

## **Development and Standardization of Mental Health Battery for Visually Impaired**

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### **Abstract**

*The aim of this study was to develop and standardize a mental health battery for students with visual impairment (MHB-VI) in India. The research was carried out on sample of 126 children with visual impairment of the age group 10-25 years from Haryana state. The battery contained 61 items and these items were categorized into six sub-scales namely emotional stability, over-all adjustment, autonomy, security-insecurity, self-concept and emotional intelligence. Items showing behavioural characteristics related with six mental health sub- scales were framed on the five points Likert Scale. Item analysis was performed by calculating *t* and *r*-value and 12 items were deleted and final 61 items were retained. The value of Cronbach's alpha and split half correlation came out to be 0.89 and 0.80 respectively. This battery may act*

*as a valuable tool in accessing mental health of students with visually impairment in India as the findings demonstrated that its scores were valid and reliable. This tool is specifically useful for practitioners, special teachers, social workers, psychologists and stakeholders. They can use this tool in assessing the mental health of students with visual impairment; as a result, effective planning and strategies can be established.*

**Keywords:** *Mental Health, Visually Impaired, Emotional Stability, Over All Adjustment, Autonomy, Security-Insecurity, Self -Concept and Emotional Intelligence*

## **Introduction**

Mental health forms an important part of an individual's health and interact in a complex manner with physical health and abilities to succeed in school, at work and in society. Sound mental health is essential to a full functioning of an individual (WHO, n.d.). Punia and Berwal (2015) explained that a mentally unhealthy person directs all his energies to overcome the imaginary threats and fears. World Health Organization (2011) defined Mental Health, "A state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make contribution to her or his community" (para.1). It is the state of mind in which an individual can work productively, enjoy life and meet the challenges of life without losing his physical, social and mental balance (Work/life balance and stress management, 2017).

Thornicroft and Strathdee (1991) described that earlier mental health issues were marginalized in medical sciences. Mental health has received main attention in public health and policies after the release of World Health Organization's flagship report (The World Health Report- Mental Health: New Understanding, New Hope, 2001). Poonia and Berwal (2013) emphasized that the concept of mental health is not new but educationist and psychologist has started giving importance to it in recent years. Wikipedia (2013) described mental health as a level of psychological well-being, or an absence of a mental disorder. Mental disorder has been referred as an umbrella term in NICHCY Disability Fact Sheet 5 (2010, p.1) prepared by National Dissemination Centre for Children with Disabilities. It includes emotional disturbance, behavioural disorders, or mental illness. These include (but are not limited to): anxiety disorders, bipolar disorder (sometimes called manic-depression), conduct disorders, eating disorders, obsessive-compulsive disorder and psychotic disorders.

Depending on the specific mental disorders individual's physical, social and cognitive skills may be affected (Behaviour Disorders: Definitions, Characteristics & Related Information n.d.). Mental illness may also affect the thinking, feeling, mood and daily functioning (What is Mental Illness & Types of Mental Disorders (n.d.). The National Alliance on Mental Illness (NAMI) (NICHCY Disability Fact Sheet 5, 2010, p.2) explained very well the characteristics and behaviours seen in children who have an emotional disturbance. These characteristics and behaviours are:

- (i) Hyperactivity (short attention span, impulsiveness);
- (ii) Aggression or self-injurious behaviour (acting out, fighting);
- (iii) Withdrawal (not interacting socially with others, excessive fear or anxiety);
- (iv) Immaturity (inappropriate crying, temper tantrums, poor coping skills); and
- (v) Learning difficulties (academically performing below grade level).

All the behaviours described above clearly highlights the significance of good mental health in everybody's life. Although mental health problems can occur to anybody at any stage of life, however the severity of the problem increases, when it occurs in the beginning of childhood or adolescence. As per Cuellar (2015) views, problem of depression and addiction are more likely to appear in teenage. Then along with other associated manifold problems it is detrimental for child's educational performance. McLeod, Uemura and Rohrman (2012) mentioned that mental health had shown consistent association with various behaviour problems and attainment. Therefore, mental health of children is an important concern for all of us. Interventions that improve the mental functioning of children should be planned and executed. Fleming et al. (2005) found that interventions that strengthened the mental health of students also positively affected their academic achievements. Research also demonstrated that there is a social benefit to invest in positive mental health of students as students with stable and good mental health are less likely to drop out of school (Skalski & Smith, 2006). Mental health was found correlated with many environmental, emotional and personal factors (Anand, 1989; Manjuvani, 1990; Chaudhary & Bajaj, 1993). Although some children who do not have mental disorders may display some of the behaviours that indicates poor mental functioning, yet in case of children having mental disorder, these behaviours stay over longer period of time.

In case of the visually impaired, the behaviour is modified by the limitation of their vision (Visual Impairment: Its Effect on Cognitive Development and Behavior, 2016). They are surrounded by various problems like lack of confidence, dependence on others, emotional disturbance, low self-concept, poor perception about surroundings, depression, lack of interaction with peer group and external environment (Stewart, 2014, Shenoy et al. 2017)). They face problems like mobility and isolation. This may further compound their problems of depression and alienation (Evans, Fletcher, & Wormald, 2007). Punia and Berwal (2017) mentioned that disabled students are at greater risk of developing different psychological problems, feeling of deprivation and alienation. This kind of social exclusion leads to various mental health problems and considerably influences their mental health (Kawachi, & Berkman, 2001). Mental health can even affect physical health and day to day activities (Cornwell, & Waite, 2009). Therefore, visual impairment is not only the loss of vision but also associated with various emotional and psychological problems and may leads to depression and increase in the feelings of anxiety. Research by the Mental Health Charity Mind, 1999(as cited in Community Care and Mental Health Services in Scotland, 2006) indicates that people who become blind or partially sighted may have particular mental health needs as they learn to adjust to their sight problems. Visual impairment is likely to influence mobility and access to social contacts which may further result in social isolation, separation, loneliness, and loss of social support (Social Isolation and Physical and Sensory Impairment, n. d.).

Based on review of relevant literature, discussion with experts and personal experiences, it was felt by the researchers that a tool to assess the mental health of visually impaired is the needed. It was further necessitated by the fact that various test /scale/battery for mental health are available for general population in India but scales measuring mental health of visually impaired are not available. Many of the items included in the mental health scales for sighted students are not appropriate for visually impaired which poses limitation on their use. Moreover, there are large numbers of students with visual impairments studying in special and inclusive schools in India. And if, a tool is developed to assess their mental health, intervention programmes for improving their mental status can be planned and executed which ultimately may help in creating a sound and wavering Indian society.

## Methodology

### Development of the battery

The aim of present study was to construct a mental health battery to evaluate the mental health of visually impaired studying in inclusive and special school. Six indices of mental health were finally selected for inclusion in the battery (Jahoda, 1959; Maslow, 1950; Rogers, 1961; Singh, 2013). These are emotional stability, over-all adjustment, autonomy, security-insecurity, self-concept and intelligence. Each dimension is explained as follows.

**Emotional Stability.** It is the ability of an individual to withstand stress, strains, failures and difficulties of day to day life without becoming anxious, nervous, tense and emotionally upset (Emotional Stability, n.d.). Behavioural characteristics associated with emotional stability are: stable emotions and self-image, even tempered, dealing successfully in diverse conditions, following strict schedule to feel in control, feeling contended with life and accepting one's circumstances, ability to cope up with adversity and safe living environment.

**Over-all Adjustment.** It refers to adapting, regulating and adjusting in various aspects of life like education, health, social, emotional and cultural at home, school, society and workplace. It helps in maintaining equilibrium between the needs and obstacles (Shaffer, 1948). The identifying characteristics associated over all adjustment are: adapting in various aspects of like education and social health at home, school and society, maintaining balance in different life situations, positive attitude towards life, balance between work and family, tackling with fear, anxiety and stress, forming positive relationship and dealing effectively with challenges of life.

**Autonomy.** Autonomy is the quality of an individual of being having independence, self-determination and freedom. Soares & Rebelo (2017) explained it as the ability of an individual to be governed by his own principles and laws and can respond freely in any situation. The characteristics associated with autonomy are: independence, self-determination, freedom, organization and contribution to the society.

**Security-Insecurity.** The concept of security and insecurity was originated from the work of W.I. Thomas and Alfred Adler (Cameron & McCormick, 1954). In the past, these terms were defined differently by different authors but in the present study security refers to the feeling of safety, confidence, stability, pleasantness and satisfaction. While the term insecurity is associated with the feeling threat, uneasiness, anger, frustration, unpleasantness created under threatening and unsupportive environment.

**Self-Concept.** Self -concept is the collection of belief about oneself like one's strengths, weaknesses, status, cognition and achievements (Adler & Towne, 2002). In general, it refers how someone thinks about himself or self -image. The defining characteristics of self -concept are: self -image, relationship with friends, perception about one's abilities, cognition, good self -image and self -esteem and abilities to meet basic needs.

**Emotional Intelligence.** This term originated from the works of Peter Salovey and John Mayer but got popularity when Dan Goleman wrote a book on emotional intelligence in 1996. Salovey and Mayer (1990) defined it as 'the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions' (p. 189). Goleman (1996) described it as collection of positive characteristics which includes political awareness, self-confidence, conscientiousness, and achievement motives. Associated constructs are: awareness of self, self-regulation, maintaining balance between relationships, motivation and understanding others emotions.

### Sample

A sample of 30 students with visual impairment was taken for the pre-pilot study. One hundred and twenty six visually impaired students in the age group 10 to 25 years, studying in five special schools and 52 inclusive schools were selected randomly for the study from entire State of Haryana for the final development of the tool. Students having multiple disabilities along with visual impairment were excluded from the study, as they might influence the final results.

### Procedure

Initially, an item-set for Mental Health Battery for the Visually Impaired (MHB-VI) was created after consulting pertinent literature and related scales. An instruction sheet was prepared including personal detail per forma for the subjects and briefly explaining purpose of the study and instructions for answering the items in the scale. In the preliminary draft, 79 statements showing the behavioural characteristics related to mental health subscales were framed on 5 points Likert scale. The draft was sent to eight experts for their opinion and constructive criticism regarding relevance, content coverage and understanding ability of items. Experts were selected from different areas like education, special education and psychology. On the basis of comments received, some of the items were modified and only those items were retained in the battery which were consented to by the experts. Further, the approved items were given to two experts in English and Hindi for language vetting. Finally, six items were deleted and 73 statements were retained in the battery. Then for pilot study, preliminary draft was administered to thirty visually impaired students and their observations regarding understanding of statements, appropriateness of language, ambiguity and repetition of statements, if any, were recorded by the investigators. Some of the statements were modified accordingly. Then following steps were undertaken for standardization of the MHB-VI and accordingly results were obtained and explained:

**Try-out.** The preliminary draft was administered on a sample of 126 visually impaired students. The instructions on the battery were read out and the doubts were removed. There was no time limit for the completion of test although subjects were asked to complete it as early as possible. As the sample of the study was of the visually impaired, the investigator collected the data by explaining each statement to the subjects and noting down their responses.

**Item Analysis and Item Selection.** After administering the initial form of test consisting of 38 positively and 35 negatively keyed items, the item analysis was completed in two steps. The score obtained by the subjects were tabulated and item analysis was done to determine the difficulty and discriminatory power of the item of the test. After scoring, the response sheets of 126 subjects were placed in an ascending order. The top 27 percent and bottom 27 percent were selected for item analysis (Kelly, 1939). The 't' test was applied to find out the item discriminating value. The items having significant 't' values (i.e. greater than or equal to 1.75) were selected whereas others were rejected. Along with this, item discrimination was also calculated for item selection, represented by r-value. The obtained t-values and r-values are given in Table 1, which shows that ten items had poor discrimination on the basis of r-value while ten items were having t-value lower than 1.75. So out of 73 items, twelve items bearing serial numbers 1,6,10,14,15,40, 43,45,46,47,51 and 61 which were falling short under any of the required value of r and t were rejected and total 61 items were retained.

**Table 1. Item Analysis and Correlation between Items and Total Scores of Mental Health Battery**

Items	Item No.	r- value	Cronbach's Alpha, if Item Deleted	Decision
1	1.02*	0.156	0.867	<b>Rejected</b>
2	2.42	0.358	0.866	Retained
3	3.44	0.343	0.865	Retained
4	3.41	0.301	0.866	Retained
5	4.11	0.432	0.864	Retained
6	1.31*	0.169	0.868	<b>Rejected</b>
7	3.91	0.24	0.867	Retained
8	6.21	0.529	0.862	Retained
9	4.24	0.284	0.866	Retained
10	-0.56*	-0.06*	0.869	<b>Rejected</b>
11	2.88	0.217	0.867	Retained
12	4.30	0.371	0.865	Retained
13	2.77	0.192	0.868	Retained
14	-2.51	-0.27*	0.872	<b>Rejected</b>
15	-4.37	-0.45*	0.876	<b>Rejected</b>
16	4.21	0.368	0.865	Retained
17	1.81	0.141	0.868	Retained
18	3.75	0.275	0.866	Retained
19	2.98	0.254	0.867	Retained
20	4.48	0.364	0.865	Retained
21	3.71	0.315	0.866	Retained
22	2.44	0.163	0.868	Retained
23	5.27	0.445	0.864	Retained
24	7.97	0.568	0.862	Retained
25	5.19	0.391	0.865	Retained
26	5.22	0.329	0.866	Retained
27	2.43	0.204	0.867	Retained
28	2.43	0.241	0.867	Retained
29	6.41	0.469	0.864	Retained
30	4.71	0.314	0.866	Retained
31	6.04	0.568	0.863	Retained
32	5.83	0.404	0.864	Retained
33	2.95	0.301	0.866	Retained
34	4.80	0.35	0.865	Retained

35.	7.47	0.49	0.863	Retained
36	2.00	0.204	0.867	Retained
37	5.63	0.377	0.865	Retained
38	3.24	0.305	0.866	Retained
39	3.67	0.258	0.867	Retained
40	<b>-0.36*</b>	-0.08*	0.871	<b>Rejected</b>
41	5.32	0.37	0.865	Retained
42	4.51	0.363	0.865	Retained
43	<b>-0.31*</b>	-0.11*	0.872	<b>Rejected</b>
44	2.32	0.208	0.867	Retained
45	<b>0*</b>	-0.1*	0.872	<b>Rejected</b>
46	<b>1.31*</b>	0.073*	0.869	<b>Rejected</b>
47	<b>-1.18*</b>	-0.13*	0.873	<b>Rejected</b>
48	2.46	0.208	0.867	Retained
49	5.57	0.375	0.865	Retained
50	6.90	0.466	0.863	Retained
51	<b>0.18*</b>	0.01*	0.87	<b>Rejected</b>
52	4.41	0.412	0.865	Retained
53	5.81	0.369	0.865	Retained
54	4.61	0.416	0.864	Retained
55	5.11	0.499	0.864	Retained
56	2.83	0.284	0.866	Retained
57	1.94	0.191	0.867	Retained
58	5.04	0.338	0.865	Retained
59	3.62	0.333	0.866	Retained
60	3.02	0.258	0.867	Retained
61	<b>0.46*</b>	0.07*	0.868	<b>Rejected</b>
62	4.81	0.358	0.865	Retained
63	5.81	0.391	0.865	Retained
64	2.80	0.317	0.866	Retained
65	2.22	0.248	0.867	Retained
66	2.61	0.173	0.868	Retained
67	3.60	0.335	0.866	Retained

68	3.46	0.362	0.865	Retained
69	3.15	0.331	0.866	Retained
70	4.44	0.443	0.864	Retained
71	5.10	0.396	0.864	Retained
72	4.26	0.383	0.865	Retained
73	6.06	0.414	0.864	Retained

\*Value accountable for item rejection

**Reliability.** Reliability of the battery was determined by means of Cronbach's alpha and split-half method and calculated by using reliability calculator created by Del Siegle (dsiegle@uconn.edu). The value of Cronbach's alpha in the present case comes out to be 0.89 which is reasonably good. Split-half reliability came out to be 0.80 which indicated that all the test items were measuring mental health. Table 2 shows different measures of reliability calculated for the mental health battery before and after the correction, based on item analysis.

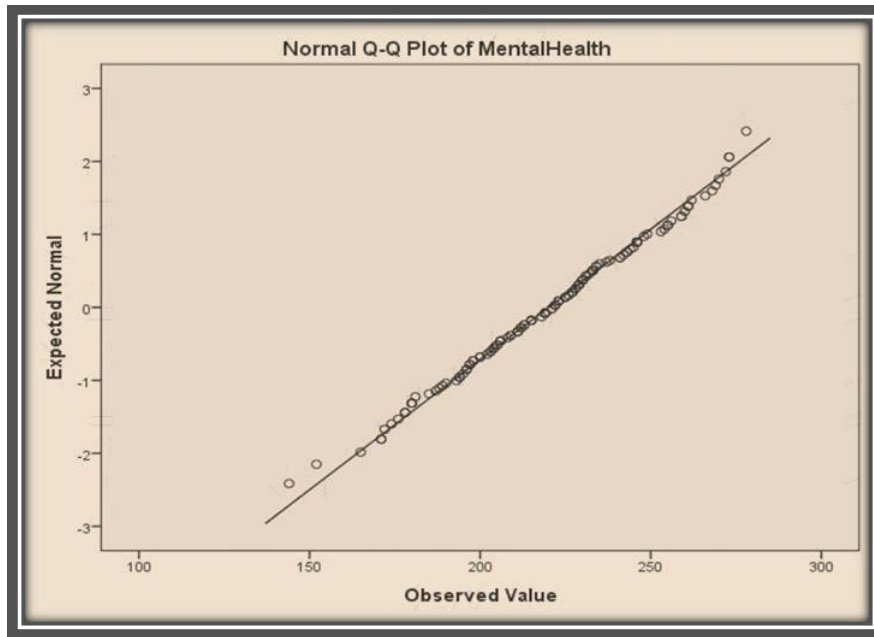
**Table 2. Different Measures of Reliability**

Reliability Measures	Preliminary Draft of MHB-VI	Final MHB-VI
Cronbach's Alpha	0.87	0.89
Split-Half (odd-even) Correlation	0.76	0.80

**Validity.** Three kinds of validity---content, face, construct---for the battery were determined. The content validity of the mental health battery was determined by "Translation and Back Translation Method". The face validity of the mental health battery was improved by including only those items which were unanimously agreed by all the experts. Construct validity was determined by computing the coefficient of correlation between the scores of this battery and scores obtained from Mental Health Battery (MHB), prepared by Arun Kumar Singh and Alpana Sen Gupta. The coefficient of correlation was calculated on 45 subjects, which came out to be 0.58. This value of coefficient of correlation was significant at 0.05 level of significance and provided the indices for construct validity.

**Norms.** First of all, normality of the data was determined by using Shapiro Wilk test and Quantile-Quantile plot (Q-Q plot). The value of Shapiro Wilk test came out to be 0.62, which was greater than 0.05, so it could be concluded that this particular sample was normally distributed.





**Figure 1: Normal Q-Q Plot of Data Collected by Using Mental Health Battery**

The Q-Q plot compares ordered values of a variable with quantiles of a specific theoretical distribution (i.e., the normal distribution). From the Fig. 1, it can be concluded that the data appeared to be normally distributed as it followed the diagonal line closely and had linear pattern. The percentile norm was prepared on the basis of mental health scores obtained from 126 subjects. The scores of mental health battery can vary from 61 to 305 and their interpretation was categorised in five broad categories viz. very poor, poor, average, good and very good. The interpretation of the scores obtained in the mental health battery was done on the basis of details given in the Table 3.

**Table 3. Percentile Norms and their Interpretation**

Percentiles	Mental Health Scores	Quantitative Interpretation	Qualitative Interpretation (Mental Health Categories)
95 <sup>th</sup>	268.65	260 and above	Very Good
90 <sup>th</sup>	259.30		
80 <sup>th</sup>	245.60	242 to 259	Good
75 <sup>th</sup>	241.00		
70 <sup>th</sup>	233.00	201 to 241	Average
60 <sup>th</sup>	228.00		
50 <sup>th</sup>	221.50		
40 <sup>th</sup>	212.80		

30 <sup>th</sup>	205.00		
25 <sup>th</sup>	200.00	181 to 200	Poor
20	196.00		
10 <sup>th</sup>	180.00	180 and below	Very poor
5 <sup>th</sup>	172.70		

**Table 4. Distribution of Items in Six Sub-Scales of Mental Health Battery**

Sr. No.	Sub-Scales	Total No. of Items	Serial number of the items in the test
1.	Emotional Stability	11	7,8,9,10,12,37,38,39,40,43,48
2.	Over-All Adjustment	9	4,5,6,11,13,14,16,41,42
3.	Autonomy	6	1,15,24,36,47,49
4.	Security-Insecurity	14	2,3,17,18,19,20,21,34,35,50,51,52,57,61
5.	Self-Concept	10	22,23,30,31,33,53,55,56,58,59
6.	Emotional Intelligence	11	25,26,27,28,29,32,44,45,46,54,60

**Item Scoring.** The positively keyed items scored as 5 was assigned to ‘strongly agree’, 4 to ‘agree’, 3 to ‘undecided’, 2 to ‘disagree’ and 1 to ‘strongly disagree’. The scoring was reversed in case of negatively keyed items, i.e. 1 was assigned to ‘strongly agree’, 2 to ‘agree’, 3 to ‘undecided’, 4 to ‘disagree’ and 5 to ‘strongly disagree’. Table 6 shows scoring pattern.

**Table 5. Detail of Positive and Negative Items of Mental Health Battery**

Type of Item	Item Serial No.	Total
Positive	1,2,4,10,11,13,15,20,22,23,24,25,26,27,28,29,30,31,32,33,38,41,43,44,45,46,48,52,53,55,56,57,58,60	35
Negative	3,5,6,7,8,9,12,16,17,18,19,21,34,35,36,37,39,40,42,47,49,50,51,54,59,61	26

**Table 6. Scoring Pattern for Positive and Negative Items**

Items	Strongly Agree	Items	Undecided	Items	Disagree	Strongly Disagree
Positive	5	4	3		2	1
Negative	1	2	3		4	5

**Description of the Battery**

The final draft of the battery contained 61 items and these items were categorized into six sub-scales namely emotional stability, over-all adjustment, autonomy, security-insecurity, self-concept and emotional intelligence. Table 4 shows the items constituting various sub-scales of mental health. This battery consisted of both the positively and negatively-keyed items. Out of 61 items, 26 items were negative statements while 35 positive ones. The items were arranged randomly in the battery to obtain most appropriate responses. The detail of positive and negative statements is given in Table 5.

**Discussions**

The present study was conducted to develop reliable and valid scale for assessing mental health of visually impaired students in India. The final format of MHB-VI contains 61 items. These items were selected from a pool of 79 items after pilot testing and following the necessary steps of standardization procedure. Item in the MHB-VI have been divided into six sub-scales namely emotional stability, over-all adjustment, autonomy, security-insecurity, self-concept and emotional intelligence. The final format of MHB-VI is appropriate for the school going visually impaired students and easy to administer. The items can easily discriminate between the visually impaired children in terms of their mental health. The results of the item analysis, reliability, and validity indicate that MHB-VI possesses satisfactory values that justify its worth for assessing the mental health level of visually impaired in India. This mental health battery has an advantage over earlier available batteries, as it was developed and standardized on the sample of visually impaired.

Like any other scale, this also have some limitations which need consideration before using it. Firstly, the construct validity of the battery was determined by using Mental Health Battery (MHB), prepared by Arun Kumar Singh and Alpana Sen Gupta (constructed for normal population) due to unavailability of mental health battery for visually impaired students in India. Secondly, the standardization of the battery was completed on a sample of 126 visually impaired students considering the fact that the sample belongs to a specific group (represents only 0.4% of total Indian population as per Census 2011). In spite of these limitations, this battery can be utilized outside India also after determining its reliability and validity in context-specific conditions.

**Conclusions**

The review of literature in the field of special education found no evidence about the availability of instrument that assess the mental health of visually impaired students in India. Further, various studies indicate that poor mental health is detrimental for the overall development of an individual, therefore timely assessment and intervention can help in reducing its negative effect on the growth and development of students with visually impairment. Hence, a battery to

assess the mental health of visually impaired students in Indian context was desired and therefore constructed and standardized by following due procedure and results are explained. It was developed in two languages i.e. English and Hindi (National Language of India). Further, the English version of it was also converted in Braille to avoid any kind of inconvenience. Therefore, the battery has its utility for blind students in addition to the partially sighted. It is easy to use and assess the mental health on six dimensions. The MHB-VI constructed in this study can be used in a number of ways in future studies. The first use is to employ MHB-VI as a screening test to detect children with visually impairment having poor mental health. Interventions programs to improve the mental health of such children can be planned and executed by the school teachers, psychologists, principals etc. The second way of using the mental health battery is for assessing the impact of intervention studies. Further, it can be utilised to reduce the dropout rate of school students and increase their academic achievements.

## References:

- Adler, R. B., & Towne, N. (2002). *Looking out, looking in: interpersonal communication*. Belmont, CA: Wadsworth.
- Alma, M., Van der Mei, S., Groothoff, J., & Suurmeijer, T. (2012). Determinants of social participation of visually impaired older adults. *Quality of Life Research*, 21(1), 87-97. Retrieved from <http://www.jstor.org/stable/41411314>
- Anand, S.P. (1989). The Mental health of high school students. *Indian Educational Review*, 24(2), 14-24.
- Behavior Disorders: Definitions, Characteristics & Related Information. (n.d.). Retrieved March 21, 2017, from <http://www.ccbd.net/about/ebddefinition>
- Cameron, W. B., & McCormick, T. C. (1954). Concepts of Security and Insecurity. *American Journal of Sociology*, 59(6), 556-564. doi:10.1086/221442
- Chaudhry, N., & Bajaj, N. (1993). Emotional maturity as a correlate of the mental health of adolescents staying at home and orphanage. *Journal of Indian Education*, 19(4-5), 61-65.
- Community care and mental health services in Scotland*. (2006). Retrieved March 6, 2013, from <http://www.scotland.gov.uk/Publications/2006/06/14155326/5>
- Cornwell, E. Y., & Waite, L. J. (2009). Social Disconnectedness, Perceived Isolation, and Health among Older Adults. *Journal of Health and Social Behavior*, 50(1), 31-48.
- Cuellar, A. (2015). Preventing and Treating Child Mental Health Problems. *The Future of Children*, 25(1), 111-134. Retrieved from <http://www.jstor.org/stable/43267765>
- Das, J., Do, Q., Friedman, J., & McKenzie, D. (2009). Mental Health Patterns and Consequences: Results from Survey Data in Five Developing Countries. *The World Bank Economic Review*, 23(1), 31-55. Retrieved from <http://www.jstor.org/stable/40282291>
- Emotional stability. (n.d.). Retrieved April 15, 2017, from [http://www.socialsciencedictionary.com/Emotional\\_stability](http://www.socialsciencedictionary.com/Emotional_stability)
- Evans, J. R., Fletcher, A. E., & Wormald, R. P. (2007). Depression and Anxiety in Visually Impaired Older People. *Ophthalmology*, 114(2), 283-288. doi:10.1016/j.ophtha.2006.10.006
- Fleming, C. B., Haggerty, K. P., Catalano, R. F., Harachi, T. W., Mazza, J. J., & Gruman, D. H. (2005). Do social and behavioral characteristics targeted by preventive interventions predict standardized test scores and grades? *Journal of School Health*, 75, 342-349.
- Goleman, D. (1996). *Emotional intelligence: why it can matter more than IQ*. New York: Bantam Books.
- Jahoda, M. (1959). Environment and mental health. *International Social Science Journal*, 11(1), 14-23. Retrieved April 15, 2017, from <http://unesdoc.unesco.org/images/0001/000168/016867eo.pdf>
- Kawachi, I., & Berkman, L. F. (2001). Social ties and mental health. *Journal of Urban health*, 78(3), 458-467.
- Manjuvani, E. (1990). *The Influence of home and school environment on the mental health status of children*. Fifth Survey of Research and Education, New Delhi: NCERT.
- Mental Health. (2013, June 14). In *Wikipedia, the Free Encyclopaedia*. Retrieved 09:28, June 17, 2013, from [http://en.wikipedia.org/w/index.php?title=Mental\\_health&oldid=559815456](http://en.wikipedia.org/w/index.php?title=Mental_health&oldid=559815456)

- Maslow, A. H. (1950). Social theory of motivation. In M. Shore (Ed.), *Twentieth century mental hygiene: New directions in mental health* (pp. 347-357). New York, NY: Social Sciences.
- NICHCY Disability Fact Sheet 5. (2010). *Emotional Disturbance*, Retrieved June 17,2013 from <http://nichcy.org/wp-content/uploads/docs/fs5.pdf>
- Poonia, P., & Berwal, S. (2013). Mental Health of Visually Impaired Children. *The Educand- Journal of Humanities and Social Sciences*, 3(1). 58-63
- Promoting Mental Health - World Health Organization (n.d.). Retrieved March 21, 2017, from [http://www.bing.com/cr?IG=3154488E98FF455A9D30C6DFE0CA1357&CID=31B95D6935DD6F6402F4572534EC6EFA&rd=1&h=RGN8NxfVWuyVCTg7NDvcha39x-mDR8hxZanhtzxYPGU&v=1&r=http%3a%2f%2fwww.who.int%2fmental\\_health%2fevidence%2fen%2fpromoting\\_mhh.pdf&p=DevEx,5062.1](http://www.bing.com/cr?IG=3154488E98FF455A9D30C6DFE0CA1357&CID=31B95D6935DD6F6402F4572534EC6EFA&rd=1&h=RGN8NxfVWuyVCTg7NDvcha39x-mDR8hxZanhtzxYPGU&v=1&r=http%3a%2f%2fwww.who.int%2fmental_health%2fevidence%2fen%2fpromoting_mhh.pdf&p=DevEx,5062.1)
- Punia, P., & Varuna. (2015, September). Behaviour Management of Children with Disabilities. *International Journal of Engineering Technology, Management and Applied Sciences*, 3(Special), 254-256. Retrieved December 14, 2016, from [www.ijetmas.com](http://www.ijetmas.com)
- Punia, P., & Berwal, S. (2015). Mental Health of Students with Visual Impairment in Special and Inclusive Schools. *Journal of Rehabilitation of India*, 11(1-2), 55-62.
- Punia, P., & Berwal, S. (2017). Alienation in Students with Visual Impairment in Special and Inclusive Schools: A Study of Haryana State. *Journal of the Indian Academy of Applied Psychology*, 43(1), 67-74.
- Rogers, C. R. (1961). *On Becoming a Person: A Therapist's View of Psychotherapy*. Retrieved April 15, 2017, from [http://s-f-walker.org.uk/pubsebooks/pdfs/Carl\\_Rogers\\_On\\_Becoming\\_a\\_Person.pdf](http://s-f-walker.org.uk/pubsebooks/pdfs/Carl_Rogers_On_Becoming_a_Person.pdf)
- Shenoy, G. G., Wagle, M. A., & Connelly, K. (2017). Level-ling the playing field for Visually Impaired using Transport Assistant. *arXiv preprint arXiv:1703.02103*.
- Shaffer, L. F. (Ed.). (1948). *Personal Adjustment*. Hoboken, NJ: John Wiley & Sons Inc.
- Singh, R. (2013). *Emotional maturity among senior secondary school students in relation to their self-esteem, home environment and mental health* (Unpublished thesis). Maharshi Dayanand University, Rohtak, Haryana, India.
- Skalski, A. K., & Smith, M. J. (September 2006). Responding to the Mental Health Needs of Students, 12-15. Retrieved March, 25, 2016 from <https://www.nasponline.org/Documents/Resources%20and%20Publications/Handouts/Families%20and%20Educators/School-Based%20Mental%20Health%20Services%20NASSP%20Sept%202006.pdf>
- Social Isolation and Physical and Sensory Impairment. (n.d.). Retrieved March 25, 2017, from [https://www.bing.com/cr?IG=43E57578E9644A909CBA895BB93DD19C&CID=33F61FE1AF3B6CA515DD15B1AE0A6DA7&rd=1&h=GAN5Bdc7-J3-HUMrWzzRj6HhVQmlT9aXIM\\_mel5cW7A&v=1&r=https%3a%2f%2fwww.bristol.gov.uk%2fdocuments%2f20182%2f34732%2fSocial%2520isolation%2520and%2520physical%2520and%2520sensory%2520deprivation\\_0\\_0\\_0.pdf%2f393c572d-5eeb-4b01-b013-b7139843af8e&p=DevEx,5062.1](https://www.bing.com/cr?IG=43E57578E9644A909CBA895BB93DD19C&CID=33F61FE1AF3B6CA515DD15B1AE0A6DA7&rd=1&h=GAN5Bdc7-J3-HUMrWzzRj6HhVQmlT9aXIM_mel5cW7A&v=1&r=https%3a%2f%2fwww.bristol.gov.uk%2fdocuments%2f20182%2f34732%2fSocial%2520isolation%2520and%2520physical%2520and%2520sensory%2520deprivation_0_0_0.pdf%2f393c572d-5eeb-4b01-b013-b7139843af8e&p=DevEx,5062.1)
- Salovey, P., & Mayer, J. D. (1990). *Emotional intelligence. Imagination, Cognition and Personality*, 9, 185–211.
- Stewart, J. (2014). Visual Impairment and Educational Attainment. Retrieved March 25, 2017, from [http://www.bing.com/cr?IG=9E518A1672334D23B9F2D8C7E8831ED1&CID=1D45C7570FCF648C3F53CD070EFE659F&rd=1&h=9kuGrU9NZ96muPZev3cD2iU\\_T-B-X7UOcPIUZV4ERMA&v=1&r=http%3a%2f%2fwww.niassembly.gov.uk%2fglobalassets%2fdocuments%2fraise%2fpublications%2f2014%2feducation%2f7714.pdf&p=DevEx,5062.1](http://www.bing.com/cr?IG=9E518A1672334D23B9F2D8C7E8831ED1&CID=1D45C7570FCF648C3F53CD070EFE659F&rd=1&h=9kuGrU9NZ96muPZev3cD2iU_T-B-X7UOcPIUZV4ERMA&v=1&r=http%3a%2f%2fwww.niassembly.gov.uk%2fglobalassets%2fdocuments%2fraise%2fpublications%2f2014%2feducation%2f7714.pdf&p=DevEx,5062.1)
- The world health report 2001 - Mental Health: New Understanding, New Hope. (n.d.). Retrieved March 24, 2017, from <http://www.who.int/whr/2001/en/>
- Thornicroft, G., & Strathdee, G. (1991). Mental Health. *BMJ: British Medical Journal*, 303(6799), 410-412. Retrieved from <http://www.jstor.org/stable/29712685>
- Tobin, M., Bozic, N., Douglas, G., Greaney, J., & Ross, S. (1997). Visually impaired children: Development and implications for education. *European Journal of Psychology of Education*, 12(4), 431-447. Retrieved from <http://www.jstor.org/stable/23420282>
- Visual Impairment: Its Effect on Cognitive Development and Behavior. (2016, May 03). Retrieved March 25, 2017, from <http://www.intellectualdisability.info/physical-health/articles/visual-impairment-its-effect-on-cognitive-development-and-behaviour>
- What is Mental Illness & Types of Mental Disorders. (n.d.). Retrieved March 24, 2017, from <http://www.namisa.org/what-is-mental-illness--types-of-mental-disorders.html>

Work/life balance and stress management | Health and wellbeing. Retrieved March 21, 2017, from <https://www.qld.gov.au/health/mental-health/balance/lifestyle/>  
 World Health Organization.(2011). *Mental health: A state of well-being*, Retrieved June 17, 2013 from [http://www.who.int/features/factfiles/mental\\_health/en/](http://www.who.int/features/factfiles/mental_health/en/)

### Appendix:

#### Mental Health Battery –Visually Impaired (MHB-VI) Items:

1. I can play significant role in the development of country despite my visual impairment.
2. People in my surrounding are supportive.
3. I fear while walking alone outside.
4. I contribute effectively in society.
5. I cannot work effectively at school.
6. Due to visual acuity, I feel depressed in school.
7. Usually, I am not able to control my feelings.
8. I get angry when somebody criticizes me.
9. I am not satisfied with my life.
10. Usually I do not get angry.
11. I easily get adjusted with among others.
12. When others blame and criticize me, I generally release my negative feelings.
13. I feel at ease with my relatives.
14. I like to go to school daily.
15. I always do my work according to my planning.
16. Often, I am not able to concentrate on my studies.
17. I do not feel secure when alone at home.
18. I feel nervous among new people.
19. In any problem or difficult situations, I get threatened.
20. I can adjust in new situations.
21. My life conditions are not good.
22. Usually, my friends welcome me.
23. I learn and grow from my mistakes rather than denying them.
24. I always complete my homework timely.
25. I can control my emotional ups and downs.
26. I am aware of my capabilities and limitations.
27. I cope up easily with harsh conditions.
28. I always think before acting.
29. I feel, obstacles make a man stronger.
30. I am mature enough to deal with difficult situations.
31. My family members usually value my ideas.
32. I can understand other's moods and behaviours.
33. I am good looking.
34. Sometimes, I have nightmares.
35. I often hesitate in sharing my feelings with others.
36. I cannot achieve whatever I like to.
37. Sometimes, I feel happy in one moment and sad in another moment.
38. My parents are caring.
39. I feel stressed during examination.
40. I fear while travelling alone.
41. I perform well in academics despite my visual impairment.
42. I often feel that my visual impairment creates hindrance in my growth.
43. I do not get frustrated in difficult situations.
44. I set goals that can be attained.
45. I maintain emotional balance in hard time.
46. I understand how my feelings affect my success.
47. Due to my visual problems, I feel helpless.
48. I am punctual at my work.

49. I face difficulty in moving freely from one place to another.
50. Sometimes, I feel scared without any reason.
51. I do not participate in any competition.
52. My family is very cooperative with me.
53. People enjoy my company.
54. It is very difficult for me to recover from setbacks in life.
55. My teachers treat me well at school.
56. I find my life to be purposeful.
57. My relationship with teachers is very healthy.
58. I like myself despite my visual impairment.
59. I face many fears and insecurities in facing new situations or challenges.
60. I maintain my patience even when I found adverse situation.
61. My future is bleak.