



Beck Depression Inventory: Hindi Translation and Psychometric Properties for the Students of Higher Education

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ABSTRACT: The purpose of this study is to establish the psychometric properties of Beck Depression Inventory (BDI) to assess depression level among Hindi speaking students. Original BDI was developed by Aron T. Beck (1961) in English having 21 items of varying symptoms intended to assess depression. A method of translation and back translation used to sharpen the content quality, refine the attribute and lucidity of language while developing Hindi-Beck Depression Inventory (H-BDI). The judgement about the appropriateness, suitability and relevance of each items to the Indian culture have been sought from a sample of 57 post-graduate students. Of those, 22 students were well verse in Hindi and 35 students were fluent in English. Through the quartile deviation analysis and computation of scale values for each items it is established that out of 21 items, 5 items are not appropriate and relevant to solicit depression, thereby subjected to elimination. Therefore H-BDI contains 16 items with higher degree of content validity. The coefficient is 0.67 ($r=0.667$). Final sample consist of 540 under-graduate and post-graduate students of traditional and general education from three state universities of Uttar Pradesh, India. The statistical analyses revealed that the internal consistency (Cronbach Alpha) is 0.862 for H-BDI and all the items of inventory are highly reliable as well as valid for the students of higher education.

Key Words: Depression, Depression Inventory, Reliability & Validity, Higher Education, Mental Health.

I. INTRODUCTION

Health is a state of physiological and psychological equilibrium. Any kind of disruption on psychological and physiological make-up leads to poor health. The state of mind which is positive under normal conditions is accepted as fully functioning being with optimal wellness. Also the state of mind under which person realizes full potential, act purposefully, think rationally, cope effectively with normal stressors of life and contribute significantly in the welfare of community, is called mentally healthy person (WHO 2014). Mental health is central determinant of quality life and extent of depression as well as anxiety are two factors for assessing mental health of person in a particular time and situation.

Depression means feeling low and it is a state of low mood as well as aversion to the activities that can affect person's thoughts, behaviour, feelings and physical well-being (Sandra 1997). Depressive signs and symptoms are characterised not only by negative thoughts, moods and behaviour but also by specific changes in bodily functions such as crying, spells body ache, low energy or libido as well as problems with eating, weight or sleeping (Beck, A. T. 1967).

It is argued that the people who feel sad and depressed for weeks or months and end accompanied by feelings of hopelessness, lack of energy and taking little or no pleasure in the things that gave joy in the past and no longer providing the same joy, that person is called depressed and seized to be crippled with the depressive disorder. Though, feeling down from time to time is a normal part of life. In higher education sometimes the educational demands really seem to pile up or become very difficult to meet. Students may experience tension, headaches, nervous stomachs or sleeplessness. Student may feel anxious and depressed.

Beck Depression Inventory (BDI) Created by Dr. Aaron T. Beck (1961) is a 21 questions multiple-choice self-report inventory. It is 21 items scale intended to assess depression among students. It asks questions about depressed mood, feelings of guilt and restlessness, psychomotor retardation and feelings of helplessness- all during a period of a month. BDI has multiple choice format for which purport is to measure the presence and

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exact degree of depression. Each of the inventory items corresponds to a specific category of depressive symptoms and/ or attitude. The BDI is a commonly used instrument which intended to measure the severity of depression in an individual irrespective of cultural and ethnic affiliation (Beck, T.A. 1967). It is a self-reported instrument intended to assess the existence and severity of symptoms of depression categorize under various diagnostic schemes. BDI has been highly reliable and valid instrument with excessive usages last four decades (more than 40 Years) for the assessment of depression by clinicians, academicians and researchers on different population across the globe. BDI has a high coefficient of alpha ($\alpha = 0.80$) and its construct validity has been established which differentiate depressed from non-depressed.

In the international context, several attempts have been made to analyse the psychometric properties of BDI for the specified purpose. From these analyses it is reported that BDI has high consistency and strongest construct validity as well as discriminant values. A meta-analysis of the BDI reflected that internal consistency estimates yielded a mean coefficient alpha of a 0.86 for psychiatric patients and 0.81 for non-psychiatric subjects (Beck, T.A. Steer, R.A. Carbins, M.G. 1988). Also in another study the reliability and validity of BDI is established for the adolescent with depression in primary care setting by paediatrician in India (Basker et al. 2007). They also claimed high test-retest reliability, high internal consistency (0.96) and high convergent as well as high discriminant validity. Veerman, J.L. et al (2009) also estimated that the mean BDI scores are correlated well with the prevalence of depression determined by clinical interviews. They also established that characteristics of individual and populations are pre-requisite determinant of depression in their lives. The effectiveness of BDI is established as screening measures in various researches done in different population of Finland of college students (Nuevo, R. et al. 2009). Overall, studies have demonstrated an internal consistency correlation coefficient of 0.86 for the test items. However, the issue concerning the use of the BDI for the self-reported of depressive symptoms are raised and considered (Kendall, P.C. et al. 1987) in the arena of research as well as practice. Although validity of BDI has been validated in normal and psychiatric population but in obese population its validity remains uncertain (Hayden, M.J. et al. 2012).

Education is the essential subsystem of any social system and higher education is the tool for achieving equality with holistic development of a particular society. In higher education there are several situations and various conditions for appraisal of depression with debilitating effect on achievement, motivation and the well-being. In India, in higher education, it is unavoidable to escape the situations which are directly or indirectly inducing depression because drawing the hierarchical nature of subjugation inflicted by caste in the society (Wankhede, 2008). The factors such as the socio-economic disparities, accessibility and affordability of higher education, discrimination based on caste and religion, higher level of competition, less occupational opportunities and prevalent current unemployment scenario of educated youth induced depression among students of higher education and burden becomes double if one is coming from 'Dalit'² background. Therefore it is pertinent to know the depression level among students of higher education to propose proper mechanism and strategies for safeguard from poor mental health. The students are either in adolescents or adulthood age which is very prone for depression appraisal. Thus it is required to have particular measures to know the degree of depression and therefore the attempt has been made to translate the BDI into Hindi with standardisation of its applicability, reliability and validity for students of higher education who speak Hindi very well.

The present study is concerned with the translation of BDI into Hindi and analyse the psychometric properties for the students pursuing higher education. This exercise would result a Hindi Beck Depression Inventory (H-BDI) which would be the appropriate instrument to assess the extent of depression among students and re-validate its suitability for Hindi speaking students. This is going to be the novice attempt to translate and validate BDI in Hindi in India among students who are at their early adulthood. In addition the scale is one dimensional and shows high internal consistency with various group of population. The assessment of depression is highly pertinent for the students of higher education to protect them from the clutches of poor mental health and strengthen their resilience for rational thinking. Furthermore, the sparking novelty and inculcation of rationality among learning adult requires mechanism and diagnosis procedure to protect students from destructive consequences of depression. In this context it is much needed and highly important to develop psychometric properties of BDI for Hindi speaking students. Thus it is taken as project to translate and re-validate the measure for the clinical as well as research purpose.

II. METHODS

2.1 Sample

In the exploration of reliability and validity of H-BDI, there has been two set of sample. First set of sample consist of 57 post-graduate students, of that 22 were well verse in Hindi and 35 were fluent in English language. This sample had been selected purposely to provide their judgment about the appropriateness and

²Dalit is the identity adopted by the downtrodden section of Indian society and those who have lived the stigma of untouchability imposed by the caste system of India.

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suitability of each item on the H-BDI and English BDI (E-BDI) respectively. Another set of sample consists of 540 students from three state universities of Uttar Pradesh to analyse the internal consistency of H-BDI. Of the 22 students, 90.9 percent were male and 9.1 percent were female and of that 40.9 percent were from General category, 40.9 were from OBC (Other Backward Classes) and 18.2 percent were from SC (Schedule Caste) category. Likewise, of the 35 students who were fluent in English language, of that 88.6 percent were male and 11.4 percent were female. Category wise distribution shows that 48.6 percent were from General category, 34.3 from OBC, 8.6 from SC and 8.6 percent were from ST (Scheduled Tribes) category.

Actual study sample comprises of 540 students of undergraduate (270) and postgraduate (270) of three state universities of Uttar Pradesh. The sample is representative of students from general and traditional educational courses like B.A., B.Sc., B.Com and M.A., M.Sc., M.Com. These students were in their 'final year' of the course. The sample has been drawn from the diverse socio-economic status. The average age of sample is 20.67 year with 1.7 Standard Deviation (SD). Category wise distribution of sample is- 35.6 percent General, 32.4 percent OBC and 32 percent belong to SC category. The sample is representative of students from rural and urban background and 59.3 percent of students are from urban background. The representation of Hindu religion in the sample is high and majority of students (51.5 percent) are living with their parents in the given context of their rural and urban background. The native language (mother tongue) of all respondents is Hindi. Salient features of the sample are given in table-1

TABLE-1 Description of Study Sample

Characteristics	Mean (SD) or n (%)
N	540
Age (in years)	20.67 (1.7)
Gender	
Male	384 (71.1)
Female	156 (28.9)
Community	
SCs	173 (32.0)
OBC	175 (32.4)
General	192 (35.6)
Religion	
Hindu	506 (93.7)
Muslims	28 (5.2)
Christians	1 (0.2)
Others *	5 (0.9)
Permanent Residence	
Urban	320 (59.3)
Rural	220 (40.7)
Present Residence	
Hostel	87 (16.1)
With Parents	278 (51.5)
On Rent	155 (28.7)
With Others*	20 (3.7)

2.2 Tool: Beck Depression Inventory in Hindi (H-BDI)

This inventory was translated into Hindi and then re-standardised on students population whereby it is found that out of 21 questions, 5 questions are not applicable for the general population of students and thus those items were eliminated Therefore Hindi inventory consists of 16 questions measuring the severity of depression. Each question has a set of at least four possible answer choices ranging in intensity. Respondents were free to choose the statement of ranging intensity of a thought which describe them best. The calculated internal consistency (reliability) of Hindi questions is 0.86 and the content validity is 0.67. Response score to each item ranges from 0-3 and the summed scale ranges from 0-48. Internal consistency (Cronbach Alpha) of depression scale (Hindi) is .86. A total score of 0-5 considered as 'Normal', 6-10 as 'Mild Mood Disturbances', 11-13 as 'Borderline Clinical Depression' 14-19 as 'Moderate', 20-30 as 'Severe depression and 31 or above this interpreted as 'Extreme' appraisal of depression.

*Other category includes mostly Sikhs and Buddhist

*Those who live with close relatives like with uncle, elder brother, or with aunty.

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2.3 Procedure:

A. Each item of English BDI (E-BDI) was translated into simple Hindi by the researcher independently and there was least difficulty to translate into Hindi because the items were either single worded or two three words together. The method of forward translation involve in translation of E-BDI into Hindi by researchers who were well verse in Hindi as well as in English language. The actual meaning of each symptom has been comprehended and replaced in simple Hindi. After the translation into Hindi, both H-BDI as well as E-BDI given to two professors for expert opinion who were fluent in both Hindi and English, to seek out their opinion, modification and suggestion to finalise the first draft. The Hindi translation was then back translated into English by the researcher independently in order to find out any discrepancy with the original inventory. The translation was corrected in lieu of more accuracy regarding the intent of wording in the original language. The refined and modified H-BDI was again given to three researchers to back translate in to English for further modification and correction of the meanings of items. This procedure continued until the researcher agreed that the two versions of the instruments are identical and has no errors in meaning.

B. After the translation exercise, to find out suitability and applicability of each item in Indian culture, the judgment about the appropriateness of items has been sought out from the students of post-graduate. Judgement on H-BDI and E-BDI respectively has been sought from 22 students of fluent Hindi and 35 students of fluent English language. For this exercise BDI was renamed as ‘Thoughts Occur to Students’ to avoid the biasness of judges. ‘Five Point Judgment Rating Scale’ was provided for the judgment rating. This Rating scale was ranging from ‘Wrong to Right’ with third point as ‘Not Decided’ judgment.

C. On the basis of judgment rating, the inter quartile (Q2) is computed for each item for both H-BDI and E-BDI. Inter quartile value is suggesting the ‘Scale Value’ of each item. Items which were having higher scale values (more than the mid-point of judgement rating scale) were retained on the other hand items with lower scale values were eliminated from the final version of inventory. By correlating the scale values of each items of H-BDI with corresponding scale values of each item of E-BDI, the coefficient of content validity is computed.

D. The modified and accurate H-BDI was finalise for administering on students population. The H-BDI was administered in the sample of 540 students. The participants were instructed to responds to each item. The raw data was fed into the Statistical Package for Social Sciences (SPSS) for the advance statistical analysis and computation of internal consistency.

III. RESULTS AND DISCUSSION

From the analysis (Table-2) it is revealed that the original BDI , which has 21 items, are reduced to 16 items only in H-BDI because 5 items (item no. 5, 6, 9, 18 and 20) were having lower scale values when re-validation is done for the general population of students. Therefore these items are eliminated from the scale.

TABLE-2 Scale Values of Items on H-BDI and E-BDI

Old S.N.	New S. N.	Hindi DI Scale Values	English DI Scale Values
1 (Sadness)	1	3.83	4.09
2 (Pessimism)	2	4.01	4.15
3(Past Failure)	3	3.82	3.93
4 (Loss of Pleasure)	4	3.91	4.00
7 (Self Dislike)	5	3.72	3.93
8 (Self Criticalness)	6	3.76	3.90
10 (Crying)	7	3.50	3.09
11(Agitation)	8	3.63	4.12
12 (Loss of Interest)	9	3.81	3.85
13 (Indecisiveness)	10	4.19	3.90
14 (Worthlessness)	11	3.75	3.60
15 (Loss of Energy)	12	4.04	4.06
16 (Change in Sleep)	13	4.04	4.52
17 (Irritability)	14	3.83	4.03
19 (Concentration Difficulty)	15	3.06	3.46
21 (Loss of Sex Interest)	16	3.59	3.53

From the judgement analysis it is clear that extreme ideation like suicidal thoughts, guilt feelings, punishment feelings , fatigue or tiredness and change in appetite seems absent symptoms among students and not contributing in the appraisal of depression. The uniqueness of this analysis projects that judgement of

students led the scale to be precise and include those symptoms which are highly frequent among students while pursuing higher education. Table -2 reveals the high scale value of each items in H-BDI as well as English Beck Depression Inventory (E-BDI). According to Edward (1951): The inter quartile ranges is the measure of the spread of the middle 50 percent of judgements. In other words the scale value (inter quartile or Q2) of each item must be greater than the mind point of judgment rating scale in order to retain the item in the scale. The items with lower scale value would be eliminated from the scale because they are neither appropriate nor suitable for the concerned population. Table-2 represents the scale value of each item of H-BDI and E-BDI respectively. To know the validity of content which are translated from English to Hindi, the assessment of content validity is done by computing correlation between the scale values of H-BDI and E-BDI. Table-3 reveals the correlation with statements of corresponding version of scale, and then it is found that the degree of association is 0.667 and the correlation is significant at the 0.01 level. This degree of association suggests that the statements are valid for the assessment of depression among the students who are at higher education.

TABLE-3 Correlations between Scale Values of H-BDI and E-BDI

		H-BDI	E-BDI
H-BDI	Pearson Correlation	1	.667**
	Sig. (2-tailed)		.005
	N	16	16

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

TABLE- 4 Mean and SD of the Items of H-BDI (N=540)

Item No	Mean	Std. Deviation	N
Item 1	.50	.714	540
Item 2	.68	.763	540
Item 3	.57	.898	540
Item 4	.54	.802	540
Item 5	.49	.786	540
Item 6	.78	1.058	540
Item 7	.59	.966	540
Item 8	.59	.847	540
Item 9	.41	.628	540
Item 10	.54	.799	540
Item 11	.33	.745	540
Item 12	.58	.831	540
Item 13	.65	.832	540
Item 14	.65	.769	540
Item 15	.53	.816	540
Item 16	.31	.579	540

TABLE-5 Summary Item Statistics of H-BDI (No. of Items=16)

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	.545	.306	.783	.478	2.564	.015	16
Item Variances	.656	.335	1.120	.785	3.343	.036	16
Inter-Item Correlations	.284	.126	.454	.328	3.592	.005	16

Table-4 represents Mean and Standard Deviation (SD) of items of H-BDI and the Table-5 provides the summary of item statistics. From both table it is observed that the mean of responses to the scale range from 0.545 to 0.306 and the SD of responses to the scale ranged from 0.579 to 1.05. It is noteworthy that the response scale was ranging from 0 to 3. Thus total individual score on the scale may be zero and that is why the mean value is below one.

TABLE-6 Reliability Statistics of H-BDI

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.862	.864	16

TABLE- 7 Item-Total Statistics (Homogeneity Index) Reliability of H-BDI

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Item 1	8.21	49.152	.494	.267	.854
Item 2	8.04	48.746	.496	.278	.854
Item 3	8.14	47.880	.477	.290	.855
Item 4	8.18	48.039	.534	.322	.852
Item 5	8.22	47.938	.557	.356	.851
Item 6	7.93	46.088	.515	.334	.854
Item 7	8.13	47.554	.460	.229	.856
Item 8	8.12	47.748	.525	.302	.852
Item 9	8.31	49.303	.558	.340	.852
Item 10	8.18	47.935	.546	.333	.851
Item 11	8.39	49.425	.442	.224	.856
Item 12	8.14	47.547	.557	.353	.851
Item 13	8.07	48.010	.512	.325	.853
Item 14	8.06	48.191	.546	.368	.851
Item 15	8.18	50.024	.340	.140	.861
Item 16	8.41	51.496	.335	.152	.860

To assess the internal consistency the Cronbach Alpha analysis is done. From the table-6 it is clear that the degree of internal consistency is 0.862 ($\alpha = .86$). However the interesting pattern can be seen from the table-7 providing 'Item Total Statistics' under the column 'Cronbach Alpha if Item Deleted' reflects that each individual items is contributing significantly to the total internal consistency of scale otherwise elimination of any items would drag down the internal consistency to its corresponding degree. Strong internal consistency suggests that respondent who tended to select high score for one items are also tended to select high score for the others and vice-versa. Therefore it is established statistically that the H-BDI is having higher internal consistency ($\alpha = .86$) for the population of students pursuing higher education in India. Also Table-7 represents the column 'Corrected Item-Total Correlation' for each items which displays the correlation between a given items and the sum score of the other items. It is suggested that there is a high correlation between the score of an item and the combine score of the other items of H-BDI. The total item correlation range from 0.335 to 0.558 and all the items are statistically significant.

To establish the sound psychometric characteristics of the items translated into Hindi, they were analysing by using inter-items correlation (Table-8) where each items is sufficiently correlated with other items independently.

TABLE-8 Inter-Item correlation Matrix of H-BDI

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	.319	.269	.292	.312	.325	.301	.347	.304	.345	.240	.254	.297	.316	.170	.152
2		1	.337	.292	.349	.286	.285	.301	.379	.301	.261	.285	.314	.255	.170	.148
3			1	.386	.373	.357	.222	.277	.270	.351	.218	.304	.185	.238	.181	.127
4				1	.346	.314	.274	.321	.388	.372	.343	.322	.256	.276	.238	.171
5					1	.454	.298	.348	.352	.300	.320	.321	.264	.296	.174	.231
6						1	.333	.278	.270	.350	.217	.322	.258	.348	.157	.126
7							1	.283	.299	.292	.219	.288	.307	.258	.151	.160

8								1	.346	.289	.242	.330	.307	.385	.234	.278
9									1	.397	.285	.357	.347	.332	.248	.239
10										1	.247	.398	.332	.289	.210	.211
11											1	.321	.271	.289	.212	.185
12												1	.386	.445	.195	.266
13													1	.451	.233	.252
14														1	.268	.238
15															1	.191
16																1

In order to find out the validity of items, item discrimination index was obtained by computing statistical difference ('t' value) for each item between high (Q3) and low (Q1) anxious individuals (Table-9). This index is useful to determine the elimination and selection of particular item in tandem with item index and coefficient alpha. The discrimination index for each item is presented which reflect that all the items are significant to be kept in the scale (inventory H-BDI). The indices from the tables are found significant for all the items.

TABLE- 9 Item Discrimination Index for H-BDI

One-Sample test (Test Value) = 0					95% Confidence Interval of the Difference	
Item No.	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Item 1	16.206	539	.000	.498	.44	.56
Item 2	20.638	539	.000	.678	.61	.74
Item 3	14.816	539	.000	.572	.50	.65
Item 4	15.515	539	.000	.535	.47	.60
Item 5	14.564	539	.000	.493	.43	.56
Item 6	17.201	539	.000	.783	.69	.87
Item 7	14.123	539	.000	.587	.51	.67
Item 8	16.210	539	.000	.591	.52	.66
Item 9	15.082	539	.000	.407	.35	.46
Item 10	15.560	539	.000	.535	.47	.60
Item 11	10.227	539	.000	.328	.26	.39
Item 12	16.112	539	.000	.576	.51	.65
Item 13	18.043	539	.000	.646	.58	.72
Item 14	19.574	539	.000	.648	.58	.71
Item 15	15.090	539	.000	.530	.46	.60
Item 16	12.267	539	.000	.306	.26	.35

Therefore from the statistical analysis it is proved that H-BDI is a measure for the population of students with highest psychometric properties like high reliability and sound validity. The computed Cronbach Alpha ($\alpha=.86$) and degree of content validity vouched for its genuine applicability for the assessment of depression. The degree of internal consistency ($\alpha=.86$) and content validity ($r=.67$) are consistent with the psychometric properties computed in different populations (Basker M. et al 2007, Veerman et al 2009).

IV. CONCLUSION

The content validity has been established by computing the correlation between the corresponding scale values of H-BDI and E-BDI which is not adequate to proclaim the validity of H-BDI. Therefore, this lacuna provides scope for assessment of criterion validity with available measures of depression in the Hindi

language. In addition to that potential revalidation process is required for the target population to cater out the distorted meanings of items during the translation procedure.

It would be exaggeration to conclude that the inventory (H-BDI) is completely and highly applicable to all the students of all kind of education background like- technical and professional courses because study sample was very limited to the traditional courses of education and universities situated in U.P. India with Hindi as mother tongue of the sample. Therefore the need arises to do cross validation on adequate sample size, both within and between cultures as well as across the various courses of education existing till date in the education system.

Overall analysis provides that H-BDI is a reliable instrument and would be useful for measurement of depression level among the students who are either adolescent or in adulthood age. However, lot of work is yet to be done to accomplish the criterion validity and draw its correlation across the educational and social variations.

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APPENDIX- A

English-Beck Depression Inventory (E-BDI)

Instructions: Following are group of statements conveying the same thought in varying degree of intensity, which are being experienced by students during higher. Read group of statement carefully and encircle the digit provided before the statement which defines your occurring thoughts completely.

S. No.	One thoughts given varying degree of intensity
1	0- I do not feel sad. 1- I feel sad. 2- I am sad all the time and I can't snap out of it. 3- I am so sad and unhappy that I can't stand it.
2	0- I am not particularly discouraged about the future. 1- I feel discouraged about the future. 2- I feel I have nothing to look forward to. 3- I feel the future is hopeless and that things cannot improve.
3	0- I do not feel like a failure 1- I feel I have failed more than the average person 2- As I look back on my life, all I can see is a lot of failures 3- I feel I am a complete failure as a person
4	0- I get as much satisfaction out of things as I used to 1- I don't enjoy things the way I used to 2- I don't get real satisfaction out of anything anymore 3- I am dissatisfied or bored with everything
5	0- I don't feel disappointed in myself 1- I am disappointed in myself 2- I am disgusted with myself 3- I hate myself
6	0- I don't feel I am any worse than anybody else 1- I am critical of myself for my weaknesses or mistakes

	2-	I blame myself all the time for my faults
	3-	I blame myself for everything bad that happens
7	0-	I don't cry any more than usual.
	1-	I cry more now than I used to.
	2-	I cry all the time now
	3-	I used to be able to cry, but now I can't cry even though I want to.
8	0-	I am no more irritated by things than I ever was
	1-	I am slightly more irritated now than usual
	2-	I am quite annoyed or irritated a good deal of the time
	3-	I feel irritated all the time
9	0-	I have not lost interest in other people
	1-	I am less interested in other people than I used to be
	2-	I have lost most of my interest in other people
	3-	I have lost all of my interest in other people
10	0-	I make decision about as well as I ever could
	1-	I put off making decisions more than I used to
	2-	I have greater difficulty in making decisions more than I used to
	3-	I can't make decision at all anymore
11	0-	I don't feel that I look any worse than I used to
	1-	I am worried that I am looking old or unattractive
	2-	I feel there are permanent changes in my appearance that make me look unattractive
	3-	I believe that I look ugly
12	0-	I can work about as well as before
	1-	It takes an extra effort to get started at doing something
	2-	I have to put myself very hard to do anything
	3-	I can't do any work at all.
13	0-	I can sleep as well as usual
	1-	I don't sleep as well as I used to be
	2-	I wake up 1-2 hours earlier than usual and find it hard to get back to sleep
	3-	I wake up several hours earlier than I used to and cannot get back to sleep
14	0-	I don't get more tired than usual
	1-	I get tired more easily than I used to.
	2-	I get tired from doing almost anything
	3-	I am too tired to do anything
15	0-	I haven't lost much weight, if any, lately
	1-	I have lost more than two Kg.
	2-	I have lost more than four Kg.
	3-	I have lost more than seven Kg.
16	0-	I have not noticed any recent change in my interest in sex.
	1-	I am less interested in sex than I used to be.
	2-	I have almost no interest in sex.
	3-	I have lost interest in sex completely

APPENDIX-B

Hindi-Beck Depression Inventory (H-BDI)

निर्देश 1 : नीचे कुछ कथनों के समूह दिए गये हैं। एक समूह एक ही विचार को विभिन्न तीव्रता के अनुसार प्रकट करता है जो कि छात्रों द्वारा उच्च शिक्षा के दौरान अनुभव किया जा सकता है। कृपया कथनों के समूह को ध्यानपूर्वक पढ़िए तथा उक्त कथन के सामने लिखे अंक पर घेरा बनाइए जो आपके आने वाले विचार को पूर्ण रूप से व्यक्त करता है।

क्र. सं.	आने वाले विचार
1	0. मैं दुखित महसूस नहीं करता हूँ। 1. मैं दुखित महसूस करता हूँ। 2. मैं हर समय दुखित होता हूँ और मैं इससे उबर नहीं पाता हूँ। 3. मैं इतना ज्यादा दुखित और अप्रसन्न हूँ कि इसको सहन नहीं कर सकता।
2	0. मैं विशेषकर भविष्य के बारे में हताशाहित नहीं हूँ। 1. मैं भविष्य के लिए हताशाहित महसूस करता हूँ। 2. मैं महसूस करता हूँ कि मेरे पास आगे करने को कुछ नहीं है। 3. मैं महसूस करता हूँ कि भविष्य निराशाजनक है और चीजें सुधर नहीं सकती हैं।
3	0. मैं असफल महसूस नहीं करता हूँ। 1. मैं महसूस करता हूँ कि मैं एक औसत आदमी से ज्यादा असफल रहा। 2. जब मैं अपनी पिछली जिन्दगी देखता हूँ तो उसमें बहुत सारी असफलताएँ देखता हूँ। 3. मैं महसूस करता हूँ कि मैं पूर्ण रूप से असफल आदमी हूँ।
4	0. मैं वस्तुओं से उतनी ही संतुष्टि प्राप्त करता हूँ जितना कि पहले करता था। 1. मुझे वस्तुओं से वैसा आनन्द नहीं मिलता जैसा कि पहले मिलता था। 2. मैं किसी चीज से किसी प्रकार की वास्तविक संतुष्टि प्राप्त नहीं करता हूँ। 3. मैं सभी चीजों से असंतुष्ट तथा ऊब चुका हूँ।
5	0. मैं अपने आपमें निराश महसूस नहीं करता हूँ। 1. मैं अपने आपमें निराश महसूस करता हूँ। 2. मैं अपने आपसे निराश हूँ। 3. मैं अपने आपसे घृणा करता हूँ।
6	0. मैं ऐसा महसूस नहीं करता कि मैं किसी और से ज्यादा खराब हूँ। 1. मैं अपनी कमियों और खामियों के बारे में आलोचनात्मक हूँ। 2. मैं हर समय अपने आपको अपनी गलतियों के लिए दोषी ठहराता हूँ। 3. मैं अपने आपको दोषी ठहराता हूँ उन सबके लिए, जो कुछ भी मेरे साथ बुरा होता है।
7	0. मैं जल्दी रोता नहीं हूँ। 1. मैं आजकल जल्दी रोने लगता हूँ, पहले की अपेक्षा। 2. मैं आजकल हर समय रोतारहा हूँ। 3. मैं रोने के लिए तत्पर हूँ पर मैं रो नहीं सकता, यहाँ तक कि ऐसा चाहने पर भी।
8	0. मैं उतना ज्यादा चिड़चिड़ा नहीं हूँ जैसा कि पहले था। 1. मैं आजकल पहले से ज्यादा चिड़चिड़ा हूँ। 2. मैं अधिकतर समय गुस्से में या चिड़चिड़े मन में रहता हूँ। 3. मैं हर समय चिड़चिड़ा महसूस करता हूँ।
9	0. मैं दूसरे लोगों से मिलने-जुलने का आनन्द नहीं खोया हूँ। 1. मैं पहले की अपेक्षा, दूसरे लोगों से कम मिलता-जुलता हूँ। 2. मैं दूसरे लोगों से मिलने-जुलने का आनन्द नहीं खो चुका हूँ।

	3. मैं दूसरे लोगों से मिलने—जुलने का आनन्द, पूर्ण रूप से खो चुका हूँ।
10	0. मैं वैसा ही निर्णय करता हूँ जैसा पहले करता था। 1. मैं वैसे निर्णय लेना बन्द कर दिया हूँ जैसा कि पहले करता था। 2. मुझे निर्णय लेने में, पहले से ज्यादा कठिनाई का सामना करना पड़ता है। 3. अब से मैं किसी प्रकार का निर्णय नहीं ले सकता हूँ।
11	0. मैं ऐसा महसूस नहीं करता हूँ कि मेरा रूप पहले से ज्यादा खराब है। 1. मैं चिन्तित हूँ कि मैं बुढ़ा या बंदसूरत दिखायी देता हूँ। 2. मैं महसूस करता हूँ कि मेरे चेहरे पर स्थायी परिवर्तन हुए हैं जो कि मेरे रूप को बंदसूरत बनाते हैं। 3. मेरा विवास है कि मैं बड़ा बंदसूरत दिखता हूँ।
12	0. मैं पहले की तरह काम कर सकता हूँ। 1. मुझे कोई काम भुरु करने और करते रहने के लिए अब ज्यादा प्रयास करना पड़ता है। 2. मुझे कोई भी करने के लिए अपने आप से ज्यादा प्रयास करना पड़ता है। 3. मैं कोई काम नहीं कर सकता हूँ।
13	0. मैं पहले की तरह अच्छे से सो सकता हूँ। 1. मैं पहले की तरह अच्छे से सो नहीं पाता हूँ। 2. मैं हमेशा समय की अपेक्षा से 1-2 घण्टें पहले जग जाता हूँ और बहुत कठिनाई से दुबारा नींद आती है। 3. मैं हमेशा समय की अपेक्षा से कई घण्टें जग जाता हूँ और फिर दुबारा से नींद नहीं आती है।
14	0. मैं थकान महसूस नहीं करता हूँ। 1. मैं पहले की अपेक्षा जल्दी थक जाता हूँ। 2. मैं कुछ भी करने में थकान महसूस करता हूँ। 3. मैं इतना ज्यादा थका हुआ हूँ कि कुछ भी नहीं कर सकता।
15	0. यदि ऐसा कुछ है तो हाल ही में मेरा वजन कम नहीं हुआ है। 1. मेरा 2 किलो वजन घट गया है। 2. मेरा 4 किलो वजन घट गया है। 3. मेरा 7 किलो वजन घट गया है।
16	0. हाल ही में मेरी यौन—क्रिया की इच्छा में कोई परिवर्तन नहीं आया है। 1. मैं पहले की अपेक्षा यौन—क्रिया के लिए कम इच्छुक हूँ। 2. मैं यौन—क्रिया करने की इच्छा लगभग खो चुका हूँ। 3. मैं यौन—क्रिया करने की इच्छा पूरी तरह से खो चुका हूँ।