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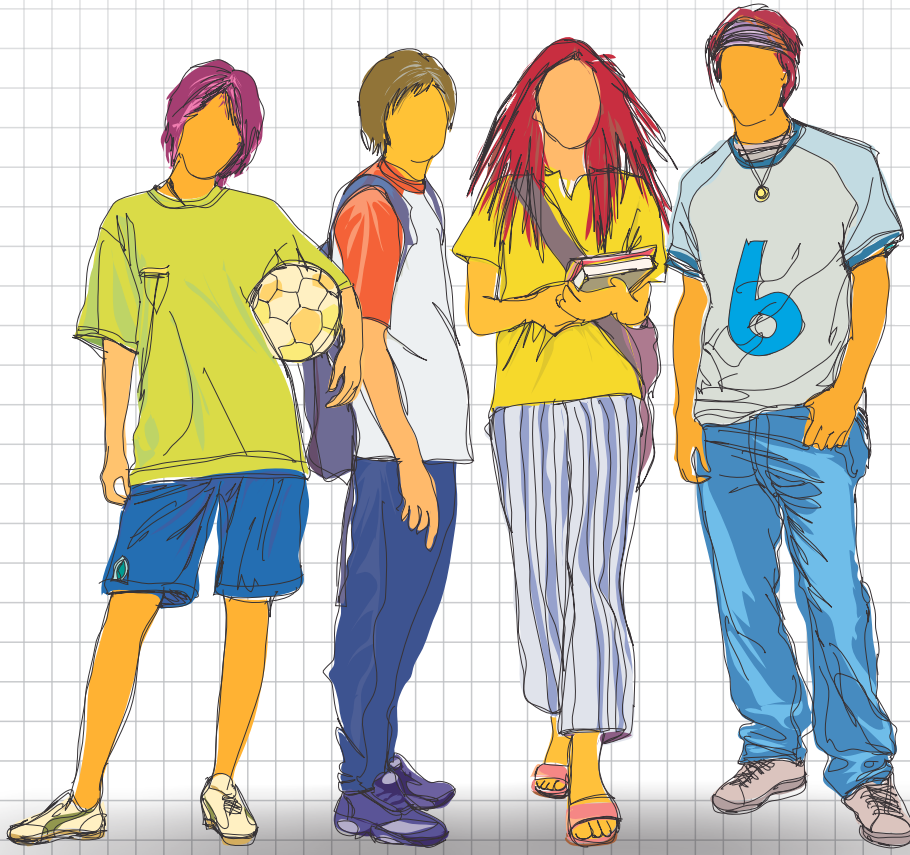
ADOLESCENT ADJSUTMENT INVENTORY

D.V. Venu Gopal, A.Ashok & K.Madhu



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CONTENTS

INTRODUCTION 5
Adolescent Developmental Contexts 7
Measures of Adolescent Adjustment in India 10
Adolescent Adjustment Inventory 14
ADMINISTRATION, SCORING & INTERPRETATION 14
Material Required 14
Instructions 14
Scoring 5
Interpretation 16
DEVELOPMENT OF ADOLESCENT ADJUSTMENT INVENTORY 16
RELIABILITY AND VALIDITY ANALYSES. 30
Reliability Analyses 30
Validity Analyses 32
DEVELOPMENT OF SUBSCALES & PREPARATION OF NORMS 37
Subscale Construction 37
Development of Norms 39
DEMOGRAPHIC INFLUENCES ON ADOLESCENT ADJUSTMENT 41
Norms. 50
REFERENCES 51

TABLES:

Table 1 19
Table 2. 20
Table 3. 22
Table 4. 23
Table 5. 25
Table 6. 25
Table 7. 29
Table 8. 30
Table 9 31
Table 10 31
Table 11 33
Table 12 34
Table 13 35
Table 14 37
Table 15 38
Table 16 40
Table 17 41
Table 18 43
Table 19 44
Table 20. 45
Table 21 45
Table 22. 46
Table 23. 47
Table 24. 48
Table 25. 49
Table 26. 49

INTRODUCTION

One of the major challenges that mankind faces today is the endless need to adjust to the rapidly changing social institutions such as the family, peer group networks, occupation, economic changes, wars and even various ideological viewpoints, many of which also stand in conflict with each other. In fact, the whole course of evolution is in itself a process of adjustment to the ever impinging changes.

The concept of adjustment was originally conceived by biologists as a biological adaptation of the organism to its environment. The word adjustment became popular in Psychology during the 1930's. Shaffer (1936) in his book, The Psychology of Adjustment, assigned biological adaptation as the central meaning of the term adjustment. This somewhat mechanistic view represents the then predominant view of behavior held by behaviorists. It is now established that the term adjustment doesn't stand for biological adaptation any more. Rather it stands for psychological survival in which psychologists are interested i.e., the individual's adjustment to social or interpersonal pressures (Lazarus, 1961).

A review of the definitions of adjustment (e.g., Symonds, 1946; Coleman, 1960; Schneiders, 1965) indicate that adjustment is not merely a passive process but an active interaction between the individual and her environment wherein the individual tries to modify her behaviors as required by the demands of the environment or acts upon the environment to achieve her goals or needs. Another aspect of adjustment that emerges from the above definitions is that adjustment is also a state (Gates, Jersild, McConnell, and Challman, 1949). It is a state by which a person is recognized as well-adjusted. A well- adjusted person is relatively free from problems such as depression, anxiety, fears, addictions, etc. reflecting a successful adjustment with the demands of life.

Given the importance of adjustment in human life, it is important to examine the adjustment issues in adolescence, as this period of life presents a

myriad of challenges to the growing child.

Adolescence

Inquiry into the nature of adolescence dates back to the days of early Greek philosophers like Aristotle (384-322 B.C) and Plato (437-347 B.C) who wrote extensively about the problems and developmental characteristics of adolescence. However, it is with the publication of Hall's (1904) seminal work Adolescence: Its Psychology and Its Relation to Physiology, Anthropology, Sociology, Sex, Crime, Religion and Education, the study of adolescence gained momentum as an academic field.

The period of adolescence is a crucial period in one's life span. It starts with attaining physical maturity and ends with psychological maturity. In terms of physical development adolescence starts when the individual experiences the first signs of sexual maturity and ends when the physical growth almost ceases at about age 17 or 18 (Medinnus & Johnson, 1969). From the psychological point of view the period of adolescence is a transitional stage that equips the growing child to enter an active adulthood. It witnesses rapid growth in all spheres of human life than any other period of human life. This growth spurt involves extensive changes in almost every aspect of development, including physical, cognitive, emotional and social domains. Primarily, this rapid growth in physical and cognitive changes enable the adolescent to think in new ways that are alien to a child and to experience the world differently, leading to varied changes in the child's emotional and social relations.

Developmental Contextualism

Developmental Contextualism is a relatively recent theoretical development in the study of human development. Broadly speaking, it represents a set of related theoretical ideas such as life-span view of human development (Baltes, 1987; Baltes, Lindenberger, & Staudinger, 1998), life-course study of human development (Elder, 1974; Elder & Caspi, 1988), and the ecological view of human development (Bronfenbrenner, 1979;

Bronfenbrenner & Morris, 1998). Developmental contextualism emphasizes the importance of understanding human development in relation to the contexts in which the development takes place. For example, ecological perspective provides an understanding of the dynamics of human development occurring within a specific micro setting (e.g., the home) or in a macro setting such as socio-cultural contexts prevalent in a particular society at that particular time. Developmental contextualism also emphasizes that these immediate and larger contexts are not independent of each other but continues to interact with each and thus shaping the individual's behavior. For example, Individuals and their families are embedded within larger cultural and subcultural contexts such as family values and religion, socioeconomic status, etc. which can influence parent-child interactions (Bronfenbrenner & Morris, 1998).

Some of the important immediate developmental contexts for an adolescent include the family, school and peers. The significance of these contexts is examined.

Adolescent Developmental Contexts

Home / Family

Family is the primary source of child's socialization. It takes care of the needs of the child and sets the stage for his/her further development. Over the course of childhood, the parent-child relations change dynamically as the child's personality characteristics crystallize and the nature of the parent-child interactions become complex. One of the most striking changes in parent-child relations during adolescence is the child's struggle to achieve autonomy from the parental safeguards. Through autonomy the adolescent expresses herself as a separate being, apart from her parents, and willing to take responsibility for her decisions and actions. However, the process of achieving autonomy is not a smooth one and often leads to conflicts between parents and their adolescent children. At one side are the parents who do not want to lose their control over the adolescent and at the other side is the adolescent struggling to gain autonomy. This parent-child conflict seems to be

inevitable across the diverse cultures (Laursen, Coy, & Collins, 1998; Yau & Smetana, 1996). The adolescents' further psychological and social adjustment, to a large extent, depends on how successfully the parents and the adolescents navigate this stage. However, in spite of their struggle, adolescents can only achieve partial autonomy from parents and they have to live with it till they achieve economic independence and the subsequent social recognition.

Another important familial aspect that can influence adolescents' development is parenting styles. Researchers often categorize parenting patterns in to four different styles such as authoritarian, authoritative, permissive and noninvolved parenting styles (Baumrind, 1971). Adolescents with less controlling and more accepting and responsive parents develop high self-esteem, good academic and social skills and experience less behavior problems (Chen, Hastings, Rubin, Sen & Stewart, 1998; Glasgow, Dornbusch, Troyer, Steinberg, & Ritter, 1997) whereas adolescents with more punitive parents tend to become more rebellious or very submissive.

Schools

School is the major source of socialization and intellectual development. In fact the child or the adolescent spends most of her waking hours in school than in homes. Schools are the formal places that impart knowledge, academic skills, problem-solving skills and social norms (Ceci, 1991). Schools also provide ample opportunities for the adolescent to develop wider social networks with their peers and with adults other than the parents such as teachers.

It was found that the organizational climate of the school such as opportunities for students to participate in school activities, sense of community among teachers and students, effective leadership, clear rules, emphasis on achievement, etc. nurture the academic motivation, self-efficacy and achievement orientation among the students (e.g., Bandura, 1997; Goodenow, 1993; Lee & Smith,2001; Maclver, Reuman, & Main, 1995).

The academic focus of schools also has important implications for the

students' mental health. Schools that emphasize ability and performance outcomes were found to eliminate more students who could not reach the strict academic standards and would induce anger, disenchantment and frustration (Eccles & Midgley, 1989; Finn, 1989). Similarly, Roeser & Eccles (1998) found that ability-focused schools would lead to decline in students' academic performance, academic values and self-esteem and would increase their anger, school truancy and depressive symptoms. In contrast, schools that emphasize effort, improvement and task-mastery appear to reduce depression, anxiety and frustration (Adams & Berzonsky, 2006).

Peer Groups

Peer groups are important socializing agents. Some researchers are of the view that peers may contribute as much, or even more, to adolescent development as adults do (Harris, 1998, 2000; Youniss, McLellan, & Strouse, 1994). Ironically, the growing adolescents, struggling to get more independence from parents, also struggle to be accepted by peer group members. They start spending more time in the company of friends. Having a friend is a significant social achievement for adolescents and an indicator of social acceptance. They perceive equal power status with their peers and can appreciate each other's perspectives, negotiate and cooperate with each other. Thus, equal-status contacts with peers are likely to contribute to the development of social competencies that are difficult to acquire in the unequal interactions with parents and other adults (Shaffer & Kipp, 2007).

However, reaching out to the peer group and to its values is not a smooth process. The adolescents' need to establish peer relations often lead to conflicts with parents. The peer group may exert pressures which are not acceptable to parents, teachers or other adult institutions. Children want more control over their own lives and judge the peer group to be more similar to themselves, and therefore more sympathetic to their interests than the adult-dominated social order (Bronfenbrenner, 1970; Coleman, 1961).

Taking cues from the ecological perspective, it is important to understand adolescent development in the contexts in which it occurs. This is essentially

related to the concept of adjustment - the process of establishing harmonious relations with the context. It is interesting to note that, Bell as early as 1930s foresaw the importance of exploring these environmental contexts in understanding the individuals' psychological problems and counseling needs. He developed tools to measure adjustment patterns of adolescents and adults to identify the life contexts to which the individual has difficulty in adjusting.

Measures of Adolescent Adjustment in India

Currently, children under 16 years of age constitute over 40 per cent of India's population and information about their mental health is a national essential. Early Indian studies reported prevalence rates of psychiatric disorders among this population ranging from 2.6% to 35.6% (Shoba, Satish, Gururaj, Shekhat, Subbakrishna, Poornima et al., 2005). Most children, in the process of growing up, are likely to experience emotional and behavioral problems that are transient in nature and are due to the stress of development and adaptation to family and societal expectations (Schroeder & Gordon, 2002).

The primary task of the clinicians working with children and adolescents is to identify and treat those who suffer from emotional and/or behavioral problems. However, these problems may have their origin in the individual's surrounding environment. Problems may arise due to the tensions caused by a wide range of personal, biological, family and social stressors (Bell-Dolan, Reaven & Peterson, 1993; Kazdin, 1990; Stark, Humphrey, Laurent, Livngston, & Christopher, 1993). In this regard, the assessment process should not only focus on the symptoms but also on the contextual factors contributing to the problem and identify the target areas for intervention (Ramana, 2007). It essentially means that the clinician or the counselor should be aware of how effectively the adolescent is functioning in dealing with different aspects of life and how these conditions are related to his present problems.

Given the importance of adjustment and its role in adolescent lives it is very essential to study the adjustment patterns of adolescents. To achieve this,

researchers in India adopted/developed a variety of self-report measures of adjustment. One of the oldest measures of adolescent adjustment is the Bell Adjustment Inventory Student Form developed by Bell (1934). It measures adjustment in the major contexts of adolescent lives such as home, health, social and emotional adjustments. Later, this initial version was modified in 1962 and included a total of six dimensions of adjustment namely, home adjustment, health adjustment, submissiveness, emotionality, hostility and masculinity-friendliness. Both these forms have been a major source for measurement of adjustment and were adopted in different languages around the world.

To appraise the adjustment patterns of adolescents in India, a survey of adjustment measures developed in India was carried out. Specifically, it includes the first, second and the third hand books of psychological and social instruments which provide the details of the instruments developed in India up to the year 1997. It was found that there are 41 adjustment measures developed or adapted in India for use with adolescents. Of these, 9 instruments are various adaptations of forms of Bell Adjustment Inventory. The first Handbook of Psychological and Social Instruments (Pareek & Rao, 1974) listed a total of 27 adjustment tests for adolescents; the Second Handbook of Psychological and Social Instruments (Pestonjee, 1988) reported a total of 11 adjustment measures and the Third Handbook of Psychological and Social Instruments (Pestonjee, 1997) reported information about only 3 instruments for measuring adolescent adjustment. Most of these instruments measure adjustment in terms of life areas such as family, physical health, emotionality, peer relations, relations with teachers and educational adjustment. The majority of these instruments are either in English or in Hindi and a few were in other major Indian languages. Only three adjustment measures were found to be developed in Telugu language.

Need to Develop Adolescent Adjustment Inventory in Telugu

Telugu, one of the oldest Dravidian languages, is the third most spoken language in India. It is the mother tongue for over 80 million people residing in

Andhra Pradesh state which is located in the southern part of India. It is one of the fast developing states in the country with rapid industrialization and the resultant changes in the lives of the people. However, the body of psychological literature about these people is very limited owing to (apart from of other problems) the problems in finding suitable research tools to study this population.

However, people are increasingly recognizing the importance of seeking professional psychological help. This change is more visible in problems related to children and adolescents who constitute a major portion of the total population. Because of the larger socioeconomic changes traditional joint families are melting down and more and more people are migrating to major towns and cities. These structural changes, alien to the traditional family system, could have an impact on the developing child. Moreover, as parents and adolescents are becoming increasingly aware of the crucial role of education in socioeconomic development, they are giving utmost importance for academic goals in life. It can be noted that most of the adolescents in Andhra Pradesh state aspire to join courses related to Engineering or Medicine after completing their high school. These ambitious parents, schools and students often put lot of efforts even at high school level to acquire admission in to these courses. This excessive stress on academics at the cost of other developmental issues is often argued to be a major source of stress among these adolescents. However, body of psychological research on these issues is very scant.

On the other side, as elucidated earlier, these child and adolescent issues are slowly gaining attention from teachers, educationists, school managements and more importantly, parents. Many schools and colleges started recruiting counselors. However, as there is a dearth of psychological tools developed in Telugu or culturally adopted, counselors are often finding it difficult to conduct psychological assessment. There is an urgent felt need to develop/adapt well standardized tests in Telugu. It is in this context, Ramana (2007) translated Achenbach System of Empirically Based Assessment (ASEBA) school-age forms in to Telugu language.

With regard to the adjustment measures, to the knowledge of the present researcher, there are only three measures developed in Telugu language. The earliest adjustment measure standardized on Telugu-speaking adolescents is Adolescent Adjustment Inventory by Reddy (1964). However, details of its availability in Telugu are not known. The earliest known adjustment measure in Telugu is Indirect Academic Adjustment Inventory by Rao (1967). It is a 100 item sentence completion test to measure academic problems of college students. Another early adjustment measure developed in Telugu is Problem Inventory by Ramamurthy and Reddy (Pareek & Rao, 1974). It measures high school students' adjustment problems in the areas of home, school, personal and social relationships. These instruments were developed decades back and the details of the norms and availability of these tests are not known.

More recently, Ashok, Madhu, and Suneetha (2004) developed the Culturally Relevant Bell Adjustment Inventory, a cultural adaptation of 1962 Bell Adjustment Inventory (Revised) Student Form. It measures adjustment in terms of home adjustment, health adjustment, emotionality, submissiveness, hostility and masculinity-femininity. Grade level norms were developed on a sample of 2225 students studying from 8th grade to post graduation in Visakhapatnam district, Andhra Pradesh. However, it does not include academic context which is the crux area of adolescents' lives.

Given the importance of studying adjustment issues in adolescent lives and its implications for adolescent guidance and counseling it is important to have a comprehensive and well-standardized test in Telugu language for use with Telugu speaking adolescents. It is felt that the previously developed tests in this context are inadequate because they don't cover wider aspects of adolescent lives or not adequately standardized. It is in this context the present researcher decided to develop a new adjustment instrument for use with Telugu speaking adolescents in both Telugu and English languages. There is a felt need to develop the test in both Telugu and English languages. The reason for this is that the students are increasingly joining schools where English language is the medium of instruction. The government of Andhra

Pradesh is also starting English medium government schools where education is free of cost. Students tend to speak Telugu at home and English in more structured contexts such as schools and formal learning environments.

It is in this context the researcher aims at developing the test in both Telugu and English. These two forms can be used as supplementary to each other and will be very helpful for the researchers, counselors and other professionals working with adolescents to obtain information with ease. It can be very helpful for a novice counselor to obtain some useful leads to explore further. This will further facilitate developing better target interventions to help the adolescent to safely navigate these problems.

ADOLESCENT ADJSUTMENT INVENTORY (AAI)

Adolescent Adjustment Inventory is a newly developed adjustment measure available in both Telugu and in English. It consists of 186-Yes/No type of items designed to assess the adjustment problems of adolescents. It assesses adolescents' adjustment in terms of five areas- Home, Health, Academic, Emotional and Social adjustment.

ADMISTRATION, SCORING AND INTERPRETATION

Materials required

Materials needed to administer the AAI include the Administration Booklet, separate answer sheet, hand scoring key, norms sheet and at least two pencils and an eraser.

Instructions for Administration

Simple and clear instructions for administration are provided on the first page of the test booklet. Although the test can be self-administering and can be used individually and in groups, it is always recommended to establish workable rapport with examinees. The following simple and straight forward instructions (as given on the cover page of the test booklet) are recommended to use while administering the test. In individual testing the administrator can read out these instructions while the client/the adolescent is asked to go

through them silently. Similarly, in the case group testing the administrator can read the instructions aloud while the participants go through them silently. The administrator can also give an example regarding how to give the answer.

In the next page there is a list of items that describe your feelings, thoughts and your relations with others. Please read each item and give your answer by circling either 1 or 0. If an item is true in your case please circle 1. If an item is not true in your case please circle 0.

*There is no time limit to complete, but work rapidly

* Please answer all the items.

1= True 0= Not True

While administering the test, as recommended by Bell (1963), the examiner is required to follow the below mentioned criteria.

--To ensure careful reading of the instructions on the first page of the test booklet, the examiner should read them aloud while the examinee reads them silently.

-- Each examinee should interpret the questions him/her self. However, the examiner may answer questions about the meaning of the words.

--If examinees ask questions concerning the purpose and the use of the test, they should be answered frankly and honestly that this will help to identify his/her adjustment levels and the problems he/she is facing.

Scoring

The scoring procedure for AAI is very objective and simple. As these items are dichotomous items each answer will get either a score of one (1) or zero (0) with higher scores indicating poor adjustment. Hand scoring keys were prepared for obtaining the adjustment dimensions' scores. Appendix I provides scoring key for each of the five adjustment scales and 24 subscales.

Interpretation

Norms are provided for each of the five adjustment scales and the 24 subscales. Percentile norms method was used to develop norms as these norms are very easy to understand and are most often used in adjustment measures. In this method, the obtained scores based on their percentile ranks are categorized as Excellent, Good, Average, Poor and Unsatisfactory. E.g., a score that lies below 5th percentile is categorized as 'Excellent' while a score that lies above 95th percentile is categorized as 'Unsatisfactory' with respect to the particular adjustment dimension.

DEVELOPMENT OF ADOLESCENT ADJUSTMENT INVENTORY

Conceptualization of Adjustment

A review of some of the definitions of adjustment presented earlier indicates that adjustment is primarily situational i.e., one adjusts to external factors such as class room environment, parental restrictions, a new teacher, new neighborhood or even to adverse social and political conditions. Researchers typically measure adolescent adjustment in terms of their interactions with the surrounding factors such as family issues, school, peer relations etc. However, some researchers also included physical health and emotional/neurotic symptoms as aspects of adjustment. From an ecological perspective these physical health and neurotic symptoms can be viewed as the inner most micro level contexts which can influence our interaction with the world in subtle ways. In this context adjustment is conceptualized as a dynamic process of establishing harmonious relations between the adolescent and his/her environment (both external and internal). Based on the experts' opinions and the review of existing adjustment measures five major adjustment contexts in adolescents' lives were identified. These contexts provided the conceptual basis for developing/identifying the items for measuring adjustment. These are external contexts - home adjustment, academic adjustment and social adjustment and internal contexts – physical health and emotional adjustment.

The development of the AAI was can presented in the following stages.

I. Scale Development

a) Development of initial item pool

b) Item Comprehensibility analyses

c) Translation Equivalence

d) Item Selection

e) Differential Item Functioning Analyses

II. Reliability & Validity analyses

III. Development of Subscales and Preparation of Norms

I. ITEM SELECTION / ITEM ANALYSES

a) Development of Initial Item Pool

As described earlier the five areas, namely, family, peer group, academics, emotional adjustment and health aspects of adolescent lives form the basis for developing items to measure adjustment. Sources such as existing measures and expert views were utilized for developing the initial item pool with 600 items. The aim at this level was to liberally develop/identify as many items as possible. Tests such as Adjustment Inventory for School Students (Sinha & Singh, 1993), Adjustment Inventory for College Students (Sinha & Singh, 1995), Ojha's Bell Adjustment Inventory (Ojha, 1994), Culturally Relevant Bell Adjustment Inventory (Ashok, et al., 2004), Youth Self Report (Achenbach, 2001), Personality Inventory for Youth (Lachar & Gruber, 1994), and Adolescent Adjustment Inventory (Reddy, 1964) were surveyed for developing the initial item pool. The selected items from these tools were substantially modified to suit Indian settings.

Apart from adopting items the researcher also developed additional items that would reflect the Indian conditions. For example, an item "my father beats my mother" is included in home adjustment domain as it is

relatively common in disrupted homes in India which can badly effect the home environment and parent-child closeness. Similarly, items such as "I smoke Cigarette, Bidi or any other such tobacco products" and "I chew substances like Gutka, Khaini, Pan etc." were included in health adjustment as these health risk behaviors tend to develop during adolescence.

Subsequently, the researchers, along with four senior faculty members of the Department of Psychology and Parapsychology, Andhra University, Visakhapatnam, verified the relevance of the developed items for the proposed five adjustment domains. Two of these faculty members have more than twenty five years of experience in psychological assessment and counseling for children and adolescents.

A series of meetings were conducted to identify the duplicate items or items repeated with the same meaning and items irrelevant to any of the proposed five adjustment domains. This led to the deletion of almost fifty per cent of the items as these were found to be repetitive or not relevant. Thus, of the initial 600 item pool 332 were retained for further analysis.

These remained 332 items were substantially modified in terms of wording to better represent its meaning to the Telugu speaking adolescents. These items were subjected to further psychometric analyses.

b) Item Comprehensibility Analysis

The 332 English items were later translated into Telugu (details given in the next section). Though the English and the Telugu items were written in a simple language to enable the high school level adolescents to read and understand them correctly it would be useful to check the extent to which the items were correctly understood by target sections. For this purpose, an item comprehensibility analysis was carried out.

Sample

The comprehensibility of the items of the English and Telugu items was tested using different samples of students from 6th grade on the

assumption that comprehensibility at this grade would ensure the same at the higher grades. In view of the large number of items (332) it was decided to administer them in two parts (Set I and Set II) to control the possible effects of boredom and lack of motivation. Thus, four separate samples were used for assessing the item readability.

Table 1 shows the details of the samples. A total of 170 students (95 boys and 75 girls) evaluated the comprehensibility of the Telugu items. These students were recruited from two government schools. This sample is a typical representation of the Telugu medium students studying in government schools in Andhra Pradesh. Of these 170 students, 89 students evaluated the Set I and 81 students evaluated the Set II. For evaluating the English items a total of 165 students (86 boys and 79 girls) were recruited from a large English school. Of these 165 students, 89 students evaluated Set I and 76 evaluated Set II. All these samples have slightly more number of boys than the girls. The students were specifically instructed to identify the words or the items which they could not understand.

Table 1

Sample for Item Comprehensibility Analysis

	Boys	**Girls**	**Total**
Samples for Telugu Form			
Set I	50 (56.18)	39 (43.82)	89 (100)
Set II	45 (55.56)	36 (44.44)	81 (100)
Samples for English Form			
Set I	45 (50.56)	44 (49.44)	89 100)
Set II	43 (56.58)	33 (43.42)	76 (100)

Numbers in Parentheses are percentages

The results of the comprehensibility analysis are presented in table 2. An item (either in English or Telugu) has been considered as comprehensible if it was understood by at least 75 per cent of the sample that has been administered the item.

Table 2

Results of the Item Comprehensibility Analysis

Form	**<75 %**	**75 to 89 %**	**>90 %**
English	94 (28.31)	81 (24.39)	157(47.28)
Telugu	77 (23.19)	226 (68.07)	29 (8.73)

Table 2 shows that 238 of the total 332 English items met the criterion of comprehensibility (i.e., being understood by more than 75 per cent of the sample). Further, 157 (47%) items were rated as understood by more than 90 per cent of the sample. With regard to the items written in Telugu, 255 items met the criterion of comprehensibility. It can be seen that the items written in English as compared to those in Telugu were understood by a larger percentage of the students. These results suggest that items written in English have a better comprehensibility level.

It can be observed that 94 (28%) of the items written in English and 77 (23%) of items written in Telugu have failed to meet the comprehensibility criterion. These items were then reviewed and refined in order to improve their comprehensibility. This was accomplished by replacing difficult words with equivalent easy-to-understand words. For example, the item "I prefer adults to children" was changed as "I like to be with adults than to be with children". Another item, "my parents or siblings help me in my studies" was reworded as "my parents or brothers or sisters help me in my studies" as the particular word "sibling" was very uncommon in usage and it was not understood by most of the students. Similarly, the item "I occasionally have conflicting moods of love and hate towards my family members" was changed as "I sometimes love and sometimes hate my family members" as the meaning of the word conflict was difficult to comprehend for the students to understand. Similar review and refinement was also done for the items written in Telugu and all these 332 items were included for subsequent translation equivalence analysis.

c) Translation Equivalence analyses

This section gives details of the item translation process. The 332 items

originally written in English were translated into Telugu by the first two authors. While in developing the translated version preference was given to represent the meaning of the English items in Telugu rather than just developing a word-to-word translation a few items for which no agreement was reached between these two translators were submitted to a panel of three professors with a request to translate them into Telugu independently. And these translated items were discussed in a meeting attended by all the five translators to finalize the translations. Thus all the 332 items were translated into Telugu.

Evaluation of the translation equivalence between the English and Telugu items was felt necessary as it was intended to use these two language versions as complementary to each other. Translation equivalence of these yes/no type items was examined using two approaches, namely, item-level comparison and back translation.

Sample:

Translation equivalence of the two language versions was tested on a sample of 82 bilingual students (47 boys and 35 girls) who were studying 7th grade at a local English medium school. These students were identified by their respective class teachers as having good proficiency in both English and Telugu languages. These students were administered the two forms (Telugu and English forms) using AB-BA experimental design.

The following are results translation equivalence analyses.

1. Item level comparison

Initially, scale level comparisons were made to obtain a general picture of translation equivalence. Scale scores were obtained by totaling the scores of all the items included in a particular scale. From table 3 it can be seen that the students obtained significantly different scores ($p \leq .05$) on the two language versions on home, health and academic adjustment domains indicating that the corresponding items of these scales in Telugu and English versions might have conveyed different meanings to the students.

Table 3

Scale Level Comparisons between the Telugu and English Versions

AAI Scales		Telugu	English	T
Home	Mean	24.74	23.82	1.97*
	S.D.	7.17	8.23	
Health	Mean	13.03	11.14	3.21*
	S.D.	6.54	6.27	
Academic	Mean	50.81	56.18	5.73**
	S.D.	9.90	10.86	
Emotional	Mean	28.07	28.15	.09
	S.D.	11.62	11.60	
Social	Mean	26.87	28.06	.83
	S.D.	6.61	7.13	

*p≤.05, **p≤.01

In the next step, item level comparisons were made between the two language versions with the aim to identify specific items with translation problems. Paired t tests were conducted between the scores of the corresponding Telugu and English items. However, as it involves conducting multiple comparisons leading to the inflated Type I error rate, Bonferroni correction was used and the p value was set at ≤ .001 level. Of the 332 items submitted for analysis 42 items were found to have significant differences at p ≤ .001 indicating that the sample gave significantly different answers for these items on the Telugu and English forms. These 42 items in the Telugu version were again put for review and necessary changes were made either in English or Telugu items.

2. Back translations

The second approach adopted for evaluating language equivalency is the back translation method. All these 332 items written in Telugu (including modified items) were presented to two independent translators who were not aware of the original version with the request to translate them into English. The first translator is a retired lecturer with a Ph.D in Psychology and the second translator is a Ph.D scholar at English and Foreign Languages

University (EFLU), Hyderabad, India. The two sets of the back-translated English items were compared with the original English items to check for any differences in the meaning. The comparison showed no differences between the original English form and the two back translated English forms. These findings indicate that the Telugu version of the AAI is equivalent to the English version in terms of content and meaning.

d) Item Selection Analyses

As the back translations were found satisfactory, further analysis using item-total correlations was carried out for identifying the items to be included in the final version of the AAI.

Sample:

A large sample of 2073 adolescents studying 7th, 8th, 9th and 10th grades in Visakhapatnam district, Andhra Pradesh, participated in the study. Table-4 gives the details of the sample composition. Table 4 gives the demographic details of the sample.

Table 4

Demographic Composition of the Item Analysis Sample

Demographics	N	%
Gender		
Boys	1050	50.7
Girls	1023	49.3
Grade		
VII	484	23.3
VIII	609	29.4
IX	560	27.0
X	408	19.7
Medium of Study		
Telugu	977	47.1
English	1096	52.9
Type of School		
Urban	1024	49.4
Rural	1049	50.6

The details of the item analysis sample are provided in table 4. The sample varies across gender, grade level, location of school and medium of instruction in school. It can be noted that there are slightly more number of boys (50.7%) than girls and slightly more number of students from rural schools (50.6%). In terms of medium of instruction, 52.9 per cent of the sample is from English medium. In terms of the grade groups 29.4 per cent of the sample is from 8th grade while 19.7 per cent of the sample is from 10th.

These students, met in their respective classrooms, were administered the 332 yes/no type AAI items either in English or in Telugu. The data obtained from this sample were used for item analysis that primarily focused on item selection. Item selection was done on the basis of item-total correlation. As mentioned in the method chapter, items were initially placed in one of the five adjustment scales based on their manifest item content. Then all the 332 items were correlated with each of these five scale total scores resulting in a large correlation matrix with 1660 correlations. An examination of these item-total correlations revealed that most of these correlations were statistically significant ($p \leq .001$). As a result certain criteria were established for including/excluding an item in the final version of the inventory.

The criteria specified that a) an item should be removed from the item list if it does not achieve a substantial amount of significant correlation ($r \geq .30$, $p \leq .001$) with any of the five adjustment scales, b) an item can be retained in its original scale if it obtains significant highest correlation with that scale and c) an item can be moved to any other scale if it obtains significant highest correlation with that scale than with the scale in which it was originally placed.

Application of these criteria resulted in the retention of 186 items. Item-total correlations for these items were conducted once again to assess if the deletion of 146 items had any effect on the item composition of the adjustment scales. However, all the 186 items showed robust correlations with those scales in which they were originally placed. The median item-total correlations for the final 186 item list are summarized in table 5.

Table 5

Median Item-total Correlations

AAI Items Sets	AAI Scales				
	Home	Health	Academic	Emotional	Social
Home	**.41**	.28	.27	.28	.27
Health	.28	**.40**	.23	.26	.23
Academic	.27	.23	**.41**	.28	.28
Emotional	.28	.26	.28	**.41**	.30
Social	.27	.23	.28	.30	**.40**

The correlations on the diagonal are the median correlations of the individual items with their corresponding scale scores. The off-diagonal correlations are the median item-total correlations between the individual items in a particular scale with the total scores of other scales (i.e., the scales in which these items are not included). It can be seen that all the diagonal correlation are at r≥ .40 and are distinctly higher than the off-diagonal correlations suggesting the initial evidence for the construct validity of the five adjustment scales.

Thus, after item analysis, 186 items out of the initial 332 items were retained for the final version of the AAI.

Table 6

Scale Level Item Composition Before and After Item Analysis

Adjustment Domain	No. of Items (Before Item Analysis)	No. of Items (After Item Analysis)
Home	55	37
Health	50	34
Academic	97	41
Emotional	67	50
Social	62	24
Total	332	186

Table 6 shows the number of items in the AAI before the item analysis and after the item analysis. The item selection criteria elucidated earlier resulted in the deletion 146 items (41%) from the 332 item list. Academic adjustment and the social adjustment scales lost more than 50% of the items. In the final list emotional adjustment has highest number of items and social adjustment has least number of it.

e) Differential Item Functioning (DIF) Analysis

Back translation method was primarily used for assessing translation equivalency between the Telugu and the English versions of the AAI. However, Hulin (1987) opines that high-quality back translations do not necessarily ascertain psychometric equivalence between the original and back translated items. Similarly, Hambleton (1994, 2005) states that although identical scale reliabilities, factor structure, comparable and other validity evidence would show equivalence at the scale level they would not provide evidence of equivalence at the item level. van de Vijver and Poortinga (1997) recommended that translation equivalence should be empirically demonstrated.

In this context, Differential Item Functioning (DIF) analysis is very useful for assessing the item-level psychometric equivalence between an original and a translated version of a test (Camilli & Shepard, 1994; Holland & Wainer, 1993). Though there has been limited research using DIF methods for assessing the translation quality of the tests researchers are increasingly using it for evaluating translation equivalence of various language versions of a same measure (Gierl, Rogers & Klinger, 1999; Collazo, 2005; Scott, Fayers, Bottomley, Aaronson, de Graeff, Groenvold, et al., 2006).

DIF is a set of procedures to detect item bias in a test. It identifies items that are functioning differentially in different groups which take the same test. An item is said to have DIF or differentially functioning when individuals from different groups which posses a particular trait at the same level have different probabilities of responding to an item in a certain way. DIF is commonly

expressed in two ways - Uniform DIF and Non-uniform DIF. Uniform DIF refers to the probability of responding to an item in a certain way is higher for one group than for the other group across the entire continuum of proficiency after matching the groups on the construct of interest. Non-uniform DIF occurs when there is a difference in the probability of responding to an item in a certain way across the groups, but the direction or magnitude of the difference is not consistent across the entire continuum. Non-uniform DIF represents an interaction between group membership and overall proficiency.

For the present purpose Logistic Regression (LR) method was used to identify the items with DIF as it is one of the most often used DIF method and is particularly useful for detecting item bias in dichotomous items. Specifically, SPSS syntax for Binary DIF with Nagelkarke R-Squared (Zumbo, 1999) was used for the present DIF analysis.

Methodological Issues Considered

Sample Size:

Though there are no established guidelines for the minimum sample size in DIF analysis Scott et al. (2006) recommended a minimum sample of 200 for logistic regression method. However, considering the large number of items in the final version and the availability of a large sample it was decided to use the same sample used for item analysis for the present DIF analyses.

Effect Size:

Another important aspect of DIF testing is effect size. Many times, statistical significance does not necessarily mean practical significance. Especially when large samples are used in the analyses even the trivial effects may become statistically significant. In this regard, statistical significance of DIF for an item should always be reported along with some measure of magnitude of effect. Zumbo (1999) recommended using the Zumbo-Thomas rule for identifying interpretable DIF in the test items. According to this rule, the DIF effect size should be at least 0.13 and 0.26 constitutes a large DIF. If an

item, adjusted for Type I error, shows Zumbo-Thomas effect size greater than 0.130 then the item can be flagged as showing DIF.

DIF Analyses

Testing for statistically significant DIF using LR method involves three steps. In the first step the conditioning variable or the scale score to which a particular item belongs is entered in the model. In the second step group membership (in the present analysis the group membership denotes either belonging to English or Telugu language groups) is added in the model. It helps to identify uniform DIF in the item. Finally the interaction between scale and group membership are added in the model to identify total DIF (i.e., both uniform and non-uniform DIF). Following these steps, separate models were created for each of the five adjustment scales. A series of simultaneous tests of uniform and non-uniform DIF were first conducted by examining the chi-square difference between step 3 and step 1 with two degrees of freedom (Swaminathan & Rogers, 1990; Zumbo, 1999). Additional uniform tests were also conducted between step 2 and step 1 with one degree of freedom chi-square difference. An item will be flagged as showing DIF if the chi-square test shows statistical significance. However, considering the number of multiple tests involved the alpha level was set at the level of $p \leq .001$ for each test, to control for an overall Type I error.

Table 7 shows the descriptive statistics. It can be observed that the Telugu language group obtained higher mean scores than the English language groups on all the five adjustment domains. Further, the internal consistency indices, as estimated by Kuder-Richarson (K-R 20) formula, indicates that the two language versions of the AAI demonstrated good internal consistency.

Table 7

Descriptive Statistics and Internal Consistency Estimates of AAI Scales

AAI Scales	Language	Mean	S.D	K-R coefficients
Home	Telugu	11.43	6.60	.86
	English	8.69	6.24	.87
Health	Telugu	7.44	5.37	.84
	English	7.32	4.92	.81
Academic	Telugu	13.55	7.62	.89
	English	10.45	6.80	.88
Emotional	Telugu	19.57	9.98	.93
	English	18.13	9.52	.93
Social	Telugu	8.58	4.48	.77
	English	8.13	4.45	.79

Table 8 shows the summary of the results of the DIF analysis for the detailed report of the DIF analyses). It can be observed that of the 186 items spread across the five adjustment scales 61 items were found have statistically significant DIF ($p \leq .001$). Further, total DIF effect sizes were calculated to identify the items that have considerable amount of DIF. The effect sizes were interpreted in the light of Zumbo-Thomas rule. It was found that none of the 61 items flagged for significant DIF have an effect size ≥ 0.130 indicating that the DIF is minimal and uninterruptable. As none of the 186 items were found to be flagged for interpretable DIF it can be concluded that the items in the two language versions of the AAI are equivalent and item level and scale level comparisons can be made between the two language groups.

Table 8

Results of the DIF Analyses

Adjustment Scale	No. of Items	No. of Items with Significant DIF	No. of Items with interpretable Effect Size (Zumbo-Thomos approach)
Home	37	18	—
Health	34	13	—
Academic	41	12	—
Emotional	50	23	—
Social	24	5	—
Total	186	61	—

Thus, item-level comparisons between the English and the Telugu versions, back translations of the Telugu version, DIF analyses on a large heterogeneous sample and the reliability analyses reveal that both the Telugu and English forms are equivalent, reliable and suitable to the existing Indian conditions. Students can be most benefitted while completing the test if the items are provided in both English and Telugu, as it helps them to understand the meaning of the items easily.

II. RELIABILITY AND VALIDITY ANALYSES

a) Reliability Analyses

Reliability indicates the stability of the test scores. The reliability of the AAI was assessed using two approaches-one is through assessing the internal consistency and the other is assessing the temporal/test-retest approaches. As the scoring pattern for items is dichotomous (yes / no) internal consistency was estimated using Kuder-Richardson formula (K-R 20). Table 9 shows the K-R reliability coefficients for Telugu and English versions of the inventory separately and also for the combined data.

From the table 9, it can be observed that all the five adjustment scales demonstrated good internal consistency reliability with K-R coefficients ranging from .77 to .93 and most of them were greater than .80. While

emotional adjustment scale demonstrated highest reliability with r ranging from .89 to .93, social adjustment demonstrated lowest reliability with r ranging from .77 to .79. These correlations demonstrate strong internal consistency within each adjustment dimension.

Table 9

Internal Consistency Reliability of the AAI Scales

Adjustment Domain	Telugu Version (N=977)	English Version (N=1056)	Combined Data (N=2073)
Home	.86	.87	.86
Health	.84	.81	.82
Academic	.89	.88	.87
Emotional	.93	.93	.89
Social	.77	.79	.77

Table-10 shows the results of the test-retest reliability analyses. Test-retest reliability of the inventory was estimated on a sample of 82 students (49 boys and 33 girls). A period of 10 days gap was maintained during the two administrations. It can be observed that the test-retest correlations range from .67 to .77 with four of the five scales having greater than .70.

Table 10

Test-Retest Reliability of the AAI Scales

Adjustment Domain	Test-retest Coefficients
Home	.72
Health	.67
Academic	.77
Emotional	.71
Social	.71

b) Validity Analyses

Validity is one of the central characteristics of a test. Validity of a test indicates whether the test measures what it intends to measure. Any method of assessing validity provides some sort of evidence about whether the test is actually measuring the concept or construct for which it was developed. Evidence for the validity of the scale was demonstrated by assessing content validity and convergent validity. The content validity of the AAI items can be demonstrated in two ways. Firstly, many of the items included were adapted from some of the already existing measures of adjustment. Secondly, content validity can be appreciated by the way in which the AAI scales were constructed. Based on the expert reviews items were placed in one of the five adjustment scales. The items included in the final test have substantial correlations with the scale scores in which they were originally placed and have weaker correlations with the other AAI scales. Evidence for the content validity of the test can also be demonstrated by high indices of internal consistency reliability (see table 9).

Convergent validity was assessed in two ways- correlating the scores with the scores on the adjustment scales with other similar measures and by using teacher ratings.

Correlations with Personality Inventory for Youth

Personality Inventory for Youth (PIY), developed by Lachar & Gruber (1995), is a popularly used measure to screen out youth for a wide spectrum of problems ranging from externalizing problems such as impulsivity and delinquency to internalizing problems such as psychological discomfort and social withdrawal. It also assesses the youth's cognitive skills, social relations and family adjustment. It has with nine broad clinical scales and 23 subscales.

A sample of 65 adolescents studying 7th to 10th grades completed the PIY and the AAI. The tests were administered in their class rooms in two consecutive days. The majority of these adolescents were boys (n=53) and the age range of the sample is from 11 to 15 years with the mean age of 13.07 years.

Table 11

Correlations between the PIY Clinical Scales and the AAI Scales

PIY Scales	AAI Scales				
	Home	Health	Academic	Emotional	Social
Cognitive Impairment	.18	.25	.54**	.42**	.39
Impulsivity / Distractibility	.34	.39	.44**	.44**	.40**
Delinquency	.37	.19	.30	.25	.23
Family Dysfunction	.51**	.34	.38	.32	.33
Reality Distortion	.29	.36	.38	.43**	.28
Somatic Concern	.26	.59**	.52**	.48**	.40**
Psychological Discomfort	.23	.54**	.57**	.69**	.54**
Social Withdrawal	.28	.43**	.50**	.47**	.60**
Social Skills Deficit	.21	.15	.44**	.35	.39

** Substantial correlations ($r \geq .40$, $p \leq .001$)

From table-11, it can be observed that substantial amount of correlations ($\geq .40$, $p \leq .001$) were obtained between the adjustment scales and many of the PIY scales. Home adjustment has significant substantial correlation with the family dysfunction scale. Specifically, it has substantial correlations with parent-child relations and parent adjustment subscales of family dysfunction. It also has significant correlations with impulsivity and antisocial sub scales.

Elevated scores on health adjustment were associated with elevated scores on somatic concern, psychological discomfort and social withdrawal. Specifically, it is associated with subscales such as psychosomatic problems, preoccupation with disease, fear and worry, sleep disturbance and social withdrawal.

Poor academic adjustment is highly related to cognitive impairment, somatic concern, psychological discomfort, social withdrawal, social skills deficit and impulsivity. Emotional adjustment is significantly related to a wide range of PIY scales. Elevated scores on emotional adjustment is significantly associated with cognitive impairment, impulsivity and distractibility, reality distortion, somatic concern, psychological discomfort social withdrawal scales. As emotional adjustment represents the inner experiences, feelings or

emotional reactions of the adolescent to any conflict or problem in his life it can be expected that this scale tend to have substantial correlations with these clinical scale.

Social adjustment scores were significantly associated with social withdrawal, psychological discomfort, somatic concern and impulsivity and distractibility.

Correlations with Adjustment Inventory for School Students

Adjustment Inventory for School Children (AISS), developed by Sinha & Singh (1993), is a 60-item simple yes/no type scale in English for use with Indian school children. It measures adjustment in terms of emotional, social and educational adjustment domains. For the present validity study, correlations between the similar domains of AISS and the AAI were assessed using a sample of 104 students. A majority of the sample is girls (72 %) and the age of the sample ranges from 11 to 15 years with a mean of 13.34 years. These students studying 7th, 8th, 9th grades were recruited from a large local private English medium school and were administered the two inventories in their class rooms in two consecutive days. Table-12 shows the correlations between the similar scales of the AISS and the present adjustment inventory.

Table 12

Correlations between the AISS and the AAI Scales

AISS Scales	AAI Scales		
	Academic	Emotional	Social
Emotional	0.52**	0.59**	0.59**
Social	0.46**	0.45**	0.56**
Educational	0.81**	0.56**	0.54**

** Substantial correlations ($r \geq .40$, $p \leq .001$)

From table 12, it can be observed that the AISS scales obtained significant substantial correlations ($r \geq .40$, $p \leq .001$) with the similar AAI scales. AISS's emotional adjustment was significantly correlated with all three domains of the present adjustment inventory, namely academic, emotional and social adjustment. Further, AISS's social adjustment scale obtained

highest significant correlation (r= .56, p≤ .001) with the AAI's social adjustment scale. Similarly, a high correlation(r= .81, p≤ .001) between was observed between the AISS's education adjustment and the AAI's academic adjustment indicating that the two domains measure similar concepts.

Correlations with Culturally Relevant Bell Adjustment Inventory

Culturally Relevant Bell Adjustment Inventory (CRBAI), developed by Ashok et al. (2004), is a cultural adaption of the 1962 Bell Adjustment Inventory – Student Form. It has 179 culturally modified items that measure six areas of adjustment – Home adjustment, Health adjustment, Submissiveness, Hostility, Emotionality and Masculinity-Femininity. It is available both in English and Telugu languages.

For the present validity study, correlations were obtained between the five AAI adjustment scales and the CRBAI adjustment domains. A sample of 86 school going adolescents participated in this study. The sample consists of a slightly higher number of girls (53.5%). The age range of the sample is from 11 to 16 years with a mean of 13.34 years. Table 13 shows the correlations between the present adjustment domains and the CRBAI scales.

Table 13

Correlations between the CRBAI and the AAI Scales

CRBAI Scales	AAI Scales			
	Home	Health	Emotional	Social
Home	.69**	.56**	.50**	.67**
Health	.39	.58**	.51**	.42**
Submissiveness	.40**	.31	.41**	.46**
Hostility	.49**	.39	.53**	.55**
Emotionality	.51**	.48**	.61**	.55**

** Substantial correlations (r≥.40, p≤.001)

Table 13 shows the correlation pattern between the present adjustment domains and CRBAI scales. It can be observed that the observed correlations between the CRBAI and the AAI scales are highest for the similar scales than for the other scales. Home adjustment scale of CRBAI was highly correlated with home adjustment domain of the adjustment inventory followed by emotionality and submissiveness. Health adjustment was highly correlated with CRABI's health adjustment scale followed by home and emotionality scales. Similarly, submissiveness and hostility scales of CRBAI which represent individual's behavior patterns in social situations were highly associated with social adjustment domain. Similarly, CRBAI's emotional adjustment scale obtained its highest correlation with the emotional adjustment domain of the AAI.

The correlations of the AAI scales with the PIY, the AISS and the CRBAI scales provide evidence for the concurrent validity of the five AAI scales.

Teacher Ratings

Teachers' subjective impressions were used to see to what extent scores on the AAI scales agree with teacher ratings. High school teachers from three private schools in Visakhapatnam city were requested to nominate their students who they considered as particularly poor or good on a give adjustment scale. They were not provided with any descriptions of the adjustment scales but were simply provided with the scale names and were asked to identify those students who, in their subjective opinion, were particularly good or poor on the adjustment scales. Teachers nominated the students separately for each of the five scales. Later, the students nominated by their teachers were administered the AAI in their classrooms. Table -- shows the mean differences between the extreme groups on adjustment scales.

Table 14

Adjustment Differences between the Teacher Nominated Groups

Dimension	Group	Mean	S.D	t	Cohen's d
Home Adjustment	Good (30)	4.70	2.71	2.64*	0.67
	Poor (38)	8.07	6.53		
Health Adjustment	Good (19)	3.52	3.48	5.48**	1.85
	Poor (15)	11.20	4.69		
Emotional Adjustment	Good (33)	11.12	8.00	4.57**	1.14
	Poor (31)	21.22	9.64		
Academic Adjustment	Good (30)	7.20	6.23	5.64 **	1.50
	Poor (25)	18.12	8.11		
Social Adjustment	Good (34)	5.38	3.48	2.91*	0.75
	Poor (24)	8.70	5.20		

*p≤ .01, **p≤ .0001

Table 14 shows that the teacher nominated extreme groups had significant differences on all the five adjustment scales. Descriptive statistics show that, in line with teachers' ratings, students in the poor group reported more adjustment problems than the students in the good group. Further, Cohen's d was calculated to examine the extent or magnitude of these mean differences. Cohen's d expresses the distance between the two means in terms of standard deviation units. Cohen (1988) advises that d = 0.2 indicates small effect, 0.5 is medium effect, and values larger than 0.8 indicate larger effect sizes. Applying this rule it can be observed that home and social adjustment scales have medium effect sizes and health, academic and emotional scales have larger effect sizes. These results indicate that the AAI can clearly differentiate between the poor and well-adjusted adolescents.

III DEVELOPMENT SUBSCALES AND PREPARATION OF NORMS

a) Subscale Construction

As each of the five adjustment scales tap a wide variety of problems within the respective adjustment domain it was decided to form subscales

based on the item content similarity. This can help the counselor to have a better understanding of the adolescent's problems in a given area. Item manifest content, the researchers placed the items within each adjustment scale into various subscales and these subscales were submitted to a panel of three experts who deal with adolescent problems and necessary modifications were done based on their suggestions. Thus a total of 24 subscales were developed (see Appendix I). With the exception of digestive problems, home conditions and risk behaviors all the other subscales contain five or more than five items. Risk behaviors subscale of the health adjustment scale contains only two items. Though it is impossible to assess health related risk behaviors with two items it was still decided to leave them as a separate scale as these items entirely different aspect of health adjustment. They assess one's proneness to develop chronic complications in later life.

Table 15

Reliability Estimates of the Subscales

	Home Adjustment	**r**			**Health Problems**	**r**
1.	Authoritarian Parenting (7)	.64		1.	Vague Problems/ Preoccupied with Disease (8)	.66
2.	Parent-child Relations (7)	.64		2.	Visual Problems (5)	.56
3.	Home Environment (13)	.70		3.	ENT Problems (6)	.57
4.	Parental Emotional Stability (5)	.58		4.	Digestive Problems (4)	.49
5.	Marital Discord (5)	.57		5.	Risk Behaviors (2)	.45
	Emotional Adjustment				**Academic Problems**	
1.	Sensitive (10)	.69		1.	Learning Skills (12)	.74
2.	Apprehensive (7)	.65		2.	Examination Tension (6)	.53
3.	Worries (10)	.72		3.	Involvement in the Class (7)	.52
4.	Depressive Feelings (13)	.77		4.	Attitude/Motivation (6)	.59
5.	Sleep Disturbances (6)	.60		5.	Relations with Teachers (7)	.43
	Social Adjustment			6.	Home Conditions (3)	.42
1.	Social Inhibitions (10)	.73				
2.	Peer Relations (5)	.55				
3.	Disruptive Behaviors (5)	.56				

Numbers in parentheses are number of items in each subscale

Table 15 shows the reliability estimates of the 24 subscales using Kuder-Richardson formula (K-R 20). These reliability estimates were obtained on a large sample of 9082 adolescents which also forms the data for norms development. Details of the sample are given in the next section. It can be observed that the reliability estimates are more variable ranging from .42 to .77 with a median of .59.

b)Development of Norms

Norms may be defined as the average performance on a particular test made by a standardization sample (Singh, 1996). Norms help to meaningfully interpret the test scores. Particularly, they are helpful in assessing the extent to which an individual possesses a trait or ability compared to similar others and to assess the potential changes in an ability or trait after undergoing some intervention. Percentile norms were developed for the five AAI scales as they are very popular and easy to understand.

Sample:

A sample of 9082 students studying 7th, 8th, 9th and 10th grades anticipated in this study. The sample was drawn from the three major geographically and culturally diverse regions of Andhra Pradesh state, namely, Coastal Andhra, Telangana and Rayalaseema. The sample was obtained from the selected schools located in 6 of the total 23 districts (a district is a major administrative block) spread across the three regions. The Andhra region which has nine districts contributed data from two districts, one from North Andhra and another from South Andhra regions, while the Rayalaseema region which includes four districts contributed data from one district. Similarly, the Telangana region which houses more than 40% of the state's population with 10 districts contributed data from three districts.

Table 16 shows the sample distribution across the geographic regions. It can be observed that the Telangana region contributed more data (43.4%) followed by Andhra (39.9%). Similarly, urban area contributed more than half of the data followed by the rural area. Of the total tribal sample, Andhra region

contributed more as it contains a large section of tribal population living in deep forest. No tribal sample was included from the Rayalaseema region as the selected district has very minimal tribal population. These region-wise sample distributions were roughly similar to the population distribution.

Table 16

Sample for Norms

	Coastal Andhra	Rayalaseema	Telangana	Total
Urban	1541 (42.5)	1188 (78.5)	2693 (68.4)	5423 (59.71)
Rural	1252 (34.5)	326 (21.5)	1135 (28.8)	2713 (29.87)
Tribal	834 (23.0)	—	112 (2.8)	946 (10.42)
Total	3627 (39.9)	1514 (16.7)	3940 (43.4)	9082 (100.0)

Numbers in parenthesis are percentages

Table 17 shows the demographic details of the sample. It can be noted that there are more number of boys (53.40%) than girls. Further, this gender disparity is more in the rural and tribal subsamples than in the urban subsample. In terms of grade level distribution, all the three groups were found to have more number of students from 8th, 9th and 10th. In terms of distribution of medium of instruction, urban group was found to have predominantly English medium students (63.3%) while rural and tribal groups have Telugu medium students (74.4% and 96.2%). Overall, there are more students from Telugu medium (54.1%) than the English medium. The sample's age ranges from 11 years to 17 years with an overall mean of 13.58 years. The mean age is similar across urban, rural and tribal subsamples (13.59, 13.58 and 13.50 years respectively).

Table 17

Socio-demographical details of the Sample for Norms

Individual Variable		Type of school						Total	
		Urban		Rural		Tribal			
		N	%	N	%	N	%	N	%
Gender	Boys	2744	50.60	1596	58.83	510	53.91	4850	53.40
	Girls	2679	49.40	1117	41.17	436	46.09	4232	46.60
Grade	7th	1242	22.93	572	21.08	178	18.92	1992	21.96
	8th	1349	24.9	790	29.12	231	24.55	2370	26.13
	9th	1322	24.4	687	25.32	218	23.17	2227	24.55
	10th	1504	27.76	664	24.47	314	33.37	2482	27.36
Medium of Study	Telugu	1988	36.7	2018	74.4	910	96.2	4916	54.1
	English	3435	63.3	695	25.6	36	3.8	4166	45.9

The development of norms was preceded by the examination of potential demographic differences on the adolescents' adjustment.

Demographic Influences on Adolescent Adjustment

The review of literature in the earlier chapter has shown that the adolescents' age and gender are the two most important demographic variables often associated with the several domains of adjustment. A few Indian studies examined the demographic influences on adolescent adjustment but they were done on limited samples or restricted to a particular geographic area. In this context, it was decided to examine the influence of these variables on adolescent adjustment using a large heterogeneous sample. Apart from gender and grade level of the adolescents, it was also decided to examine the influence of the location of the school (urban, rural and tribal areas) as it reflects the socio-cultural influences on adolescent adjustment.

Demographic influences were examined in terms of location of the school, gender and grade level on adjustment dimensions. Further, it was also decided to examine the interaction effects of location of school with gender and grade level on adolescent adjustment.

The following are results of these analyses.

Location of the School

Table 18 presents the influence of location of school on adolescent adjustment. Significant mean differences were observed among the three groups (urban, rural and tribal) on all the five dimensions of adjustment. The mean scores indicate that adolescents from tribal schools reported more adjustment problems with regard to home, health, academic, emotional and social aspects of life. They were followed by students from rural schools. In other words, adolescents from urban schools reported significantly lesser adjustment problems. It is interesting to note some parallels between the present finding and other findings about emotional and behavioral problems. Ramana (2007) found that rural adolescents had higher levels of emotional and behavioral problems than the urban adolescents. Similarly, Gopal and Ashok (2012) found that tribal adolescents had higher levels of emotional and behavioral problems than non-tribal adolescents. The present finding indicates that tribal adolescents, followed by rural adolescents, had more adjustment problems which in turn can manifest in various emotional and behavioral reactions.

These findings can be understood in the light of the sociocultural contexts of the tribal adolescents' lives. They typically live in impoverished conditions compared to the urban or even rural adolescents. The literacy rate of tribals in Andhra Pradesh is 17.16 per cent (Bhagai & Nundy, 2009) which is much lower than the national literacy rate of 64.83. Further, literacy rate is much lower for female (8.6 %). A majority of them (61.05%) are living below the Below Poverty Line (BPL). Most of the tribal adults are employed in low-income, unskilled occupations or semi-skilled occupations and the adolescents tend to drop out of school and are forced to work to supplement family income.

Table 18

Location of school and Adolescent Adjustment

AAI Scales		Urban	Rural	Tribal	F
Home	Mean	9.08	10.77	15.46	356.47**
	S.D	6.85	6.84	7.23	
Health	Mean	6.54	7.19	10.98	264.43**
	S.D	5.25	5.48	6.62	
Academic	Mean	13.40	14.16	18.38	196.55**
	S.D	7.19	7.04	7.03	
Emotional	Mean	16.93	17.46	24.79	254.25**
	S.D	10.01	9.71	10.42	
Social	Mean	7.75	8.14	11.59	255.09**
	S.D	4.85	4.76	4.96	

**p≤.001

Gender

The results regarding the influence of gender on adjustment are presented in table-17. Significant gender differences were observed on four of the five dimensions of adjustment. Boys were found to have more adjustment problems in home, health, academic and social aspects their life. No significant gender differences were found on emotional adjustment. Similar finding was reported by Gopal, Ashok and madhu (in press). In their study on Telugu speaking adolescents, they found no significant gender differences on emotional adjustment at high school level but they noted that these gender differences emerge at 12th grade level.

Table 19

Gender and Adolescent Adjustment

AAI Scales		Boys	Girls	T
Home	Mean	10.54	9.91	4.41**
	S.D.	6.96	7.36	
Health	Mean	7.36	7.01	2.95*
	S.D.	5.56	5.72	
Academic	Mean	14.60	13.62	6.45**
	S.D.	7.18	7.37	
Emotional	Mean	17.97	17.85	0.55
	S.D.	10.00	10.50	
Social	Mean	8.51	7.99	4.90**
	S.D.	4.91	5.01	

*p≤.01, **p≤.001

Gender and Location of School

Gender differences on adolescent adjustment were examined within each of the three locations of school (urban, rural and tribal) and the results were presented in tables 20, 21 and 22. It can be noted that gender has a differential influence on adolescents' adjustment. It was observed that the gender differences found in the overall data were also replicated within the urban and rural subsamples separately. Boys reported significantly more adjustment problems in home, health, academic and social adjustments both in urban and rural subsamples. However, interestingly, these gender differences were reversed in the tribal subsample. Girls from tribal schools, unlike the girls from urban or rural schools, reported significantly more adjustment problems on all the adjustment areas including emotional adjustment than boys.

Table 20

Gender and Adjustment among Adolescents from Urban Schools

AAI Scales		Boys	Girls	T
Home	Mean	9.46	8.69	4.16**
	S.D	6.75	6.94	
Health	Mean	6.86	6.22	4.52**
	S.D	5.30	5.19	
Academic	Mean	14.01	12.77	6.37**
	S.D	7.06	7.28	
Emotional	Mean	17.18	16.68	1.82
	S.D	9.82	10.19	
Social	Mean	8.11	7.39	5.50**
	S.D	4.85	4.82	

**p≤.001

Table 21

Gender and Adjustment among Adolescents from Rural Schools

AAI Scales		Boys	Girls	T
Home	Mean	11.14	10.25	3.34**
	S.D	6.81	6.85	
Health	Mean	7.60	6.91	2.24*
	S.D	5.54	5.39	
Academic	Mean	14.62	13.49	4.12**
	S.D	7.13	6.85	
Emotional	Mean	17.63	17.23	1.05
	S.D	9.63	9.82	
Social	Mean	8.37	7.81	3.03*
	S.D	4.78	4.71	

*p≤.01, **p≤.001

Table 22

Gender and Adjustment among Adolescents from Tribal Schools

AI Scales		Boys	Girls	T
Home	Mean	14.46	16.62	4.59**
	S.D	6.89	7.46	
Health	Mean	9.98	12.16	5.08**
	S.D	6.21	6.88	
Academic	Mean	17.74	19.14	3.07*
	S.D	7.13	6.85	
Emotional	Mean	23.26	26.57	4.95**
	S.D	10.51	10.02	
Social	Mean	11.06	12.20	3.56**
	S.D	4.89	4.97	

*p≤.01, **p≤.001

Grade level

Table 21 presents the grade level differences on adolescents' adjustment. Significant differences were observed among the four grade groups on all the five adjustment dimensions. Students from 8th, 9th and 10th grades reported comparatively poor home adjustment than the students from 7th grade. On health adjustment, students from 7th and 8th grades reported more health problems. With regard to academic, emotional and social adjustments a clear trend was observed. It was found that adjustment problems related to these areas tend to show a steady increase from 7th to 10th grades.

Table 23

Grade Level and Adolescent Adjustment

AI Scales		7th	8th	9th	10th	F
Home	Mean	9.52	10.39	10.69	10.28	10.00**
	S.D	6.44	7.31	7.19	7.46	
Health	Mean	7.50	7.68	7.04	6.63	16.63**
	S.D	5.27	6.00	5.67	5.45	
Academic	Mean	13.60	13.91	14.34	14.61	8.38**
	S.D	6.89	7.48	7.29	7.34	
Emotional	Mean	17.18	17.79	17.99	18.50	6.36**
	S.D	9.53	10.36	10.27	10.56	
Social	Mean	7.75	8.23	8.51	8.48	10.66**
	S.D	4.60	5.03	5.07	5.05	

**p≤.001

Grade level and Location of School

Grade level differences on adolescent adjustment were examined within each of the three locations of the school (urban, rural and tribal) and these results were presented in tables- 22, 23 and 24. Overall, it can be noted that grade level differences were more pronounced in the tribal subsample than in the urban or rural subsamples.

Grade level has a differential influence on home adjustment. In both urban and tribal school subsamples students from higher grades reported more adjustment problems at home while students from 7th grade reported fewer adjustment problems at home. However, in the rural school subsample this pattern was reversed. Rural schools' students from 7th grade reported more home adjustment problems than their higher grade counterparts. Similarly, urban and rural school students from 7th and 8th grades reported more health problems. However, in the tribal school subsample, students from 8th and 9th grades reported more health related problems than the

students from 7th and 10th grades. It seems that in the tribal school subsample health problems tend to increase steadily from 7th to 10th grades.

Further, with regard to academic adjustment, no significant grade level influences were observed in the students from urban and rural schools. However, significant grade level differences were observed in the students from tribal schools. In the tribal subsample students from 7th grade expressed fewer academic adjustment problems.

No significant grade level differences on emotional and social adjustment domains were observed in the students from urban and rural schools. However, significant grade level differences on these adjustment domains were noted in the students from tribal schools indicating that problems in these areas tend to increase from 7th grade to 10th grade.

Table 24

Grade and Adjustment among Urban Adolescents

AI Scales		7th	8th	9th	10th	F
Home	Mean	8.51	9.40	9.62	8.77	7.61**
	S.D	6.45	7.09	6.94	6.83	
Health	Mean	6.93	7.04	6.37	5.94	13.33**
	S.D	5.14	5.58	5.26	4.97	
Academic	Mean	13.23	13.19	13.48	13.66	1.34
	S.D	6.99	7.40	7.24	7.13	
Emotional	Mean	16.83	16.91	16.75	17.21	0.59
	S.D	9.75	10.28	9.96	10.01	
Social	Mean	7.48	7.78	7.89	7.82	1.82
	S.D	4.74	4.98	4.91	4.75	

**p≤.001

Table 25

Grade and Adjustment among Rural Adolescents

AI Scales		7th	8th	9th	10th	F
Home	Mean	11.25	10.40	10.91	10.66	1.85
	S.D	6.43	7.01	6.67	7.13	
Health	Mean	8.46	7.35	6.80	6.31	17.48**
	S.D	5.61	5.70	5.20	5.18	
Academic	Mean	14.19	13.59	14.36	14.59	2.73*
	S.D	6.90	7.15	6.87	7.17	
Emotional	Mean	17.40	17.02	17.94	17.55	1.13
	S.D	9.15	9.73	9.83	10.01	
Social	Mean	8.06	7.92	8.52	8.09	2.11
	S.D	4.41	4.76	4.99	4.79	

*p≤.01, **p≤.001

Table 26

Grade and Adjustment among Tribal Adolescents

AI Scales		7th	8th	9th	10th	F
Home	Mean	11.01	16.12	16.45	16.71	30.16**
	S.D	4.79	6.95	7.44	7.52	
Health	Mean	8.37	12.52	11.86	10.59	15.82**
	S.D	4.50	7.06	7.07	6.47	
Academic	Mean	14.31	19.20	19.50	19.15	26.03**
	S.D	5.90	7.00	6.76	7.00	
Emotional	Mean	18.92	25.57	25.71	26.71	25.30**
	S.D	9.05	9.71	10.17	10.63	
Social	Mean	8.62	11.99	12.20	12.47	28.57**
	S.D	4.05	4.68	4.64	5.22	

**p≤.001

Norms

This section of the study describes the development of norms. As elucidated earlier percentile norms were developed by adopting a method used by Bell (1963) and Ashok, Madhu and Ramana (2007). This method categorizes the percentile ranks into five categories, namely, Excellent, Good, Average, Poor and Unsatisfactory. Scoring is done in such a way that higher scores indicate more adjustment problems and lower scores indicate fewer adjustment problems. Scores below the 5th percentile reflect excellent adjustment in that particular area while scores above 95th percentile were termed as unsatisfactory indicating that serious adjustment problem that demands immediate attention. Similarly scores between 5th and 25th percentiles indicate good adjustment while scores between 75th and 95th percentiles reflect poor adjustment in that particular aspect of life. Finally, scores between 25th and 75th percentiles reflect average adjustment for that particular adjustment domain.

Norms were developed separately for the urban and rural subsamples accounting for the gender (boys Vs girls) and grade (7th, 8th, 9th and 10th) level differences on adjustment. However, as tribal sample is very small only gender-wise norms were reported. Appendix III provides the details of the percentile norms for the five adjustment scales and 24 subscales.

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APPENDIX I

Subscale Descriptions

Home Adjustment

Authoritarian parenting		
S.no.	**Item no.**	**Item Description**
1	19	My parents always force me to obey them even if what they are saying is not right.
2	20	I have frequently had to keep quiet or leave the house in order to have peace at home.
3	49	I feel that my parents teach me one thing but do the opposite thing.
4	97	My parents often beat me.
5	132	My parents frequently criticize me without any reason.
6	168	My parents often find fault with my conduct.
7	173	I feel that my parents are very strict with me.
Parent-child relations		
8	17	I often feel that at least one of my parents does not understand me.
9	61	I do not like the type of work my father does.
10	91	I often doubt if my parents love me.
11	152	My parents love a brother or sister more than me.
12	156	I sometimes feel that my parents are disappointed in me.
13	159	I sometimes love and sometimes hate my family members.
14	179	My parents have certain habits which irritate me.
Home environment		
15	36	I feel that my friends have a happier home life than me.
16	46	My home condition is disturbing my studies.
17	65	I sometimes strongly feel like running away from home.
18	80	It has been a long time since our family has gone out together.
19	84	Friends don't come to my home.
20	116	I am happy at home.
21	121	I feel that there is no real love and affection in my family.
22	134	One of my parents has lost job recently.
23	141	There is a lot of tension in my home.
24	142	Lack of money at home made my life unhappy.
25	177	My mother dominates my home.
26	180	There have been frequent family quarrels among my near relatives.
27	184	My parents have lots of problems.
Parental Emotional Stability		
28	09	My parents cry very often.
29	33	Sometimes, the actions of at least one of my parents scare me.
30	74	My parents become very nervous.
31	120	My parents become angry easily.
32	140	My parents become very easily irritated.
Marital Discord		
33	28	My father often beats my mother.
34	144	My parents often argue with each other.
35	153	My father drinks too much.
36	154	My parents are not living together.
37	163	My father and mother do not agree with each other.

Health Adjustment

Vague Problems/ Preoccupied with Disease		
S.no.	**Item no.**	**Item Description**
1	37	Sometimes I get hot all over the body.
2	41	I frequently feel dizzy.
3	75	I often talk about sickness.
4	78	I feel tired most of the time.
5	112	I have been frequently absent from school because of illness.
6	130	Sometimes I shiver without any reason.
7	133	I am worried about getting a disease.
8	165	I often need to visit a doctor.
Visual Problems		
9	02	I frequently suffer from headaches.
10	95	My eyes often get tired.
11	100	I cannot clearly see the letters on the black board.
12	115	I cannot clearly see the letters in the textbooks.
13	139	Recently, I have problems with my eyes.
ENT Problems		
14	76	I have difficulty getting rid of a cold.
15	77	I cannot hear properly.
16	88	I often get sore throat.
17	128	I get common colds more often than most children.
18	171	I have Sinus or Asthma.
19	172	I often have throat problems.
Parental Emotional Stability		
20	06	I often have stomach aches.
21	38	I am troubled much with constipation (difficulty in going to toilet).
22	123	I have digestive problems.
23	161	I often suffer from vomiting or diarrhea.
Risk Behaviors		
24	125	I chew substances like Gutka, khini, Pan etc.
25	157	I smoke Cigarette, Bidi or any other such tobacco products.

Academic Adjustment

Learning Skills		
S.no	**Item no.**	**Item Description**
1	05	Usually, I have to read the notes many times to understand it.
2	13	I forget soon what I have read.
3	16	It is difficult for me to understand the lessons taught in class.
4	21	I cannot read words properly.
5	26	I cannot write properly.
6	40	I don't know how to identify important points in the lesson.
7	50	I do not like mathematics.
8	52	I cannot concentrate when I study.
9	89	I have difficulty in concentrating on my studies.
10	122	I am not spending enough time to study on some subjects.

11	147	Textbooks are very difficult to understand.
12	186	I am weak in spelling and grammar.
		Examination Tension
13	03	I have trouble finishing the exam in the given time.
14	29	I have a revision timetable for exams.
15	69	I am afraid of appearing for examinations.
16	102	I often get less marks in exams.
17	113	I am afraid of examinations.
18	118	It is difficult for me to get good marks.
		Involvement in the Class
19	10	I am unable to answer in the class even though I know the answer.
20	25	Many times I knew the answer to a question but could not answer because I was afraid to speak in front of the class.
21	30	I can talk in front of all my classmates.
22	35	I ask teachers when I have doubts.
23	58	I complete my school work in time.
24	64	It is difficult for me to read out in front of the class.
25	137	I feel shy when I am to read aloud in class.
		Attitude/Motivation
26	31	I do not like my school.
27	39	I feel sleepy in class even after I have had enough of sleep during the night. .
28	51	I am not interested in books.
29	68	I study just enough to pass the exams.
30	126	I do not feel like studying.
31	131	I study because my parents ask me to study.
		Teacher-student Relations
32	66	My teachers help me in my studies.
33	94	My teachers praise me.
34	96	I am afraid of telling my problems to my teachers.
35	99	I am not getting along with a teacher.
36	106	My teachers encourage me.
37	108	My teachers have no interest in me.
38	151	I do not like my teachers.
		Home Conditions
39	23	I don't have a proper place to study at home.
40	42	My friends study better than me because they have better facilities.
41	45	My parents talk less about education.

Emotional Adjustment

Sensitive		
S.no	**Item no.**	**Item Description**
1	08	What people say often makes me angry.
2	15	I usually get irritated.
3	47	I cry easily over simple things.
4	70	I worry over an insulting experience for a long time.
5	71	Ideas often run through my head so that I cannot sleep.
6	101	My feelings are easily hurt.

7	127	I feel sad if anyone criticizes me.
8	135	I worry too much over something that really doesn't matter.
9	145	I get upset easily when a teacher calls me unexpectedly.
10	162	I get upset easily.
Apprehensive		
11	04	I sometimes feel that people are talking “behind my back”.
12	48	At times, I feel that someone is trying to harm me.
13	57	People around me take advantage, if I am not alert.
14	105	I am troubled by the feeling that people are reading my thoughts.
15	109	I am troubled with the idea that people are watching me on the street.
16	111	Most people will take advantage of me if they get a chance.
17	136	I have met a number of people whom I do not like at all.
Worries		
18	11	My mind is often disturbed by useless thoughts.
19	56	I worry a lot before I start something new.
20	63	I sometimes felt afraid that I might jump off when I was on a high place.
21	103	I am troubled with shyness.
22	114	I have trouble making up my mind about things.
23	129	I have too many problems.
24	138	I am afraid that I may do mistakes.
25	155	I often become anxious.
26	169	I feel that my problems are increasing so that I cannot overcome them.
27	185	I am troubled with feelings of inferiority.
Depressive Feelings		
28	12	I often feel sad without any reason.
29	14	I feel pity for myself.
30	44	I feel like a failure.
31	53	I often feel sad.
32	60	I am unhappy too much of the time.
33	62	I often feel lonely.
34	110	I often think about death.
35	119	Several times I said I wanted to die.
36	164	I lose confidence easily.
37	170	I feel happy and sad without any reason.
38	174	I feel that I am useless.
39	182	I often feel lonely even when I am with people.
40	183	I am not lucky.
Sleep Disturbances		
41	32	I often have disturbed sleep.
42	73	I sometimes have difficulty in getting to sleep even when there are no noises to disturb me.
43	86	I am not getting enough sleep.
44	90	I often get up at night.
45	92	I have a lot of nightmares.
46	93	I often have trouble falling asleep.

Social Adjustment

Social Inhibitions		
S.no	**Item no.**	**Item Description**
1	59	I feel shy to ask a question when I don't understand something.
2	67	I am often afraid to meet new people.
3	104	When some of my teachers are together, I hesitate to go there.
4	117	When I am in a group, I often have trouble finding the right word to say.
5	150	I feel shy to enter a room when a group of people are sitting and talking in a room.
6	158	I find it difficult to start talking to a new person.
7	160	Many times I feel difficult to make a proper comment while a group of people are talking.
8	166	I don't like to be recognized in social gatherings like parties and celebrations.
9	175	I am shy with children of my own age.
10	181	I am shy with adults.
Peer Relations		
11	01	Other children make fun of my words/ideas.
12	22	Other children are often angry with me.
13	24	I do not get along with my classmates.
14	55	I was cheated by friends many times.
15	87	I almost always play alone.
16	149	People think that I am bad.
Disruptive Behaviors		
17	27	I lose friends because of my anger.
18	34	Things that I do often make others angry.
19	146	Others say that I find too many faults with them.
20	148	At times I have become violent.
21	178	At times I have hurt other people's feelings.

APPENDIX II

SCORING KEY

Home		Health		Academic		Emotionality				Social	
Item No.	Response	Item No.	Response	Item No.	Response	Item No.	Response	Item No.	Response	Item No.	Response
9	Y	2	Y	3	Y	4	Y	162	Y	1	Y
17	Y	6	Y	5	Y	8	Y	164	Y	18	Y
19	Y	7	Y	10	Y	11	Y	169	Y	22	Y
20	Y	37	Y	13	Y	12	Y	170	Y	24	Y
28	Y	38	Y	16	Y	14	Y	174	Y	27	Y
33	Y	41	Y	21	Y	15	Y	182	Y	34	Y
36	Y	54	Y	23	Y	32	Y	183	Y	43	Y
46	Y	75	Y	25	Y	44	Y	185	Y	55	Y
49	Y	76	Y	26	Y	47	Y			59	Y
61	Y	77	Y	29	N	48	Y			67	Y
65	Y	78	Y	30	N	53	Y			82	Y
74	Y	79	Y	31	Y	56	Y			87	Y
80	Y	81	Y	35	N	57	Y			104	Y
84	Y	85	Y	39	Y	60	Y			117	Y
91	Y	88	Y	40	Y	62	Y			146	Y
97	Y	95	Y	42	Y	63	Y			148	Y
116	N	100	Y	45	Y	70	Y			149	Y
120	Y	112	Y	50	Y	71	Y			150	Y
121	Y	115	Y	51	Y	72	Y			158	Y
132	Y	123	Y	52	Y	73	Y			160	Y
134	Y	124	Y	58	N	83	Y			166	Y
140	Y	125	Y	64	Y	86	Y			175	Y
141	Y	128	Y	66	N	90	Y			178	Y
142	Y	130	Y	68	Y	92	Y			181	Y
144	Y	133	Y	69	Y	93	Y				
152	Y	139	Y	89	Y	98	Y				
153	Y	143	Y	94	N	101	Y				
154	Y	157	Y	96	Y	103	Y				
156	Y	161	Y	99	Y	105	Y				
159	Y	165	Y	102	Y	107	Y				
163	Y	167	Y	106	N	109	Y				
168	Y	171	Y	108	Y	110	Y				
173	Y	172	Y	113	Y	111	Y				
177	Y	176	Y	118	Y	114	Y				
179	Y			122	Y	119	Y				
180	Y			126	Y	127	Y				
184	Y			131	Y	129	Y				
				137	Y	135	Y				
				147	Y	136	Y				
				151	Y	138	Y				
				186	Y	145	Y				
						155	Y				

SCORING KEY FOR SUBSCALES

HOME ADJUSTMENT

Authoritarian Parenting		Parent-child relations		Home Environment				Parental Emotional Stability		Parental Marital Discord	
19	Y	17	Y	36	36	134	Y	09	Y	28	Y
20	Y	61	Y	46	Y	141	Y	33	Y	144	Y
49	Y	91	Y	65	Y	142	Y	74	Y	153	Y
97	Y	152	Y	80	Y	177	Y	120	Y	154	Y
132	Y	156	Y	84	Y	180	Y	140	Y	163	Y
168	Y	159	Y	116	N	184	Y				
173	Y	179	Y	121	Y						

HEALTH ADJUSTMENT

Vague problems		Visual Problems		ENT Problems		Digestive Problems		Risk Behaviors	
37	Y	02	Y	76	Y	06	Y	125	Y
41	Y	95	Y	77	Y	38	Y	157	Y
75	Y	100	Y	88	Y	123	Y		
78	Y	115	Y	128	Y	161	Y		
112	Y	139	Y	171	Y				
130	Y			172	Y				
133	Y								
165	Y								

SOCIAL ADJSUTMENT

Social Inhibitions				Peer Relations		Disruptive Behaviors	
59	Y	160	Y	01	Y	27	Y
67	Y	166	Y	22	Y	34	Y
104	Y	175	Y	24	Y	146	Y
117	Y	181	Y	55	Y	148	Y
150	Y			87	Y	178	Y
158	Y			149	Y		

EMOTIONAL ADJUSTMENT

Sensitive		Apprehensive		Worries		Depressive Feelings		Sleep Disturbances	
08	Y	04	Y	11	Y	12	Y	32	Y
15	Y	48	Y	56	Y	14	Y	73	Y
47	Y	57	Y	63	Y	44	Y	86	Y
70	Y	105	Y	103	Y	53	Y	90	Y
71	Y	109	Y	114	Y	60	Y	92	Y
101	Y	111	Y	129	Y	62	Y	93	Y
127	Y	136	Y	138	Y	110	Y		
135	Y			155	Y	119	Y		
145	Y			169	Y	164	Y		
162	Y			185	Y	170	Y		
						174	Y		
						182	Y		
						183	Y		

ACADEMIC ADJSUTMENT

Learning Skills		Examination Tension		Classroom Involvement		Attitude / Motivation		Teacher-student Relations		Home Conditions	
05	Y	03	Y	10	Y	31	Y	66	N	23	Y
13	Y	29	N	25	Y	39	Y	94	N	42	Y
16	Y	69	Y	30	N	51	Y	96	Y	45	Y
21	Y	102	Y	35	N	68	Y	99	Y		
26	Y	113	Y	58	N	126	Y	106	N		
40	Y	118	Y	64	Y	131	Y	108	Y		
50	Y			137	Y			151	Y		
52	Y										
89	Y										
122	Y										
147	Y										
186	Y										

APPENDIX III

PERCENTILE NORMS

Table 1: Percentile norms for Adolescents from Urban Schools

AAI Scales	Description	Urban Adolescents (5423)							
		Boys (2744)				Girls (2679)			
		7th (633)	8th (674)	9th (678)	10th (759)	7th (609)	8th (675)	9th (650)	10th (745)
Home Adjustment	Excellent	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	0	0 – 01
	Good	02 – 04	02 – 04	02 – 04	02 – 04	02 – 03	02 – 03	01 – 04	02 – 03
	Average	05 – 11	05 – 13	05 -14	05 – 13	04 – 11	04 – 13	05 – 13	04 – 12
	Poor	12 – 20	14 – 22	15 -23	14 – 22	12– 22	14 – 23	14 – 21	13 – 23
	Unsatisfactory	>20	>22	>23	>22	>22	>23	>21	>23
Health Adjustment	Excellent	0 – 01	0 – 01	0	0	0 – 01	0	0	0
	Good	02 – 03	02 – 03	01 – 02	01 – 02	02 – 03	01 – 02	01 – 02	01 – 02
	Average	04 – 09	04 – 11	03 – 09	03 – 08	04 – 09	03 – 09	03 – 08	03 – 08
	Poor	10 – 16	12 – 17	10 – 16	09 – 15	10 – 16	10 – 16	09 – 15	09 – 15
	Unsatisfactory	>16	>17	>16	>15	>16	>16	>15	>15
Academic Adjustment	Excellent	0 – 02	0 – 03	0 – 03	0 – 03	0 – 02	0 – 02	0 – 01	0 – 02
	Good	03 – 08	04 – 08	04 – 09	04 – 09	03 – 08	03 – 06	02 – 07	03 – 07
	Average	09 – 18	09 – 18	10 – 19	10 – 19	09 – 18	07 – 18	08 – 17	08 – 17
	Poor	19 – 24	19 – 25	20 – 26	20 – 27	19 – 26	19 – 26	18 – 24	18 – 25
	Unsatisfactory	>24	>25	>26	>27	>26	>26	>24	>25
Emotional Adjustment	Excellent	0 – 03	0 – 03	0 – 02	0 – 03	0 – 03	0 – 02	0 – 02	0 – 02
	Good	04 – 09	04 – 09	03 – 08	04 – 10	04 – 09	03 – 07	03 – 08	03 – 08
	Average	10 – 23	10 – 24	09 – 23	11 – 23	10 – 22	08 – 23	09 – 23	09 – 23
	Poor	24 – 35	25 – 35	24 – 34	24 – 35	23 – 36	24 – 36	24 – 35	24 – 36
	Unsatisfactory	>35	>35	>34	>35	>36	>36	>35	>36
Social Adjustment	Excellent	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01
	Good	02 – 04	02 – 04	02 – 04	02 – 04	02 – 03	02 – 03	02 – 03	02 – 04
	Average	05 – 11	05 – 11	05 – 12	05 – 11	04 – 10	04 – 11	04 – 11	05 – 10
	Poor	12 – 17	12 – 16	13 – 17	12 – 17	11 – 16	12 – 16	12 – 16	11 – 16
	Unsatisfactory	>17	>17	>17	>17	>16	>17	>16	>16

Table 2: Percentile norms for Adolescents from Rural Schools

AAI Scales	Description	Rural Adolescents (2713)							
		Boys (1596)				Girls (1117)			
		7th (332)	8th (453)	9th (416)	10th (395)	7th (240)	8th (337)	9th(271)	10th (269)
	Excellent	0 – 02	0 – 01	0 – 02	0 – 02	0 – 02	0 – 01	0 – 01	0 – 02
	Good	03 – 07	02 – 05	03 – 06	03 – 06	03 – 05	02 – 04	02 – 06	03 – 04
	Average	08 – 16	06 – 14	07 – 15	07 – 15	06 – 13	05 – 13	07 – 14	05 – 14
	Poor	17 – 23	15 – 23	16 – 23	16 – 23	14 – 20	14 – 23	165– 23	15 – 25
	Unsatisfactory	>23	>23	>23	>23	>20	>23	>23	>25
Health Adjustment	Excellent	0 – 01	0	0	0	0	0	0 – 01	0
	Good	02 – 04	01 – 03	01 – 03	01 – 03	01 – 04	01 - 03	02 – 03	01 - 02
	Average	05 – 12	04 – 10	04 – 10	04 – 08	05 – 10	04 – 09	04 – 08	03 – 08
	Poor	13– 19	11 – 18	11 – 17	09 – 15	11 – 16	10 – 15	09 – 15	09 – 16
	Unsatisfactory	>19	>18	>17	>15	>16	>15	>15	>16
Academic Adjustment	Excellent	0 – 03	0 – 03	0 – 04	0 – 03	0 – 03	0 – 03	0 – 04	0 – 03
	Good	04 – 09	04 – 08	05 – 09	04 – 09	04 – 08	04 – 07	05 – 08	04 – 09
	Average	10 – 19	09 – 19	10 – 20	10 – 20	09 - 16	08 – 17	09 – 18	10 – 19
	Poor	20 – 27	20 – 26	21 – 26	21 – 28	17 – 22	18 – 27	19 – 24	20 – 27
	Unsatisfactory	>27	>26	>26	>28	>22	`>27	>24	>27
Emotional Adjustment	Excellent	0 – 03	0 – 03	0 – 03	0 – 03	0 – 03	0 – 03	0 – 03	0 – 03
	Good	04 – 10	04 - 10	04 – 10	04 – 10	04 – 09	04 – 08	04 – 10	04 – 08
	Average	11 – 23	11 – 23	11 – 25	11 – 25	10 – 22	09 – 22	11 – 24	09 – 26
	Poor	23 – 35	24 – 35	26 – 37	25 – 35	23 – 31	23 – 35	25 – 34	27 – 37
	Unsatisfactory	>35	>35	>37	>35	>31	>35	>34	>37
Social Adjustment	Excellent	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01
	Good	02 – 05	02 – 04	02 – 05	02 – 04	02 – 04	02 – 04	02 – 04	02 – 04
	Average	06 – 11	05 – 11	06 – 12	05 – 11	05 – 10	05 – 11	05 – 11	05 – 11
	Poor	12 – 16	12 – 17	13 – 18	12 – 17	11 – 14	12 – 17	12 – 16	12 – 16
	Unsatisfactory	>16	>17	>18	>17	>14	>17	>16	>16

Table 3: Percentile Norms for Adolescents from Tribal Schools

AAI Scales	Description	Tribal Adolescents (946)	
		Boys (510)	Girls (436)
Home Adjustment	Excellent	0 – 05	0 – 06
	Good	06 – 09	07 – 11
	Average	10 – 19	12 – 22
	Poor	20 – 26	23 – 29
	Unsatisfactory	>26	>29
Health Adjustment	Excellent	0 – 02	0 – 03
	Good	03 – 05	04 – 06
	Average	06 – 13	07 – 16
	Poor	14 – 21	17 – 24
	Unsatisfactory	>21	>24
Academic Adjustment	Excellent	0 – 05	0 – 08
	Good	06 – 12	09 – 14
	Average	13 – 23	15 – 23
	Poor	24 – 29	24 – 30
	Unsatisfactory	>29	>30
Emotional Adjustment	Excellent	0 – 06	0 – 09
	Good	07 – 15	10 – 20
	Average	16 – 30	21 – 34
	Poor	31 – 42	35 – 42
	Unsatisfactory	>42	>42
Social Adjustment	Excellent	0 – 03	0 – 04
	Good	04 – 07	05 – 09
	Average	08 – 14	10 – 16
	Poor	15 – 19	17 – 20
	Unsatisfactory	>19	>20

Table 4: Subscale Percentile Norms for Urban Adolescents

	AAI Subscales	Description	Urban Adolescents (5423)							
			Boys (2744)				Girls (2679)			
			7th (633)	8th (674)	9th (678)	10th (759)	7th (609)	8th (675)	9th (650)	10th (745)
A	Authoritarian Parenting	High	02 – 04	03 – 05	03 – 05	02 – 05	02 – 04	02 – 05	02 – 05	02 – 05
		Very High	>04	>05	>05	>05	> 04	>05	>05	>05
	Parent-child Relations	Poor	03 – 05	03 – 05	03 – 05	03 – 05	03 – 04	03 – 05	03 – 05	03 – 05
		Unsatisfactory	>05	>05	>05	>05	>05	>05	>05	>05
	Home Environment	Poor	05 – 08	05 – 09	05 - -9	05 – 09	05 – 08	05 – 08	05 – 09	05 – 08
		Unsatisfactory	>08	>09	>09	>09	>08	>08	>09	>08
	Parental Emotional Stability	Poor	02 – 03	02 – 04	02 – 04	02 – 04	02 – 04	02 – 04	02 – 04	02 – 04
		Unsatisfactory	>03	>04	>04	>04	>04	>04	>04	>04
	Marital Discord	High	01 – 02	01 – 03	01 – 03	01 – 03	01 – 03	01 – 03	01 – 03	01 – 03
		Very high	>02	>03	>03	>03	>03	>03	>03	>03
B	Learning Skills	Poor	06 – 09	06 – 09	07– 10	07 – 09	06 – 09	06 – 09	05 – 08	06 – 09
		Unsatisfactory	>09	>09	>10	>09	>09	>09	>08	>09
	Examination Tension	High	03 – 05	03 – 05	03 – 05	03 – 05	03 – 05	03 – 05	03 – 05	03 – 05
		Very high	>05	>05	>05	>05	>05	>05	>05	>05
	Class Room involvement	Poor	04 – 06	04 – 05	04 – 06	04 – 06	04 – 06	04 – 06	04 – 06	04 – 06
		Unsatisfactory	>06	>05	>06	>06	>06	>06	>06	>06
	Attitude/Motivation	Poor	02 -04	02 -04	02 -04	02 -04	02 -04	02 -04	02 -04	02 -04
		Unsatisfactory	>04	>04	>04	>04	>04	>04	>04	>04
	Relations with Teachers	Poor	04 – 05	03 – 05	03 – 05	03 – 05	03 – 05	03 – 05	03 – 05	03 – 04
		Unsatisfactory	>05	>05	>05	>05	>05	>05	>05	>05
	Home Conditions	Poor	01 – 02	02	02	02	01 – 02	02	02	01 – 02
		Unsatisfactory	>02	>02	>02	>02	>02	>02	>02	>02
C	Social Inhibitions	High	05 – 08	05 – 08	05 – 08	06 – 08	06 – 08	05 – 08	06 – 08	06 – 08
		Very High	>08	>08	>08	>08	>08	>08	>08	>08
	Peer Relations	Poor	03 – 04	03 – 04	03 – 04	03 – 04	02 – 04	02 – 04	02 – 04	02 – 04
		Unsatisfactory	>04	>04	>04	>04	>04	>04	>04	`>04
	Disruptive Behaviors	High	02 – 04	03 – 04	03 – 04	03 – 04	02 – 04	02 – 04	02 – 04	02 – 04
		Very High	>04	>04	>04	>04	>04	>04	>04	>04

D	Vague Problems / Preoccupied with Disease	High	03 – 06	04 – 06	03 – 06	03 – 05	03 – 05	03 – 06	03 – 06	03 – 06
		Very High	>06	>06	>06	>05	>05	>06	>06	>06
	Visual Problems	High	02 – 03	02 – 04	02 – 03	02 – 03	02 – 04	02 – 04	02 – 03	02 – 04
		Very High	>03	>04	>03	>03	>04	>04	>03	>04
	ENT Problems	High	02 – 03	02 – 04	02 – 04	02 – 04	02 – 04	02 – 04	02 – 04	02 – 03
		Very High	>03	>04	>04	>04	>04	>04	>04	>03
	Digestive Problems	High	01 – 02	01 – 02	01 – 02	01 – 02	01 – 03	01 – 02	01 – 02	01 – 02
		Very High	>02	>02	>02	>02	>03	>02	>02	>02
	Risk Behaviors	High	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	–
		Very High	>01	>01	>01	>01	>01	>01	>01	–
E	Sensitive	High	05 – 08	05 – 08	05 – 08	05 – 08	05 – 09	06 – 09	05 – 08	06 – 09
		Very High	>08	>08	>08	>08	>09	>09	>08	>09
	Apprehensive	High	04 – 06	04 – 06	04 – 06	04 – 06	04 – 06	04 – 06	04 – 06	04 – 06
		Very High	>06	>06	>06	>06	>06	>06	>06	>06
	Worrisome	High	05 – 08	06 – 08	06 – 08	05 – 08	05 – 08	05 – 08	05 – 09	05 – 08
		Very High	>08	>08	>08	>08	>08	>08	>09	>08
	Depressive	High	05 – 09	05 – 10	05 – 09	05 – 09	05 – 09	05 – 09	05 – 09	05 – 10
		Very High	>09	>10	>09	>09	>09	>09	>09	>10
	Sleep Disturbances	High	03 – 05	03 – 05	03 – 05	03 – 05	03 – 05	03 – 05	03 – 05	03 – 05
		Very High	>05	>05	>05	>05	>05	>05	>05	>05

A-Home, B-Academic, C-Social, D-Health and E-Emotional

Table 5: Subscale Percentile Norms for the Rural Adolescents

	AAI Subscales	Description	Rural Adolescents (2713)							
			Boys (1596)				Girls (1117)			
			7th (332)	8th (453)	9th (416)	10th (395)	7th (240)	8th (337)	9th(271)	10th (269)
A	Authoritarian Parenting	High	03 – 05	03 – 05	03 – 05	03 – 05	02 – 05	02 – 05	02 – 04	02 – 05
		Very High	>05	>05	>05	>05	>05	>05	>04	>05
	Parent-child Relations	Poor	03 – 05	03 – 05	04 – 05	03 – 05	03 – 05	03 – 05	03 – 05	04 – 06
		Unsatisfactory	>05	>05	>05	>05	>05	>05	>05	>06
	Home Environment	Poor	06 – 09	05 – 09	06 – 09	06 – 09	05 – 07	05 – 09	06 – 09	06 – 09
		Unsatisfactory	>09	>09	>09	>09	>07	>09	>09	>09
	Parental Emotional Stability	Poor	02 – 04	02 – 04	02 – 04	02 – 04	02- 04	02- 04	03- 04	02- 04
		Unsatisfactory	>04	>04	>04	>04	>04	>04	>04	>04
	Marital Discord	High	02 – 03	01 – 03	01 – 03	02 – 03	01 – 03	01 – 03	01 – 03	01 – 03
		Very high	>03	>03	>03	>03	>03	>03	>03	>03
B	Learning Skills	Poor	06 – 09	06 – 10	07 – 10	07 – 10	06 – 08	06 – 09	06 – 09	06 – 09
		Unsatisfactory	>09	>10	>10	>10	>08	>09	>09	>09
	Examination Tension	High	03 – 04	03 – 05	03 – 05	03 – 05	03 – 04	03 – 05	03 – 05	04 – 05
		Very high	>04	>05	>05	>05	>04	>05	>05	>05
	Class Room involvement	Poor	03 – 05	03 – 05	04 – 06	04 – 06	03 – 05	03 – 05	03 – 05	04 – 05
		Unsatisfactory	>05	>05	>06	>06	>05	>05	>05	>05
	Attitude/Motivation	Poor	03 – 05	03 – 04	03 – 05	02 – 04	03 – 04	03 – 04	02 – 04	02 – 04
		Unsatisfactory	>05	>04	>05	>04	>04	>04	>04	>04
	Relations with Teachers	Poor	03 – 05	03 – 05	03 – 05	03 – 05	03 – 04	03 – 05	03 – 04	03 – 04
		Unsatisfactory	>05	>05	>05	>05	>04	>05	>04	>04
	Home Conditions	Poor	02	02	02	02	02	02	02	02
		Unsatisfactory	>02	>02	>02	>02	>02	>02	>02	>02
C	Social Inhibitions	High	05 – 07	05 – 08	06 – 08	06 – 08	05 – 08	06 – 08	06 – 08	06 – 09
		Very High	>07	>08	>08	>08	>08	>08	>08	>09
	Peer Relations	Poor	03 – 04	03 – 04	03 – 04	02 – 04	02 – 04	02 – 04	03 – 04	02 – 04
		Unsatisfactory	>04	>04	>04	>04	>04	>04	>04	>04
	Disruptive Behaviors	High	02 – 04	02 – 04	02 – 04	02 – 04	02 – 03	02 – 04	02 – 04	02 – 04
		Very High	>04	>04	>04	>04	>03	>04	>04	>04

D	Vague Problems / Preoccupied with Disease	High	04 – 06	04 – 06	04 – 06	03 – 06	04 – 06	04 – 05	04 – 06	03 – 06
		Very High	>06	>06	>06	>06	>06	>06	>06	>06
	Visual Problems	High	02 – 03	02 – 03	02 – 04	02 – 03	02 – 04	02 – 03	02 – 03	02 – 04
		Very High	>03	>03	>04	>03	>04	>03	>03	>04
	ENT Problems	High	02 – 04	02 – 04	02 – 04	02 – 03	02 – 04	02 – 04	02 – 03	02 – 03
		Very High	>04	>04	>04	>03	>04	>04	>03	>03
	Digestive Problems	High	02 – 03	01 – 03	01 – 02	01 – 02	01 – 03	01 – 03	01 – 02	01 – 03
		Very High	>03	>03	>02	>02	>03	>03	>02	>03
	Risk Behaviors	High	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01	0 – 01
		Very High	>01	>01	>01	>01	>01	>01	>01	>01
E	Sensitive	High	05 – 07	05 – 08	06 – 09	05 – 08	05 – 08	06 – 08	06 – 08	06 – 09
		Very High	>07	>08	>09	>08	>08	>08	>08	>09
	Apprehensive	High	04 – 06	04 – 06	04 – 06	04 – 06	04 – 06	04 – 06	04 – 06	04 – 06
		Very High	>06	>06	>06	>06	>06	>06	>06	>06
	Worrisome	High	05 – 08	06 – 08	06 – 09	06 – 09	05 – 08	05 – 08	06 – 08	06 – 08
		Very High	>08	>08	>09	>09	>08	>08	>08	>08
	Depressive	High	06 – 09	05 – 10	06 – 10	06 – 09	06 – 09	05 – 10	05 – 09	05 – 10
		Very High	>09	>10	>10	>09	>09	>10	>09	>10
	Sleep Disturbances	High	03 – 05	03 – 05	03 – 05	03 – 05	03 – 04	03 – 05	03 – 05	03 – 05
		Very High	>05	>05	>05	>05	>04	>05	>05	>05

A-Home, B-Academic, C-Social, D-Health and E-Emotional

Table 6: Subscale percentile Norms for the Tribal Adolescents

	AAI Subscales	Description	Tribal Adolescents (946)	
			Boys (510)	Girls (436)
A	Authoritarian Parenting	High	04 – 05	04 – 06
		Very High	>05	>06
	Parent-child Relations	Poor	04 – 06	05 – 07
		Unsatisfactory	>06	>06
	Home Environment	Poor	07 – 10	08 – 10
		Unsatisfactory	>10	>10
	Parental Emotional Stability	Poor	03 – 04	04 – 05
		Unsatisfactory	>04	–
	Marital Discord	High	02 – 04	03 – 04
		Very high	>04	>04
B	Learning Skills	Poor	08 – 10	08 – 11
		Unsatisfactory	>10	>11
	Examination Tension	High	04 – 05	04 – 05
		Very high	>05	>05
	Class Room involvement	Poor	04 – 06	04 – 06
		Unsatisfactory	>06	>06
	Attitude/Motivation	Poor	03 – 05	04 – 06
		Unsatisfactory	>05	–
	Relations with Teachers	Poor	03 – 05	03 – 05
		Unsatisfactory	>05	>05
	Home Conditions	Poor	02 – 03	02 – 03
		Unsatisfactory	–	–
C	Social Inhibitions	High	08 – 09	08 – 09
		Very High	>09	>09
	Peer Relations	Poor	03 – 05	04 – 05
		Unsatisfactory	>05	>05
	Disruptive Behaviors	High	03 – 04	03 – 05
		Very High	>04	–
D	Vague Problems / Preoccupied with Disease	High	05 – 07	06 – 08
		Very High	>07	–
	Visual Problems	High	02 – 04	03 – 04
		Very High	>04	>04
	ENT Problems	High	02 – 04	03 – 05
		Very High	>04	>05
	Digestive Problems	High	02 – 03	02 – 03
		Very High	>03	>03
	Risk Behaviors	High	0 – 01	0 – 01
		Very High	>01	>01
E	Sensitive	High	07 - 09	08 – 10
		Very High	>09	–
	Apprehensive	High	05 – 07	05 – 07
		Very High	–	–
	Worrisome	High	08 – 10	08 – 09
		Very High	–	>09
	Depressive	High	07 – 11	09 – 12
		Very High	>11	>12
	Sleep Disturbances	High	04 – 06	04 – 06
		Very High	–	–

A-Home, B-Academic, C-Social, D-Health and E-Emotional

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