Original article

A hundred cases of parasuicide: IV validation of the Amharic Version of IDA-Scale at St. Paul's General Specialised Referral Hospital, AA, Ethiopia

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Abstract

Background: There is a need for a valid and reliable Amharic version (AV) of IDA-Scale whose sub-scales measure irritability (inward and outward directed), depression and anxiety. Irritability which had emerged to be an important distinguishing characteristic of parasuicide cases can be easily tapped with IDA- Scale which is cost-effective and quickly administered.

Objective: To test the validity and the reliability of each sub-scale.

Methods: Retrospective and prospective data were collected from a cohort of 100 consecutive parasuicide cases and each followed for a period of five years. Self-rated AV of IDA-Scale and interviewer-rated Expanded BPRS (Brief Psychiatric Rating Scale) were administered. Each sub-scale was validated against the corresponding item/items on the Expanded BPRS. ROC curves were plotted for sub-scales to select the efficient cut-off scores. Reliability and validity tests were performed for each sub-scale.

Results: The coefficient of association (Yule's Q) between depression, anxiety, extropunitiveness and intropunitiveness sub-scales and the corresponding item/items on Expanded BPRS were 0.83333 (p=0.0000), 0.72680 (p=0.00021), 0.49116 (p=0.01702) and 0.61821 (p=0.00029) respectively (all 2-tailed). One of the items of extropunitiveness sub-scale, IDA12, has low item-total correlation. This sub-scale, at its cut-off point, lacks the desired discriminating ability and could not manifest the expected relationship between PV+, specificity or positivity criterion. Its factor loading was also insignificant.

Conclusion: Depression, anxiety and intropunitiveness sub-scales showed acceptable validity and reliability. IDA12 has to be re-translated/re-written to keep the meaning as close to the original (English version) as possible and to ensure that terms are understood. Further validation of extropunitiveness sub-scale is advisable. In the meantime, the AV of IDA-Scale has to be applied clinically in vulnerable groups. [*Ethiop.J.Health Dev.* 2008;22(3):282-297]

Introduction

Until Index Medicus included Medical Subject Heading of 'Irritable Mood' in 1985, authors were using misleading alternative terms like 'Hostility', 'Anger' and 'Aggression' as substitutes for a 'mood of general irascibility' in their scientific communications (1).

Irritability is now defined, in the context of psychopathology, as 'an unpleasant feeling state in which the person feels an inner disease and discomfort'. It may exist purely as a feeling state or be behaviourally associated with reduced control over temper. Irritable persons often lash out at others, usually verbally but sometimes physically. In contrast to anger, irritability does not lessen after an outburst. It is diagnostically non-specific, seen in a variety of anxiety and mood disorders and as a lifelong temperamental quality, demonstrable from birth (1, 2).

With the exception of IDA (Irritability, Depression and Anxiety) scale a review of item contents of other previously constructed scales for measuring 'irritability' or 'hostility' or 'aggression', revealed that some items are concerned either with enduring personality characteristics (traits) or with temporary psychological experiences (states) or the scales have been constructed on non-clinical population (3).

For reasons given bellow (see method), the IDA-Scale which also measures depression and anxiety, was found to be a suitable scale for measuring irritability among clinical population. However, it is likely that some people will tend to deny feeling irritable and the intensity also may vary from one situation to another (3).

Irritability is quite common in psychiatric disorders or as an enduring characteristic and a valid measurement of the degree of irritability might be necessary in certain clinical conditions especially in studying the psychopharmacological effects of drugs in alleviating irritability itself (2). Hostility or irritability and depression are both clinically important factors associated with parasuicide and research has shown that manifest hostility or irritability, rather than the degree of depression, emerged to be an important distinguishing characteristic of parasuicide cases. It was further found out that the tendency of parasuicide cases to have a less overt depression appearance can be misleading in suicide prevention and treatment. Therefore, adequate attention has to be given to the quantitative measures of hostility or irritability (4). Irritability is assessed, together with depression and anxiety, by subjective accounts from patients using IDA-Scale, the self-assessment questionnaire, and not by an objective report of the behaviour by others.

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The *aim* of this paper was, therefore, to perform the validity and reliability tests on each sub-scale of the AV of IDA-Scale.

Method
Methodology was described in detail in paper I (5). Briefly, it could be summarised as follows:
The sample: The research sample comprised of 100 consecutive parasuicide cases seen during the last 16 months (Jan. 1, 1997-Apr.30, 1998) at the OPD of St. Paul's Hospital, Addis Ababa. A key informant, i.e. a close relative, was included, as required, during the interview.

Contents of the interview: The interviews were designed to assess patients' socio-demographic and clinical profiles, past psychiatric problems, methods of parasuicidal act, reasons for parasuicide, life events encountered within the last 12 months, interpersonal difficulties and social and psychological benefits of the act. List of reasons and life-events were obtained from similar studies (6).

The study was also designed to assess their symptoms and severity and to classify them into different diagnostic categories by using the 24-item 'Expanded Brief Psychiatric Rating Scale' (EBPRS). This scale is useful as an efficient, rapid, economical, valid and reliable method of patient classification in research using selected items from it (10,11). All the EBPRS diagnoses were later confirmed by the Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV criteria. AV of HS (Hopelessness Scale) which was validated with the same sample was used to measure 'pessimism' of the subjects (12).

The Instrument: IDA-Scale is a self-assessment questionnaire designed to tap irritability feelings of the present moment or of the last day or two. It measures reliably outwardly directed and inwardly directed irritability, depression and anxiety. It was developed by Snaith et al in Leeds, UK, in 1978 (3).

The outwardly directed irritability (Extropunitiveness) sub-scale is an assessment of the degree to which a subject attacks or fears he/she might attack other people, physically or verbally. The inwardly directed irritability (Intropunitiveness) sub-scale is an assessment of the degree to which a subject reports feeling angry or annoyed with himself/herself and of the extent to which he/she feels like harming himself/herself or has thoughts of doing so. Depression and anxiety sub-scales were derived from Hamilton scales and produce valid and purer measures of depression and anxiety. Each item of the IDA sub-scales is scored 0, 1, 2, or 3. The top most response is scored 3 and the last response is scored 0 (see Appendix 1 and 2 for item numbers and scores) (3).

Measures of irritability are combined with measures of depression and of anxiety since they are interrelated. Another advantage for this combination is that, if the irritability items are interspersed among other items relating to mood disorder, the scale is less likely to cause offence and more likely to be acceptable by all subjects and therefore answered by all subjects truthfully (3).

The IDA-Scale was translated into Amharic by the author. Then, a senior psychiatrist appraised the face validity and comprehensibility of the items. It was back-translated into English by the same senior psychiatrist who has never seen the English version of IDA-Scale.

To ensure that the items in IDA-Scale are understood, unambiguous and jargon-free, it was pre-tested on a group of ten parasuicide cases who could be comparable to the ultimate target population. Their responses were judged as generally correct.

Study Design: Retrospective and prospective data were collected from 100 subjects who entered the study at different periods of time and each was followed for five years. This cohort of 100 consented parasuicide cases comprised of all consecutive cases who presented to the casuality OPD during the last 16 month period (Jan. 1, 1997 to Apr. 30, 1998). The self-assessment questionnaire, the AV of IDA-scale, was administered together with other questionnaires as soon as patients arrived at the hospital. This research was ethically approved both at St. Paul's hospital and at the Ethiopian Science and Technology Commission (ESTC).

Statistical analysis:
Important socio-demographic, clinical and other variables of the 100 parasuicide cases were summarised in a frequency table. Non-parametric one sample X^2-test was used to compare the observed frequencies with the theoretical distributions of subgroups of different variables. The statistical package of SPSS for window was used for all the analyses.

The endorsement frequencies (*p*): response alternative (0, 1, 2 or 3) of each of the 18 items of the AV of IDA-Scale was calculated. In practice, only items with endorsement rates between 0.20 and 0.80 were used. Usually items where one alternative has a very high (or low) endorsement rates were eliminated (7, 8).

Validity tests: *The concurrent* (criterion) validity of the four sub-scales of Amharic version of IDA-scale was determined by measuring the strength of association (Yule's Q similarity coefficient which is a 2x2 version of Goodman and Kruskal's gamma) of cases and non-cases in each sub-scale in 100 parasuicide cases with the corresponding item or items (cluster) of the Expanded BPRS (i.e. gold standard) which is also dichotomous.

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Other criterion validity was presented in terms of *sensitivity* and *specificity* of the four sub-scales of the AV of IDA-scale at particular cut-off points. Receiver Operator Characteristic (ROC) curves were plotted for all four sub-scales and these visual displays made it easy to select the most efficient cut-off scores (7,8,9,). Yule's Q and Gamma was determined between cases and non-cases at these cut-off points.

Reliability test: To check reliability (homogeneity or internal consistency), item-total correlation test was applied.

Result

Socio-demographic and diagnostic variables of parasuicide cases:

The important socio-demographic and diagnostic variables of the 100 parasuicide cases were summarised in Table 1 bellow. One sample chi-square test indicated that the observed frequencies of sub-groups of different variables are different from the theoretical distributions. Except in sex, the differences in frequency of sub-groups are significant.

Table 1: **Socio-demographic and diagnostic variables of 100 parasuicide cases at St. Paul's General Specialised Referral Hospital, Addis Ababa, 2007**

Socio-demographic and Diagnostic Variables	N (%) 100			Socio-demographic and Diagnostic Variables	N (%) 100		
	X^2	DF	p		X^2	DF	p
Age groups	53.44	3	<0.001	**Literacy Level**	55.76	3	<0.001
11-20	51			Illiterate	7		
21-30	33			Elementary	42		
31-40	11			Secondary	45		
41and above	5			University	6		
Sex	0.35	1	>0.50	**Religion**	82.00	3	<0.001
Male	53			Eth. Ortho. Christian	83		
Female	47			Other Christian	4		
				Muslim	13		
Marital status	100.94	2	<0.001	**Ethnicity**	110.30	4	<0.001
Unmarried	80			Amhara	61		
Married	17			Gurage	16		
Divorced	3			Oromo	12		
				Others	11		
Diagnoses (BPRS)	69.10	4	<0.001	**Employment**	7.84	1	<0.005
Anxiety and Tension[1]				Unemployed	-	64	
Depression[2]				Employed	-	36	
Depression and Anxiety[3]							
Psychoses							
1-Depr. (+MGPF)[4]							
2-Schizophrenia[5]							
No psychopathathology							

Clinical Diagnoses based on DSM-IV Criteria:
[1]Generalized Anxiety Disorder   [2]Major Depressive Disorder   [3]Mixed Anxiety and Depressive Disorder (MADD)
[4]Major Depressive Disorder with MCPF (mood-congruent psychotic features)   [5]Schizophrenia (Paranoid Type)

Translation and back-translation of IDA scale: The AV of the IDA-Scale did not manifest difference in any of its 18 items and no modification was required. The appraisal of the Amharic version by the back-translator, a senior psychiatrist, was positive.

Frequencies of endorsement: Each item of the AV of IDA-Scale has a number of frequencies of endorsement (*p*) for one of its alternatives (i.e. score of '0', '1', '2' or '3'). Each frequency was within the recommended range (i.e. between 0.20 and 0.80). Any item where one alternative has a very high ($p>0.95$) or very low ($p<0.05$) endorsement frequency, the answer will be predictable with >95% accuracy. Such questions do not improve a scale's psychometric properties and, actually, it detracts from them and makes test larger (8). The fact that all subjects have answered all the questions indicated that

the IDA-Scale, in general, has good acceptability by the subjects.

Validity tests:

All items of the four sub-scales of the AV of IDA-Scale appeared to be measuring what they ought to measure, i.e. the degree of irritability (both outward and inward directed), depression and anxiety of the respondents and there were no omission of items. This indicates that the AV of IDA-scale has acceptable *face validity*.

Criterion validity:

 a) *Concurrent validity:* In developing each sub-scale, as shown in table 2, various cut-off points were explored to decide on the cut-off scores which provide the maximum discrimination between cases and non-cases.

The corresponding item or items (cluster) of the Expanded BPRS (i.e. gold standard) are listed in Appendix 4.

Using cut-off points which provide the maximum discrimination between cases and non-cases in each sub-scale (see table 2), the association (Yule's Q/Gamma) between IDA-scale's cases and non-cases of Depression, Anxiety, Extropunitiveness and Intropunitiveness and that of Expanded BPRS's Depression, Anxiety, Hostility (Extropunitiveness) and Suicidality (Intropunitiveness) were found to be   0.83333 (p=0.0000), 0.72680 (p=0.00021),   0.49116   (p=0.01702)   and   0.61821 (p=0.00029) respectively (all 2-tailed significance).
These values represent modest to high positive association and all are highly significant. Thus the 4 sub-scales have the required concurrent validity.

   b) *Sensitivity and Specificity:* Criterion validity is often presented in terms of sensitivity and specificity of the new test. Sensitivity and specificity change as one moves the cut-off score; and these data of sensitivity and specificity can be used to:
   i) Determine the most efficient cut-off score and
   ii) Select between alternative tests (8,9,10).
Sensitivity (%) of a test is 'true positive rate' and 'false positive rate' is '1- specificity (%)'. Specificity (%) is 'true negative rate'. Sensitivity (%) and '1- specificity (%)' can be plotted against each other to produce a graph known as the Receiver Operator Characteristic (ROC) Curve. This visual display makes it easy to select the most efficient cut-off score which is located on the upper left corner of the curve (8,9).

Figures 1A, 1B, 1C and 1D are ROC curves of data from Table 2 which show the different cut-off scores of the four sub-scales of the Amharic version of IDA-scale each with its corresponding sensitivity, specificity ('1- specificity (%)'), predictive values and accuracy rate.
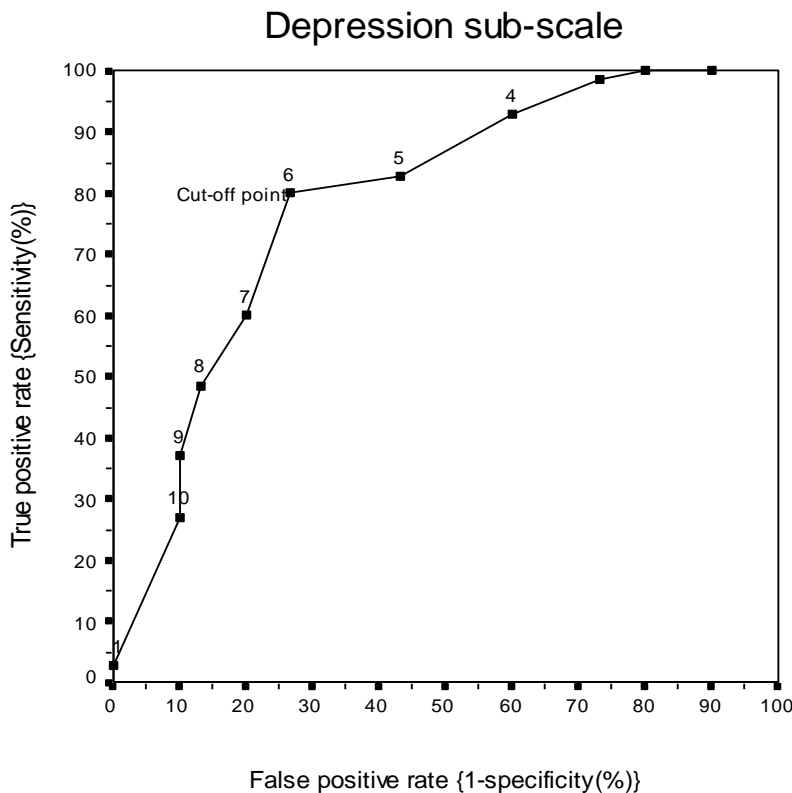

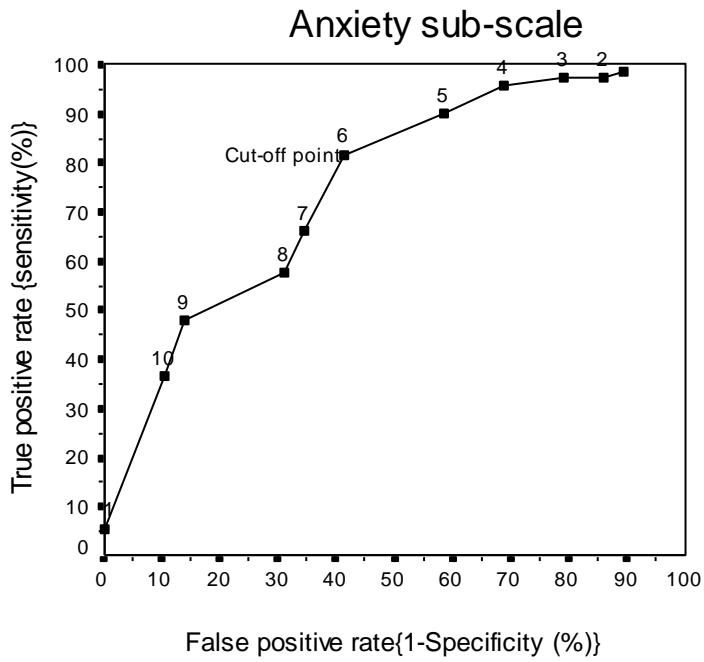Figure 1: **1A: ROC curve of data of IDA Depression sub-scale**

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Anxiety sub-scale

Figure 1: **1B: ROC curve of data of IDA Anxiety sub-scale**

Extropunitiveness sub-scale
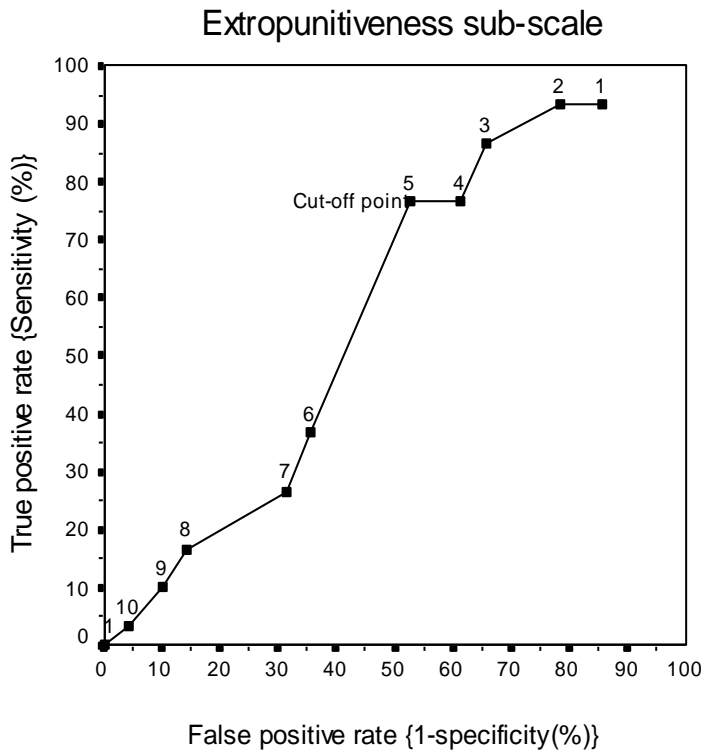
Figure 1: **1C: ROC curve of data of IDA extropunitiveness sub-scale**
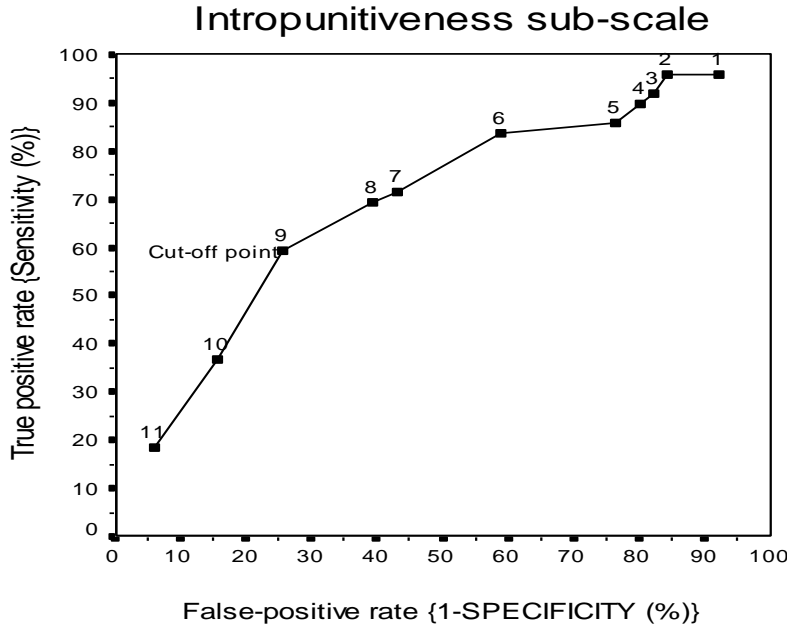
Intropunitiveness sub-scale

Figure 1: **1D: ROC curve of data of IDA Intropunitiveness sub-scale**

Table 2: **The effects of various cut-of scores on the sensitivity, specificity (1- specificity (%)), predictive values (+ve and -ve) and accuracy of the four sub-scales of the IDA-Scale in 100 parasuicide cases at St. Paul's General Specialised Referral Hospital, Addis Ababa, 2007**

IDA Depression:	1	2	3	4	5	6	7	8	9	10	11
Cut-off point	½	2/3	¾	4/5	5/6	*6/7	7/8	8/9	9/10	10/11	14/15
Sensitivity %)	100	100	98.6	92.9	82.9	80.0	60.0	48.6	37.1	27.1	2.9
1-Specificity (%)	90.0	80.0	73.3	60.0	43.3	26.7	20.0	13.3	10.0	10.0	0.0
Base rate (%)	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
PV+ (%)	72.2	74.5	75.8	78.3	81.7	87.5	87.5	89.5	89.7	86.4	100
PV-(%)	100	100	88.9	70.6	58.6	61.1	46.2	41.9	38.0	34.6	30.6
Accuracy (%)	73.0	76.0	77.0	77.0	75.0	78.0	66.0	60.0	53.0	46.0	32.0
IDA Anxiety:	1	2	3	4	5	6	7	8	9	10	11
Cut-off point	½	2/3	¾	4/5	5/6	*6/7	7/8	8/9	9/10	10/11	13/14
Sensitivity (%)	98.6	97.2	97.2	95.7	90.1	81.7	66.2	57.8	47.9	36.6	5.6
1-Specificity (%)	89.7	86.2	79.3	69.0	58.6	41.4	34.5	31.0	13.8	10.3	0.0
Base rate (%)	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0	71.0
PV+ (%)	72.9	73.4	75.0	77.0	79.0	82.9	83.5	82.0	89.5	89.7	100
PV- (%)	75.0	66.7	75.0	69.2	63.2	56.7	44.2	40.0	40.3	36.6	30.9
Accuracy (%)	73.0	73.0	75.0	76.0	76.0	75.0	66.0	61.0	59.0	52.0	33.0
IDA Extropunit.:*[1]	1	2	3	4	5	6	7	8	9	10	11
Cut-off point	½	2/3	¾	4/5	*5/6	6/7	7/8	8/9	9/10	10/11	11/12
Sensitivity (%)	93.3	93.3	86.7	76.7	76.7	36.7	26.7	16.7	10.0	3.3	0.0
1-Specificity (%)	85.7	78.6	65.7	61.4	52.9	35.7	31.4	14.3	10.0	4.3	0.0
Base rate (%)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
PV+ (%)	31.8	33.8	36.1	34.9	38.3	30.6	26.7	33.3	30.0	25.0	00.0
PV- (%)	82.3	88.2	85.7	79.4	82.5	70.3	68.6	70.6	70.0	69.8	70.0
Accuracy (%)	38.0	43.0	50.0	50.0	56.0	56.0	56.0	65.0	66.0	68.0	70.0
IDA Intropunit.:*[2]	1	2	3	4	5	6	7	8	9	10	11
Cut-off point	½	2/3	¾	4/5	5/6	6/7	7/8	8/9	*9/10	10/11	11/12
Sensitivity (%)	95.9	95.9	91.8	89.8	85.7	83.7	71.4	69.4	59.2	36.7	18.4
1-Specificity (%)	92.2	84.3	82.4	80.4	76.5	58.8	43.1	39.2	25.5	15.7	5.9
Base rate (%)	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0
PV+ (%)	51.1	52.2	51.7	51.8	51.9	57.8	61.4	63.0	69.1	69.2	75.0
PV-(%)	66.7	80.0	69.2	66.7	63.6	72.4	67.4	67.4	65.6	58.1	54.6
Accuracy (%)	51.0	55.0	54.0	54.0	54.0	62.0	64.0	65.0	67.0	61.0	57.0

*Most efficient cut-off scores (positivity criterion) selected from the
  corresponding ROC curves.
*[1]=IDA Extropunitiveness Sub-scale (Hostility)
*[2]=IDA Intropunitiveness Sub-scale (Suicidality)

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The most efficient cut-off points which are located on the upper left corner of the ROC curves are marked clearly. At these points the discriminative ability of the sub-scales are maximised and the number of erroneous diagnoses (false positive and false negative) are minimised (8). The different epidemiological terms mentioned above are best explained by referring to Appendix 3, a 2x2 Table which summarises the relationship between the results of the screening test (the Amharic version of IDA-scale) and the gold standard (the Expanded BPRS).

Reliability test: To check the *internal consistency* (*homogeneity*) of the Amharic version of IDA-scale, a reliability test, *item-total correlation*, was performed. Item-total correlation is the correlation of the individual item score with the total score of that sub-scale omitting item. This is a widely used method for checking the *internal consistency* (*homogeneity*) of a scale and the correlations are shown in Table 3 (see also the Appendix 1, the IDA-Scale).

The correlation between individual item scores and total sub-scale scores of each sub-scale are very highly significant and the correlation coefficients have ranged from 0.2287 to 0.5963, except item number 12 (IDA12) in 'Outward Directed Irritability' sub-scale which has a very low correlation coefficient (0.1769) (P=0.078). The usual rule of thumb is that an item should correlate with the total score >0.20. Items with lower correlations should be discarded (8).

Table 3: **Internal consistency of the Amharic Version of IDA-Scale at St. Paul's General Specialised Referral Hospital, Addis Ababa, 2007**

Serial No	Variable No.	Item	Item-total Correlation
	A. Depression sub-scale		
1	IDA1	I feel cheerful.	**0.4063***
3	IDA3	My appetite is:-----	**0.2517****
7	IDA7	I have kept up my old interests.	**0.4512***
11	IDA11	I can laugh and feel amused.	**0.4964***
15	IDA15	I'm awake before I need to wake up.	**0.2767***[2]**
	B. Anxiety sub-scale		
2	IDA2	I can sit down and relax quite easily.	**0.3169****
5	IDA5	I feel tense or 'wound up'.	**0.4678***
9	IDA9	I get scared or panicky for no very good reason.	**0.2943***[1]**
13	IDA13	I have uncomfortable feeling like butterflies in the stomach.	**0.4261***
17	IDA17	I can go out on my own without feeling anxious.	**0.2287****
	C. Outward Irritability (Extropunitiveness) sub-scale		
4	IDA4	I lose my temper and shout or snap at others.	**0.4297***
8	IDA8	I am patient with other people.	**0.3385****
12	IDA12	I feel I might lose control and hit or hurt someone.	**0.1769*****
16	IDA16	People upset me so that I feel like slamming doors or banging about.	**0.2518****
	D. Inward Irritability (Intropunitiveness) sub-scale		
6	IDA6	I feel like harming myself.	**0.4211***
10	IDA10	I get angry with myself or call myself names.	**0.4059***
14	IDA14	The thought of hurting myself occurs to me.	**0.4641***
18	IDA18	Lately I have been getting annoyed with myself.	**0.5963***

*P=0.000, **P=0.001,***[1]P=0.003, ***[2]P=0.005, ****P=(0.011 - 0.022),*****P=0.078

Discussion

Even though the sample is dominated by unmarried, unemployed, young, high school students who suffer from a depressive illness and who are members of the Amhara ethnic group and the Ethiopian Orthodox Church, there was no bias in sample selection as it included all consecutive parasuicide cases that have arrived to the OPD.

This study, in general, has revealed that all items of the AV of IDA-Scale are comprehensible and acceptable to the target population.

Frequency of endorsement (*p*) for any of the alternatives of each item of the AV of IDA-Scale was within the recommended range (i.e. between 0.20 and 0.80) and, therefore, it appears that all the items in the four sub-scales could be retained at this stage (8).

Face validity was judged as acceptable for measuring the degree of irritability, both outward and inward directed, depression and anxiety of respondents.

The coefficient of association, of cases and non-cases of each sub-scale of IDA-Scale with that of the corresponding item or items (cluster) of the Expanded BPRS (gold standard) was highly positive except for Extropunitiveness which was modest. However, all associations were highly significant. This indicates that each sub-scale of the AV of IDA-Scale has reasonably acceptable *concurrent validity*. The fact that an item of Extropunitiveness, IDA12, needs further improvement will be discussed bellow.

Using the ROC curves of the AV of IDA-Scale sub-scales (see Fig.1:1A, 1B, 1C and 1D) to locate the cut-off points closest to the upper left corner (*positivity criterion*) is quite understandable. When it comes to comparing, in the future, the discriminating ability of two sets of ROC curves of an IDA-Scale sub-scales and selecting the better one, one has to focus on the diagonal line which runs from a point (0,0) in the left lower corner to a point at the right upper corner. This line reflects the characteristics of a test with no discriminating ability (8). On the other hand, a point on the upper left corner represents a perfect diagnostic test. At this point both sensitivity and specificity are 100%, that is, all diseased individuals are identified, all healthy individuals are labelled disease-free, and no disease-free individuals are labelled diseased (10). Now, looking at Fig. 1:1C, the Extropunitiveness ROC curve, though the cut-off point lies between the diagonal line and upper left corner, it does not look to be closer to the corner and this indicates lack of the desired good discriminating ability. At this cut-off point (5/6), sensitivity =76.67%, specificity =47.14% (100-52.86%), PV+=38.33%, PV-=82.50% and accuracy =56% were examined.

Again, looking at Table 2, another weakness of the Extropunitiveness ROC curve could be explained as follows: unlike the other three ROC curves, the PV+ did not increase as the specificity {100-[1-specificity(%)]} of test or rather as the cut-off point (the criterion of positivity) increased. Improvement was suggested in one of the items of Extropunitiveness sub-scale.

In checking the *reliability* of the AV of IDA-Scale, item-total correlations in each sub-scale are very highly significant and the correlation coefficients have ranged from 0.2287 to 0.5963, except item number IDA12 in 'Outward Directed Irritability' or 'Extropunitiveness' sub-scale which has a very low correlation coefficient (0.1769) (p=0.078). This item has to be discarded as its item-total correlation is <0.20 or it has to be retranslated taking into consideration cultural differences and then the sub-scale has to be re-validated in another study.

In summary, validation study of the AV of IDA-Scale has shown that the screening programme could be feasible by the fact that it is acceptable to the clients / parasuicide cases. It is cost-effective (4 screening tests in one questionnaire of 18 items) and cases could be followed up easily in the general psychiatric OPD together with other patients. The IDA-Scale could be administered quickly and easily without discomfort.

In determining the *concurrent validity* (coefficient of association (Yule's Q), unlike the other three sub-scales, the 'Extropunitiveness sub-scale' was described as having only modest positive association, though the association was highly significant. In other words, the relatively weaker association of the 'Extropunitiveness sub-scale' was not by chance.

With respect to the yield at the cut-off points, the PV+ for sub-scales have ranged from 69.10% to 87.50%, except the Extropunitiveness sub-scale which has a PV+ of 38.36%. At its cut-off point (5/6), Extropunitiveness sub-scale lacked the desired good discriminating ability and could not manifest the expected relationship between PV+, specificity or positivity criterion as manifested by the other three sub-scales.

It was further shown that the weakness of Extropunitiveness sub-scale lies in one of its items, IDA12, which has unacceptably low item-total correlation (<0.20) in 'reliability test' as mentioned earlier (see Table 3). IDA-Scale has also low and insignificant factor loading in the factor analysis. Here, the factor analysis has formed only one cluster of variables (a factor) out of which the fourth variable, IDA12, has insignificant loading (<0.52). Discarding this item or retranslating it for further validation studies was recommended. Re-translation helps to keep the meaning as close to the original (English version) as possible and to ensure that terms are understood. For depression and anxiety sub-scales, the factor analysis has clearly separated psychological symptoms (Factor I) from physical symptoms (Factor II). Extrapunitive and Intrapunitive sub-scales yielded 1 factor each. Detailed factor analysis was not included here due to the size of this paper.

The importance of quantitative measures of irritability in suicide prevention programmes were mentioned earlier. Judging from the depressive appearance of parasuicide cases is misleading. Therefore, adequate attention has to be given for future application of the Amharic version of IDA-Scale after further validations and development of the scale.

_____

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Appendix: 1 * IDA-Scale
*[1] Instruction: This questionnaire is to help the Doctor to know how you are feeling at present. Read each item and underline the response which best shows how you are feeling now, or have been feeling in the last day or two.

S. No.	Var. No	Item	Score	Scale Allocation
1	IDA1	**I feel cheerful.**		
		Yes, definitely	0	
		Yes, sometimes	1	**DEPRESSION**
		No, not much	2	
		No, not at all	3	
2	IDA2	**I can sit down and relax quite easily.**		
		Yes, definitely	0	
		Yes, sometimes	1	**ANXIETY**
		No, not much	2	
		No, not at all	3	
3	IDA3	**My appetite is:**		
		Very poor	3	
		Fairly poor	2	**DEPRESSION**
		Quite good	1	
		Very good	0	
4	IDA4	**I lose my temper and shout or snap at others.**		
		Yes, definitely	3	
		Yes, sometimes	2	**OUTWARD**
		No, not much	1	**IRRITABILITY**
		No, not at all	0	
5	IDA5	**I feel tense or 'wound up'.**		
		Yes, definitely	3	
		Yes, sometimes	2	**ANXIETY**
		No, not much	1	
		No, not at all	0	
6	IDA6	**I feel like harming myself.**		
		Yes, definitely	3	
		Yes, sometimes	2	**INWARD**
		No, not much	1	**IRRITABILITY**
		No, not at all	0	
7	IDA7	**I have kept up my old interests.**		
		Yes, most of them	0	
		Yes, some of them	1	**DEPRESSION**
		No, not many of them	2	
		No, none of them	3	
8	IDA8	**I am patient with other people.**		
		All of the time	0	
		Most of the time	1	**OUTWARD**
		Some of the time	2	**IRRITABILITY**
		Hardly ever	3	
9	IDA9	**I get scared or panicky for no very good reason.**		
		Yes, definitely	3	
		Yes, sometimes	2	**ANXIETY**
		No, not much	1	
		No, not at all	0	
10	IDA10	**I get angry with myself or call myself names.**		
		Yes, definitely	3	
		Sometimes	2	**INWARD**
		Not often	1	**IRRITABILITY**
		No, not at all	0	
11	IDA11	**I can laugh and feel amused.**		
		Yes, definitely	0	
		Yes, sometimes	1	**DEPRESSION**
		No, not much	2	
		No, not at all	3	

cont.------Appendix: 1

12	IDA12	**I feel I might lose control and hit or hurt someone.**		
		Sometimes	3	
		Occasionally	2	**OUTWARD**
		Rarely	1	**IRRITABILITY**
		Never	0	
13	IDA13	**I have uncomfortable feeling like butterflies in the stomach.**		
		Yes, definitely	3	
		Yes, sometimes	2	**ANXIETY**
		Not very often	1	
		Not at all	0	
14	IDA14	**The thought of hurting myself occurs to me.**		
		Sometimes	3	
		Not very often	2	**INWARD**
		Hardly ever	1	**IRRITABILITY**
		Not at all	0	
15	IDA15	**I'm awake before I need to wake up.**		
		For 2 hours or more	3	
		For about 1 hour	2	**DEPRESSION**
		For less than an hour	1	
		Not at all, I sleep until it is time to get up.	0	
16	IDA16	**People upset me so that I feel like slamming doors or banging about.**		
		Yes, often	3	
		Yes, sometimes	2	**OUTWARD**
		Only occasionally	1	**IRRITABILITY**
		Not at all	0	
17	IDA17	**I can go out on my own without feeling anxious.**		
		Yes, always	0	
		Yes, sometimes	1	**ANXIETY**
		No, not often	2	
		No, I never can	3	
18	IDA18	**Lately I have been getting annoyed with myself.**		
		Very much so	3	
		Rather a lot	2	**INWARD**
		Not much	1	**IRRITABILITY**
		Not at all	0	

* Snaith RP, Constantopoulos AA, Jardine MY and McGuffin P. A Clinical Scale for the Self
   assessment of Irritability. Brit. J. Psychiat. 1978; 132, 164-71.
*[1] For practical use the scores and the scale allocation should not appear on the form.

Appendix: 2 The Amharic version of IDA Scale

አይ.ዲ.ኤ. መለኪያ / መመዘኛ

ስም: _____   ተራ ቁዓ C: _____

የገባበት ሰዓት በተመሳላሽ ክፍል የ• ¾ _____   ቀን: _____

ቃስ መጠይቅ የተደረገበት ሰዓት: _____   ቀን: _____

መመሪጸ:

ይህ መጠይቅ የሚረዳው ሐኪሙ በአሁኑ ጊዜ በትክክል የሚሰማዎትን ለማወቅ ነው። እያንዳንዱን ሐተታ ያንብቡና በትክክል በአሁኑ ጊዜ የእርስዎን ስሜት የሚገልጸውን ወይም ባለፉት አንድ ወይም ሁለት ቀናት የነበረዎትን ትክክለኛ ስሜት በሚገልጸው ሐተ• ሥሯ ጸስምሩበት።

	ሐተ•	SCORE	SCALE ALLOCATION
1.	ኣስ• Ãሰማኛል።		
	ሀ. አምን፣ በ• ርዕዓ	_____	_____
	ለ. አምን፣ አንዳንድ ጊዜ	_____	_____
	ሐ. ¾ልም፣ • ም•ብ³ም	_____	_____
	መ. ¾ልም፣ አፍም	_____	_____
2.	ቁጭ ብዬ (አረፍ ብዬ) በቀላሉ ለመዝናናት እችላለሁ።		
	ሀ. አምን፣ በ• ርዕዓ	_____	_____
	ለ. አምን፣ አንዳንድ ጊዜ	_____	_____
	ሐ. ¾ልም፣ እምብዛም አይደለም	_____	_____
	መ. ¾ልም፣ በጬ ራሽ	_____	_____
3.	¾ም዁ብ አላቱቴ		
	ሀ. እጅግ በጣም የቀነሰ ነው	_____	_____
	ለ. ዓ ሩ ነው፣ ም”ንም አይል	_____	_____
	ሐ. ዓ ሩ ነው በጣም	_____	_____
	መ. • θ዁ በ× ም ዓ ሩ ነው	_____	_____
4.	ቁጡነቴን መቆጣጠር አቅቶኝ በሌሎች ስዎች ላይ እጮሃለሁኝ (በቁ× እመልሳለሁኝ)		
	ሀ. አምን፣ በ• ርዕዓ	_____	_____
	ለ. አምን፣ አንዳንድ ጊዜ	_____	_____
	ሐ. ¾ልም፣ እምብዛም አይደለም	_____	_____
	መ. ¾ልም፣ በጬ ራሽ	_____	_____
5.	አዕምሮዬ የመወጠር ስሜት ወይም የመስቃየት ስሜት Ãሰማኛል።		
	ሀ. አምን፣ በ• ርዕዓ	_____	_____

ለ. አዎን፤ አንዳንድ ጊዜ   _____   _____

ሐ. ³ልም፤ እምብዛም አይደለም   _____   _____

መ. ³ልም፤ በ�ߪ ራሽ   _____   _____

6. እራሴን በገዛ እጁ እንደምጉዳ ይሰማኛል
   ሀ. አዎን፤ በ• ር፥ዓ   _____   _____

   ለ. አዎን፤ አንዳንት ፪²,   _____   _____

   ሐ. ³ልም፤ • ምብ³ም   _____   _____

   መ. ³ልም፤ በቧ ራሽ   _____   _____

7. ድሮ ለማድረግ ደስ የሚሉኝ ነገሮችን አሁንም ማድረጉን
   ቀጥያለሁኝ፡፡
   ሀ. አዎን፤ የአብዛኞቹን   _____   _____

   ለ. አዎን፤ ጥቂቶቹን   _____   _____

   ሐ. የለም፤ ብዙ ዎቹን አይደለም   _____   _____

   መ. የለም፤ አንዳቸውንም   _____   _____

8. ሴሎቹን ሰዎች •• ቶሃለሁ፡፡
   ሀ. ሁ ልቷ,ም   _____   _____

   ለ. አብዛኛውን ጊዜ   _____   _____

   ሐ. አንዳንድ ጊዜ   _____   _____

   መ. እንዲያውም በአጋጣሚ ካልሆነ በስተቀC አል• ቘም፡፡   _____   _____

9. ያለበቂ ምክንያት እፈራለሁኝ ወይም እሸበራለሁኝ፡፡
   ሀ. አዎን፤ በ• ር፥ዓ   _____   _____

   ለ. አዎን፤ አንዳንድ ጊዜ   _____   _____

   ሐ. ³ልም፤ እምብዛም አይደለም   _____   _____

   መ. ³ልም፤ በቧ ራሽ   _____   _____

10. በእራሴ እናደዳለሁኝ ወይም እራሴን እሰድባለሁኝ
   ሀ. አዎን፤ በ• ር፥ዓ   _____   _____

   ለ. አንዳንድ ጊዜ   _____   _____

   ሐ. አልፎ፤ አልፎ   _____   _____

   መ. ³ልም፤ በቧ ራሽ   _____   _____

11. መሳቅም፤ መደሰትም እችላለሁኝ
   ሀ. አዎን፤ በ• ር፥ዓ   _____   _____

   ለ. አዎን፤ አንዳንድ ጊዜ   _____   _____

   ሐ. ³ልም፤ • ምብ³ም   _____   _____

መ. ¾ልም፣ በቤ ራሽ   _____   _____

12. እራሴን መቆጣጠር ተስኖኝ ሌላውን ሰው እንደምመታ ወይም
     እንደምጐዳ ይሰማኛል።
     ሀ. እንዳንድ ጊዜ   _____   _____
     ለ. አልፎ፣ አልፎ   _____   _____
     ሐ. ሳÃበ³ / በዓ ቂቱ   _____   _____
     መ. በአኖም / በቤ ራሽ   _____   _____

13. ደስ የማይል ስሜት በአካላቴ ¨·ስዓ Ãሰማኛል።
     ለምሳሌም ያህል፣ ሆዴ ውስጥ ቡጭ፣ ቡጭ ማለት።
     ሀ. አዎን፣ ቡⷀ ርÖዓ   _____   _____
     ለ. አዎን፣ አንዳንድ ጊዜ   _____   _____
     ሐ. የለም፣ ብዙውን ጊዜ አይደለም   _____   _____
     መ. በአኖም ¾ልም   _____   _____

14. እራሴን የመጉዳት ሃሳብ ይከሰትብኛል።
     ሀ. አንዳንድ ጊዜ   _____   _____
     ለ. የለም፣ ብዙውን ጊዜ አይደለም   _____   _____
     ሐ. እንዲያው በአጋጣሚ ካልሆነ በስተቀር   _____   _____
     መ. ¾ልም፣ በቤ ራሽ   _____   _____

15. ለመነሳት ከመፈለጌ በፊት ከእንቅልፌ እነቃለሁኝ።
     ሀ. ለሁለት ሰዓት ወይም ለበለጠ ቀደም ብሎ   _____   _____
     ለ. በግምት በአንድ ሰዓት ቀደም ብሎ   _____   _____
     ሐ. ከአንድ ሰዓት ላነስ ጊዜ   _____   _____
     መ. በፍፁም አልነቃም። የመነሳት ጊዜዬ እስኪደርስ ድረስ
        • ተኛለሁ።   _____   _____

16. ሰዎች ስለሚያበሳጩኝ በቁጣ እንደመጭሁ ወይም በር በኃይል
     እንደመዝጋት ይለኛል።
     ሀ. አዎን፣ በአብዛኛ¨·   _____   _____
     ለ. አዎን፣ አንዳንድ ጊዜ   _____   _____
     ሐ. አልፎ፣ አልፎ ብቻ   _____   _____
     መ. በጭራሽ፣ አላደርገውም   _____   _____

17. ያለ ምንም ጭንቀት ብቻዬን መሄድ እችላለሁኝ።
     ሀ. አዎን፣ ሁልጊዜ   _____   _____
     ለ. አዎን፣ አንዳንድ ጊዜ   _____   _____
     ሐ. ¾ልም፣ እምብዛም /አላዘወትርም   _____   _____

መ. የለም ፤ ፍፁም አልቻልም   _____   _____

18.   ከቅርብ ጊዜ ወዲህ በገዛ ራሴ እናደዳለሁኝ፡፡

    ሀ. •θÓ ሲበ³   _____   _____

    ሊ. በብ²·   _____   _____

    ሐ. ሳÃበ³   _____   _____

    መ. በß ራሽ   _____   _____

Appendix: 3 (7,8,9)

A 2x2 table for calculating sensitivity, specificity, base rate and predictive values of 100 parsuicide cases, St. Paul's General Specialised Hospital, Addis Ababa, 2007.

Screening Test	CRITERION (Gold Standard)		Total
	1(+ve)/Case	0(-ve)/Non-case	
1(+ve) / Case	a (*True positive*)	b (*False positive*)	**a+b**
0(-ve) / Non-case	c (*False negative*)	d (*True negative*)	**c+d**
Total	**a+c**	**b+d**	**a+b+c+d**

Stable properties: Sensitivity (%) = a / (a+c) x 100%
Specificity (%) = d / (b+d) x 100%
Frequency-dependent properties: Base rate (%) = a+c / (a+b+c+d) x 100%
PV$^+$ (Predictive value positive) = a / a+b x 100%
PV$^-$ (Predictive value negative) = d / c+d x 100%
Accuracy = (a+d)/(a+b+c+d)

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a, b, c and d = Frequencies in four cells.
1(+ve) = when the subject exceeds the cut-off score of the test or the criteria.
0(-ve) = when the subject fails to meet the cut-off score of the test or the criteria.

Appendix: 4

Corresponding item or items (cluster) of the Expanded BPRS, the 'gold standard' (10,11).

1) Item no. 1, 3, 4, 13 ,14, 18 and 19 measure the magnitude of all aspects of

   Depression.

2) Item no. 2 and 15 measure the magnitude of different aspects of ***Anxiety***.

3) Item no. 19 measures the severity of ***Suicidality (Intropunitiveness)*** which

   include expressed desire, intent or actual actions to harm or kill self and which

   is the result of hopelessness and helplessness.

4) Item no. 5 which measures the magnitude of ***Hostility (Extropunitivess)*** and

   which includes animosity, contempt, belligerence, threat, arguments, tantrums,

   property destruction, fights and any other expressions of hostile attitudes or

   actions.