/ELOPMENT AND INITIAL VALIDATION OF ATTITUDE TOWARDS HIV/AIDS SCALE

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ABSTRACT

An instrument to measure attitude towards HIV/AIDS was developed based on some selected predictors (measuring issues). 63 items were initially written and adopted based on the measuring issues and prepared to be checked for its face validity and clarity. 49 items that survived the face validity test of two psychology department instructors (AAU) and 36 students from different colleges/faculties, year levels and sex groups with 7 new items were administered to the sample selected based on stratified random sampling. After undertaking some item analysis for each measuring issues (subscales) using 362 questionnaires, 27 items were retained and subject to validation study using principal component analysis. The principal component analysis extracted six components with coefficient alpha reliability ranging from 0.70 to 0.81: close-mindedness, condom and condom use, confidentiality, discrimination, discussion & fear of sex. Construct validity of the HAA scale was also supported by its positive and significant correlation (0.75) with a related measure "personal attitude about AIDS" and its poor correlation (0.08) with the unrelated measure "depression". Therefore, The HIV/AIDS attitude scale developed to AAU students is reliable and valid.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE PROBLEM

1. 1. 1 ATTITUDE AND ITS COMPONENTS

Attitude is an important concept that is often used to understand and predict people's reaction to an attitude object (Fishabein & Aizen, 1975 as cited in Eagly & Chaiken, 1998). Although the concept of attitude is not easy to define precisely (Ebel, 1979) and there is no single definition of attitudes acceptable to all (Kiesler *et al.*, 1969), there are several definitions of attitude. Allport (1956) (cited in Rosenberg *et al.*, 1960) defined attitude as "individuals mental process which determines both the actual and potential responses of each person in the social world." This definition indicates that attitudes could determine "responses" or reactions (positive or negative) to occurrences around the individual after undertaking some "mental process" in relation to the thoughts and feelings towards the attitude object. Other definitions and descriptions of attitude are:

"... a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object" (Rosenberg *et al.*, 1960).

"... an enduring organization of motivational, emotional, perceptual, and cognitive process with respect to some aspect of the individual's world" (Krech & Crutchfield, 1948 cited in Kiesler *et al.*, 1969).

"... an enduring system of three components centering about a single object: the beliefs about the object (the cognitive component), the affect connected with the object (the feeling

component), the disposition to take action with respect to the object (the action tendency component) (Krech *et al.*, 1962 as cited in Kiesler *et al.*, 1969). And

" ...a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Katz and Stotland, 1959).

Some important characteristics of attitude that can be deduced from these definitions can be summarized as follows:

- Attitude predisposes favorable or unfavorable reactions to an object.
- Attitude is enduring, relative to other related concepts such as motives and feelings.
- Attitude is mostly learned and changes with learning and experience.
- Attitude is not directly observable but inferred from observable responses that occur in conjunction with the stimuli that denote the evaluated entity.
- Attitude can be split into cognitive, affective and behavioral components; and
- An attitude encompasses the direct or indirect experience that an individual has with the attitude object.

From these features an attitude may be described as a complex, mostly learned, and relatively enduring but changeable system of cognitive and affective tendencies with which individuals predispose to evaluate an attitude object so as to act or react favorably or unfavorably. This definition can be presented in pictorial form based on its components in fig.-1.

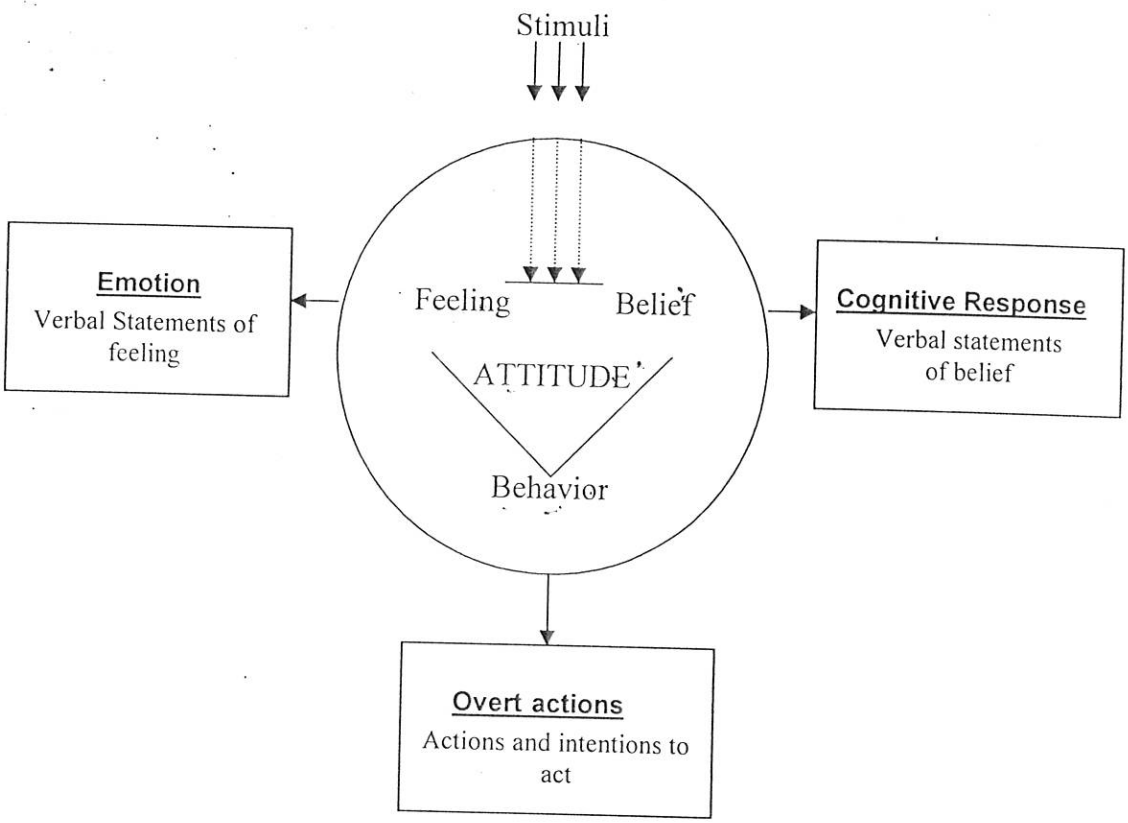

Fig. 1. *A pictorial presentation of attitude based on its components (Mick, 2005)*

Evaluation, in the above definition, refers to the attribution of qualities that can be placed along a dimension of " desirability – undesirability" or "goodness- badness" which according to Katz & Stotland (1959) always includes cognitive and affective elements.

A) **The affective & cognitive components.** The affective component of an attitude according to Eagly & Chaiken (1998) consists of feelings, moods, emotions, and sympathetic nervous-system activities that people have experienced in relation to an attitude object and subsequently associated with it, where as the cognitive component of an attitude includes perceptions, concepts and thoughts about the attitude object (Rosenberg, *et al.*, 1960).

Although some elements of cognition are important in evaluating an attitude object, the affective component of an attitude is the central aspect of the attitude, which most closely related to the evaluation of the object (Katz and Stotland, 1959). This is to say that the object must be recognized and related at least implicitly to other objects and beliefs that the person in question possesses. Nevertheless, it is the affective element that differentiates attitudinal evaluation and intellectual appraisal. Rephrasing the above view Katz and Stotland added that a person may have beliefs and judgment about various objects and aspects of his world, but these are not attitudes unless and otherwise an attribution of good or bad qualities accompanied the specific beliefs.

B) **The behavioral component.** It refers to a person's overt actions towards the attitude object as well as intentions to act, which are not necessarily expressed in overt behavior (Eagly and Chaiken, 1998). Although the behavioral component of an attitude has received the least amount of systematic studies and least often used as the main index of attitudes, few studies like Cartwright (1949) and Katz & Kahn (1952) cited in Rosenberg *et al.* (1960) have found out that attitudes are characterized through indexes of overt behaviors and those attitudes which have behavioral tendencies associated with them are of special interest (Katz and Stotland, 1959). Moreover, Katz and Stotland stated that the behavioral component might be closely related with the cognitive component in that the impulsion to action can be symbolically represented and even rehearsed. That is, the cognitive component comprises knowledge of appropriate and inappropriate modes of action towards the object.

All these three components of attitude could express positive or negative evaluation of greater or lesser extremity that could be generalized on the basis of repeated responding (Eagly and Chaiken, 1998).

1. 1. 2 ATTITUDE MEASUREMENTS AND SELF – REPORT SCALES

Although the taxonomy developed by Cook and Selling (1964) cited in Kiesler *et al.* (1969) identified five attitude measuring techniques (*self-report, observation, Individuals reaction of partially structured stimuli, performance of objective task, and physiological reactions to the attitudinal object or representations of it*) based on where the inferences are drawn from, observational and self-report techniques are used most frequently. Though defining an attitude as a hypothetical construct seem to contradict with the view that attitude can be measured on the basis of observable responses (Gregory, 1984), observers making use of rating-scales can measure attitude since attitudes affect behavior. However, the difficulties of finding qualified observers and sufficient relevant incidents to observe usually made measurement based on direct observation unattractive (Ebel, 1979). The easier and generally better way according to Rosenberg *et al.* (1960) is to ask subjects directly what they believe or what they like to do. Thus, measurement of attitudes is usually based on the subject's self-report.

Instruments used to measure attitudes are usually referred to as attitude scales (Ebel, 1979). Coolican (1995) noted that attitude scales and other psychometric tests are considered to be scientific measures of psychological constructs. And, although in many areas of psychological test construction the aim is to produce a single, thoroughly validated test that will become widely adopted by the field, the area of attitude measurement has not followed that tradition (Gregory,

1984). Researchers often prefer to devise a new attitude scale for each new research project even if several compendia of validated scales are available. One reason for this difference in approach according to Ebel (1979) is the existence of a near infinite number of attitudes.

Although many techniques of attitude scale construction have been developed, including Thurstone's equal-appearing intervals scale, Likert's summated rating scale, Guttman's scaleogram, Lazarsfeld's latent structure analysis, and Osgood's *et al.* semantic difference (Miller, 1977), only the first two have come into wide use. These methods involve either scaled statements (Thurstone) or scaled responses (Likert).

1.1.2.1. THURSTONE'S EQUAL APPEARING INTERVAL SCALE

Thurston was one of the first and most productive scaling theorist (Trochim, 2002) who shocked the academic world when he suggested "Attitude can be measured" quantitatively using techniques that generated interval levels (Kifer, 1992). He actually invented three different methods to develop unidimensional scale. These are the method of equal-appearing intervals, the methods of successive intervals, and the method of paired comparisons (Trochim, 2002). These three methods differ only in how the scale values for items are constructed, but in all cases respondents rated the resulting scale the same way. The easiest method of the three to implement is the method of equal-appearing intervals (Trochim, 2002). This scale consists of a number of items whose position on the scale has been determined previously by a ranking operation performed by judges (Miller, 1977).

Some limitations, identified by Coolican (1995) and Foster (2001), of the Thurstone's equal-appearing intervals scale are:

- The judges rating the items can't be completely neutral and depending on the issue, produce a distorting bias in the rating system.
- It may be difficult to choose the best items from those with the same scale values, and
- The construction of the scale can be quite time consuming.

1.1.2.2. LIKERT'S SUMMATED RATING SCALE

In response to the above problems of the Thurstone scale, the summated rating scale was developed (Foster, 2001). The original scale of this type was developed by Rensis Likert (Prichard, n. d.). This was the first scale that gave great attention to score an attitude directly from the attitudinal responses without recourse to a panel of judges. As the Likert scale is easier in constructing, scoring and producing more homogenous scale than the Thurstone scales, it appeared to be the most popular method of attitude scale construction (Mehrens & Lehmann, 1991).

In developing a scale using Likert method according to Coolican (1995), Foster (2001) & Miller (1977) the following steps are usually recommended.

- Collect or write a large number of statements considered relevant to the attitude being investigated. These items should be items at either end of the continuum (both positive & negative statements).
- The positive and negative items should be mixed and administered to a group of representative subjects of those the questionnaire is to be used.

- The responses to the various items are scored in such a way that a response indicative of the most favorable attitude is given the highest score. And, add up the scores for each item to give the respondent's over all score.
- In order to select the appropriate items of a scale; compute the inter-item correlation and item-total correlation to produce homogeneous and most discriminating items of the scale.
- Reject low correlated and discriminating items and keep the balance of favorable and unfavorable items to form a scale.

Although the Likert method was developed in order to reduce the observed limitation in the Thurstone's method, it has limitation of its own too. Some of them according to Coolican (1995) are:

- For each respondent, scores on the scale only have meaning relative to the scores in the distribution obtained from other respondents, and
- The "undecided" score is ambiguous. As a consequence, over all scores central to the distribution are quite ambiguous.

Yet, with these limitations, the Likert technique is easier to use and currently it is the most widely used technique of scale development (Ebel, 1979).

1.1.3. SUGGESTIONS FOR CONSTRUCTING ATTITUDE SCALES

After specifying the theoretical issues like the attitude object, the conceptual attributes of the attitude construct relevant to the aims of the research and the response domain, according to Coolican (1995) & Mehrens & Lehmann (1991), the attitude scale can be developed following the basic principles or suggestions that pertain particularly to writing items of the scale. These are

- Write direct statements in clear, simple language
- Avoid factual statements or those that may be interpreted as factual.
- Avoid using universal words such as Always, Never, All, or None.
- Restrict the use of words such as Only, Just, or Merely as much as possible.
- Make each statement brief, preferably less than 20 words.
- Avoid suggesting a particular answer.
- Avoid statements that are likely to receive universal endorsement or rejection.
- Avoid double-barreled statements. That is, each statement should be unidimensional or it should be only a single concept.
- Minimize the occurrence of response acquiescence set by using about equal number of positive and negative worded items.
- Avoid statements that are ambiguous and may be interpreted in a variety of ways.
- Intersperse sensitive and non-sensitive questions where possible.
- Usually 3- to -7 continuums are recommended.
- Randomly distribute the statements in the scale. Make certain that you don't have more than four or five positive or negative items in sequence.
- Keep the number of items of the scale manageable (usually 6 – 30 declarative statements).

1.1.4 VALIDATION TECHNIQUES OF A SCALE

In a normal process of constructing a scale, researchers would pilot the scale and conduct some form of item analysis (Coolican, 1995). Although this is extremely time consuming, it is a good idea to try out the initial collection of items on a few people in order to identify ambiguous or tricky items

and possibility to spot items which are similar and don't add anything to the overall differences in scores (Foster, 2001). In doing so, inter-item correlation and reliability as measures of homogeneity and internal consistency and item-total correlation to check the discrimination ability of items (Oppenheim, 1966 cited in Desalegne, 1993) are required as a prerequisite in validating the scale.

1.1.4.1. CORRELATION, DISCRIMINATION POWER AND RELIABILITY

Whenever we have two sets of scores from the same group of people and wish to study the reliability and/or validity of a test, it is often desirable to know the degree to which the scores are related (Mehren & Lehmann, 1968). The degree of relationship or correspondence between two (X & Y) sets of scores can be expressed using the correlation coefficient (r_{xy}).

Although correlation coefficients can be computed in various ways, choosing one among them usually depend on the nature of the data and the form of the relationship between the two variables (Brown, 1983). Since, usually relatively continuous distributions of scores and linear relationship are the concerns, the Pearson Product Moment Correlation Coefficient is used to measure stability, equivalence and internal consistency using split half (Mehren & Lehmann, 1968).

In order to use correlation in the Likert type scale, we need to create a new variable which is the summation of each individual item score for each respondent. Including this new variable in the correlation matrix, the inter-item correlation will be undertaken to check the homogeneity of a scale and the item-total correlation will be undertaken to check both homogeneity and discrimination ability of an item (Coolican, 1995). Though there is no fixed rule for how low the correlation should be to throw out an item, according to Trochim (2002) "you might eliminate all items with a correlation score less than 0.3."

Since items that are worth kept in an attitude scale are those which discriminate among people and items, which could be measured in much the same way by every respondent, don't discriminate, we need methods of checking the discrimination ability of an item. Though there are many methods of checking the discrimination of an item, the simplest method is the item-total correlation (Openheim, 1966 cited in Desalegne, 1993) described above. It is one among the important applications of correlation. Another relatively better method of testing the discrimination ability of an item according to Coolican (1995) is a method which is based on a simple critical ratio on the basis of total scores. In using this method, select the top 25% and lowest 25% of subjects; determine the mean on each item for both the top and lowest quarter of the subjects; and then, a judgment to accept or reject an item will depend on its ability to discriminate the two extreme quarters using t-test (the mean differences divided by its standard error). Higher t-value means there is greater difference between the subjects of the two groups. In more practical terms, items that indicate significant difference between the means of the two extreme quartiles discriminates the groups best. Thus, adding personal judgment on how sensible the item is, such items need to be retained.

Reliability is another application of correlation, which is conceptually used to measure the degree of consistency between two measures of the same thing (Anastasi, 1976). Although psychological measurement is typically much less reliable than physical measurement and it is indirect and conducted with less precise instruments on traits that are not always stable or well defined (Mehren & Lehmann, 1968), we can calculate one of the several types of reliability estimates depending on which error sources are of greater concern (Aiken, 1976).

If we are interested in the stability of performance over time, According to Brown (1983), we would administer a test; a period of time elapses, and the same test is readministered. Then, we compute the correlation between scores on the test and the retest. This is called the coefficient of stability or test retest reliability, which takes in to account measurement errors caused by different administration times (Aiken, 1976).

If we have two equivalent forms of a test, according to Brown (1983), "we would administer one form of a test and then, with a minimum time lag, administer the second test to the same sample." Correlating the scores of the two forms gives us a coefficient of equivalence, which takes in to account the variance of error introduced by using different samples of items (Aiken, 1976). We could combine the above two procedures to obtain the coefficient of equivalence and stability by administering two forms of a test at different times.

When we have only one form of a test to be administrated just once, according to Brown (1983), we have two options. One is to divide the test in to two parts and compare the two scores. This is called split-half reliability, which is best used with instruments that have many items (Yang, 2004). And, the other option is to investigate the consistency of performance over the items comprising the test. These analyses determine whether all items on the test measure the same trait or characteristic. Such indices are called internal consistency or homogeneity coefficients.

Although a number of indices of internal consistency have been developed, the coefficient of Cronbach's alpha (coefficient alpha) is the most widely used measure of internal consistency and it is a method most commonly used in estimating reliability in standardized tests, specially with items that have various point values like attitude scales (Yang, 2004). An internal consistency reliability of

greater than or equal to 0.7 is usually considered as indicator of stability in a scale ("Reliability Key Concepts & terms," n.d).

1.1.4.2 VALIDITY AND SCALE VALIDATION

Validity is the most important characteristic of a test or a scale (Brown, 1983). It refers to the extent to which a test measures what it is designed to measure. As a result, according to Anastasi (1976) validity answers questions like

- What does the test measure? and
- How well does it measure what it is designed to measure?

Without evidences of its validity, we don't know what characteristics a test actually measures and in turn can't interpret scores. The way in which the validity of a test can be determined usually depends on the nature of the construct measured and the purpose of testing (Anastasi, 1976). Although there are numerous types of validity, according to Brown (1983) all fall into three main classes: criterion-related validation, content validity and construct validity.

An investigator of criterion related validity is primarily interested in some criterion that one wishes to predict. Then, administer the test, obtain an independent criterion measure on the same subjects and compute a correlation (Brown, 1983). If the criterion is obtained some time after the test is given, the investigator is studying predictive validity; whereas, if the test score and criterion score are determined essentially at the same time, the investigator is studying concurrent validity (Brown).

Content validity is designed to measure how well an individual has mastered a specific skill or course of study (Anastasi, 1976). It is established deductively by showing that the test items are a sample of a universe in which the investigator is interested (Cornbach and Meehl, 1955). This is a

situation most frequently involved during achievement testing (Brown, 1983). Checking the content validity of other psychological tests like attitude, aptitude and personality according to Anastasi is usually found out inappropriate and misleading. This is because, according to her, considerations of relevance and effectiveness of content must obviously enter in to the initial stage of constructing any test and these tests are not based on a specified course of instruction or uniform set of prior experiences from which test content can be drawn. Hence, individuals are likely to vary more in the work methods or psychological process employed in responding to the same test. In other words, identical tests might measure different functions in different persons. Under these conditions, therefore, it would be virtually impossible to determine the psychological functions measured by the test from an inspection of its content. On the other hand, as it has been noted in ("Method of summated rating," n. d.) if an attitude scale measures beliefs, feelings, and action tendencies pertaining to the subject, it can be said intrinsically valid or have content validity. Moreover, Moriya *et al.* (1994) and Goh (1993) used content validity in developing and validating their AIDS scale.

The construct validity of a test is the extent to which the test may be said to measure a theoretical construct or trait (Anastasi, 1976). It is involved whenever a test is to be interpreted as a measure of some attribute or quality which is not operationally defined (Cronbach and Meehl, 1955). Since the definition of constructs may include statements or elements that go beyond observable behavior and are often broader (Brown, 1983), it is evaluated by an accumulation of evidences (Cronbach and Meehl, 1955). Therefore, as no single quantitative index of construct validity is possible, it is studied ordinarily when the investigator has no definite criterion measure of the quality with which he is concerned. According to Messick (1989) cited in Judd and McClelland (1989) since construct validity subsumed all other forms of validity, it has been recognized as the central measurement question in the psychometrics tradition and needs special attention and description.

Some among varieties of methods that can be used to investigate construct validity are correlation and covariance of the test with other tests, factor analysis, internal structure (consistency), experimental manipulations, generalizeability studies and the multitrait–multimethod matrix (Anastasi, 1976 and Brown, 1983). With the knowledge that all the methods are not independent of each other, the first two methods are going to be described.

A) Correlation with other Measures

This method is designed to indicate whether various tests measure the same construct and/or what features the tests do and don't share in common (Brown, 1983). According to Judd and McClelland (1989) one can argue about the construct validity of a variable by showing its observed correlation with other variables so as to provide evidences of convergent and discriminant validities. This argument was also supported by Campbell (1960) (as cited in Anastasi, 1976) who pointed out that to demonstrate the construct validity of a scale we must show not only that the scale correlates highly with other variables with which it should theoretically correlate but also it does not correlate significantly with variables from which it should differ. Whenever we investigate the correlation between two or more scales presumed to measure the same construct, we are investigating the convergent validity (Brown). It amounts to the demonstration that the variable reflects the construct of interest (Anastasi). On the contrary, in order to show the construct of disinterest we also need to establish the measures of different traits that are not highly intercorrelated with the variable. This is called discriminant validity (Brown).

B) Factor Analysis

Factor analysis is a generic term for a family of statistical techniques concerned with the reduction of a set of observable variables in terms of a small number of latent factors (University of Texas at Austin [UTA], 1995). It has been developed primarily for analyzing relationships among a number of measurable entities (such as survey items or test scores). Its underlying assumption is that there exist a number of unobserved latent variables (or "factors") that account for the correlations among observed variables, such that if the latent variables are held constant, the partial correlations among observed variables all become zero (UTA).

Factor analysis has been widely used in the behavioral sciences to assess the construct validity of a test or a scale. According to Goodwin and Goodwin cited in Froman (2001) the most popular method of documenting construct validity is the use of factor analysis technique. They assert that most researchers commonly rely heavily on factor analysis to obtain evidences of the construct validity of their instrument.

Common factor analysis (CFA) and principal component analysis (PCA) are the two functionally very similar factor analysis techniques which are used for the same purpose though they are quite different in terms of their underlying assumptions (UTA, 1995). Some of the differences observed between common factor analysis and principal component analysis as identified by Kendall (1975), Reese and Lochmuller (1994), UTA (1995) and Rencher (2002) are summarized in table-1 as follows.

Table 1. Comparison of CFA and PCA

CFA	PCA
variables are expressed as linear combination of the factors.	components are expressed as linear functions of variables.
attempts to explain the covariance.	emphasis on explaining the total variance.
makes several key assumptions.	requires essentially no assumptions
subject to arbitrary rotation.	Unique in assuming distinct eigenvalues

These differences are usually considered in selecting one technique over another (UTA, 1995).

Some important steps in implementing factor analysis as considered by Kendall (1975), Reese & Lochmüller (1994), UTA (1995), Froman (2001) & Rencher (2002) are Preparing Data, Selecting a Factor Model, Estimating Communalities, Determining the Number of Factors and means of factor Rotation, & Interpretation of latent Factor(s).

1.1.5 Predictors (Measuring Issues) of Individuals HIV/AIDS Attitude

From the moment scientists identified HIV/AIDS, according to Fredriksson and Kanabus (2004), social responses of denial (close mindedness), stigma and discrimination and fear have accompanied the epidemic. These reactions were indications of the attitude of individuals towards HIV/AIDS and people living with HIV/AIDS. Similarly, Myers *et al.* (1993) identified six categories that attitude towards HIV/AIDS can be grouped and inferences of individuals' attitude towards HIV/AIDS can be made. These were "AIDS anxiety, isolation of people living with AIDS, communication with sexual partners, traditional values & AIDS education, embarrassment in obtaining condoms, and others."

As attitude towards HIV/AIDS is a construct, which cannot be addressed directly, it is important to select relevant measuring issues surrounding it. Therefore, adding some other measuring issues from those selected categories identified by Fredriksson & Kanabus (2004) and Myers *et al.* (1993), measuring issues such as attitude towards counseling and testing, attitude towards condom and condom use, confidentiality of test results, close-mindedness, stigma and discrimination, fear of sex, and attitude towards discussion of HIV/AIDS related issues are considered as important measuring issues (predictors) of attitude towards HIV AIDS based on the three components of attitude.

A) Counseling and Testing

Testing for HIV antibodies is an important component of prevention and intervention programs designed to curb the spread of HIV infection (Peltzer *et. al.*, 2004). Because pretest and posttest counseling are offered to individuals whose test results are either HIV-positive or HIV-negative, according to Peltzer *et al.* (2004) "there is an opportunity for individualized intervention to discuss risky and safer behaviors and ways to modify risk behavior patterns."

Since there are individual as well as societal level factors that contributed for failure to use HIV testing services and brought individual difference on attitude towards HIV/AIDS related counseling and testing (like fear of learning that they are HIV positive; believe that they are unlikely to have been exposed to HIV; believe that they are HIV negative; reluctant to think about the possibility of being HIV-positive; the perceived stigma and fear of discrimination if seropositive; concerns of over privacy and issues of who has access to information about one's HIV status (Peltzer *et al.*, 2004)), willingness to be tested and implementation of the issues discussed as risk reduction and safer

behavior during pretest and posttest counseling are important concepts to be addressed in using counseling and testing as a measuring issue of individuals attitude towards HIV/AIDS.

B) Confidentiality

Individuals' attitude towards counseling and testing are usually accompanied by the confidentiality of test results. According to Princh *et al.* (1995) "some individuals with HIV may fear that disclosure of their diagnosis may result in abuse from their intimate partners or abandonment." The disclosure of AIDS related information that is not authorized by patients could bring serious psychological, social, and economic repercussions (Daigle *et al.*, 2000). Beauchamp and Childress (1994) described confidentiality as "disclosure of information from one person to another, whether through words or an examination, after which the person to whom the information is disclosed doesn't divulge that information with out the permission of the concerned individual."

Since one possible reason to have attitude towards testing and counseling is the confidentiality of test results (Princh *et al.*, 1995) and "confidentiality is particularly important with respect to HIV because of the stigma and discrimination experienced by people living with HIV and AIDS" (Why Confidentiality is Important [WCI], n. d.), individuals who believed that disclosing the HIV/AIDS status as the right of the concerned individual only and individuals HIV/AIDS status should be kept secrete can be considered as having positive attitude towards HIV/AIDS. On the contrary, those who believed that HIV positive individuals should be identified, workers and organizations have the right to know the HIV/AIDS test results of co-workers and employees respectively, and in general, those who invade the privacy of people living with HIV/AIDS can be viewed as having negative attitude towards HIV and AIDS.

C) Discrimination

"Discrimination is the denial of equal treatment to an individual or to a group of people on the bases of an adverse opinion or belief" Smith (2001). Since many people are somewhat concerned about the possibility that they will become infected with HIV, significant number of individuals still think that HIV can be transmitted through various forms of casual contact. And "since HIV/AIDS is linked to social taboos, such as immoral sexual activities, there are enormous level of ignorance, denial, and intolerance about the diseases in most communities" UNAIDS (n. d.). These lingering misconceptions are potentially a contributing factor to prejudice against HIV-positive individuals (KHPR, 2002). As a result, many people infected with HIV were socially isolated, fired from their jobs, driven from their homes, and even physically attacked Herek (1988) cited in Herek & Capitanio (1992). Most surprisingly, according to Gregory (1984) "some medical professionals avoid treating patients with AIDS."

Although there are clear evidences on the importance of the role that family members play in providing support and care for people living with HIV/AIDS, all families and family members responses are not positive. Infected members of the family can find themselves discriminated against with in the home. Here in an evidence of discrimination with in the family on a 23 years of age Indian woman presented on WORLD AIDS DAY [WAD] (2003).

> *"My mother-in-law has kept every thing separate for me-my glass, my plate, they never discriminated like this with their son. They used to eat together with him. For me, it's don't do this or don't touch that and even if I use a bucket to bathe, they yell- 'wash it, wash it'. They really harass me..."*

The family bond does not get disturbed until a member is detected and found infected with HIV/AIDS. The attitudinal change towards their family members is usually observed just after having information that a family member is infected with HIV/AIDS. As the phrase "*they never discriminated me like this...*" indicated, discrimination has been started after she has been infected with HIV/AIDS and let them know. This is the indication of their attitude towards HIV/AIDS through their beloved family member.

There are also evidences of work place discriminations. As it has been presented on WAD (2003) "While HIV is not transmitted in the majorities of work place settings, the supposed risk of transmission has been used by numerous employers to terminate or refuse employment." There is also evidence that if people living with HIV/AIDS are open about their infection status at work, they may well experience discrimination by others. The report presented by a 27 years of age Indian man on WAD (2003) could be an example for work place discrimination. He said "nobody will come near me, eat with me in the canteen, nobody will want to work with me, I am an outcast here."

This discrimination is not purely an indicator of hatred towards the individual as he could had at least one intimate work place friend who wanted to have, work with and to eat with him just before informing his HIV/AIDS status to his co-workers. So, it is usually the fear individuals have towards HIV/AIDS that is expressed over people living with HIV/AIDS. Therefore, individuals' attitude towards people living with HIV/AIDS can be used as a measuring issue to evaluate their attitude towards HIV/AIDS and this measuring issue was identified as a subscale of the "personal attitude towards AIDS" scale developed by Snell *et al.* (2001).

D) Condom and Condom Use

Some other possible factor that guide people's attitude towards AIDS could be their attitude towards condom and condom use. Although the use of condom is the cheapest and most effective form of protection against AIDS during sexual contact (Stine, 2003), in many settings condoms are still unfamiliar and men are reluctant to use them (Holmes, 2003). Smith (2001) also agreed with the above idea and said that though condoms are a highly effective preventive method when used correctly and consistently, many people fail to use them or don't use it at all. The findings of the study conducted by Kaisler (1997) cited in Stine (2003) showed " men, especially teenage males, don't use condom mostly because of embarrassment: buying the condom, talking about the condom with their sexual partner, ..., and the reduction of sexual pleasure." Beyond these reasons some believed that condoms don't prevent HIV/AIDS and often associate them with infidelity and immoral behaviors (Holmes, 2003) which contributed for the development of negative attitudes towards condom (Potsonen & Kontula, 1999). Another barrier to condom use among teens according to Smith (2001) is that "they often don't plan for sex or didn't perceive themselves to be at risk for diseases if they only have a single sex partner at any given time."

Therefore, as HIV/AIDS is a serious problem and condom is the cheapest and most effective form of protection against AIDS during sexual contact (Stine, 2003), individuals attitude towards HIV/AIDS can be determined based on their attitude towards condom. This is the reason why, according to Holmes (2003), many young people have been willing to adopt the use of condom to protect themselves against HIV. According to Finkelstein & Brannick (2000) cited in McCabe (2002)

Individuals attitude towards condom can be measured by looking at how comfortable they are in discussing condoms, whether or not they believed condoms would interfere with the spontaneity of the moment, and whether or not condom reduce physical sensation.

Other indicators of individuals positive attitude towards condom according to McCabe (2002) are the believe that condoms are easy to use, and their dedication to use condom regardless of the date's and feelings about condom.

E) Close-mindedness and Fear of sex

Fear of sex and close-mindedness about AIDS are two mostly contrasting issues, which could be considered in understanding individuals' attitude about AIDS.

Although the fear an individual developed towards HIV/AIDS is sometimes a challenge by itself, it could be used as precaution whenever it is accompanied by fear of sex. If we look at individuals who have sufficient knowledge about AIDS and perceived positive attitude towards it, according to Penzel (n. d.) " they no longer feel as free to have unprotected or casual sex." This is an indicator of the fear individuals have about HIV/AIDS through their sexual practices and most importantly the relationship between individuals attitude towards HIV/AIDS and the fear they have towards sex.

Therefore, as the fear an individual developed towards sex inline with HIV/AIDS has its own profound influence upon the development of safer sex practices, limiting sexual partner or choosing abstinence as their life style, according to Herlitz and Steel (2000) it has profound influence in

decreasing the rates of sexually transmitted infections including HIV/AIDS. As a result, individuals' attitude towards HIV/AIDS could be assessed through the fear they exhibited towards sex and AIDS.

On the other hand, there are individuals who don't exhibit fear, deliberately forgets the existence of HIV/AIDS and as a result practice unprotected sexual activities, consider themselves as free from the crisis of HIV/AIDS, believed that AIDS means death, associated HIV/AIDS with immoral activity, believe that living with HIV/AIDS is impossible, and AIDS don't catch children. In most cases, these individuals are in a state of activating the HIV/AIDS epidemic and can be considered as having denial and/or close-minded approach towards HIV/AIDS.

Therefore, denial and/or close-mindedness can be used as one measuring issue from which inferences about individuals attitude towards HIV/AIDS can be made. Moreover, this measuring issue was identified as a subscale in the Snell *et al.* (2001) "personal attitude about AIDS" scale.

F) HIV/AIDS Related Discussions

Although media campaigns concerning AIDS have been shown to have impacts on knowledge about illness and the way in which it is transmitted, they seem to have little impact on attitudes or behavior. According to Phillips (1989) cited in Lalljiee & Palmer (2001) "one reason for this might be that the development of relevant behavior depends not only on information itself but also the evaluation of such information. " this is to say that instead of involving as a passive reception of the evaluation of the campaigners, these evaluations are likely to be examined and assessed in discussing with others. Therefore, discussing HIV/AIDS related information with others could be considered as a means of intervention and prevention mechanism and participating in such discussions can be considered as indicator of attitudinal change.

In general terms Featinger (1954) cited in Lalljiee & Palmer (2001) pointed out that "informal societal communications are important for establishing the subjective validity of the person's beliefs and attitude." And more specifically, the report presented by the surgeon general of the United States (1986) cited in Lalljiee & Palmer (2001) stressed on the importance of talking about AIDS and related issues. The report encouraged the discussion of a range of issues concerning sexual practices that have traditionally been regarded as private, intimate matters. Moreover, it was hopped that if people talked more openly about these matters, potential sexual partners would be more likely to discuss their sexual history and that such talk would facilitate the adoption of safer sex practices.

Evidences gathered by Cline *et al.* (1992), indicated that people who had talked to their partners about safer sex or general AIDS topics were more likely to interact with people with AIDS and have more positive attitudes towards condom use. Therefore, according to Lalljiee & Palmer (2001) " there is some relationship between talk and attitude." And discussion about HIV/AIDS can be used as a measuring issue of attitude towards HIV/AIDS.

1.1.6 HIV/AIDS Attitude Scales

As instruments are usually prepared for sale, it was really difficult to have full descriptions of an instrument. Therefore, based on the available abstracts of instruments developed and validated to measure individuals (university students) attitude towards AIDS, a summary of scales is presented in table-2.

Table 2. HIV/AIDS Attitude Scales

Title/ Author	Item collection & Development	Validation of the Instrument	Reliability
Development of an Instrument to Measure Attitude towards AIDS Shrum *et al.* (1989)	67 items determined by an expert to have content validity were randomly ordered and administered to 164 students. 54 items that correlated significantly ($p < 0.001$) with the total attitude score were retained.	The revised scale was administered to 135 voluntary students. Factor analysis revealed three factors explaining approximately 45% of the variance. The three factors were proximity with people with AIDS, moral issues & social welfare issues.	0.96
Personal Attitude about AIDS Snell *et al.* (2001)	—	20 items were factor analyzed and five separate factors with eigenvalue greater than one were identified. The desire to avoid those afflicted with AIDS, AIDS was not perceived as self relevant, close-minded approach about AIDS, AIDS is being exaggerated and AIDS is a moral punishment were the five factors identified. All these subscales were positively correlated with each other.	The range of the reliability for the five factors identified was 0.72 - 0.87
A Scale of Attitude towards AIDS: a psychometric analysis Moriya *et al.* (1994)	- 129 statements, which related to the causes of the disease, knowledge about AIDS and evaluation of the carrier, were collected. - Content validation was made and 18 items were dropped. - 77 out of 111 items represented significant difference between two groups (78 military persons and 75 students) were retained. - The intercorrelation of the 77-items were calculated and were significant ($p < 0.001$)	-The 77-items were subjected to factorial analysis which yield 28 factors based on the Kaiser criteria of eigenvalue greater than one. - Item sub-categories were made using t-test	The correlation coefficient between the scores obtained from responses of even and odd numbered items was 0.81 and that corrected by the Spearman-Brown formula was 0.90.
The Development and Reliability of the Attitude towards AIDS Scale Goh (1993)	—	Content validity method was used to develop this scale for college students	High internal consistency and test-retest reliability

1. 2 SIGNIFICANCE OF THE STUDY

The result of this study will help researchers, who want to study university students HIV/AIDS attitude, to have a reliable and valid measuring instrument, which is developed with a consideration of the demographic characteristics of the population considered in their study. As a result, time required to conduct the study will be reduced and the validity of their research findings will increase. This increment in the validity of research findings in turn helps both governmental and non-governmental organizations, working on HIV/AIDS, to identify proper way(s) & allocate sufficient amount of money in combating HIV/AIDS. Moreover, it initiates measurement experts and students to evaluate existing measuring instruments (scales) and to develop and validate similar psychological measuring instruments (scales) based on our own context.

1. 3 STATEMENT OF THE PROBLEM

Although several studies found high level of empathy, tolerance, acceptance, & positive attitude towards AIDS or person with AIDS (Serovich and Greene, 1977 and Villarvuel *et al.*, 1998 cited in Uwalaka and Matsuo, 2002; Robilland, 2001 and Uwalaka and Matsuo, 2002), others showed neutral, unfavorable, or unsympathetic attitudes towards AIDS or persons with AIDS (Cardueci *et al.*, 1995, Katz *et al.*, 1995, & konde-Lule, 1998 cited in Uwalaka and Matsuo; and Tavoosi *et al.*, 2004). A possible explanation, according to Uwalaka and Matsuo (2002), for the variance in findings among studies is demographic characteristics such as nationality, age, sex, religion, ethnicity, and marital status. Supporting the above explanation, the finding of the study conducted by Peltzer *et al.* (2004) in USA, India and South Africa showed the influence of the

demographic characteristics on attitude towards HIV/AIDS testing and people living with HIV/AIDS. The finding reported that:

> *American students had much more positive attitude towards HIV testing than South African and Indian students. Regression analysis for the Indian students identified blaming, irritation, and negative attitudes towards homosexual as independent predictors of readiness to engage in personal contact with persons with AIDS, while the regression analysis for both South African and American students identified pits and irritation as independent predictors of contact readiness with persons with AIDS.*

The observed differences among students attitude towards HIV testing and readiness to contact with persons with AIDS could be due to the demographic characteristics described above; especially nationality, religion and ethnicity. Therefore, as the demographic characteristics have an influence up on individuals attitude, it is advisable that every sector of a nation should have its own scales that could measure every aspect of individuals psychological constructs including attitude towards AIDS with respect to the demographic characteristics mentioned above.

Although some studies (Zenabu, 2003 & Yayeh *et al.*, 2003) have been conducted in our country to measure the attitude of some specific groups of the society towards AIDS, the validity and reliability of the measuring instruments used were questionable. This is because, for example, Yayeh *et al.* used the already existing exotic measuring instrument that was simply translated in to Amharic. In their own words "the questionnaire was translated in to Amharic and administered." It is due to the findings of these kinds of researches that implemented an instrument where at least its reliability was not checked with a consideration of the group under

study that lead the Ministry of Health to reach at some what a wrong conclusion & as a result the intervention and prevention programs implemented could not contribute for reducing and controlling the pandemic. The best illustration for this is the latest report disclosed by the UN, which stated "over 25,000 Ethiopians are infected each week by HIV/AIDS" (Dangachew, 2005). One possible reason for the increment of infected citizens could be the intervention and prevention programs implemented, which is most likely supported by research findings and recommendations where most measuring instruments used in these researches were exotic and implemented after simple translation. Another reason could be, generalizing research findings and recommendations undertaken for a specific group. For example, if teaching about HIV/AIDS through coffee ceremony discussion is suggested by a research conducted on women, the findings and recommendations of this research should be delimited only to the group specified unless and otherwise other findings support and suggest the importance of the method for other groups.

Therefore, we need to have a standardized measuring instrument for the psychological constructs attitude towards HIV/AIDS with a consideration of our own demographic characteristics so as to make it easily available, have been primarily checked for its reliability and validity and as a result appropriate intervention and prevention programs can be designed and the epidemic can be reduced or controlled. Therefore, as HIV/AIDS is a sensitive issue in our society now a days, the development and validation of an attitude towards HIV/AIDS scale has got attention.

This instrument development and validation is undertaken on university students for at least two important reasons.

i) While this group is sexually active and is with in the risk age group, they are just beginning to experience self-control and to determine on issues (including HIV/AIDS) surrounding them (with out the involvement of their family members). And,

ii) It is the substitute work force that the nation invests on and really need to deserve special attention and privilege. Moreover, universities are one of the institutions in which almost all ethnic & religion groups of the nation can be easily addressed.

1.4 PURPOSE OF THE STUDY

The purpose of this study is to develop and validate an HIV/AIDS attitude scale for university students following the appropriate development and validation techniques.

1.5 DELIMITATION OF THE STUDY

The HIV/AIDS attitude scale development and validation was delimited

i) to undergraduate regular students of Addis Ababa university.

ii) to seven selected indicators (measuring issues) of individuals' attitude towards HIV/AIDS.

iii) to an internal consistency reliability check of chronbach alpha (alpha coefficient) and construct validity through principal component analysis and correlation with the "Mehrabian depression" and "Personal Attitude about AIDS" Scales.

1.6 DEFINITION OF IMPORTANT TERM(S)

Development refers to all the activities prior to validating the scale. That is, all activities from item collection to item selection of the scale.

HIV/AIDS refers to both the virus and HIV related illnesses.

CHAPTER TWO

METHODOLOGY

2.1 POPULATION AND SAMPLING

As one can't study attitude of individuals towards a specific attitude object prior to their direct or indirect exposure to the attitude object, university students (regular undergraduate students of the Addis Ababa University, AAU) were considered as research participants of this study hoping that they have sufficient information access (through Newspapers, Magazines, Radio, Television…) so as to have an attitude towards HIV/AIDS. Moreover, they are under the risk age bracket.

The representative sample used in this study was selected based on stratified random sampling. The strata considered in the study were faculty/college, year level and sex. Fourteen faculties/colleges (Social Science, Business & Economics, Science, Law, Technology, Education, Medicine, Pharmacy, Language Studies, Informatics, Veterinary Medicine, Yared Music School, Fine Art & Design, & Commerce), five-year levels (1^{st} -year, 2^{nd} -year, 3^{rd} -year, 4^{th} -year & above the 4^{th} -year) and sex (male & female) were considered in implementing the stratified random sampling. See appendix- D for details. The sample distribution (appendix-D) was prepared based on the three strata following the steps described below.

1. The percentage of the population for each college/faculty was calculated and the 400 samples considered in this study were distributed to each college/faculty based on their calculated percentage on the population.
2. The percentage of the population in each sex group for each college/faculty were calculated and based on their percentage the sample allocated for the college/faculty were distributed to their respective sex group.
3. Then at last, the percentage of the population for each year level of each sex group & college/faculty were calculated and based on their percentage the samples allocated to each sex group were distributed to their respective year levels.

It should be noted here that minimum percentage difference between the population and the sample could be observed due to the correction made to remove the decimal points (fractional values) used as representation of human beings.

Out of 400 students who participated in responding the questionnaire, 357 responded to all of the items. When the variance of each individual's score for each subscale were calculated, the variance of 81 subjects were found to be very large (≥ 5.0 while the maximum variance expected is 7.14) for at least four of the subscales. Considering this deviation as an indicator of inconsistent responding to somewhat homogeneous statements (see appendix-G) of the respective subscales, these 81 subjects were excluded from the sample and the remaining 276 respondents were eligible for the study. But, as the sampling technique implemented was stratified random sampling and the representativeness of the sample could be questionable, 150 more questionnaires were administered with a consideration of the sex, college/faculty and the year level of the excluded subjects. Of these 150 questionnaires, 86 of the 121 returned were

found to be usable and included in the study. This increased the cases eligible for validating the HIV/AIDS attitude (HAA) scale to be 362 (276 + 86).

Two groups, each having 150 students, responded to one of the two validation scales (personal attitude about AIDS scale (Snell *et al.,* 2001) or Mehrabian Depression Scales (Mehrabian, 1998)), which were required for checking the convergent and discriminant validity of the HIV/AIDS attitude scale.

2.2 VALIDATION SCALES

A) Mehrabian Depression Scale. According to Mehrabian (1998), depression is defined as "a generalized individual emotional predisposition to be gloomy, sad, depressed, bored, and hopeless." The Mehrabian depression scale, which has 20 items; very high internal consistency-reliability coefficient (0.95); and a correlation of 0.79 with the Zung depression scale, were used to check the discriminant validity (correlation of the instrument with measures of disinterest) of the HIV/AIDS attitude scale. In doing so, as Mehrabian stated, "If you are correlating depression scores with other variables, you won't need norms -- you can work, simply, with the total unstandardized or raw scores." Therefore, the raw scores of this scale were correlated with the HIV/AIDS attitude scale. See Appendix – C.

B) "Personal Attitude about AIDS" Scale. It was a subscale of the Snell's *et al.* (2001) "College Students Stereotypes about AIDS" questionnaire, which had 20 items with in five subscales (the desire to *avoid AIDS victims, AIDS was not perceived as self-relevant, a close mindedness approach to AIDS, the issue of AIDS is being exaggerated and the notion that AIDS*

is a moral punishment). Since it measures the same construct (attitude about AIDS) on university students, it was expected to have strong relationship with the HIV/AIDS attitude scale. All subscales of the aforementioned scale had sufficiently high internal consistency (alphas ranging from 0.72 to 0.87) and were applicable for researches to be conducted with a consideration of university students. Five-point (-2 = disagree, -1 = slightly disagree, 0 = neither agree nor disagree, 1 = slightly agree, 2 = agree) Likert-type scale was used in responding each item of the scale. Only 19 of the 20-items of the subscales of this scale were considered to validate the HAA scale. The item excluded was "living in San Francisco would increase anyone's chance of getting AIDS." See Appendix- B.

2.3. PROCEDURE OF DATA ANALYSIS

In developing the HAA scale, two administrations were made. The purpose of the first administration was to identify sentence(s) or word(s) that respondents might not understand in items of the questionnaire and to collect comments on the face validity of each subscale and the items as a whole. The purpose of the second administration, on the other hand, was to test the reliability, inter-item correlation, item-subscale correlation & communality of the items in the subscales so as to select relevant items of each subscale. These analysis and selection were done from the data of the validation study. Using the outputs of the analysis, item-subscale correlation greater than the cut of point (0.4), high communality and items that didn't influence the reliability of its subscale were retained and subjected to the validation study using principal component analysis (PCA) and the correlation of the scale and its components with the validation measures.

A) Pilot Study: First Administration

Based on the selected measuring issues of attitude towards HIV/AIDS, items were written and adopted from available AIDS attitude scales especially from Snell *et al.* (2001). The measuring issues considered were: confidentiality, discrimination, attitude towards condom, attitude towards counseling and testing, readiness for discussion about AIDS, fear of sex and close-mindedness or denial.

Two instructors of Addis Ababa University (AAU) from the Department of Psychology were asked to evaluate how well each of the items tapped with the concept of the respective subscales and the comprehensiveness of the item pool as a whole. At the same time, 36-students of AAU from different disciplines, sex groups and year level were invited to identify sentence(s) or word(s) from the questionnaire that they might not understand.

Items rated as not relevant or needed major revision, based on the suggestions provided by both instructors and students, were rejected. Of the 63 items submitted to both the instructors and the students, 14 items were discarded, 4 items were rewritten and 7 new items were incorporated in the scale.

A modified scale, which had 7 subscales (8 items each), was prepared to be responded by the representative samples using a 6-point (6-*very strongly agree, 5-strongly agree, 4-agree, 3-disagree, 2-strongly disagree, and 1-very strongly disagree*) Likert-type scale. Since some respondents might not have sexual partner, an instruction that asked respondents to imagine how they would feel under the circumstances described in the item were included.

B) Item Selection and Scale Validation: Second Administration

27-items (4 items for each of the confidentiality, fear of sex and discussion subscales and 5 items for each of the close-mindedness, attitude towards condom and condom use and discrimination subscales) of the HIV/AIDS attitude scale were selected using the item analysis techniques such as item-subscale correlation, reliability if item deleted, communality of items and inter subscale-correlations. The counseling and testing subscale was discarded with its four items, as its correlation with other subscales was not significant and it has poor correlation with the total score. Principal component analysis and correlation of the subscales containing the selected items with measures of interest and disinterest were implemented to check the construct validity of the HAA-scale.

CHAPTER THREE

RESULT

3.1 SCALE CONSTRUCTION

The main purpose of this study was to develop and validate an instrument that measures university students HIV/AIDS attitude (HAA). In developing the HAA scale, the first step was identifying observable measuring issues (subscales) that could help to determine individuals' HAA. Statements (items) that deal about the identified measuring issues were written and adopted. These items were subject to item analysis techniques and appropriate items based on the analysis techniques were selected and scale validation based on the selected items was undertaken.

3.1.1 ITEM ANALYSIS AND SELECTION

For all items of each subscale the mean (M), median (Md), item-subscale correlation (r_{is}), inter-item correlation, alpha if item deleted (α_{id}) and communality (h^2) were computed to identify items to be considered in validating the HAA scale. For eight items of each subscale including the row total score a 9 X 9 matrix was constructed. The correlation between each item and total score of the respective subscales was utilized as indicator of item discrimination power. Excluding a row and column containing item-total correlation, an inter-item correlation (8 X 8) matrix of each subscale was obtained (see appendix-G). These matrices were used for checking the homogeneity and communality of items in their respective subscales.

Table-$3_{a\&b}$ presents the outputs of item analysis (mean, median, the difference of the mean & median, item-subscale correlation, α if item delete & communality) where items are arranged in decreasing order of their item-subscale correlation coefficients (r_{is}).

Table 3a. Item Analysis Information of the Close-mindedness, Condom & Confidentiality Subscales

Subscale	*Item No.*	*M*	*Md*	*Md-M*	r_{is}	α_{id}	h^2
***CLOSEMINDEDNESS*:** This subscale contained items that deal with denial about the existence of HIV/AIDS and related issues. **Alpha = .7456**	20	4.0359	4.00	-0.0359	.6289	.6833	.599
	41	3.7956	4.00	0.2044	.5743	.6939	.555
	6	4.1088	4.00	-0.1088	.5131	.7091	.488
	55	4.2044	4.00	-0.2044	.5034	.7113	.468
	34	4.3177	4.00	-0.3177	.4353	.7204	.363
	48	4.2182	5.00	0.7818	.3540	.7382	.226
	27	4.3978	5.00	0.6022	.3400	.7386	.228
	13	5.0110	6.00	0.9890	.2726	.7556	.153
COMDOM: This subscale contained items that are prepared to measure the perceived attitude of students towards condom and condom use. **Alpha = .7612**	42	4.2514	4.00	-0.2514	.5878	.7125	.601
	49	4.2227	4.00	-0.2227	.5578	.7179	.593
	35	4.4309	4.00	-0.4309	.5339	.7253	.620
	28	4.3232	4.00	-0.3232	.5215	.7239	.513
	14	3.7586	4.00	0.2414	.4755	.7336	.498
	56	4.1961	4.00	-0.1961	.3850	.7486	.502
	21	3.6077	4.00	0.3923	.3363	.7582	.400
	7	3.8481	4.00	0.1519	.3181	.7640	.450
CONFIDENTIALITY: statements of this subscale are prepared to measure students' attitude in securing somebody else's HIV/AIDS test status and their general attitude towards confidentiality of test results. **Alpha = .7921**	25	4.3867	4.00	-0.3867	.6337	.7462	.580
	32	3.6768	4.00	0.3232	.5730	.7577	.513
	46	4.4282	4.00	-0.4284	.5437	.7618	.473
	39	2.8950	3.00	0.1050	.4650	.7743	.367
	11	5.3564	5.00	-0.3564	.4627	.7746	.364
	53	4.8674	4.00	-0.8674	.4608	.7750	.354
	4	4.7514	5.00	0.2486	.4580	.7763	.297
	18	4.0801	4.00	-0.0801	.3960	.7848	.280

Table 3b. Item Analysis Information of the Discussion, Fear of Sex, Discrimination & Counseling and Testing Subscales

Subscale	*Item No.*	*M*	*Md*	*Md-M*	r_{is}	α_{id}	h^2
DISCUSSION: The statements of this subscale emphasizes on individuals' feelings and reactions in discussing issues related to HIV/AIDS. **Alpha = .7307**	29	3.8757	4.00	0.1243	.5486	.6809	.522
	1	4.2707	4.00	-0.2707	.5399	.6831	.495
	22	3.5972	4.00	0.4028	.4876	.6898	.478
	50	3.8039	4.00	0.1907	.4642	.7001	.560
	8	5.5856	5.00	-0.5856	.4317	.7018	.459
	15	5.3398	6.00	0.6602	.3966	.7096	.345
	36	5.3729	6.00	0.6271	.3436	.7246	.340
	43	4.7403	5.00	0.2597	.2544	.7362	.719
FEAR of SEX: this scale contains statements that could address individuals' concern and fear of sexual partners and sexual activity, which could be activated due to HIV/AIDS. **Alpha = .6938**	10	4.2735	4.00	-0.2735	.5406	.6244	.538
	17	4.0994	4.00	-0.0994	.5202	.6325	.505
	24	3.7890	4.00	0.2110	.5078	.6339	.509
	3	4.1436	4.00	-0.1436	.4463	.6505	.427
	45	5.0967	4.00	-1.0967	.2913	.6876	.221
	52	4.8260	5.00	0.1740	.2913	.6876	.514
	31	4.6547	5.00	0.3453	.2337	.6954	.136
	38	3.4365	3.00	-0.4365	.0153	.7346	.960
DISCRIMINATION subscale contained statements, which are prepared to investigate students' attitude towards people living with HIV/AIDS. **Alpha = .8039**	19	4.1050	4.00	-0.1050	.7619	.7468	.730
	33	4.0497	4.00	-0.0497	.6110	.7674	.561
	5	4.2072	4.00	-0.2072	.6039	.7726	.547
	54	3.6575	4.00	0.3425	.5879	.7706	.516
	12	3.5249	4.00	0.4751	.5085	.7831	.417
	47	5.6878	6.00	0.3122	.4314	.7961	.329
	40	6.1934	7.00	0.8066	.4124	.7962	.306
	26	5.1298	5.00	-0.1298	.3028	.8170	.169
COUNSELING & TESTING subscale contained statements, which are designed to measure students' attitude towards HIV/AIDS related counseling and testing and other related issues. **Alpha = .7768**	37	3.5470	4.00	0.4530	.6270	.7321	.578
	30	3.8646	4.00	0.1354	.5759	.7347	.519
	16	3.5331	4.00	0.4669	.5286	.7450	.450
	2	3.6917	4.00	0.3083	.5061	.7480	.434
	44	5.9475	6.00	0.0525	.4386	.7606	.332
	9	5.3398	6.00	0.6602	.4197	.7637	.323
	23	5.0608	5.00	-0.0608	.4068	.7651	.302
	51	4.7486	4.00	-0.7486	.3754	.7693	.270

Items having mean values around 3.5 ((Max. scale value + Min. scale value)/2) (expected mean) would be desirable for a six-point scale (inferred from Desalegne, 1993). Those items which have mean value that deviates much from the expected mean (3.5) would be desirable if they have high ($\geq$ 0.70) item-subscale correlation (Desalegne, 1993). 18 items of seven subscales (item 4, 8, 9, 11, 13, 15, 23, 26, 31, 36, 40, 43, 44, 45, 47, 51, 52, & 53) have mean values that deviates more than one unit from the expected mean (3.5) and have an item-subscale correlation coefficient less than 0.5 (which could not be considered as high correlation coefficient).

The item-subscale correlation (r_{is}) as discrimination index was computed between the rating of each item and the total score of their respective subscales (Oppenheim, 1966 cited in Desalegne, 1993). Although correlation coefficient values as small as 0.124 are significant ($P < .05$) for a sample size of 362 and Trochim (2002) suggested to eliminate all items with item-subscale correlation coefficient less than 0.3, it is common to specify greater values as a cut off score so as to increase the extent to which an item measures the same trait as their respective subscales. Therefore, correlation coefficient value of 0.4 was considered as a cut off point so as to increase the quality of items in each subscale. As it can be seen from column-6 of table-$3_{a\&b}$, 16 items (item 7, 13, 15, 18, 21, 26, 27, 31, 36, 38, 43, 45, 48, 51, 52, & 56) have an item- subscale total correlation value below 0.4. Item number 38 was the only item that has poor inter-item correlation with items of its subscale (fear of sex) (see appendix-G).

The difference between the mean and median were considered as indicators of whether the item score distribution deviates from normality or not. In doing so, items 8, 9, 13, 15, 27, 36, 40, 45, 48, 51 & 53 showed relatively large differences between their mean and median (a difference of

more than 0.5) though there is no specified cut off point. On the other hand, as all of these items were poor in either their item-subscale correlation and/or the deviation of the mean of item scores from the expected mean value (3.5), these items were identified prior to the information of their mean-median difference.

Communality based on principal component analysis was also implemented for item selection with in subscales. Although there is no uniform consensus on the cut off point for communality, 0.3 was set as a cut off point (Kline, 1994) though no new item is identified (4, 13, 18, 26, 27, 31, 45, 48, 51).

Based on the above criteria 25 items (4, 7, 8, 9, 11, 13, 15, 18, 21, 23, 26, 27, 31, 36, 38, 40, 43, 44, 45, 47, 48, 51, 52, 53 & 56) were dropped from their respective subscales. And, the subscales containing the remaining items were subject to statistical analysis of skewness, kurtosis and reliability, and it is presented in table-4 below.

Table 4. Reliability, Skewness, and Kurtosis of Subscales Containing Selected Items

Subscales	No. of items	α-coef.	Skewness	SE of skew	Kurtosis	SE of kurtosis
Discrimination	5	.81	-.837	.128	.798	.256
Close-mindedness	5	.77	-.962	.128	1.256	.256
Condom	5	.76	-.659	.128	.396	.256
Counseling & test.	4	.75	-.322	.128	-.089	.256
Confidentiality	4	.74	.140	.128	-.151	.256
Fear of sex	4	.72	-.153	.128	.436	.256
Discussion	4	.70	-.711	.128	.073	.256

After undertaking the item analysis 31 items (5-items for each of the discrimination, close-mindedness, and condom subscales and 4-items for each of the confidentiality, discussion, counseling and testing and fear of sex subscales) were identified for the seven subscales. Four

subscales have a Chronbach alpha reliability greater than or equal to 0.75 though the reliability of the subscales in general ranged from 0.70 to 0.81.

While defining skewness & kurtosis, SPSS Version 10.0 recommended that skewness and kurtosis values greater than twice their standard error (2.56 and 5.12 respectively for this particular case) are taken as indicators of asymmetry (departure from symmetry). Positive kurtosis value indicates that the observation cluster more and have longer tail than the normal distribution (platykurtic) whereas negative kurtosis values implies that the observation clusters less and have short tails (leptokurtic). And, skewness values greater than zero indicates that the distribution has a long right tail (positively skewed) and if it is less than zero, the distribution has a long left tail (negatively skewed).

Based on the information above, three subscales (counseling and testing, confidentiality and fear of sex) indicated almost perfect normal distribution; two subscales (Discrimination and close-mindedness) showed both skewed and kurtosis distribution; and the other two subscales (condom and discussion) are skewed only. All observed skewnesses are negative (negatively skewed) and the distribution of the two observed Kurtosis indicated that they are platykurtic. Moreover, the nature of the distribution of all subscales have been checked using graphical presentation (histograms) (see appendix H) and it is found to be consistent with the result presented on table-4.

Table 5. Inter-subscale and Subscale-total Correlation Matrix

	1	2	3	4	5	6	7	Total
Close-Mindedness (1)	1.000	.679**	.692*	.728**	.683**	.674**	-.009	.848**
Condom (2)	.679**	1.000	.700**	.715**	.763**	.659**	-.050	.846**
Confidentiality (3)	.692**	.700**	1.000	.730**	.717**	.609**	-.006	.853**
Discussion (4)	.728**	.715**	.730**	1.000	.672**	.703**	-.076	.848**
Fear of sex (5)	.683**	.763**	.717**	.672**	1.000	.667**	-.031	.858**
Stigma & disc. (6)	.674**	.659**	.609**	.703**	.667**	1.000	-.038	.822**
Counseling & testing (7)	-.009	-.050	-.006	-.076	-.031	-.038	1.000	.157*
Total	.848**	.846**	.853**	.848**	.858**	.822**	.157*	1.000

**** Significant at 0.01 level**

*** Significant at 0.05 level**

Though most of the subscales were not found to be normally distributed (table-4), as the subscale-total correlation coefficients (row- 9 of table-5) of most subscales (except the counseling and testing subscale) were above 0.82, these subscales discriminate subjects best and need to be retained. But, the counseling and testing subscale, which is negatively & poorly correlated with other subscales (see row-8 of table-5) and relatively poorly correlated with the total score, need to be excluded with the four items contained in it. Therefore, Validation of the HAA scale is going to be under taken using 27 items of the six subscales using PCA and correlating it with the validation measures.

3.2 CONSTRUCT VALIDITY

3.2.1 FACTOR ANALYSIS

After omitting 29-items, the PCA is used to analyze the 27 items and yielded 6-significant components using Kaiser's component selection technique of eignevalue greater than one and the scree-test (see fig. 2). The item-component correlation coefficients (r_{ic}) for these items were calculated and substantial increment has been noticed, which indicates the augmentation of the items discrimination power. Although, according to Johnston (1986) cited in Desalegne (1993),

the larger the loading of the variable on the component explains the component best, since the six components identified are exactly the same as the subscales or measuring issues identified before, labeling was made based on the name of the subscales (measuring issues) and descriptions about the components identified are the same as the respective measuring issues.

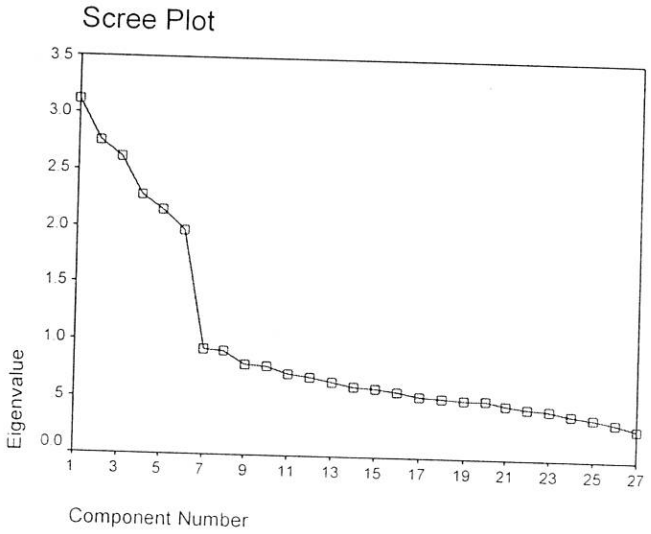

Figure 2. A scree-plot for components of the selected items

The items, varimax loading (VL), communality (h^2) and item-component correlation (r_{ic}) of the six components identified & item-higher order component (item-total) correlation (r_{ih}) are presented in table-6a-c below.

Table 6a. Varimax Loading (VL), Communality (h^2), Item-component Correlation (r_{ic}) & Item-high-order Component Correlation (r_{ih}) for the Discrimination and Close-mindedness subscales

Factors and Items	VL	h^2	r_{ic}	r_{ih}
Factor 1: Discrimination				
19 - A friend living with AIDS is still a friend.	.845	.715	.833	.349
5 - I do not want to talk or interact with any one with AIDS.	.775	.610	.752	.270
33 - Organizations should have the right to fire employees if they have AIDS	.758	.587	.750	.272
54 - I treat every one the same whether they live with AIDS or not.	.740	.555	.758	.296
12 - Someone with AIDS is just like me.	.678	.467	.715	.265
Eigenvalue = 2.955 % of variance = 10.944				
Factor 2: close mindedness				
41 - The AIDS crisis is totally removed from me.	.779	.614	.772	.367
20 - Living with AIDS is impossible.	.749	.579	.755	.306
6 - AIDS do not catch children.	.740	.561	.719	.319
55 - AIDS is not my problem.	.723	.535	.705	.269
34 - I will never get AIDS.	.636	.428	.682	.365
Eigenvalue = 2.690 % of variance = 9.963				

Table 6b. Varimax Loading (VL), Communality (h^2), Item-component Correlation (r_{ic}) & Item-high-order Component Correlation (r_{ih}) for the Condom & Confidentiality Subscales

Factors and Items	VL	h^2	r_{ic}	r_{ih}
Factor 3: attitude towards condom & condom use				
28 - I do not like the idea of using condoms.	.756	.577	.778	.264
49 - If I am not sure of my partner's feeling about using condoms, I will not suggest using it.	.745	.562	.568	.295
42 - I feel confident in my ability to suggest using condoms with a new partner.	.726	.538	.759	.270
35 - If my partner and I fail in using condom, I will not try using it again.	.685	.475	.660	.253
14 - I feel confident in my ability to discuss condom usage with any partner I may have.	.653	.450	.708	.308
Eigenvalue = 2.595 % of variance = 9.650				
Factor 4: confidentiality				
25 - Employees should have a right to know if any of their co-workers have AIDS.	.778	.611	.779	.358
46 - Hospitals should have the right to test all patients for AIDS with out their consent.	.768	.602	.771	.348
32 - Organizations should have a right to know AIDS test results of their employees.	.765	.592	.761	.299
39 - People with AIDS must educate others about AIDS.	.670	.468	.683	.326
Eigenvalue = 2.282 % of variance = 8.453				

Table 6c. Varimax Loading (VL), Communality (h^2), Item-component Correlation (r_{ic}) & Item-high-order Component Correlation (r_{ih}) for the Fear of Sex and Discussion Subscales

Factors and Items	VL	h^2	r_{ic}	r_{ih}
Factor 5: Fear of Sex				
17 - I feel scared when I think about catching AIDS from a sexual partner.	.767	.592	.748	.332
24 - Because of AIDS, I feel nervous about initiating sexual relations.	.742	.562	.746	.261
10 - I am afraid of getting AIDS.	.723	543	.741	.385
3 - I am scared of AIDS whenever I think about sexual relationship.	.704	.512	.712	.277
Eigenvalue = 2.154 % of variance = 8.128				
Factor 6: Discussion				
22 - I feel uncomfortable whenever I discuss about AIDS.	.762	.589	.784	.233
29 - I do not want to discuss about AIDS unless and otherwise my sexual partner wanted to.	.709	.507	.715	.189
50 - I am always willing to discuss the issue of AIDS with any body.	.710	.515	.684	.135
1 - I do not want to hear any thing in relation to HIV/AIDS.	.713	.526	.723	.153
Eigenvalue = 2.154 % of variance = 7.979				

3.2.1.1 HIGHER-ORDER COMPONENT

Since table-5 showed the presence of strong positive relationship between the six subscales (components), the inter-component correlation matrix was subject to another round of PCA to see whether higher-order component (component of the components) could be identified. Such components could represent a broader level of generalizability that could further clarify the construct being measured (Gorsuch, 1983 cited in Berger, *et al.* 2001). Using the PCA, one component solution emerged (table-7). This indicated that all the components could measure a single construct.

Table 7. PCA of Subscales

	h^2	Loading
CLOSEMINDEDNES	.741	.861
CONDOM	.763	.873
CONFIDENCIALITY	.740	.861
DISCUSSION	.774	.880
FEAR of SEX	.758	.870
DISCRIMINATION	.690	.831
% of variance explained		74.429

Although, following the higher-order component identification a final phase of item reduction could occur, items (all items) having item-higher order component correlation less than 0.4 were retained since their loading and correlation with their respective component were large (greater than 0.6 and 0.5 respectively). This resulted in a final 27-item of the HAA scale.

3.2.2 CORRELATION WITH VALIDATION MEASURES

In addition to PCA, construct validity of the HAA scale was also assessed by examining the relationship of the instrument with two selected measures. Measures of depression (Mehrabian, 1998) and personal attitude about AIDS (Snell *et al*, 2001). Table-8 presents the correlation between scores on these measures and the HAA scale and its subscales (components).

It is important to note here that taking in to consideration of greater over all scores as indicators of positive attitude towards HIV/AIDS, subscales such as close-mindedness and discrimination were reverse scored. That is, the higher the score in these subscales, the smaller they discriminate people living with HIV/AIDS, and close-minded about HIV/AIDS and the higher their attitude about HIV/AIDS.

Table 8. Correlation of the HAA Scale with the Depression and Personal Attitude about AIDS Scales

SCALES	No. of items	Personal attitude about AIDS *19-items* *N=148*	Depression *20-items* *N=146*	Reliability α-coefficient
Discussion	4	.389*	.061	0.70
Fear of sex	4	.799*	.112	0.72
Confidentiality	4	.452*	.138	0.74
Condom	5	.541*	.096	0.76
Close-mindedness	5	.528*	.041	0.77
Discrimination	5	.411*	.018	0.81
Total	27	.746*	.080	0.93**

** Significant at the 0.01 level (2-tailed)*
*** α- value using subscale scores*

Though it was positive, the depression score correlated without statistical significance with both the total HAA score and all its subscale scores. Personal attitude about AIDS was associated with statistical significance with over-all HAA as well as to each of the subscales.

3.3 Development of Subscale and Total Scores and Interpretations

Using some appropriate item analysis techniques, items that are positively and significantly correlated with each other and have good discrimination ability among subjects of the study were identified and retained. Once items to be incorporated in each subscale and those items that needed to be reverse scored were identified (see table-9), subscale scores were computed by adding the response scores of each item with in the subscales. Agreement with the positively worded or positively-scored items indicates higher scores and lower score for negatively scored statements (items). Here are the lists of positively and negatively scored items in each of the subscale of the HAA scale.

Table 9. Positively and Negatively-scored Items of each Subscale of the HAA Scale

Subscale	Positive-scored items	Reverse-scored items
Close-mindedness	-	6, 20, 34, 41, 55
Condom & condom use	14, 42	28, 35, 49
Confidentiality	-	25, 32, 39, 46
Discussion	50	1, 22, 29
Fear of Sex	3, 10, 17, 24	-
Discrimination	12, 19, 54	5, 33
Total number of items	10	17

It can be noticed from table-9 that due to the nature of the subscales, some subscales have either totally positively or negatively scored items. But the positively and negatively scored items of the HAA scale as a whole are in a good proportion so that it can minimize "response bias" (i.e., the tendency of some people to agree with most statements or, alternatively, the tendency of others to disagree generally with any statement).

As the HAA scale tries to investigate individuals' attitude towards HIV/AIDS through selected predictors (measuring issues) which later become components of the scale, regressional analysis were made to see the weight (coefficients) of each component in predicting attitude towards HIV/AIDS.

Table 10. Coefficients (B) of the Components of HAA Scale

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Predictors	B	Std. Error	Beta		
(Constant)	26.192	3.315		7.902	.000
Close-mindedness	.992	.050	.428	20.204	.000
Condom & condom use	.961	.056	.353	16.541	.000
Confidentiality	.988	.051	.409	19.264	.000
Discussion	.964	.068	.304	14.228	.000
Fear of Sex	.980	.053	.390	18.323	.000
Discrimination	.979	.047	.428	20.116	.000

Dependent Variable: HIV/AIDS Attitude
$R^2 = .841$

Since the weights (coefficients) of all components are almost equal to one (table-10), all components of HAA scale can be considered as having equal power in determining individuals' attitude about HIV/AIDS. As a result simple summation of the scores of the components could determine the total HIV/AIDS attitude score.

3.3.1 NORM

If one wants to know how each participant's HAA score compares with the rest of the population, then we need norms. The norm for the HAA scale is as follows:

MEAN = 141.2

STANDARD DEVIATION = 9.72

Then the formula to convert the total HAA raw scores to a Z scores is:

Z score = (total raw score – 141.2)/9.72

Once we know the Z score, we can use a statistical table and find the corresponding "percentile" score. Table-11 helps to interpret meanings of Z scores calculated as suggested above. Entries in each row of the table give equivalent values of a Z score, percentile score, and an interpretation of the meaning of the scores in that row.

Table 11. Percentile Score of Z Score Equivalents and Their Interpretations

Z Score	Percentile	Score Interpretation
3.0	99.87	Very extremely high
2.0	97.72	Extremely high
1.0	84.13	Moderately high
0.0	50.00	Average
-1.0	15.87	Moderately low
-2.0	2.28	Extremely low
-3.0	0.13	Very extremely low

Table-11 can be used to interpret the meaning of the total raw score you obtain when you test a participant. First, convert a participant's total HAA raw score to a Z score using the Z score formulas given above. Locate the number in the first column of Table-11 that is closest to the Z score you have computed and look over to the last column to assess its meaning.

CHAPTER FOUR

DISCUSSION

4.1 INTRODUCTION

As sexual intercourse is the main cause of HIV/AIDS and university students are with in sexually active period (age) that are experiencing self-management and taking decision on issues surrounding them, the threat of AIDS to this group needs great attention. Effective education about AIDS should be considered as one-way of preventing the spread of AIDS in this group. But, according to Snell *et al.* (2001) "one of the factors that may influence the effectiveness of any educational effort designed to prevent the spread of AIDS is the concern and attitude individuals have towards it." Therefore, individuals' attitude should be studied so as to identify & design the type and intensity of education the group needed. But, to measure the attitude of the group best, it is important to have an instrument that was developed and validated with a consideration of the demographic characteristics surrounding the group.

As a result, the goal of this study was to develop and initially validate a Likert type self-report measure designed to assess university students' attitude towards HIV/AIDS. The result of this measuring instrument development and validation strategy is best discussed in two headings:

- Item development, and
- Instrument validation

4.2. ITEM DEVELOPMENT

As attitude is a broad psychological construct which is difficult to be measured directly, the first step of item development was identifying some important measuring issues through which students' attitude towards HIV/AIDS can be measured. Therefore, though they are not perfectly independent of each other, seven measuring issues (subscales) were identified. These were attitude towards:

- discussing about HIV/AIDS related issues (discussion subscale).
- HIV/AIDS test results (confidentiality subscale).
- people living with HIV/AIDS (discrimination subscale).
- HIV/AIDS related counseling and testing (counseling & testing subscale).
- condom and condom use (condom subscale).
- sex because of HIV/AIDS (fear of sex subscale), and close-mindedness about HIV/AIDS (close-mindedness subscale).

63 items under these measuring issues were developed and subjected to face validity and clarity. Based on the comments collected from two instructors of AAU, department of psychology and 36 students of the university, 14 items were discarded; 4 items were rewritten; and 7 new items were added.

The questionnaire containing 56 items under 7-measuring issues (subscales) were administered to the samples identified using stratified random sampling technique. The strata considered were: year level, college/faculty and sex.

To validate the HIV/AIDS attitude scale, items were first selected using the mean, median, item-subscale correlation (r_{is}), inter-item correlation, alpha if item deleted (α_{id}) and communality (PCA).

Although items having mean value around the average of the maximum and minimum values ((6+1)/2 = 3.5) of a scale is suggested (inferred from Desalegne, 1993), those items whose mean value deviates one unit from the expected mean (with in the range of [2.5, 4.5]) were considered as relevant in this analysis. But 18-items were found to be out of the described range. Although these items need to have high item subscale correlation (discrimination power) to be retained in the validation scale (Desalegne, 1993), their item-subscale correlation were less than 0.5 (which couldn't be considered as high correlation coefficient).

Seven new items (not with in the 18-items) had an item-subscale correlation below the selected cut off point (0.4) though their means were with in the range specified. On the other hand, no new item was identified using the mean-median comparison, communality of the items and inter-item correlations. Therefore, 25 (18 + 7) of the 56-items were dropped from their respective subscales.

Once the appropriate items of each subscale have been identified, it was advisable to see at least the nature of the distributions and inter-subscale correlations of the subscales. Although some of the subscales were not found to be normally distributed, their subscale-total correlation indicated that they have good discrimination ability among subjects. Therefore, no subscale was rejected due to its distribution. But, the inter-subscale correlation exhibited that one subscale (attitude

towards counseling and testing) was correlated negatively and not significantly with all other subscales and relatively poorly correlated with the total score. One possible reason for the exhibited poor correlation could be the nature of the subscale. That is, counseling and testing is the only subscale identified as a measuring issue with a consideration of the clinical aspects & settings of attitude towards HIV/AIDS. Therefore, as all items of the counseling and testing subscale correlate significantly ($P < 0.01$) with each other (see appendix-G) and have internal consistency reliability of 0.75 (see table-4), the items of the subscale counseling & testing are homogeneous and need to be omitted with the subscale containing them. As a result, only six subscales containing 27-items were developed and prepared for validation.

4.3 SCALE VALIDATION

PCA was used to determine the underling dimensions (components) of the HAA-scale. PCA with the varimax rotation (which terminated at the 5^{th} iteration) identified six dimensions (components) (see appendix E) and one higher-order component.

Support for construct validity was provided by the finding that the identified components represent important dimensions which were considered as a measuring issue of students attitude towards HIV/AIDS in the literature: discrimination, close-mindedness, condom, confidentiality, fear of sex & discussion.

The discrimination component refers to the attitude individuals' have towards people living with HIV/AIDS. As reported in the literature, considering it as a measuring issue of HIV/AIDS attitude was crucial as the misconceptions about AIDS (KHPR, 2000) lead people living with HIV/AIDS to be socially isolated, fired form their jobs, driven from their homes and even

physically attacked (Herek, 1988 cited in Herek and Capitanio, 1992). Moreover, this component was identified by Snell *et al.* (2001).

The close-mindedness component, which refers to denying the existence of HIV/AIDS and related issues is usually happened, as discussed in the literature, when individuals believe that living with HIV/AIDS is impossible; they will never get AIDS; AIDS is not a problem; they will not be affected by the crises of AIDS; AIDS do not catch children and other related issues. This component was also identified by Snell *et al.* (2001).

The condom component refers to the perceived attitude individuals have towards condom and condom use. As the epidemic of HIV/AIDS is mainly through sexual contacts and condom is the cheapest and most effective form of protection against AIDS during sexual contacts (Stine, 2003), the condom component identified to measure individuals' attitude towards HIV/AIDS is crucial.

The confidentiality component refers to individuals' attitude in securing somebody else's HIV/AIDS test status and the general attitude towards test results. As individuals' attitude towards counseling and testing are usually determined by the confidentiality of test results (Princh *et al*, 1995) and the discrimination people living with HIV/AIDS experienced are a result of disclosing their test result, the confidentiality component identified is important in the study of individuals attitude towards HIV/AIDS.

The fear of sex component refers to the fear individuals' exhibited towards sexual activities and sexual partners, which could be activated due to HIV/AIDS. As the fear individuals' developed towards sexual activities inline with the fear towards HIV/AIDS is important for the development of safer sex practices; limiting sexual partner or choosing abstinence as their life style. As a result, this component is also vital in studying individuals' attitude towards HIV/AIDS.

The discussion component refers to individuals' feeling and reaction in discussing HIV/AIDS related issues. As described in the literature, if people talked more openly about HIV/AIDS, potential sexual partners would be more likely to discuss their sexual history and as a result it facilitates the adoption of safer sex practices. As evidences gathered by Cline *et al.* (1990), indicated that people who talked to their partners about safer sex or general AIDS topics were more likely to interact with people with AIDS and have more positive attitudes towards condom use. Moreover, according to Lalljiee & Palmer (2001) " there is positive relationship between talk and attitude." Therefore, the discussion component identified is important predictor of individuals' attitude towards HIV/AIDS.

As the six components identified have significant positive relationships (see table-5) with each other, higher order component analysis was undertaken. One higher order component, which can be named "attitude towards HIV/AIDS", was identified. As there is only one higher-order component, we can say that all subscales can together measure only one construct. Since the construct measured using the components (subscales) should be identified clearly, the

components (subscales) and the scale as a whole were correlated with two well-established and valid measures (the depression scale and the personal attitude about AIDS scale).

As depression is defined as emotional predispositions to be gloomy, sad, depressed, bored and hopeless (Mehrabian, 1998), it causes a significant loss of functioning and a marked diminishment in quality of life (Gonzalez, 2001). As the description associated with depressed individuals contradicts with those having positive attitude towards the attitude objects (HIV/AIDS), the Mehrabian depression scale was used as measure of disinterest (discriminant validity) and was expected to correlate negatively or poorly with the HAA-scale and its components. The finding was consistent with the aforementioned description. The score of the depression scale was correlated positively but not significantly with all the subscales (components) and with the total score of the HAA-scale.

On the other hand, the correlation of the six components of the HAA-scale and its total score with the personal attitude towards AIDS scale (measure of interest or indicator of convergent validity) were all found to be positive and significant as expected. Therefore these findings provided support for construct validity for the HAA-scale.

The reliability of the HAA- scale was also supported ("Method of summated rating", n. d.). The alpha coefficient computed to the six subscales exceeded or equal to the criterion of 0.70, which provided evidence of internal consistency reliability. The high alpha reliability (0.93) of the scale based on subscale scores provide confidence that HAA-scale measures a single construct and it is an evidence for the internal consistency among the components.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. SUMMARY AND CONCLUSION

The purpose of this study was to develop and validate an HIV/AIDS attitude scale with a consideration of AAU students. In order to attain this purpose seven measuring issues (considered as constructs surrounding individuals HIV/AIDS attitude) were identified and items under these measuring issues were written, adopted and prepared for item analysis. Mean, median, item-subscale correlation, alpha if item deleted, and communality (PCA) followed by inter-subscale correlations based on the selected items of each subscale were the techniques implemented for item analysis and selection. As a result,

1. 18-items whose mean value deviates more than one unit from expected mean (3.5) for a six-point scale and don't have high item-subscale correlation were omitted.
2. Another 7-items having an item-subscale correlation below the cut off point (0.4) was also omitted.
3. Though there was no specified cut off point to check an item distribution using the difference of the mean and median of item scores, it was implemented and no new item was identified.

4. Similarly, though there is no consensus on the cut off point for communality, 0.3 was established as cut off point & no new item was identified.

Following the above item selection techniques 25 (18+7) items were omitted and the inter-subscale correlations were undertaken. The correlation of the counseling and testing subscale with other subscales (all containing selected items) were negative & not significant. As a result, all items of this subscale were omitted since the inter-item correlation ($P < 0.01$) indicated the homogeneity of items in this subscale (see appendix-G).

Therefore six subscales having a total of 27-items and reliability ranging from 0.70 to 0.81were selected and the construct validity was checked using PCA and correlation of the HAA-scale with two validation scales (The Mehrabian depression scale (1998) and the "students attitude about AIDS" scale (Snell *et al,* 2001)). PCA identified six components, which were exactly identical with the measuring issues (subscales) considered to measure attitude towards HIV/AIDS and explained 55.15% of the variance. Moreover PCA categorized the above six components in one higher order component, which could be labeled as "attitude towards HIV/AIDS."

The correlation of the HAA-scale and its components with the depression scale was found to be non significant whereas its correlation with the attitude about AIDS scale was significant and positive.

Therefore, the HAA-scale is found to be a measure of one construct which correlated positively and significantly with the attitude towards AIDS scale while its correlation is not significant with

the depression scale and the internal consistency reliability of the scale and its components were greater than or equal to 0.70 ("Reliability Key Concepts & Terms," n. d.), it is reasonable to conclude that the HAA-scale is reliable and valid.

5.2 RECOMMENDATIONS

As the main purpose of this paper was to develop and validate an HIV/AIDS attitude scale and the two potential groups that could use this instrument are measurement experts (students) and researchers, the researcher would like to give the following recommendation to these two groups.

To the user (researchers): As the validation of this instrument is on its initial stage and the population considered to validate this instrument was only the 2004/05 students of AAU, it is important to check at least the reliability of the instrument even if the population under your study is students of AAU.

To the measurement experts (students): Since this is possibly the first measuring instrument developed to measure students' attitude towards HIV/AIDS with a consideration of a group from our society, the title of this instrument development includes a phrase "initial validation". This phrase was included deliberately to initiate measurement experts and students to evaluate and contribute their part for the improvement of the quality (reliability and validity) of the instrument as it is or by adding other possible and important measuring issues and even to check the applicability of the instrument to students of other universities and academic years.

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APPENDICES

Appendix-A: The HAA Scale Distributed to the Representative Samples

ADDIS ABABA UNIVERSITY
School of Graduate Studies
Collage of Education
Department of Educational Psychology

The main objective of this questionnaire is to develop and standardize an HIV/AIDS attitude scale for university students' so as to help researchers who want to study attitude of university students' towards HIV/AIDS in the future.

Dear Respondents:
You are kindly requested to give your genuine response for each statement so as to have a valid instrument for the purpose intended. As a result, I would like to remember you the following important points in responding the questionnaire.

1. Since every respondent give their opinion for each statement based on their experience and/or understanding, there is no right or wrong response to any of these statements.

2. The information provided will be kept confidential and no one will be affected by it. For this reason your name and specific address should not be written in any place in the questionnaire.

3. Respondents, who don't have sexual partner, need to respond to statements dealing about sexual partner based on the kind of relationship they intend to have with their future sexual partner.

4. To indicate your reactions to the statements, use the following scale and check mark (√) in the box of the appropriate letter corresponding to the statement.

VSA	=	Very Strongly Agree
SA	=	Strongly Agree
A	=	Agree
D	=	Disagree
SD	=	Strongly Disagree
VSD	=	Very Strongly Disagree

5. Please respond to each statement in the questionnaire.

Thank you for your cooperation in advance.

No	Statements	VSA	SA	A	D	SD	VSD
1	I do not want to hear any thing in relation to HIV/AIDS. (R)						
2	I do want to take HIV/AIDS test as the test result could help me to make necessary precautions.						
3	I scared AIDS whenever I think about sexual relationship.						
4	People with AIDS do not really have the right to confidentiality about their disease. (R)						
5	I do not want to talk or interact with any one with AIDS. (R)						
6	AIDS do not catch children. (R)						
7	I do not feel embarrassed purchasing condoms.						
8	Part of the problem with AIDS is that people do not talk about it.						
9	I would die with out the knowledge of living with AIDS than testing. (R)						
10	I am afraid of getting AIDS.						
11	AIDS victims have a right to privacy about their lives and lifestyles.						
12	Someone with AIDS is just like me.						
13	People who contract AIDS should deserve it. (R)						
14	I feel confident in my ability to discuss condom usage with any partner I may have.						
15	I found it hard to discuss issues related to HIV/AIDS. (R)						
16	If confidential testing for AIDS is available, I am willing to be tested.						
17	I feel scared when I think about catching AIDS from a sexual partner.						
18	Identifying those people with AIDS should be a priority. (R)						

No	Statements	VSA	SA	A	D	SD	VSD
19	A friend living with AIDS is still a friend.						
20	Living with AIDS is impossible. (R)						
21	I do not think condoms interfere with the enjoyment of sex.						
22	I feel uncomfortable whenever I discuss about AIDS. (R)						
23	I do not want to take HIV/AIDS test for fear of stigma if I am positive. (R)						
24	Because of AIDS, I feel nervous about initiating sexual relations.						
25	Employees should have a right to know if any of their co-workers have AIDS. (R)						
26	People with AIDS should not be allowed to work with patients in hospitals. (R)						
27	AIDS is a death sentence. (R)						
28	I do not like the idea of using condoms. (R)						
29	I do not want to discuss about AIDS unless and otherwise my sexual partner wanted to. (R)						
30	What ever the result will be, I do want to take HIV/AIDS test.						
31	AIDS related discussions leave me feeling a bit alarmed.						
32	Organizations should have a right to know AIDS test results of their employees. (R)						
33	Organizations should have the right to fire employees if they have AIDS. (R)						
34	I will never get AIDS. (R)						
35	If my partner and I fail in using condom, I will not try using it again. (R)						
36	Despite any obstacle from my partner, I do want to discuss about AIDS.						

No	Statements	VSA	SA	A	D	SD	VSD
37	Since I know, from my life experience, what my HIV/AIDS test result will be, I do not want to take the test. (R)						
38	Thinking about catching AIDS leaves me feel concerned.						
39	People with AIDS must educate others about AIDS. (R)						
40	Children with AIDS should be kept out of public schools. (R)						
41	The AIDS crisis is totally removed from me. (R)						
42	I feel confident in my ability to suggest using condoms with a new partner.						
43	I would give up our relation if my partner refused to discuss AIDS related issues.						
44	Even if I realized, from our discussion, that my sexual partner has a good understanding about AIDS, testing is necessary.						
45	Because of AIDS, abstinence rules my lifestyle.						
46	Hospitals should have the right to test all patients for AIDS with out their consent. (R)						
47	Having a room-met with AIDS would not bother me.						
48	People get AIDS by engaging in immoral activity. (R)						
49	If I am not sure of my partner's feeling about using condoms, I will not suggest using it. (R)						
50	I am always willing to discuss the issue of AIDS with any body.						
51	The frustration observed on individuals in HIV/AIDS testing centers discouraged me to take the test. (R)						
52	The fear of AIDS makes me feel nervous about engaging in sex.						
53	If I know somebody with HIV/AIDS, I will keep his/her status secrete.						

No	Statements	VSA	SA	A	D	SD	VSD
54	I treat every one the same whether they live with AIDS or not.						
55	AIDS is not my problem. (R)						
56	I am being afraid of rejection if I suggest using condom. (R)						

Personal Data:

Sex: M☐ F☐

Year of study in the University: _____.

Faculty or College: _____.

Appendix-B: Personal Attitude about AIDS Scale

INSTRUCTION: The items listed below refer to people's beliefs about the topic of AIDS (Acquired Immune Deficiency Syndrome) we are interested in whether you agree or disagree with these statements. As such, there is no right or wrong answers, only your own individual opinion. To indicate your reactions to these statements, use the following scale:

A = Agree
B = Slightly Agree
C = Neither Agree nor Disagree
D = Slightly Disagree
E = Disagree

REMEMBER: there are no right or wrong responses; only your opinion. Be sure to respond to each and every statement; leave no blanks.

No.	Statements	A	B	C	D	E
1	I do not want to talk or interact with any one with AIDS. (R)					
2	People who describe AIDS as an epidemic are exaggerating its true nature. (R)					
3	AIDS is not really my problem; it is some body else's. (R)					
4	AIDS is not my problem. (R)					
5	AIDS is not a threat to me. (R)					
6	The AIDS crisis is really removed from me. (R)					
7	People who die from AIDS are being punished for their past wrongs. (R)					
8	People are blowing the issue of AIDS way out of proportion. (R)					
9	You can't teach young children about AIDS. (R)					
10	Men and women don't really need to discuss AIDS with each other. (R)					
11	People with AIDS should not be allowed to work in public schools. (R)					

No.	Statements	A	B	C	D	E
12	People with AIDS should not be allowed to handle food in restaurant. (R)					
13	People with AIDS should not be allowed to work with patients in hospitals. (R)					
14	AIDS is not as big a problem as the media suggests. (R)					
15	I have heard enough about AIDS, and don't want to hear any more about it. (R)					
16	AIDS is Gods punishment for immorality. (R)					
17	AIDS patients offend me morally. (R)					
18	If I knew some one with AIDS, it would be hard for me to continue that relationship. (R)					
19	Children with AIDS should not be allowed to attend public schools. (R)					

Appendix C: The Mehrabian Depression Scale

Please rate how accurately each word, given below, describes your personal characteristics. Enter one of the nine numbers from the following ACCURATE-INACCURATE scale in the space provided alongside each word. Try to describe the way you are as a person. That is, for each word, decide, just how accurately it describes you as a person in general.

+4 = extremely accurate
+3 = very accurate
+2 = moderately accurate
+1 = slightly accurate
0 = neither accurate nor inaccurate
-1 = slightly inaccurate
-2 = moderately inaccurate
-3 = very inaccurate
-4 = extremely inaccurate

I am:

_____ 1. Sad and gloomy
_____ 2. Happy (R)
_____ 3. Hopeless
_____ 4. Feeling life is wonderful (R)
_____ 5. Satisfied with my past (R)
_____ 6. Bored
_____ 7. A failure
_____ 8. Enjoying life (R)
_____ 9. Useful and needed (R)
_____ 10. Lonely
_____ 11. Working well and competently (R)
_____ 12. Withdrawn from others
_____ 13. Energetic (R)
_____ 14. Liked by most people (R)
_____ 15. Unable to make decisions
_____ 16. Feeling guilty
_____ 17. Hopeful (R)
_____ 18. Tired and weak
_____ 19. Thinking well and clearly (R)
_____ 20. Feeling I'd be better off dead

Appendix – D: The Percentage of Sample Distribution

College/ Faculty	Sex	I- year		II- year		III- year		IV- year		Above year IV		TOTAL	
		Pop	Sam	Pop	Sam	Pop	Sam	Pop	Sam	Pop	Sam	Pop	Sam
Commerce	M	58.55	58.0	41.45	42.0	-	-	-	-	-	-	74.72	74.63
	F	75.14	76.47	24.86	23.53	-	-	-	-	-	-	25.28	25.37
	Σ	**62.74**	**62.69**	**37.26**	**37.31**	-	-	-	-	-	-	**16.75**	**16.75**
Fine Art	M	25.58	50.0	24.42	-	26.74	50.0	23.26	-	-	-	88.66	100
	F	27.27	-	36.37	-	9.09	-	27.27	-	-	-	11.34	-
	Σ	**25.77**	**50.0**	**25.77**	-	**24.75**	**50.0**	**23.71**	-	-	-	**.57**	**.50**
Yared Music School	M	25.84	50.0	21.36	50.0	16.85	-	16.85	-	19.10	-	77.39	66.67
	F	7.70	-	11.54	-	26.92	100	26.92	-	26.92	-	22.61	33.33
	Σ	**21.74**	**33.33**	**19.13**	**33.33**	**19.13**	**33.33**	**19.13**	-	**20.87**	-	**.67**	**.02**
Veterinary	M	18.86	25.0	13.71	12.5	16.29	12.5	24.57	25.0	26.57	25.0	88.16	88.89
	F	57.45	100	8.51	-	21.28	-	10.64	-	2.13	-	11.84	11.11
	Σ	**23.43**	**33.4**	**13.09**	**11.1**	**16.88**	**11.1**	**22.92**	**22.2**	**23.68**	**22.2**	**2.32**	**2.25**
Informatics	M	28.09	28.57	21.40	28.57	18.73	14.29	31.78	28.57	-	-	72.75	70.0
	F	33.93	33.33	15.18	-	17.86	33.33	33.03	33.33	-	-	27.25	30.0
	Σ	**29.68**	**30.0**	**19.71**	**20.0**	**18.49**	**20.0**	**32.12**	**30.0**	-	-	**2.40**	**2.5**
Language Studies	M	31.90	33.33	17.49	19.05	11.55	9.52	39.06	38.10	-	-	74.75	75.0
	F	39.09	42.85	16.61	14.29	20.20	14.29	24.10	28.57	-	-	25.25	25.0
	Σ	**33.72**	**35.71**	**17.27**	**17.87**	**13.73**	**10.71**	**35.28**	**35.71**	-	-	**7.11**	**7.5**
Pharmacy	M	18.86	20.0	10.53	20.0	25.0	20.0	25.0	20.0	20.61	20.0	67.46	62.5
	F	20.0	33.33	25.45	33.33	17.27	-	20.92	33.33	16.36	-	32.54	37.5
	Σ	**19.23**	**25.0**	**15.38**	**25.0**	**22.49**	**12.5**	**23.67**	**25.0**	**19.23**	**12.5**	**1.98**	**2.0**
Medicine	M	33.8	35.0	40.09	40.0	11.89	10.0	6.29	5.0	7.93	10.0	69.64	68.97
	F	37.17	33.33	49.73	55.56	5.62	11.11	3.74	-	3.74	-	30.36	31.03
	Σ	**34.82**	**34.48**	**43.02**	**44.83**	**9.98**	**10.34**	**5.52**	**3.45**	**6.66**	**6.90**	**7.20**	**7.25**
Law	M	29.81	28.57	13.78	14.29	17.63	14.29	29.49	28.57	9.29	14.28	65.96	63.64
	F	34.16	25.0	16.77	25.0	19.88	25.0	22.36	25.0	6.83	-	34.04	36.36
	Σ	**31.29**	**27.27**	**14.80**	**18.18**	**18.39**	**18.18**	**27.06**	**27.27**	**8.46**	**9.10**	**2.77**	**2.75**
Education	M	45.28	45.46	36.89	36.36	8.84	9.09	8.99	9.09	-	-	79.92	79.52
	F	66.62	64.71	23.84	23.53	3.51	5.88	6.03	5.88	-	-	20.08	20.48
	Σ	**49.57**	**49.40**	**34.27**	**33.74**	**7.77**	**8.43**	**8.39**	**8.43**	-	-	**20.77**	**20.75**
Technology	M	21.25	21.21	14.00	15.15	22.53	21.21	23.38	24.25	18.84	18.18	80.86	80.49
	F	47.15	50.00	12.01	12.50	21.02	25.00	12.91	12.50	6.91	-	19.14	19.51
	Σ	**26.21**	**26.84**	**13.62**	**14.63**	**22.24**	**21.95**	**21.38**	**21.95**	**16.55**	**14.63**	**10.17**	**10.25**
Science	M	22.04	21.05	15.15	15.79	19.46	18.42	43.35	44.74	-	-	83.28	80.85
	F	43.25	33.34	20.55	22.22	19.33	22.22	16.87	22.22	-	-	16.72	19.15
	Σ	**25.59**	**23.91**	**16.05**	**17.39**	**19.44**	**19.57**	**38.92**	**41.30**	-	-	**11.40**	**11.75**
Business & Economics	M	39.19	39.14	18.09	17.39	12.47	13.04	30.25	30.43	-	-	68.23	69.70
	F	42.19	40.00	16.74	20.00	18.30	20.00	22.77	20.00	-	-	31.77	30.30
	Σ	**40.14**	**39.40**	**17.66**	**18.18**	**14.33**	**15.15**	**27.87**	**27.27**	-	-	**8.25**	**8.25**
Social Science	M	21.17	22.73	23.42	22.73	15.64	13.64	39.77	40.90	-	-	74.83	73.33
	F	37.69	37.50	24.62	25.00	16.41	12.50	21.28	25.00	-	-	25.17	26.67
	Σ	**25.33**	**26.67**	**23.72**	**23.33**	**15.83**	**13.33**	**35.12**	**36.67**	-	-	**7.64**	**7.50**
ΣΣ		39.33	39.75	25.93	26.50	12.24	12.00	19.03	18.75	3.47	3.00	100	100

Appendix-E: The Rotated Components Matrix

	Components					
Item	1	2	3	4	5	6
1	-2.649E-02	3.820E-03	-7.059E-02	7.455E-02	-9.058E-02	.713
3	-7.089E-02	-2.711E-02	7.788E-02	-1.518E-02	.704	-4.823E-02
5	.775	-2.698E-02	-2.273E-03	1.378E-02	-8.186E-02	-1.757E-02
6	-2.353E-02	.740	7.009E-02	2.076E-02	-2.170E-02	-6.218E-02
10	5.255E-02	3.667E-02	9.040E-02	7.085E-02	.723	-2.752E-02
12	.678	-4.044E-02	-3.336E-02	-4.221E-04	1.524E-02	-6.030E-02
14	2.044E-02	8.886E-04	.653	.141	1.801E-02	-1.978E-02
17	1.404E-02	4.216E-02	-1.091E-02	-1.967E-02	.767	4.188E-03
19	.845	1.988E-02	-1.105E-02	-1.863E-02	-7.668E-03	2.471E-03
20	-9.873E-02	.749	-3.968E-02	5.446E-02	-2.922E-02	-7.153E-02
22	3.140E-02	3.356E-02	-6.722E-02	4.439E-02	4.600E-02	.762
24	-4.853E-02	-5.617E-02	-5.965E-02	2.646E-02	.742	-3.551E-02
25	-4.821E-02	5.282E-02	2.550E-02	.778	1.288E-03	-2.694E-02
28	-1.564E-02	-3.958E-02	.756	-5.886E-02	9.756E-03	-2.260E-02
29	-1.089E-02	2.182E-02	3.935E-04	-2.579E-02	-5.228E-02	.709
32	-5.319E-02	-1.779E-03	-2.995E-02	.765	9.885E-04	3.771E-02
33	.758	-9.565E-02	-2.824E-02	-5.024E-02	4.181E-02	3.926E-02
34	1.191E-02	.636	6.034E-02	-2.159E-02	4.103E-02	9.622E-02
35	-3.840E-02	2.350E-02	.685	-3.273E-02	1.089E-02	-2.765E-02
39	4.912E-02	-6.737E-02	4.749E-02	.670	3.193E-02	.105
41	8.727E-02	.779	2.461E-02	-1.263E-02	3.172E-02	-5.968E-03
42	-7.446E-02	7.350E-02	.726	-3.118E-03	1.513E-02	-2.594E-02
46	-2.673E-02	7.435E-02	-1.571E-02	.768	2.375E-02	-5.191E-02
49	1.054E-02	1.449E-02	.745	-1.478E-02	5.071E-02	-5.126E-02
50	-7.670E-02	-6.382E-02	-7.417E-03	-2.019E-02	-8.338E-03	.710
54	.740	3.957E-02	-2.341E-02	-2.756E-02	-3.553E-02	-5.158E-02
55	-8.491E-02	.723	-4.633E-02	1.851E-02	-3.320E-02	2.207E-02

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 5th iterations.

Appendix-F: Selected Items of the HAA Scale: Prepared for Users

Dear Respondents:

You are kindly requested to give your genuine response for each statement. In doing so I would like to remember you the following important points in responding the questionnaire.

1. Since every respondent give their opinion for each statement based on their experience and/or understanding, there is no right or wrong response to any of these statements.

2. The information provided will be kept confidential and no one will be affected by it. For this reason your name and specific address should not be written in any place in the questionnaire.

3. Respondents, who don't have sexual partner, need to respond to statements dealing about sexual partner based on the kind of relationship they intend to have with their future sexual partner.

4. To indicate your reactions to the statements, use the following scale and check mark (√) in the box of the appropriate letter corresponding to the statement.

VSA	=	Very Strongly Agree
SA	=	Strongly Agree
A	=	Agree
D	=	Disagree
SD	=	Strongly Disagree
VSD	=	Very Strongly Disagree

5. Please respond to each statement in the questionnaire.

Thank you for your cooperation in advance.

No	Statements	VSA	SA	A	D	SD	VSD
1	I scared AIDS whenever I think about sexual relationship.						
2	I do not want to hear any thing in relation to HIV/AIDS. (R)						
3	A friend living with AIDS is still a friend.						
4	If I am not sure of my partner's feeling about using condoms, I will not suggest using it. (R)						
5	I will never get AIDS. (R)						
6	I treat every one the same whether they live with AIDS or not.						
7	If my partner and I fail in using condom, I will not try using it again. (R)						
8	Because of AIDS, I feel nervous about initiating sexual relations.						
9	AIDS is not my problem. (R)						
10	Employees should have a right to know if any of their co-workers have AIDS. (R)						
11	I feel confident in my ability to suggest using condoms with a new partner.						
12	I do not want to discuss about AIDS unless and otherwise my sexual partner wanted to. (R)						
13	People with AIDS must educate others about AIDS.						
14	Someone with AIDS is just like me.						
15	I feel uncomfortable whenever I discuss about AIDS. (R)						
16	AIDS do not catch children. (R)						
17	I am afraid of getting AIDS.						
18	I do not like the idea of using condoms. (R)						
19	I do not want to talk or interact with any one with AIDS. (R)						

No	Statements	VSA	SA	A	D	SD	VSD
20	I feel scared when I think about catching AIDS from a sexual partner.						
21	Hospitals should have the right to test all patients for AIDS with out their consent. (R)						
22	I am always willing to discuss the issue of AIDS with any body.						
23	Living with AIDS is impossible. (R)						
24	Organizations should have the right to fire employees if they have AIDS. (R)						
25	I feel confident in my ability to discuss condom usage with any partner I may have.						
26	Organizations should have a right to know AIDS test results of their employees. (R)						
27	The AIDS crisis is totally removed from me. (R)						

Key for subscales of the items:

Subscale of the items	**Item number**
Discrimination	*3, 6, 14, 19, and 24*
Close-mindedness	*5, 9, 16, 23, and 27*
Condom & condom use	*4, 7, 11, 18, and 25*
Confidentiality	*10, 13, 21, and 26*
Fear of sex	*1, 8, 17, and 20*
Discussion	*2, 12, 15, and 22*

Appendix-G: Inter-item Correlations of each Subscale

The Close-mindedness Subscale

Item NO.		6	13	20	27	34	41	48
13	Pearson Corr.	.206**						
	Sig. (2-tailed)	.000						
20	Pearson Corr.	.490**	.254**					
	Sig. (2-tailed)	.000	.000					
27	Pearson Corr.	.166**	.102	.419**				
	Sig. (2-tailed)	.002	.053	.000				
34	Pearson Corr.	.282**	.124*	.364**	.186**			
	Sig. (2-tailed)	.000	.018	.000	.000			
41	Pearson Corr.	.476**	.227**	.468**	.194**	.393**		
	Sig. (2-tailed)	.000	.000	.000	.000	.000		
48	Pearson Corr.	.190**	.175**	.262**	.226**	.233**	.267**	
	Sig. (2-tailed)	.000	.001	.000	.000	.000	.000	
55	Pearson Corr.	.439**	.142**	.405**	.219**	.344**	.455**	.203**
	Sig. (2-tailed)	.000	.007	.000	.000	.000	.000	.000

The Condom Subscale

Item NO.		7	14	21	28	35	42	49
14	Pearson Corr.	.259**						
	Sig. (2-tailed)	.000						
21	Pearson Corr.	.205**	.218**					
	Sig. (2-tailed)	.000	.000					
28	Pearson Corr.	.148**	.360**	.217**				
	Sig. (2-tailed)	.005	.000	.000				
35	Pearson Corr.	.179**	.252**	.235**	.434**			
	Sig. (2-tailed)	.001	.000	.000	.000			
42	Pearson Corr.	.295**	.479**	.326**	.403**	.319**		
	Sig. (2-tailed)	.000	.000	.000	.000	.000		
49	Pearson Corr.	.214**	.295**	.195**	.467**	.482**	.413**	
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
56	Pearson Corr.	.141**	.201**	.115*	.259**	.406**	.272**	.347**
	Sig. (2-tailed)	.007	.000	.029	.000	.000	.000	.000

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Confidentiality Subscale

Item NO.		4	11	18	25	32	39	46
11	Pearson Corr.	.225**						
	Sig. (2-tailed)	.000						
18	Pearson Corr.	.194**	.277**					
	Sig. (2-tailed)	.000	.000					
25	Pearson Corr.	.437**	.307**	.354**				
	Sig. (2-tailed)	.000	.000	.000				
32	Pearson Corr.	.243**	.446**	.286**	.480**			
	Sig. (2-tailed)	.000	.000	.000	.000			
39	Pearson Corr.	.321**	.244**	.184**	.404**	.311**		
	Sig. (2-tailed)	.000	.000	.000	.000	.000		
46	Pearson Corr.	.356**	.302**	.256**	.425**	.495**	.371**	
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
53	Pearson Corr.	.307**	.320**	.281**	.384**	.300**	.275**	.237**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000

Discussion Subscale

Item NO.		1	8	15	22	29	36	43
8	Pearson Corr.	.349**						
	Sig. (2-tailed)	.000						
15	Pearson Corr.	.275**	.246**					
	Sig. (2-tailed)	.000	.000					
22	Pearson Corr.	.383**	.243**	.323**				
	Sig. (2-tailed)	.000	.000	.000				
29	Pearson Corr.	.349**	.375**	.273**	.417**			
	Sig. (2-tailed)	.000	.000	.000	.000			
36	Pearson Corr.	.296**	.237**	.173**	.187**	.294**		
	Sig. (2-tailed)	.000	.000	.001	.000	.000		
43	Pearson Corr.	.216**	.211**	.127*	.158**	.258**	.058	
	Sig. (2-tailed)	.000	.000	.016	.003	.000	.275	
50	Pearson Corr.	.392**	.172**	.307**	.394**	.305**	.278**	.117*
	Sig. (2-tailed)	.000	.001	.000	.000	.000	.000	.025

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

* Correlation is significant at the 0.05 level (2-tailed).

The Counseling and Testing Subscale

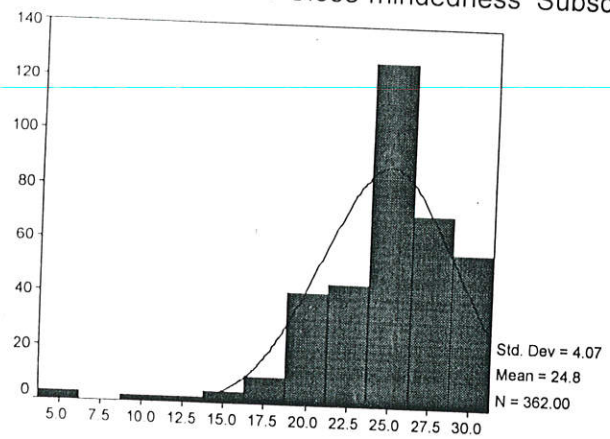
Item No.		2	9	16	23	30	37	44
9	Pearson Corr.	.295**						
	Sig. (2-tailed)	.000						
16	Pearson Corr.	.437**	.287**					
	Sig. (2-tailed)	.000	.000					
23	Pearson Corr.	.211**	.240**	.247**				
	Sig. (2-tailed)	.000	.000	.000				
30	Pearson Corr.	.427**	.318**	.449**	.298**			
	Sig. (2-tailed)	.000	.000	.000	.000			
37	Pearson Corr.	.422**	.375**	.396**	.365**	.477**		
	Sig. (2-tailed)	.000	.000	.000	.000	.000		
44	Pearson Corr.	.245**	.275**	.236**	.269**	.257**	.376**	
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
51	Pearson Corr.	.206**	.121*	.254**	.238**	.291**	.307**	.341**
	Sig. (2-tailed)	.000	.021	.000	.000	.000	.000	.000

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

* Correlation is significant at the 0.05 level (2-tailed).

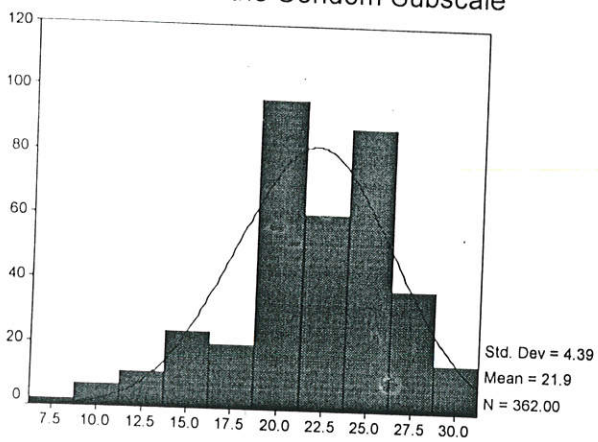
Appendix-H: Distributions of Subscale Scores

Distribution of the Close-mindedness Subscale



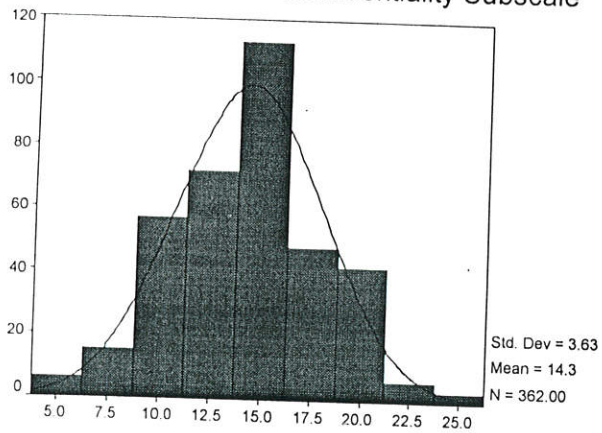
CLOSEMIN

Distribution of the Condom Subscale



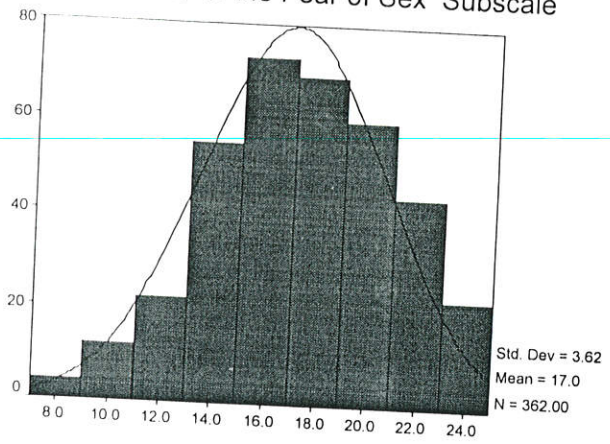
CONDOM

Distribution of the Confidentiality Subscale



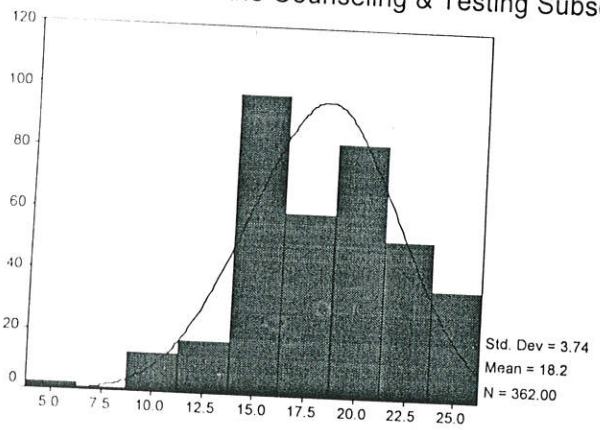
CONFIDEN

Distribution of the Fear of Sex Subscale



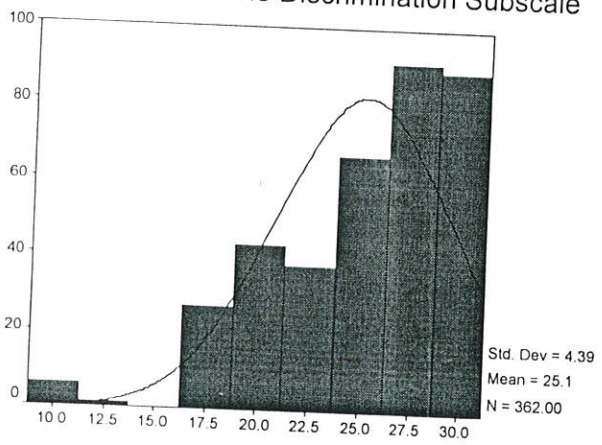
FEAR

Distribution of the Counseling & Testing Subscale



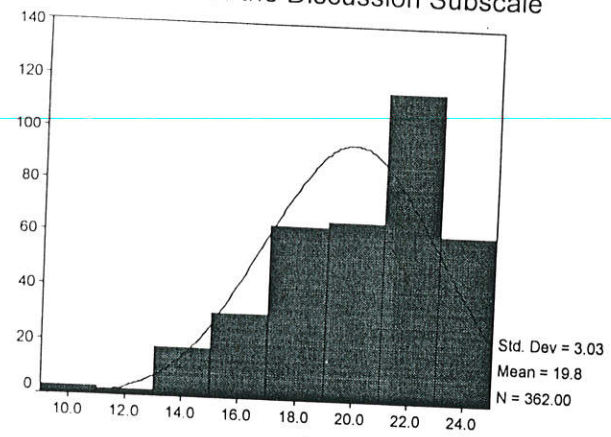
TEST

Distribution of the Discrimination Subscale



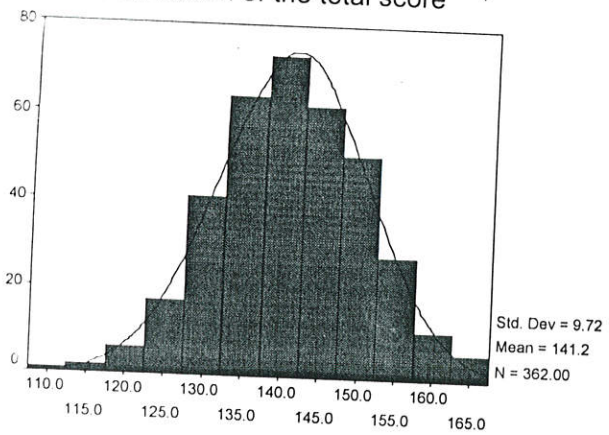
DISCRIMI

Distribution of the Discussion Subscale



DISCUSSI

The distribution of the total score



TOTAL