்க வேண்டிய காரியங்களுக்குத் தேவைப்படுபவற்றைத் தொலைத்துவிடுவது [பாடப்பகுதிகள், புத்தகப் பென்சில் போன்றவை]

8.   வெளிப்புறத் தூண்டுதல்களால் எளிதாக கவனத்தை சிதறவிடுவது

9.   அன்றாட வேலைகளை மறந்து போகுதல்

10. கைகால்களை ஏதாவது நோண்டிக்கொண்டோ, ஒரே இடத்தில் உட்கார முடியாமல் அசைந்துகொண்டோ இருப்பது

11. ஒரு இடத்தில் உட்கார்ந்து இருக்க வேண்டிய தருணங்களில் உட்கார முடியாமல் எழுந்துவிடுவது

12. உட்கார்ந்து இருக்க வேண்டிய தருணங்களில் ஓடிக்கொண்டிருந்தால் அல்லது தாவுதல் போன்றவற்றில் ஈடுபடுதல்

13. ஓய்வு நேரங்களில் அமைதியாக விளையாடவோ, ஏதாவது வேலையில் ஈடுபடுத்திக்கொள்ள முடியாமலும் கஷ்டப்படுதல்

14. எந்நேரமும் ஒரு மோட்டாரினால் இயக்கப்படுவோர்போல் வேகமாக நகர்வதற்கே முயற்சி செய்வது

15. அதிக அளவு பேசுவது

16. கேள்விகள் கேட்டு முடிப்பதற்கு முன்னரே முந்திக்கொண்டு விடை அளிப்பது

17. தன் முறை வருவதற்குள் பொறுமை இல்லாமல் அவசரப்படுவது

18. மற்றவர்களின் பேச்சுக்கிடையிலோ, விளையாட்டுக்கிடையிலோ அநாவசியமாகக் குறுக்கிடுவது

19. பெரியவர்களோடு தேவையற்ற விவாதத்தில் ஈடுபடுவது

20. பொறுமை இழப்பது

21. பெரியவர்களின் வேண்டுகோளையோ, கட்டுப்பாட்டையோ வேண்டும் என்றே மீறுவது

22. வேண்டும் என்றே பிறரிடம் கோபப்படுவது

23. மற்றவர்களை குற்றம் சொல்லுவது, அடிக்கடி அவர்கள் செய்த தவறை சொல்லிக்காட்டுவது

24. அநாவசியமாக மற்றவர்களிடம் கோபப்படுவது அல்லது சிறு விஷயத்திற்கு உணர்ச்சி வசப்படுவது

25. மற்றவர்களிடம் கோபப்படுவது அல்லது காரணமே இல்லாமல் பயங்கரமாக கோபப்படுவது

26. மனதளவில் மற்றவர்களை துன்புறுத்துவது அல்லது பழி தீர்க்கும் எண்ணம்

27. மிரட்டுவது, இழுபறியாக சொல்வது, ஒன்றுக்கு இரண்டாக திரித்துவிடுவது

28. மற்றவர்களோடு தேவையற்ற விஷயங்களுக்கு சண்டை போடுவது

29. அடுத்தவர்களின் உதவியை நிராகரிப்பது, தட்டிக்கழிப்பது

30. பள்ளி செல்வதை தவிர்ப்பது எவரிடமும் சொல்லாமல் பள்ளிவிட்டு வெளியேறுவது

31. தன்னுடைய குணத்தால் மக்களிடம் மூர்க்கமாக இருப்பது

32. அர்ப்பமற்ற பொருட்களை திருடுவது

33. அடுத்தவர்களுடைய சொத்துக்களை வேண்டும் என்றே அழிப்பது

34. மற்றவர்களை ஆயுதத்தால் [மட்டை, கத்தி] கொண்டு வெறித்தனமாக தாக்குவது

35. பிராணிகளிடம் மூர்க்கமாக நடந்துக்கொள்வது

36. மூர்க்கத்தனமாக தீயை கொண்டு பொருட்களை சேதப்படுத்துவது

37. சில சமயங்களில் நபருடைய வாகனம், வீடு, தொழிலை சேதப்படுத்துவது.

38. வீட்டில் எவரிடமும் அனுமதி பெறாமல் வெளியிடத்தில் இரவு தங்குவது

39. வீட்டிலிருந்து இரவோடு இரவாக ஓடிப்போவது

40. மற்றவர்களை தன்னோடு உடலுறவு வைத்துக்கொள்ள
     கட்டாயப்படுத்துவது

41. தனக்குத் தானே தேவையில்லாமல் பயப்படுவது, தாழ்வு மனப்பான்மை
     கொள்வது, கவலைப்படுவது

42. தவறு செய்து விடுவோமோ என்ற பயத்தால், புதிய காரியங்களில் முயற்சி
     செய்யாமல் இருப்பது

43. நான் தகுதியில்லாதவன் என்று நினைத்துக்கொள்வது

44. தனக்குத் தானே பிரச்சனைகளை உருவாக்கிக்கொண்டு அதைப் பற்றியே
     யோசிப்பது அல்லது குற்ற உணர்ச்சியோடு இருப்பது

45. தனித்து விடப்பட்டதாகவோ மற்றவர்களிடம் அன்பு காட்டப்படுவதாகவோ
     குறை கூறுவது அல்லது வேண்டப்படாதவராக நினைப்பது

46. சோகமாக அல்லது மகிழ்ச்சியில்லாமல் இருப்பது அல்லது மனச்
     சோர்வுகளோடு இருப்பது

47. தன்னுடைய குறையை பற்றி நினைத்துக்கொண்டு இருப்பது, கூச்ச
     சுபாவத்துடன் இருப்பது

பெயர் : ....   வரிசை எண் : ....

பிறந்த தேதி : ....   வயது : ....

வகுப்பு : ....   தேதி : ....

குறிப்பு:   0 - எப்போதும் இல்லை   1 - எப்போதாவது

                            2 - அடிக்கடி   3 - பெரும்பாலும்

1	வீட்டுப்பாடங்கள் செய்வது போன்ற விஷயங்களில் அக்கறை இல்லாமலும், கவனக்குறைவாகவும் இருப்பது	
2	தான் செய்யும் செயல்கள் (அ) காரியங்களில் தொடர்ந்து கவனம் செலுத்த முடியாமல் கஷ்டப்படுவது	
3	நேரடியாகப் பேசும்போது காது கொடுத்துக் கேட்பது இல்லை	
4	சொல்கிற வழிமுறைகள் எதையும் கடைபிடிக்காது இருப்பது மற்றும் வீட்டுப்பாடங்களை முடிக்க முடியாமல் இருப்பது (கீழ்படியாமையினாலோ (அ) புரியாமையினாலோ அல்ல)	
5	செய்ய வேண்டிய அல்லது முடிக்க வேண்டிய காரியங்களை ஒழுங்குபடுத்தி அமைக்கத் தெரியாது இருப்பது	
6	தொடர்ந்து கவனத்துடன் ஈடுபட்டு முடிக்க வேண்டிய காரியங்களை தவிர்ப்பது, வெறுப்பது அல்லது தயக்கத்துடன் செய்வது	
7	தன் செயல்களுக்குத் தேவையான பொருட்களை தொலைத்துவிடுவது (படிப்பு சம்பந்தப்பட்ட பொருட்கள், புத்தகங்கள் மற்றும் பென்சில் (முதலியன)	
8	சுற்றுப்புற காரணங்களால் எளிதாக கவனத்தை சிதறவிடுவது	
9	அன்றாட வேலைகளை செய்வதற்கு மறந்துவிடுவது	
10	கைகால்களை அசைத்துக் கொண்டோ அல்லது இருக்கையில் நெளிந்துகொண்டோ இருப்பது	
11	ஒரே இடத்தில் உட்கார்ந்து இருக்க வேண்டிய தருணங்களில் உட்கார முடியாமல் எழுந்து செல்வது	
12	உட்கார்ந்து இருக்க வேண்டிய தருணங்களில் ஓடிக்கொண்டிருப்பது அல்லது தாவுவது	
13	பொழுதுபோக்கு அல்லது விளையாட்டில் அமைதியாக ஈடுபடுவதில் சிரமப்படுவது	
14	நிலை கொள்ளாமல் இருப்பது அல்லது எந்நேரமும் ஒரு மோட்டாரினால் இயக்கப்படுவது போல ஏதாவது செய்துகொண்டிருப்பது	
15	அளவிற்கு அதிகமாக பேசுவது	
16	கேள்விகள் கேட்டு முடிப்பதற்கு முன்னரே முந்திக்கொண்டு பதில் சொல்வது	
17	தன்னுடைய முறை வரும் வரை பொறுமையுடன் காத்திருப்பதில் சிரமம்	
18	பிறர் பேசும்போதோ அல்லது விளையாடும்போதோ இடையில் அநாவசியமாக குறுக்கிடுவது (அ) இடைமறிப்பது	
19	பெரியவர்களோடு தேவையற்ற விவாதத்தில் ஈடுபடுவது	
20	பொறுமை இழப்பது	

21	பெரியவர்களின் வேண்டுகோளையோ (அ) கட்டளைகளையோ வேண்டுமென்றே மீறுவது (அ) கீழ்ப்படியாமல் இருப்பது.	
22	வேண்டுமென்றே பிறரை வெறுப்பூட்டுவது (அ) தொல்லைப்படுத்துவது	
23	தன் தவறுகள் (அ) தவறான செயல்களுக்கும் பிறரை பழிசொல்வது	
24	பிறரிடம் எளிதில் எரிச்சலடைவது அல்லது சிறு விஷயத்திற்கு உணர்ச்சி வசப்படுவது	
25	அளவுக்கு அதிகமாக கோபப்படுவது அல்லது வெறுப்புடன் இருப்பது	
26	மனதளவில் மற்றவர்களை துன்புறுத்துவது அல்லது பழிவாங்கும் இயல்புடன் இருப்பது	
27	பிறரை அச்சுறுத்துவது, மிரட்டுவது அல்லது மிரட்டிப் பணிய வைப்பது	
28	கைகலப்பு சண்டைகளை ஆரம்பிப்பது	
29	தனக்கு வேண்டியதை அடைவதற்காகவோ அல்லது தனது பொறுப்புகளை தட்டிக்கழிப்பதற்காகவோ பொய் சொல்லுவது	
30	அனுமதி இல்லாமல், பெற்றோருக்குத் தெரியாமல் பள்ளியை விட்டு வெளியேறுவது	
31	உடல் ரீதியாக மற்றவர்களை கொடுமைப்படுத்துவது	
32	விலை மதிப்புள்ள பொருட்களை திருடுவது	
33	வேண்டுமென்றே பிறருடைய பொருட்களை / சொத்துக்களை சேதப்படுத்துவது	
34	மிகவும் கேடு விளைவிக்கும் ஆயுதங்களால் (மட்டை, கத்தி, செங்கல்) மற்றவர்களை தாக்குவது	
35	பிராணிகளிடம் கொடூரமாக நடந்து கொள்வது	
36	வேண்டுமென்றே தீ வைத்து பொருட்களை சேதப்படுத்துவது	
37	மற்றவர்களின் வீடு, கடை, வாகனம் போன்றவற்றினுள் நுழைந்து சேதப்படுத்துவது	
38	அனுமதியின்றி இரவில் வெளியிடத்தில் தங்குவது	
39	இரவோடு இரவாக வீட்டை விட்டு ஓடிப்போய்விடுவது	
40	பிறரை பாலியல் ரீதியாக வலுக்கட்டாயப்படுத்துவது	
41	பயம், பதட்டம் அல்லது கவலையுடன் இருப்பது	
42	தவறு செய்துவிடுவோமோ என்ற பயத்தால், புதிய காரியங்களில் முயற்சி செய்யாமல் இருப்பது	
43	தான் தகுதியில்லாதவன் அல்லது தாழ்வானவன் என்று நினைத்துக்கொள்வது	
44	பிரச்சனைகளுக்கு தன்னையே குற்றம் சொல்லுவது அல்லது குற்ற உணர்வு கொள்வது.	
45	தான் தனித்து விடப்பட்டதாகவோ, வேண்டப்படாதவராகவோ அல்லது நேசிக்கப்படாதவராகவோ உணருவது; என்னை யாரும் நேசிக்கவில்லை என்று வருத்தப்படுவது.	
46	சோகம், சந்தோஷமின்மை அல்லது மன அழுத்தத்துடன் இருப்பது	
47	அதிக தன்னுணர்வுடன் இருப்பது (அ) எளிதில் கூச்சப்படுவது (சங்கடப்படுவது)	

செயல்திறன்

	சிக்கலான	சராசரி	சராசரிக்கும் அதிகமாக

கல்வித் திறன்

1. படித்தல்
2. கணிதம்
3. எழுத்தின் வெளிப்பாடு

வகுப்பறை நடத்தை

1. பள்ளி தோழர்களுடனான உறவு
2. விதிகள்/வழிமுறைகளைப் பின்பற்றுதல்
3. தடை செய்யப்பட்ட வகுப்பு
4. நியமிக்கப்பட்ட பணியை நிறைவு செய்தல்
5. ஒருங்கிணைக்கும் திறன்கள்

APPENDIX – 7

FINAL COMPOSITE TAMIL VERSION - VADPRS

பெயர் : …………………………………………… வரிசை எண்: …………………

பிறந்த தேதி : …………………………………… வயது : …………………

வகுப்பு : …………………………………………….. தேதி : …………………

குறிப்பு : 0 – எப்போதும் இல்லை 1 – எப்போதாவது
2 – அடிக்கடி 3 – பெரும்பாலும்

1	வீட்டுப்பாடங்கள் செய்வது போன்ற விஷயங்களில் அக்கறை இல்லாமலும், கவனக்குறைவாகவும் இருப்பது	
2	தான் செய்யும் செயல் (அ) காரியங்களில் தொடர்ந்து கவனம் செலுத்த முடியாமல் சிரமப்படுவது	
3	நேரடியாகப் பேசும்போது காது கொடுத்துக் கேட்பது இல்லை	
4	சொல்கிற வழிமுறைகள் எதையும் கடைபிடிக்காது மற்றும் வீட்டுப்பாடங்களை முடிக்க முடியாமல் இருப்பது (கீழ்ப்படியாமையினாலோ (அ) புரியாமையினாலோ அல்ல)	
5	செய்ய வேண்டிய அல்லது முடிக்கவேண்டிய காரியங்களை ஒழுங்குபடுத்தி அமைக்கத்தெரியாது இருத்தல்	
6	தொடர்ந்து கவனத்துடன் ஈடுபட்டு முடிக்க வேண்டிய காரியங்களை தவிர்ப்பது, வெறுப்பது அல்லது தயக்கத்துடன் செய்வது	
7	தன் செயல்களுக்குத் தேவையான பொருட்களை தொலைத்துவிடுவது (படிப்பு சம்பந்தப்பட்ட பொருட்கள், புத்தகங்கள் மற்றும் எழுதுகோல் (பென்சில்) முதலியன)	
8	சுற்றுப்புற காரணங்களால் எளிதாக கவனத்தை சிதறவிடுவது	
9	அன்றாட வேலைகளை செய்வதற்கு மறந்துவிடுதல்	
10	கை கால்களை அசைத்துக் கொண்டோ அல்லது இருக்கையில் நெளிந்துக்கொண்டோ இருப்பது	
11	ஒரே இடத்தில் உட்கார்ந்து இருக்கவேண்டிய தருணங்களில் உட்கார முடியாமல் எழுந்து செல்வது	
12	உட்கார்ந்து இருக்க வேண்டிய தருணங்களில் ஓடிக்கொண்டிருத்தல் அல்லது தாவுதல்	
13	பொழுதுபோக்கு அல்லது விளையாட்டில் அமைதியாக ஈடுபடுவதில் சிரமப்படுதல்	
14	நிலைகொள்ளாமல் இருத்தல் அல்லது எந்நேரமும் ஒரு இயந்திரத்தினால் (மோட்டாரினால்) இயக்கப்படுவது போல் ஏதாவது செய்துகொண்டிருத்தல்	
15	அளவிற்கு அதிகம் பேசுவது	
16	கேள்விகள் கேட்டு முடிப்பதற்கு முன்னரே முந்திக்கொண்டு பதில் சொல்லுதல்	
17	தன்னுடைய முறை வரும்வரை பொறுமையுடன் கார்த்திருப்பதில் சிரமம்	
18	பிறர் பேச்சுக்கிடையிலோ (அ) விளையாட்டுக்கிடையிலோ அநாவசியமாக குறுக்கிடுதல் (அ) இடைமறித்தல்	
19	பெரியவர்களோடு தேவையற்ற விவாதத்தில் ஈடுபடுதல்	

20	பொறுமை இழப்பது	
21	பெரியவர்களின் வேண்டுகோளையோ (அ) கட்டளைகளையோ வேண்டும் என்றே மீறுவது (அ) கீழ்ப்படியாமருப்பது	
22	வேண்டுமென்றே பிறரை வெறுப்பூட்டுவது (அ) தொல்லைப்படுத்துவது	
23	தன் தவறுகள் (அ) தவறான செயல்களுக்கும் பிறரை பழிசொல்லுவது	
24	பிறரிடம் எளிதில் எரிச்சலடைவது அல்லது சிறு விஷயத்திற்கு உணர்ச்சி வசப்படுவது	
25	அளவிற்கதிகமாக கோபப்படுவது அல்லது வெறுப்புடன் இருப்பது	
26	மனதளவில் மற்றவர்களை துன்புறுத்துவது அல்லது பழிவாங்கும் இயல்புடன் இருப்பது	
27	பிறரை அச்சுறுத்துவது, மிரட்டுவது அல்லது மிரட்டி பணியவைத்தல்	
28	கைகலப்பு சண்டைகளை ஆரம்பிப்பது	
29	தனக்கு வேண்டியதை அடைவதற்கோ அல்லது தனது பொறுப்புகளை தட்டிக்கழிப்பதற்காகவோ பொய் சொல்லுதல்	
30	அனுமதி இல்லாமல், பெற்றோருக்குத் தெரியாமல் பள்ளியை விட்டு வெளியேறுதல்	
31	உடல்ரீதியாக மற்றவர்களை கொடுமைப்படுத்துவது	
32	விலைமதிப்புள்ள பொருட்களை திருடுவது	
33	வேண்டுமென்றே பிறருடைய பொருட்களை / சொத்துக்களை சேதப்படுத்துதல்	
34	மிகவும் கேடு விளைவிக்கும் ஆயுதங்களால் (மட்டை, கத்தி, செங்கல்) மற்றவர்களை தாக்குவது	
35	விலங்குகளிடம் கொடூரமாக நடந்துகொள்வது	
36	வேண்டுமென்றே தீவைத்து பொருட்களை சேதப்படுத்துவது	
37	மற்றவர்களின் வீடு, கடை, வாகனம் போன்றவற்றினுள் நுழைந்து சேதப்படுத்துதல்	
38	அனுமதியின்றி இரவில் வெளியிடத்தில் தங்குவது	
39	இரவோடு இரவாக வீட்டைவிட்டு ஓடிப்போய்விடுவது	
40	பிறரை பாலியல் ரீதியாக வலுக்கட்டாயப்படுத்துவது	
41	பயம், பதட்டம் அல்லது கவலையுடன் இருக்கிறாரா?	
42	தவறு செய்துவிடுவோமோ என்ற பயத்தால், புதிய காரியங்களில் முயற்சி செய்யாமல் இருப்பது	
43	தான் தகுதியில்லாதவன் அல்லது தாழ்வானவன் என்று நினைத்துக்கொள்வது	
44	பிரச்சனைகளுக்கு தன்னையே குற்றும் சொல்லுவது அல்லது குற்ற உணர்வு கொள்வது.	
45	தான் தனித்து விடப்பட்டதாகவோ, வேண்டப்படாதவராகவோ, அல்லது நேசிக்கப்படாதவராகவோ உணருவது; என்னை யாரும் நேசிக்கவில்லை என்று வருத்தப்படுவது.	
46	சோகம், மகிழ்ச்சியின்மை அல்லது மன அழுத்தத்துடன் இருப்பது	
47	அதிக தன் உணர்வுடன் இருப்பது (அ) எளிதில் கூச்சப்படுவது (சங்கடப்படுவது)	

பள்ளி செயல்பாடு

1. படித்தல்

2. கணக்கு பாடம்

3. எழுத்து வேலை

வகுப்பறை நடத்தைகள்

1. தோழர்களுடன் பழகுதல்

2. விதிகளை பின்பற்றுதல்

3. வகுப்பில் இடையூறு செய்தல்

4. இட்ட பணியை செயல்படுத்துதல்

5. ஒருங்கிணைப்பு திறமை

APPENDIX – 8

BACK TRANSLATION - 1

Name: .... Serial No.:.....................

Date of Birth: .... Age: ....

Class: .... Date: ....

Note: 0 - Never   1 - Occasionally
                2 - Often   3 - Mostly

1	Not interested and Careless in doing homework	
2	Struggling to concentrate in his activity (or) doing things	
3	Not listening while talking to them directly	
4	Not following the said procedures and not finishing the homework (Not because of understanding or disobedient)	
5	Not able to organize the completed work or to be completed work	
6	Ignoring, disliking or hesitating the things which involves continuous concentration to complete	
7	Losing the things which are required for his activity(study related things, books and pencil etc)	
8	Easily gets distracted because of environment	
9	Forget to do daily activities	
10	Shaking hands and legs or squirming in the seat	
11	Not able to sit and walk away in the situation where they need to sit in a place	
12	Running or Jumping in the situation where they need to sit	
13	Difficulty in participating quietly in entertainment program or sports	
14	Not able to calm or all the time doing things as operated by motor	
15	Talking more than limit	
16	Answering before asking the questions	
17	Problem in waiting for their turn while answering	
18	Interrupting (or) intercepting unnecessarily in others speech or sports	
19	Unnecessarily involving in discussions with adults	
20	Losing temper	

21	Deliberately not obeying (or) violating adults request (or) orders	
22	Deliberately irritating (or) troubling others	
23	Blaming others for their mistakes (or) misbehaviors	
24	Easily getting irritated with others or getting emotional for small things	
25	Getting anger more than the limit or being dislike.	
26	Having an idea of Troubling others or taking revenge	
27	Threatening, bullying or frightening others to obey	
28	Starting fights	
29	Telling lies to get the things done or to avoid their responsibilities	
30	Without permission, without parents knowledge, leaving the school	
31	Physically harassing others	
32	Looting precious things	
33	Deliberately damaging others' things/ properties	
34	Attacking others with damage resulting weapons(wood, knife, brick)	
35	Behaving terribly with animals.	
36	Deliberately damaging things with fire.	
37	Damaging by entering into others' house, shop, vehicle etc	
38	Without permission staying outside in night.	
39	Running away from the house overnight.	
40	Forcing others sexually.	
41	Looking Fearful, anxiety or worry?	
42	Not involving in trying new things because of the fear of wrong doing	
43	Feeling inability or inferior	
44	Blaming themselves for problems or feeling inferior	
45	Feeling left alone, dislike or hated; feeling bad about no one liking them.	
46	Feeling sorrow, worry or depressed.	
47	Being sensitive or easily sensible (shy)	

VADPRS back-translated English version

1. Disinterested and inattentive in doing home work.
2. Difficulty in being attentive while doing certain work (or) activities.
3. Not listening while spoken to directly.
4. Not following the rules, not completing home work [not because of disobedience (or) not because of poor understanding (or) comprehension].
5. Not able to perfectly manage the activities which need to be done (or) completed.
6. Neglects, hates (or) does half heartedly the tasks (activities) which need sustained attention.
7. Loses articles for day to day activities (learning materials, book, pencil).
8. Easily distracted by external factors.
9. Inattentive in doing day to day work.
10. Repeatedly moving hands and legs (or) fidgeting while seated.
11. Not able to be seated in one place.
12. Jumps (or) runs in situations which warrant him (or) her to be seated.
13. Difficulty in maintaining silence in recreational (or) sport activities.
14. Restless (or) always doing something as if being controlled by a mechanical motor.
15. Excessive quantum of speech.
16. Answering impatiently even before the questions are completed.
17. Difficulty in waiting for his turn.
18. Unnecessarily interfering in others conversation (or) play activities.
19. Involving in unnecessary arguments with elders.
20. Losing one's patience easily.
21. Disobeying (or) wantedly not following elder's request (or) commands.
22. Wantedly creating nuisance (or) irritation to others.
23. Blaming others for one's faults (or) faulty acts.
24. Becoming extremely emotional for petty issues (or) becoming easily angry towards others.
25. Extreme outbursts of anger (or) hate towards others.
26. Has intention to harm (or) settle scores with others.
27. Threatening others (or) threatening to meet one's needs.
28. Initiating petty clashes.
29. Telling lies for getting one's things done (or) for not doing one's activities.
30. Leaving school without permission (or) without parents' knowledge.
31. Physically harming others.
32. Stealing costly articles.
33. Wantedly damaging others articles (or) properties.
34. Hurting others with deadly weapons (sticks, knife, brick).
35. Hurting pet animals.
36. Wantedly burning (or) destroying property.
37. Destruction of others' shops, houses (or) vehicles.
38. Staying outside without permission.
39. Running away from home at night.
40. Sexually assaulting others.
41. Whether he (or) she is fearful, anxious (or) sad.
42. Not initiating new activities (or) involved in new tasks for the fear of committing mistakes (or) something wrong might happen.
43. Thinking that one is 'worthless' (or) 'inferior'.

44. Finding fault with oneself for all problems (or) feeling guilty.
45. Feeling lonely, isolated, not being loved; Expressing sadness stating "No one loves me".
46. Being sad, unhappy (or) depressed.
47. Easily feeling shy (or) introverted

ACADEMIC ABILITIES
48. Reading
49. Mathematical calculations
50. Writing work

CLASSROOM BEHAVIOURS
51. Rapport with friends
52. Following instructions/rules
53. Disturbing class
54. Project completion
55. Organising ability

APPENDIX 10

VANDERBILT ADHD DIAGNOSTIC PARENT RATING SCALE (VADPRS)COMPARABILITY / SIMILARITY SCORING SHEET (BETWEEN ORIGINAL ENGLISH AND BACK-TRANSLATED ENGLISH VERSIONS)

SCALE ITEMS	LIKERT SCALE SCORES						
	EXTREMELY COMPARABLE / SIMILAR		MODERATELY COMPARABLE / SIMILAR			NOT AT ALL COMPARABLE / SIMILAR	
S.NO	1	2	3	4	5	6	7
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
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14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

SCALE ITEMS	LIKERT SCALE SCORES						
S.NO	EXTREMELY COMPARABLE / SIMILAR		MODERATELY COMPARABLE / SIMILAR			NOT AT ALL COMPARABLE / SIMILAR	
	1	2	3	4	5	6	7
26							
27							
28							
29							
30							
31							
32							
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54							
55							

Sample Size Calculation

Sample size was determined on the basis of the reference study Venkata JA, Panicker AS. Prevalence of attention deficit hyperactivity disorder in primary school children . Indian J Psychiatry 2013;55:338-42 in which the prevalence of ADHD among primary school children in india was measured at 11.32%.

Description:

• The confidence level is estimated at 95%
• with a z value of 1.96
• the confidence interval or margin of error is estimated at +/-5
• Assuming that 11.32 percent of the sample will have the specified attribute p% =11.32 and q%=88.68

$n = p\% \times q\% \times [z/e\%]^2$
$n = 11.32 \times 88.68 \times [1.96/5]^2$
$n = 154$

Therefore 154 is the minimum sample size required for the study

APPENDIX – 12

INFORMED CONSENT FORM

Title of the study : **"Translation and Validation of Vanderbilt Attention Deficit and Hyperactivity Disorder (ADHD) Parent Rating Scale in Tamil language and Determination of its Psychometric properties"**

Name of the Participant   :

Name of the Principal Investigator   :

Name of the Institution   :   Dept. of Child and Adolescent Psychiatry,
                                                Institute of Child Health & Hospital for Children,
                                                Madras Medical College, Chennai.

Documentation of the informed consent:

I _____ have read the information in this form (or it has been read to me). I was free to ask any questions and they have been answered. I am over 18 years of age and, exercising my free power of choice, hereby give my consent to be included as a participant in **"Translation and Validation of Vanderbilt Attention Deficit and Hyperactivity Disorder (ADHD) Parent Rating Scale in Tamil language and Determination of its Psychometric properties".**

1. I have read and understood this consent form and the information provided to me.
2. I have had the consent document explained to me.
3. I have been explained about the nature of the study.
4. I have been explained about my rights and responsibilities by the investigator. I have the right to withdraw from the study at any time.
5. I hereby give permission to the investigators to release the information obtained from me as result of participation in this study to regulatory authorities, Govt. agencies, and IEC. I understand that they are publicly presented.
6. I have understood that my identity will be kept confidential if my data are publicly presented
7. I have had my questions answered to my satisfaction.
8. I have decided to be in the research study.

I am aware that if I have any question during this study, I should contact the investigator. By signing this consent form I attest that the information given in this document has been clearly explained to me and understood by me, I will be given a copy of this consent document.

For Parents :

Name and signature / thumb impression of the Parent / Guardian

Name _____ Signature_____ Date_____

APPENDIX – 13

ஆராய்ச்சி தகவல் மற்றும் ஒப்புதல் படிவம்

ஆராய்ச்சியாளர் பெயர் :   மரு. சு. நீலகண்டன்

பங்குகொள்பவரின் பெயர் :

பெற்றோர் பெயர் :

இடம் :

ஆராய்ச்சியின் நோக்கம்:

    6-13 வயது குழந்தைகளிடம் அதிக அளவில் காண்படும் ADHD (கவனக்குறைபாடு & இயற்கை மீறிய துறுதுறுப்பு) என்னும் குறைபாட்டின் தன்மை மற்றும் தீவிரத்தை ஆராய்ந்து அறிந்து கொள்வதற்கு ஏதுவாக, ஆங்கிலத்தில் உள்ள ஒரு வினாத்தொகுப்பை (Vanderbilt ADHD Parent Rating Scale (VADPRS)) தமிழில் மொழிப்பெயர்த்து அதன் நம்பகத்தன்மையை உறுதி செய்வது தான் இந்த ஆராய்ச்சியின் நோக்கம்.

    இதற்காக இந்த ADHD குறைபாட்டினை கண்டறிய உதவும் வினாத்தொகுப்பை உங்கள் குழந்தைக்காக உங்களிடம் கேட்டு அறிந்து அளவிடுவதற்காகவும் மற்றும் அதன் தீவிரத்தன்மையை ஆராய்வதற்காகவும், அதை தமிழில் மொழி பெயர்த்துள்ளோம். இது நாம் அனைவரும் அதை ஒழுங்காகவும், ஒரே மாதிரியாகவும், எளிதாகவும், புரிந்து கொண்டு முறையாக சிகிச்சை செய்ய உதவும். இந்த ஆராய்ச்சியில் நீங்களும் பங்கேற்க விரும்புகிறோம்.

    இதற்காக உங்களுக்கு 30 நிமிடங்கள் வரை மட்டுமே செலவாகும்.

    இதனால் தங்கள் குழந்தைக்கு எந்தவிதமான பாதிப்புகளும் ஏற்படாது என்றும்; அவரது சிகிச்சை முறையில் எந்த மாற்றமும் செய்யப்படமாட்டாது என்றும்; இந்த ஆராய்ச்சிக்காக எந்த குறிப்பிட்ட மருந்துகளும் பரிசோதனைக்காக உபயோகிக்கப்படவில்லை என்றும் உறுதியளிக்கிறோம்.

    முடிவுகளை அல்லது கருத்துக்களை வெளியிடும்போதோ அல்லது ஆராய்ச்சியின் போதோ தங்களது பெயரையோ அல்லது அடையாளங்களையோ வெளியிடமாட்டோம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

    இந்த ஆய்வின் முடிவுகளை ஆராய்ச்சியின்போது அல்லது ஆராய்ச்சியின் முடிவின் போது தங்களுக்கு அறிவிக்கப்படும் என்பதையும் தெரிவித்துக்கொள்கிறோம்.

    இந்த ஆராய்ச்சியில் பங்கேற்பது தங்களுடைய விருப்பத்தின் பேரில் தான் இருக்கிறது. மேலும் நீங்கள் எந்த நேரமும் இந்த ஆராய்ச்சியிலிருந்து பின்வாங்கலாம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

ஆராய்ச்சியாளர் கையொப்பம்

நாள் :

இடம் :

பங்கேற்பாளர் கையொப்பம்
/இடது கைரேகை

APPENDIX – 14

SOCIO - DEMOGRAPHIC DATA

Name of the Subject : _____

Sr. No.   : _____   Date : _____

DEMOGRAPHIC DATA:

1. Age of Subject   : _____ Year _____ Months

2. Date of Birth   : _____   3. Sex : ☐1) Male   ☐2)Female

4. Religion   :   ☐1)Hindu   ☐2)Muslim   ☐3)Christian   ☐4)Others

5. Type of family   :   ☐1)Nuclear   ☐2)Joint

6. Total monthly income of the family : _____

7. Area   :   ☐1) Urban   ☐2) Rural

8. Source of Referral :   ☐1) Direct   ☐2) G.P.   ☐3) School
                                        ☐4) Other Hospitals ☐5) Others

PARENT DETAILS:

		Mother	Father
Age		9)	12)
Education : 1) Illiterate 2) Below High School 3) High School 4) Higher Secondary 5) Graduate 6) Above Graduate		10)	13)
Occupation : 1) Works full time (6-8 Hrs) 2) Working part time (less than 6 Hrs) 3) Not working		11)	14)

15. No. of siblings   :

16. Birth Order   :

17. Sib Rivalry   :

18. Presence of Speech delay in family   :   ☐1)Yes   ☐2)No

19. History of mental retardation in family : ☐1)Yes ☐2)No

20. History of mental illness in family : ☐1)Yes ☐2)No

21. History of major physical illness in family : ☐1)Yes ☐2)No

22. Level of communication between parents & children :
☐1)Poor ☐2)Fair ☐3)Good ☐4)Not sure

23. Level of stimulation by books, radio, T.V. etc.
☐1)Poor ☐2)Good ☐3)Fair ☐4)Not sure

24. No. of languages spoken at home ☐1)One ☐2)Two or More

25. Language at home and neighbourhood are : ☐1)Same ☐2)Different

26. Antenatal Period : ☐1)Normal ☐2)Abnormal Details : _____

27. History of : ☐1)Fever ☐2)Drug intake ☐3)Hemorrhage
☐4)Toxemia ☐5)Surgery ☐6)Anaemia ☐7)Others

28. Delivery : ☐1)Home ☐2)Hospital

29. Type of Delivery : ☐1)Normal ☐2)Breech ☐3)Other Presentation
☐4)Forceps/Vaccum ☐5)Caesarian

30. Term : ☐1)Pre-term ☐2)Full Term ☐3)Post Term

31. **Complications after delivery**

1)	Jaundice	☐1)Yes	☐2)No
2)	Convulsions	☐1)Yes	☐2)No
3)	Infections	☐1)Yes	☐2)No
4)	Feeding problems	☐1)Yes	☐2)No
5)	Asphyxia	☐1)Yes	☐2)No
6)	Congenital Anomalies	☐1)Yes	☐2)No

32. Birth Weight in Kgs.: ☐1)Below 2.5 Kgs ☐2)Above 2.5 Kgs ☐3)Don't know

33. Developmental Milestones : ☐1)Normal ☐2)Delayed ☐3)Don't know

34. Fully immunized for age : ☐1)Yes ☐2)No

35. Any Separation from Mother : ☐1)Yes ☐2)No

36. History of Major Medical Illness :

1)	Convulsions	☐1)Yes	☐2)No
2)	Epilepsy	☐1)Yes	☐2)No
3)	Encephalitis / Meningitis	☐1)Yes	☐2)No
4)	Exanthematous Fever	☐1)Yes	☐2)No
5)	Tuberculosis	☐1)Yes	☐2)No
6)	Others	☐1)Yes	☐2)No

SCHOOL HISTORY

37. Goes to School   : ☐1)Yes ☐2)No

38. Age of Joining School : _____

39. Type of School   : ☐1) Regular ☐2)Special   ☐3) Regular & Extra coaching

40. Problems of Schooling : ☐1) School refusal   ☐2) School phobia
                               ☐3) Scholastic backwardness ☐4) Others
                               ☐5) No Problems

41. Special problems   : ☐1) Reading   ☐2) Writing   ☐3) Arithmetic

42. Thumb sucking   : ☐1)Yes ☐2)No

43. Nocturnal Enuresis   : ☐1)Yes ☐2)No

K-SADS-PL Version 1.0

Summary Lifetime Diagnoses Checklist

Name _____   Med. Rec. # _____   Date _____   Interviewer _____

No information   = 0
Not present   = 1
Probable   = 2
Partial Remission = 3
Definite   = 4

Criteria for Probable Diagnosis

1. Meets criteria for core symptoms of the disorder.
2. Meets all but one, or a minimum of 75% of the remaining criteria required for the diagnosis, and
3. Evidence of functional impairment

	Diagnosis Previous Episode	Age of Onset First Episode	Diagnosis Current Episode	Age of Onset Current Episode	Duration in Months All Episodes	Total Number of Episodes
Major Depressive Disorder*	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Psychotic Features	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Dysthymia	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Depressive Disorder NOS	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Adj. Disorder w Depressed Mood	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Mania	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Hypomania	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Cyclothymia	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Bipolar NOS	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Bipolar I	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Bipolar II	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Schizoaffective Disorder - Manic	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Schizoaffective Disorder - Depressed	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Schizophrenia	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Schizophreniform Disorder	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Brief Reactive Psychosis	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Panic Disorder	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Separation Anxiety Disorder	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Avoidant Disorder of Childhood	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Simple Phobia	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Social Phobia	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Agoraphobia	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Overanxious Disorder	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Generalized Anxiety Disorder	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Obsessive-Compulsive Disorder	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Post-traumatic Stress Disorder	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Acute Stress Disorder	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Adj. Disorder w Anxious Mood	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Enuresis	0 1 2 3 4	____	0 1 2 3 4	____	____	____
Encopresis	0 1 2 3 4	____	0 1 2 3 4	____	____	____

NOTE: * = Specify Subtype

	Diagnosis Previous Episode	Age of Onset First Episodes	Diagnosis Current Episode	Age of Onset Current Episode	Duration in Months Episodes	Total Number of Episodes
Anorexia Nervosa	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Bulimia	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Attention Deficit Disorder*	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Conduct Disorder*	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Oppositional Defiant Disorder	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Adj. Disorder w Dist. of Conduct	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Adj. Dis w. Mixed Mood & Conduct	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Tourettes	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Chronic Motor or Vocal Tic Disorder	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Transient Tic Disorder	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Alcohol Abuse	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Alcohol Dependence	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Substance Abuse	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Substance Dependence	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Mental Retardation	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
Other Psychiatric Disorder (specify)	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____
No Psychiatric Disorder	0 1 2 3 4	_____	0 1 2 3 4	_____	_____	_____

Treatment History (Score: 0 = No information, 1 = No, 2 = Yes)

Outpatient Treatment	0 1 2	Antipsychotic (specify)	0 1 2
Age of First Outpatient Treatment	__ __	Antidepressants (specify)	0 1 2
Total Duration of Outpatient Treatment (weeks)	__ __	Sedatives of Minor Tranquilizers (specify)	0 1 2
Psychiatric Hospitalization	0 1 2	Stimulants (specify)	0 1 2
Age of First Psychiatric Hospitalization	__ __	Lithium (specify)	0 1 2
Number of Psychiatric Hospitalizations	__ __	Other (specify)	0 1 2
Total Duration of Inpatient Treatments (weeks)	__ __	Current Medication (Specify:)	

_____

_____

Suicidal Behavior	No	Reliability of Information	
Ideation	_____	Good	_____
Gesture	_____	Fair	_____
Attempt	_____	Poor	_____

Notes:

ADHD SUPPLEMENT

1) Makes a lot of careless mistakes	0	1	2	3
2) Doesn't Listen	0	1	2	3
3) Difficulty following instructions	0	1	2	3
4) Difficulty organizing tasks	0	1	2	3
5) Dislikes / Avoids tasks requiring attention	0	1	2	3
6) Loses things	0	1	2	3
7) Forgetful in Daily Activities	0	1	2	3
8) Fidget	0	1	2	3
9) Runs or Climbs Excessively	0	1	2	3
10) On the Go / Acts like driven by Motor	0	1	2	3
11) Difficulty Playing Quietly	0	1	2	3
12) Blurts Out Answers	0	1	2	3
13) Difficulty Waiting Turn	0	1	2	3
14) Interrupts or Intrudes	0	1	2	3
15) Shifts Activities	0	1	2	3
16) Talks Excessively	0	1	2	3
17) Engages in Physically Dangerous Activities	0	1	2	3
18) Duration (6 months or more)	0	1	2	
19) Age of Onset (Onset before age 7)	0	1	2	
20) Impairment	0	1	2	
a. Socially (with peers)	0	1	2	
b. With family	0	1	2	
c. In school	0	1	2	

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1 to 17	= 0 – No information	1 – Not present	2 – Occasionally	3 – Often
18,19 &20	= 0 - No information	1 – No	2 – Yes	

APPENDIX – 16

22. Evidence of ADHD (DSM-IV)	Summary CE	Summary MSP

A. Either i or ii:

Inattention: 0 1 2   0 1 2

  i. Meets criteria for at least six of the following nine symptoms:

    1) Makes a lot of Careless Mistakes
    2) Difficulty Sustaining Attention on Tasks or Play Activities
    3) Doesn't Listen
    4) Difficulty Following Instructions
    5) Difficulty Organizing Tasks
    6) Dislikes/Avoids Tasks Requiring Attention
    7) Loses Things
    8) Easily Distracted
    9) Forgetful in Daily Activities or

OR Hyperactivity/Impulsivity

  ii. Meets Criteria for at least six or more of the following nine symptoms:

    1) Fidget
    2) Difficulty Remaining Seated
    3) Runs or Climbs Excessively
    4) Difficulty Playing Quietly
    5) On the go/Acts as if Driven by a Motor
    6) Talks Excessively
    7) Blurts Out Answers
    8) Difficulty Waiting Turn
    9) Often interrupts or intrudes

B. duration of symptoms 6 months or longer;
C. some symptoms that caused impairment present before the age of 7;
D. some impairment from symptoms must be present in two or more situations (e.g. school and home)
E. clinically significant impairment; and
F. does not meet criteria for Pervasive Developmental Disorder.

23. Predominantly Inattentive Type

Meets criterion Ai, but not criterion Aii for past six months.   0 1 2   0 1 2

24. Predominantly Hyperactive-Impulsive Type

Meets criterion Aii, but not criterion Ai for past six months.   0 1 2   0 1 2

	Summary CE	Summary MSP
25. <u>Combined Type</u>		
Both criterion Ai and Aii are met for past six months.	0 1 2	0 1 2
26. <u>Attention-Deficit Hyperactivity Disorder Not Otherwise Specified</u>		
Prominent symptoms of inattention or hyperactivity - impulsivity that do not meet criteria for Attention Deficit/Hyperactivity Disorder.	0 1 2	0 1 2

LIKERT SCALE EXPERT REVIEW CHART

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39
3	2	1	2	3	2	1	1	5	2	2	1	1	1	1	1	1	2	2	1	1	1	2	2	1	3	2	1	1	1	5	1	1	1	1	1	1	1	2
4	2	2	3	4	4	3	2	5	4	3	4	5	4	4	3	2	3	3	5	4	4	3	2	3	3	5	4	4	3	3	4	3	3	3	4	3	4	3
4	4	2	2	5	3	1	1	4	1	1	1	3	2	2	1	1	1	3	2	2	1	1	1	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1
3	2	1	4	2	1	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	1	4	2	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1
4	3	2	4	3	2	2	1	4	2	2	1	4	4	3	1	1	2	2	2	3	2	3	2	2	2	4	5	3	3	2	3	4	1	5	4	4	2	1
2	2	2	5	2	2	2	5	1	2	1	4	1	2	2	1	2	3	2	2	1	5	3	3	3	1	1	2	1	1	1	3	1	2	3	2	2	3	2
4	2	1	3	3	1	1	1	3	4	2	1	3	2	1	1	1	1	2	3	1	2	1	1	2	1	4	4	2	2	1	2	1	2	3	4	4	3	2
2	3	1	1	2	1	3	1	3	2	2	1	2	2	1	1	1	1	2	3	1	2	1	1	2	3	5	4	1	2	1	1	1	2	2	2	3	3	3
4	2	2	2	2	1	2	2	4	2	4	2	2	3	2	2	2	1	1	2	3	3	2	4	2	2	3	2	2	2	2	4	2	4	3	2	3	2	2
3	1	1	4	4	2	1	2	1	4	1	2	1	3	1	1	2	1	2	1	1	1	1	1	1	3	3	1	1	1	1	1	3	3	2	2	2	2	3

Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54	Q55
2	2	1	1	1	2	1	2	1	1	1	3	1	1	1	1
4	2	2	2	3	3	3	3	2	2	2	2	2	2	2	2
3	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	2	1	1	2	1	1	1	1	1
4	2	1	1	1	1	1	4	4	1	1	2	1	1	3	2
4	1	1	1	1	1	1	4	2	2	2	2	2	2	2	2
2	2	1	1	2	1	1	3	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	2	1	2	2	2	1	1	1	1
2	2	2	2	4	4	2	4	2	2	2	2	2	2	2	2
3	2	1	1	3	1	1	1	1	1	1	1	1	1	1	1

Community School Sample

S.NO.	AGE yrs	SEX	RELIGION	F.TYPE	SES	AREA	M-Edu	M-occu	F-Edu	F-Occup	Sib.no	B.order	Sib.riv	F/h.MR	F/h.M.I.	I.O.Com	I.O.Stim	No.Lang	AN.per	Del	Del.type	Gest	Del.comp	BW kg	D.MS.	FIC	M.sep	Scl.atten	Age.scl	Scl.typ	Prob.scl	SLD	Th.suc	T.tantrum	Temp.	N.Enurs	E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	E-10	E-11	E-12	E-13	E-14	E-15	E-16	E-17	E-18	E-19	E-20	E-21	E-22	E-23	E-24	E-25	E-26	E-27	E-28	E-29	E-30	E-31	E-32	E-33	E-34	E-35	E-36	E-37	E-38	E-39	E-40	E-41

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| 97 |
| 98 |
| 99 |
| 100 |

E-42	E-43	E-44	E-45	E-46	E-47	AP-1/E	AP-2/E	AP-3/E	CB-1/E	CB-2/E	CB-3/E	CB-4/E	CB-5/E	T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10	T-11	T-12	T-13	T-14	T-15	T-16	T-17	T-18	T-19	T-20	T-21	T-22	T-23	T-24	T-25	T-26	T-27	T-28	T-29	T-30	T-31	T-32	T-33	T-34	T-35	T-36	T-37	T-38	T-39	T-40	T-41	T-42	T-43	T-44	T-45	T-46	T-47	AP-1/T	AP-2/T	AP-3/T	CB-1/T	CB-2/T	CB-3/T	CB-4/T	CB-5/T
0	0	0	1	1	1	4	4	3	3	3	4	4	4	2	2	1	1	1	1	0	2	0	0	1	0	0	0	1	2	2	1	0	1	1	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	4	3	3	5	3	3	2	3
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1	0	0	0	1	1	5	4	4	4	3	5	4	4	1	1	0	1	0	0	1	1	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	4	3	4	4	4	2	4	5
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0	0	0	0	0	0	4	3	3	3	4	4	3	0	1	0	0	0	0	1	1	1	1	0	1	1	1	0	1	1	1	3	1	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	4	4	4	5	4	3
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0	0	0	0	1	0	5	4	3	3	3	2	4	4	2	2	3	2	2	2	2	2	2	1	3	1	2	2	1	2	1	1	0	1	0	2	0	2	1	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	5	4	3	3	4	4	4	5
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1	0	0	0	0	3	4	3	3	4	3	4	0	1	1	0	1	1	1	0	0	1	1	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	3	3	2	4	3	3	2	3
0	0	0	0	0	5	4	3	3	3	3	4	4	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	4	4	3	3	4	4
1	0	0	0	1	3	4	2	4	3	3	4	5	0	0	0	0	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4	3	3	3	4	4	3
0	0	0	1	0	1	5	3	3	3	4	5	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0	1	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	1	4	3	3	4	4	4	3
0	0	0	1	1	1	4	3	4	4	3	3	5	1	1	1	1	0	1	1	0	1	1	0	1	1	0	1	2	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	1	1	0	1	5	4	4	4	3	5	4	4
0	0	0	0	0	0	3	3	4	3	3	4	5	4	1	1	1	0	1	1	2	1	0	1	1	1	1	2	1	1	1	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	1	0	1	1	1	4	3	4	4	4	3	4	5
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1	0	0	0	1	4	3	3	5	3	3	2	3	1	0	0	1	0	1	0	0	0	0	0	0	2	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	4	4	4	4	5	4	3
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1	1	0	0	0	5	4	3	3	3	2	4	4	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	0	0	5	4	3	3	3	3	4	4
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1	0	0	0	0	4	3	4	4	3	2	5	0	1	1	0	1	1	1	0	1	1	0	0	1	1	0	0	1	0	1	0	0	0	1	0	0	0	1	0	0	0	3	2	4	3	3	4	5	4
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1	0	2	0	0	4	3	4	4	4	3	2	5	1	0	0	0	1	0	1	0	0	0	1	0	0	1	0	1	1	0	0	0	0	0	0	0	1	2	0	0	5	4	4	3	4	5	4	4
1	0	0	0	0	2	4	3	4	4	4	2	4	5	1	0	0	0	1	0	0	0	0	2	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	1	3	3	2	4	3	3	2	2
1	0	0	0	0	4	3	2	4	3	3	3	3	0	0	1	1	2	0	0	0	0	1	1	0	0	1	0	0	1	2	1	0	0	0	0	0	0	0	0	0	4	3	3	3	5	3	3	2	3
1	0	0	0	1	4	2	4	4	5	4	3	1	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	1	2	0	0	1	0	0	0	0	1	0	0	1	4	3	3	3	4	4	4	2
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| 1 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 3 | 3 | 2 | 3 | 3 | 4 | 2 | 4 |
| 0 | 1 | 0 | 1 | 1 | 1 | 5 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 3 | 4 | 3 | 4 | 3 | 4 | 2 | 4 |

Hospital Bilingual Sample

S.NO.	AGE.yrs	SEX	RELIGION	FAM.TYP	SES	AREA	REF.	M-Edu	M-occu	F-Edu	F-Occup	Sib.no	B.order	Sib.riv	F/h.MR	F/h.M.I.	L.O.Com	L.O.Stim	No.Lang	AN.per	Del	Del.type	Gest	Del.comp	BW.kg	D.M.S.	FIC	M.sep	Scl.atten	Age.scl	Scl.typ	Prob.scl	SLD	Th.suc	T.tantrum	Temp.	N.Enur.	D-4/I.1	D-4/I.2	D-4/I.3	D-4/I.4	D-4/I.5	D-4/I.6	D-4/I.7	D-4/I.8	D-4/I.9	D-4/H.1	D-4/H.2	D-4/H.3	D-4/H.4	D-4/H.5	D-4/H.6	D-4/H.7	D-4/H.8	D-4/H.9	Onset.yr	Dura.yrs	type	T-1	T-2	T-3	T-4
1	1	2	2	2	2	1	4	4	3	5	1	1	1	2	2	2	1	2	2	1	2	5	2	0	2	1	1	2	1	3	1	1	2	1	1	2	1	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	5	2	3	2	2	2	2
2	3	1	1	2	1	4	5	3	5	1	1	1	2	2	2	2	1	1	2	1	2	1	2	0	2	1	1	2	1	3	1	3	2	2	1	2	2	2	2	2	2	1	2	2	1	2	2	2	2	2	2	2	2	1	2	6	5	3	2	3	2	1
3	2	1	1	1	1	3	5	3	5	1	0	1	2	2	2	2	1	1	2	5	2	0	1	2	1	2	2	2	1	3	1	3	0	1	2	1	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	6	3	3	2	2	2	2
4	1	2	1	2	2	1	2	6	2	5	1	0	1	2	2	2	2	1	1	2	1	2	0	2	1	1	2	1	3	1	3	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	5	3	3	2	2	2	2
5	2	1	1	1	2	1	4	4	3	5	1	0	1	2	2	2	2	1	1	2	5	2	0	2	1	1	2	1	3.5	1	3	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	6	2	3	2	2	2	1
6	3	1	1	1	2	1	3	6	1	5	1	1	2	1	2	2	2	1	1	2	5	2	0	2	1	1	2	1	3	1	3	2	2	1	3	1	2	2	2	2	2	1	2	2	2	1	2	1	2	2	2	2	2	2	6	6	3	2	2	2	3
7	1	1	3	1	2	2	4	4	3	6	1	0	1	2	2	2	3	2	1	1	2	1	2	0	1	1	1	2	1	3	1	3	0	1	2	1	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	6	1	3	2	2	1	1
8	3	1	1	1	1	1	4	5	1	5	1	1	2	2	2	2	3	2	1	2-GDM	2	5	2	0	2	2	1	2	1	4	1	3	2	2	1	2	1	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	6	4	3	2	2	2	2
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3	2	2	2	2	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	2	3	1	2	2	3	2	2	3	3	2	3	3	2	3	2	3	3	3	3	2	3	2	2	2	1	1	2						

Hospital Tamil Sample

S.No	AGE yrs	SEX	RELIGION	FAM.TYP	SES	AREA	REF.	M-Edu	M-occu	F-Edu	F-Occup	Sib.no	B.order	Sib.riv	F/h.MR	F/h.M.I.	L.O.Com	L.O.Stim	No.Lang	AN.per	Del	Del.type	Gest	Del.comp	BW kg	D.M.S.	FIC	M.sep	Sci.atten	Age.scl	Scl.typ	Prob.scl	SLD	Th.suc	T.tantrum
1	2	2	1	1	3	2	3	3	3	4	1	1	1	2	2	2	1	2	1	1	2	5	1	0	1	2	1	2	1	3.5	1	3	2	2	2
2	2	1	1	2	2	2	4	3	3	3	1	1	2	2	2	2	2	2	1	1	2	1	2	0	2	1	1	2	1	3	1	3	0	2	1
3	2	2	1	1	2	2	2	4	3	5	1	2	2	2	2	2	2	2	1	1	2	1	2	0	2	1	1	2	1	3	1	3	2	2	2
4	2	1	1	1	2	1	4	2	3	3	1	1	2	2	2	2	2	2	1	1	2	1	2	0	2	1	1	2	1	3.5	1	3	0	2	2
5	3	1	1	1	3	2	3	3	3	4	1	1	1	2	2	2	2	2	1	2	2	1	2	1	2	2	1	2	1	3	1	3	0	2	1
6	2	1	1	1	2	2	3	4	3	5	1	1	1	2	2	2	2	2	1	1	2	1	2	0	2	1	1	2	1	3	1	3	0	2	1
7	1	1	1	1	3	2	3	1	3	3	1	2	1	2	2	2	1	1	1	2	1	2	0	2	1	2	1	2	1	3	1	3	0	2	2
8	2	1	1	2	2	1	2	2	3	3	1	1	2	2	2	2	2	2	1	1	2	1	2	0	2	2	1	2	1	3.5	1	3	2	2	1
9	3	2	1	2	3	2	4	Exp	Exp	3	1	1	1	1	1	2	1	1	1	1	2	1	2	0	1	2	1	2	1	3	1	3	2	2	1
10	1	1	1	1	2	1	3	3	1	4	2	1	1	2	2	2	2	3	1	1	2	5	2	0	1	1	1	2	1	3.5	1	3	0	2	2
11	2	1	1	1	3	2	3	5	1	3	1	1	1	1	2	2	2	2	1	1	2	5	2	0	2	1	1	2	1	3	1	3	0	2	1
12	1	1	2	1	3	1	3	2	3	3	1	1	1	1	2	2	1	2	1	2-PIH	2	5	1	0	1	2	1	2	1	3.5	1	3	2	1	2
13	3	1	2	1	2	1	4	3	3	4	1	3	1	2	2	2	1	2	2	1	2	1	2	0	2	1	1	2	1	4	1	3	2	2	2
14	2	1	1	1	3	1	3	2	3	3	1	2	3	2	2	2	1	2	1	1	2	5	2	0	2	1	1	2	1	3	1	3	2	1	2
15	2	1	2	1	3	2	4	2	3	3	1	1	2	2	2	2	2	2	1	1	2	4	2	0	2	1	1	2	1	3	1	3	0	2	2
16	2	1	1	1	3	2	3	2	3	2	1	2	2	1	2	2	2	2	1	1	2	1	2	0	2	2	1	2	1	3	1	3	2	2	1
17	2	1	1	1	2	1	4	3	3	5	1	1	2	2	2	2	2	2	1	1	2	5	2	0	2	1	1	2	1	3.5	1	3	0	2	2
18	1	1	1	1	2	1	4	4	3	6	1	0	1	2	2	2	2	2	1	1	2	5	2	0	2	1	1	2	1	3	1	1	0	2	1
19	1	1	1	2	3	2	4	2	3	3	1	1	2	2	2	2	2	2	1	1	2	1	2	0	2	1	1	2	1	4	1	3	2	2	1
20	3	1	1	1	2	1	3	3	3	4	1	3	2	2	2	2	2	2	1	1	2	4	2	0	2	1	1	2	1	3.5	1	3	2	2	2
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22	1	1	1	1	3	2	4	3	3	3	1	1	1	2	2	2	2	1	1	1	2	1	2	0	2	1	1	2	1	4	1	3	2	2	2
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24	1	1	1	1	3	2	3	2	3	3	1	1	2	2	2	2	2	2	1	1	2	1	2	0	2	1	1	2	1	3	1	3	0	2	1
25	2	2	1	2	3	2	1	3	3	4	1	1	2	2	2	2	2	2	1	1	2	1	2	0	2	1	1	2	1	3.5	1	3	2	2	2
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28	1	1	1	2	3	1	3	3	2	4	1	1	1	2	2	2	2	2	1	1	2	4	2	0	2	1	1	2	1	3	1	3	2	2	2
29	2	2	3	1	2	1	4	4	2	4	1	1	1	2	2	2	2	2	1	1	2	5	2	0	2	1	1	2	1	3	1	3	2	2	1
30	2	2	1	1	2	1	3	3	3	3	1	1	1	2	2	2	2	2	1	1	2	1	2	0	2	1	1	2	1	3.5	1	3	2	2	2
31	2	1	1	1	1	3	1	3	3	3	3	1	2	1	2	2	2	2	1	1	2	2	1	0	2	2	1	2	1	3	1	3	2	2	1
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34	2	1	1	1	2	1	4	5	3	5	1	1	1	2	1	2	2	2	1	1	2	5	2	0	2	1	1	2	1	3.5	1	3	0	2	1
35	2	1	1	1	2	1	4	4	2	5	1	1	1	2	2	2	2	3	1	1	2	5	2	0	2	1	1	2	1	3	1	2	0	2	2
36	2	1	1	2	3	4	3	3	3	3	1	1	1	2	2	2	2	3	1	1	2	1	2	0	2	1	1	2	1	3.5	1	3	1	2	2
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39	3	1	1	1	3	2	3	3	3	4	1	1	1	2	2	2	2	2	1	2	2	1	2	1	2	2	1	2	1	3	1	3	0	2	1
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41	1	1	1	1	3	2	3	1	3	2	1	1	1	2	2	2	2	3	1	1	2	5	2	0	2	1	1	2	1	3.5	1	3	0	2	1
42	2	1	1	1	3	2	3	5	1	3	1	1	1	2	2	2	2	2	1	1	2	1	2	0	2	1	1	2	1	3	1	1	2	2	1
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62	2	1	1	1	3	2	3	3	3	3	1	1	2	2	2	2	2	2	1	1	2	1	2	0	2	1	1	2	1	3.5	1	3	0	2	2
63	2	1	2	3	2	2	4	2	2	Div	div	1	2	2	2	2	1	2	1	1	2	1	2	0	2	1	1	2	1	4	1	3	2	2	2
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65	1	1	1	1	2	2	3	3	3	3	1	1	2	2	2	2	2	2	1	1	2	1	2	0	2	1	1	2	1	4	1	3	2	2	2
66	3	1	2	1	3	2	3	4	3	5	1	1	2	2	2	2	2	2	1	1	2	5	2	0	2	1	1	2	1	3.5	1	0	0	2	1
67	2	2	1	1	2	1	4	5	2	5	1	0	1	2	2	2	2	2	1	1	2	5	2	0	2	1	1	2	1	3	1	2	0	2	2
68	1	1	2	1	3	2	4	5	3	2	1	1	1	2	2	2	2	1	1	2	2	1	2	0	2	1	1	2	1	3.5	1	1	0	2	1
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72	2	2	3	1	3	2	3	3	3	4	1	1	1	2	2	2	1	2	1	1	2	4	2	0	2	1	1	2	1	3.5	1	3	2	2	2

Temp	N.Enur.	D-4/I.1	D-4/I.2	D-4/I.3	D-4/I.4	D-4/I.5	D-4/I.6	D-4/I.7	D-4/I.8	D-4/I.9	D-4/H.1	D-4/H.2	D-4/H.3	D-4/H.4	D-4/H.5	D-4/H.6	D-4/H.7	D-4/H.8	D-4/H.9	Onset.yrs	Dura.yrs	type	T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10	T-11	T-12	T-13
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T-14	T-15	T-16	T-17	T-18	T-19	T-20	T-21	T-22	T-23	T-24	T-25	T-26	T-27	T-28	T-29	T-30	T-31	T-32	T-33	T-34	T-35	T-36	T-37	T-38	T-39	T-40	T-41	T-42	T-43	T-44	T-45	T-46	T-47	A.P.1	A.P.2
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