Effect of Gender, Degree of Impairment and Type of School on the Mental Health of Visually Impaired Students

Sandeep Berwal

Poonam Punia

Varuna Dahiya

Abstract

The present paper is an outcome of research conducted by authors to examine the effect of gender, degree of impairment and type of school on the mental health of students with visual impairment. The study employed multi-stage random sampling technique to draw a sample of 200 visually impaired students from 52 inclusive and 5 special schools situated in different parts of Haryana State, India. Mental Health Battery for students with visual impairment, consisting of 61 items to assess their mental health status.

Multiple regression and two-way ANOVA was used to analyse the data. The results revealed that three independent variables (gender, degree of impairment and type of school) made a joint contribution of 22.1% to the prediction of mental health of visually impaired students. Significant main effect of degree of visual impairment on mental health was observed whereas no significant main effect for gender was established.

Keywords: *Mental Health, Visually Impaired, Degree of Visual Impairment, Inclusive School, Special School*

Introduction

Visual impairment refers to a decreased ability to see to a degree that causes problems not encountered by usual means, such as glasses (Wikipedia, n. d.). Visual impairment is also known by other terms such as 'vision impairment', 'vision loss', 'sight handicapped' and 'visual disability'. According to Indian Census 2011, visual impairment was at the third position among the eight types of disabilities on which

data was collected. It counts to 18.8 percent of total disabled population in India. Making provision for education to such a large number of visually impaired persons in relevant educational settings seems to be a big challenge for policy makers and educators.

There are 4 levels of visual function, according to the International Classification of Diseases -10 (Update and Revision 2006): normal vision, moderate visual impairment, severe visual impairment, and blindness. In India, the Persons with Disabilities (P.W.D) Act, 1995 categorizes persons with visual impairments into two broad categories namely (i), the blind and, (ii) the low vision. According to P.W.D Act, blindness refers to a condition where a person suffers from any of the conditions, namely (i) total absence of sight, ii) visual acuity not exceeding 6/60 or 20/200 (Snellen) in the better eye with correcting lenses, (iii) limitation of the field of vision subtending an angle of 20 degree or worse. The 'low vision' means a person with impairment of visual functioning even after treatment or standard refractive correction but who uses or is potentially capable of using vision for the planning or execution of a task with appropriate assistive device. In this study, the term 'visually impaired' is used to refer to those students who are categorized as 'the blind' and 'the low vision' by a medical board duly constituted by the Government of Haryana.

In India, there are two ways to educate the children with visual impairment. The first way is the oldest and most comprehensive one i.e. is through special schools and the second way, a new venture, is establishing neighbourhood inclusive schools. In special schools, the campus is so designed that it meets all unique needs of students with visual impairment. The classroom teacher in these schools are trained and qualified to deal with such children. In addition, there are experts to facilitate the training in orientation and mobility, activities of daily living, occupational therapy, career counseling and vocational counseling of such children. The teaching-learning materials, mobility devices and specialized equipments are made available to all the students. Inclusive schooling is comparatively a new phenomenon which emerged as a consequence of ratification of international treaties by Indian Government after its participation in Salamanca Conference in 1994. The inclusive and special schools are running parallel in the educational structure to cater to the needs of visually impaired, which by and large, depends upon their degree of impairment and socio-demographic factors.

Among all categories of the disabled, high incidence of psychiatric disorder were found in visually impaired children (Jan et al., 1977). Punia and Dahiya (2015) asserted that children with disabilities are more likely to show behavioural problems due to their disability and experiential feeling which they receive from others. Ramulu (2010) showed that students with vision handicap had difficulties with their daily normal life such as reading, walking and driving etc. Consequently, mental disorders viz. anger, fear, frustration, depression, anxiety etc. develops in them. These disorders lead to poor mental health. Koenes and Karshmer (2000) compared blind with sighted adolescents and found higher incidence of depression amongst the former. Sharma (1998) found that visually challenged were frustrated when compared with their sighted counterparts. Studies reported that visually impaired experience severe psychological and behavioral problems, specifically during adolescence period. Wong et al. (2009, as cited in Parveen and Khan, 2016) investigated the impact of visual impairment on quality of life in a study of 1249 adolescents aged 11 to 18 years. The study showed that the levels of psychological and school functionality are

significantly low. Jan et al. (1977) reported that 57 percent children with visual impairment had psychiatric disorder. Prasad et al. (1996) defined mental health a state of complete well-being. Mental health as per the definition of World Health Organization (W.H.O) is one of the needed factors for general health. The W.H.O defines health as, "A state of complete physical, mental, and social well-being, not merely the absence of disease". The W.H.O definition of mental health includes emotional well-being and ability to live a full and meaningful life. A person who has no disease is not ill, but he can't be termed as healthy until all the dimensions of his body, including mental dimension, function completely. A mentally healthy person shows a homogenous organization of desirable attitudes, healthy values and righteous self-concept and a scientific perception of the world as a whole (Rani & Singh, 2012). In contrast, a person with poor mental health faces emotional and behavioural problems. According to Smith, Segel and Segel (2011), mentally healthy people can deal difficult situation whereas poor mental health ceases such abilities. Mental health is essential for overall learning as well as for social and emotional development of an individual.

In the recent years, the researchers have shown interest on exploring the influence of different factors on mental health of school students. Research on mental health has demonstrated that mental health affects learning, academic success and social interactions of school students. It has been found that students with good mental health are more successful whereas students with poor mental health often struggle to cope up with the demands of the society. In a longitudinal study, Fleming et al (2005) described that students with strong mental health performed better in academics and achieve higher standardized test scores. Research conducted by Teacher's College at Columbia University (2005) revealed that students, who struggle emotionally and behaviorally, were likely to drop out of school. The studies on mental health of students with disabilities and without disabilities showed that former had poor mental health as compared to their normal counterparts. In an investigation, Read et al. (2001) found that 'depression and lack of self-confidence were common in orthopedically disabled'. The lower level of motivation, poor self-esteem and bad experiences in routine life made disabled to feel inferior to the non-disabled. By and large, the mental health is byproduct of day to day interaction in the society. It has been observed that the interaction of the disabled with non-disabled in social affairs is not healthy. The disabled are still considered and treated as 'aliens'. One of the most common misconceptions about the disability is that it is a curse of God and the disabled has got it because of their *Karma* in past life. Such theories and perceptions adversely affect mental status of the disabled. It lowers down their motivation, aspirations and self-concept (Sharma et al., 2004). Halder and Datta (2012) noted significant differences among sighted and visually impaired adolescents with respect to the overall self-concept including the domains namely physical appearance, popularity, happiness and satisfaction. Vaughn, Elbaum & Boardman (2001) found a relationship between self-concept and physical disability. It was discovered that disability negatively affects the self-concept and poor self-concept leads to poor mental health. It is also observed that the mental health is affected by the poor physique. Varni and James (1996, cited in Halder and Datta, 2012) indicated that physical appearance affects psychological distress. Students with disabilities often experience that their growth and development is slower as compared to the non-disabled child. So, these children with disabilities possess very poor mental health (Sharma et al., 2004). Fisher et al. (1991, cited Parveen & Khan, 2012) stated that in every social situation, the person who is having disabilities, their thoughts and

feelings were found more negative in comparison to normal one. Punia and Berwal (2013) found that mental health of the visually impaired students were having poor mental health.

Studies conducted to find out the relationship between mental health, gender and demographic variables suggests that there is no difference in mental health on the basis of gender and organisation (Rani and Singh, 2012). In contrast, Basu (2008) found gender differences in the status of mental health and male had better mental health than female. Viswanath & Reddy, 2016 conducted a study on mental health status of high school students in relation to their gender, locality and caste revealed that mental health is closely associated with gender, locality and caste. The study revealed that boys possessed better mental health than girls; urban students have better mental health status than the rural students and upper class students have better mental health than backward class students. Mishra and Jha (2015) examined overall as well as interactive effect of gender and residence on the mental health of college students. The findings revealed an overall significant effect of gender and residence on mental health but there was no interactive influence of gender and residence on mental health of college students. Ashish (2016) investigated the influences of gender and residential status as well as the interaction effects of gender and residential status on mental health of aged people staying in old age home and within family set up and found that gender and residential status do not interact to influence mental health.

It is clearly evident from review studies that personal and social factors have effect on mental health. Very few studies were found related with exploring the effect and contribution of gender, degree of impairment and type of school on mental health of visually impaired students. Hence, the present study was aimed at evaluating the contribution and effect of gender, degree of impairment and type of school on mental health of visually impaired.

Objectives

1. To find the interactive effect of gender and degree of visual impairment on mental health of visually impaired students.

2. To ascertain the contribution of gender, degree of visual impairment and type of school on mental health of visually impaired students.

Hypothesis

H_{01} There is no significant interactive effect of gender and degree of visual impairment on mental health of visually impaired students.

H_{02} There is no significant contribution of gender, degree of visual impairment and type of school on mental health of visually impaired students.

Method

Descriptive method was used to collect the data. Gender, degree of impairment and type of school were considered as independent variables while mental health was taken as dependent variable.

Participants

The sample for the study consisted of two hundred students studying in the inclusive and special school settings, from entire state of Haryana, India. Those students who were having multiple disabilities along with visual impairment were not included in the study as this might influence the outcome. The sample was selected by following multi-stage random sampling technique from five special schools and 52

inclusive schools. Multi stage random sampling was employed in order to create a more representative sample of large population of visually impaired students in Haryana state. Further, the unavailability of comprehensive list of all the visually impaired students studying in special and inclusive schools necessitated the use of this sampling technique. The sample comprised the two groups, having 100 students from each inclusive and special school.

Research Instrument

The Mental Health Battery for Visually Impaired (MHB-VI) was used to assess the mental health of the students. This battery consisted of 61 items belonging to six broad dimensions of the mental health. The six sub-dimensions are emotional stability, over-all adjustment, autonomy, security-insecurity, self-concept and emotional intelligence. Standardization of the tool was done by following prescribed procedure. Item analysis was done by using t-value and discrimination index. The reliability of the tool was determined by using Cronbach's alpha and split–half reliability method, the values of which were 0.89 and 0.80 respectively. The values indicated that the battery is reliable and all the test items were measuring mental health. To determine construct validity, the coefficient of correlation between the score of this battery and Mental Health Battery by Arun Kumar Singh and Alpana Sen Gupta was computed and its value came out to be 0.58 which was fairly good. Both positively and negatively skewed items, based on five point Likert scale, were included in this battery.

Research Procedure

Data was collected after seeking permission from the headmaster/principal of the concerned school. Rapport was established with the students by exchanging introduction and students were told about the purpose and objectives of the study in brief. Subjects were also assured that all this information will be kept confidential and will be used for research purpose only. Thereafter, instructions mentioned in the tools were explained to the students verbally. Visually impaired students were comprised of both low vision and blind students. Consequently, the degree of visual impairment varies in both the groups. Looking at the different needs of subjects, the tools were administered in three different ways. For blind students who knew Braille were given Braille sheets of the tools, while those who did not know Braille, every item of the tools was explained and responses were filled by the investigators. However, those low vision students who were able to read and write filled their responses themselves. Data generated from the instrument was analysed using statistical package for social sciences (SPSS).

Results

The effect of two independent variables gender and degree of visual impairment was analysed by applying two way ANOVA. Preliminary analyses were performed to ensure that there was no violation of the assumptions underlying ANOVA. The value of Levene's Test of Equality of Error Variances given in Table 1 came out to be significant, indicating that the variance of dependent variable across the group was not equal. Therefore, a more stringent significance level (i.e. 0.01) for evaluating the results of two way ANOVA was set.

Table 1.Summary of ANOVA to find the Effect of Gender and Degree of Visual Impairment on Mental Health (N=200)

Source of Variance		Sum of Squares	Df	Mean Square	F	Significance Value	Remarks(at 0.01 level)
Gender	A	4722.371	1	4722.371	5.673	0.018	Not Significant
Degree of Visual Impairment	B	11585.11	1	11585.11	13.917	0.000	Significant
Gender*Degree Visual Impairment	A*B	3533.792	1	3533.792	4.245	0.041	Not Significant
Error		163152.35	196	832.430			
Total		9698238.00	200				
Corrected Total		195181.92	199				
Levene's Test of Equality of Error Variances			$df_1 = 3$ $df_2 = 196$		8.524	0.000	Significant

It can be interpreted from the Table 1 that the F-ratio for interactional effect of gender and degree of visual impairment was 4.24, which was not significant at 0.01 level of significance. Hence, the null hypothesis H_{01} stating, "There is no significant interaction effect of gender and degree of visual impairment on mental health of visually impaired students" was retained at 0.01 level of significance. Further, it was observed from the above finding that in case of visually impaired students, the influence of degree of visual impairment on mental health was not dependent on whether they were male or female.
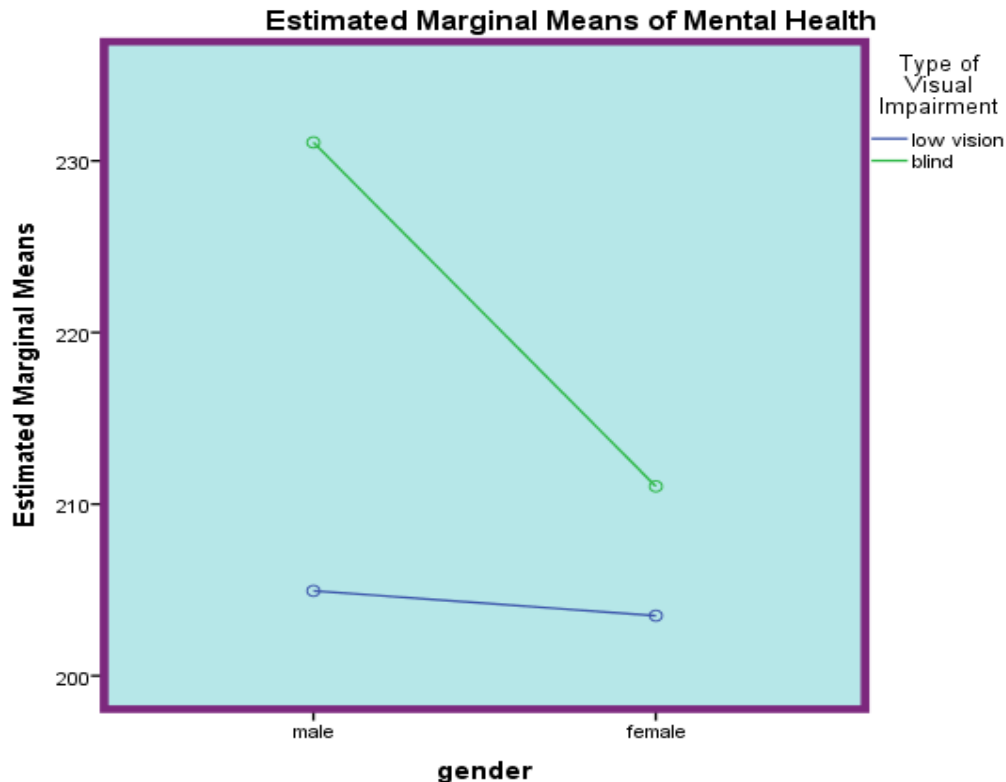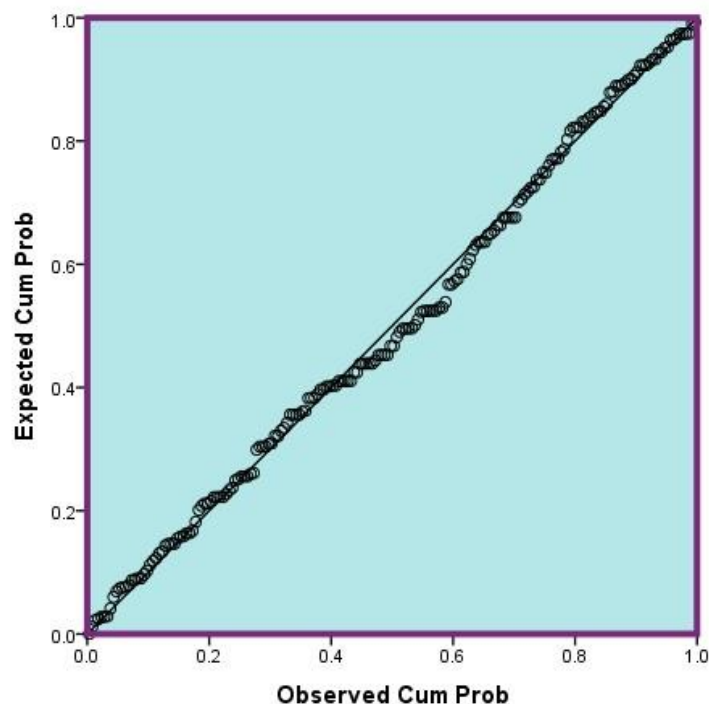
Figure 1: Effect of Gender and Degree of Visual Impairment on Mental Health of Visually Impaired Students

Furthermore, as shown in Fig.1, the lines were not crossing each other and were showing insignificant ordinal interaction, so main effects of the independent variables were also interpreted. It was observed that there was a significant main effect for degree of visual impairment (F_B (1,196) = 13.917; p=.000) whereas no significant main effect for gender (F_A (1,196) = 5.673; p=.018) was established. It can be inferred that the male and the female did not differ in the level of mental health but there was a difference in the scores of mental health, depending upon the degree of visual impairment. Thus, the results showed that degree of visual impairment had significant main effect on the mental health of visually impaired students.

Normal Probability Plot for mental health is shown in Fig. 2 revealed that most of the observed values were lying in a reasonably straight diagonal line from bottom left to top right. In this manner, the assumption of normality was followed. In addition to this, it was discernible from the values of tolerance and variance inflation factor (VIF) given in Table 2 that the assumption of multi-collinearity was not violated. Further, from Table 2, it was evidenced that the value of beta coefficient for type of school i.e special and inclusive schools came out to be 0.462 which was the largest and significant at 0.05 level of significance. Whereas, the values of beta coefficient for gender and the degree of visual impairment were -0.084 and -0.039 respectively and came out to be not significant at 0.05 level of significance. By this way, it can be concluded that the type of school made the strongest unique contribution in prediction of the dependent variable namely mental health.

Figure 2: Normal P-P Plot of Regression Standardized Residual for Mental Health

But the contributions of other two independent variables namely gender and degree of visual impairment were found very weak as well as insignificant. It was evidenced that type of school contributed 7.5 percent (calculated by squaring the value of partial correlation coefficient and multiplying by 100) to the value of R squared. Hence, the null hypothesis H_{02} stating, "There is no significant contribution of gender, type of school and degree of visual impairment on mental health of visually impaired students", was accepted in relation to gender and degree of visual impairment whereas not accepted in regard to type of school at 0.05 level of significance.

Table 2. Summary of Multiple Regression Analysis for Dependent Variable-Mental Health (N=200)

Independent Variables	Dependent Variable : Mental health					
	Tolerance	VIF	Part correlation	Standardized Coefficients Beta	Significance Value	Remarks (at 0.05 level)
Gender	0.855	1.169	-0.078	-0.084	0.219	Not Significant

Degree of Visual Impairment	0.385	2.598	-0.024	-0.039	0.705	Not Significant
Type of School	0.353	2.833	0.274	0.462	0.000	Significant

Regression Model summary given in Table 3 revealed that this model explained 22.1 percent of variance in mental health of visually impaired students, which can be considered as good model in social sciences.

Table 3. Regression Model Summary for Dependent Variable-Mental Health

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	0.470[a]	.221	0.209	27.849

a. **Predictors: (Constant), Type of School, Gender, Degree of Visual Impairment**

Further, this model was tested for its statistical significance on the basis of ANOVA summary given in Table 4. F-ratio (3,196) for this regression model came out to be 18.52 which was statistically significant at 0.05 level of significance. In this way, the results of regression analysis showed that the type of school emerged as a significant contributor to mental health, but gender and degree of visual impairment did not emerge as significant contributors.

Table 4. ANOVA summary for Dependent Variable-Mental Health

Model	Sum of Squares	Df	Mean Square	F	Significance Value
Regression	43172.807	3	14390.936	18.552	0.000[b]
Residual	152009.113	196	775.557		
Total	195181.920	199			

b. **Predictors: (Constant), Type of School, Gender, Degree of Visual Impairment**

Discussion

The study was aimed to assess whether there was any interactive effect of gender and degree of visual impairment on mental health of visually impaired students and to ascertain the contribution of gender, type of school and degree of visual impairment on mental health of visually impaired students. The findings revealed that gender and the degree of visual impairment had no significant interactional effect on mental health of visually impaired students. However, the degree of visual impairment had significant main effect on the mental health at 0.01 level of significance. This finding was found in consonance with the finding of Alam (2001) who reported significant contribution of hearing status on academic achievement and self-concept of hearing impaired students. In another study on visually impaired students, Rambir (2007) reported that status of vision had significant effect on mental health. In relation to main effect of gender on the mental health, Aghara (1995) reported that sex difference had no significant effect on the mental health of the students. However, the results related with interactional effect of gender and degree of visual impairment on mental health could not be compared due to lack of empirical studies in this area. This suggested that degree of visual impairment produced significant main effect in determining the mental health of the visually impaired students.

Gender and the degree of visual impairment had no significant contribution on mental health of visually impaired students but type of school emerged as a significant contributor to mental health. This regression model explained 22.1 percent of variance in mental health scores of visually impaired, which may be considered as a good model as far as field of social sciences is considered. This finding was in agreement with findings of Manjuvani (1990) and Sharma and Lata (2014) who reported that the school environment contributed to the mental health index. Findings in relation to effect of gender were supported by Aghara (1995) who reported no significant effect of sex difference on the mental health of the students. Considine and Zapla (2002) also reported that the type of school a child attended influenced the educational outcomes.

Conclusion

The finding of the present study demonstrates that the personal and demographic factors of visually impaired students contribute towards their mental health. Consequently, the results highlight the importance of considering degree of impairment and type of school while providing mental health services to visual impaired students. In addition, the current study investigated the interaction effects of gender and degree of impairment which have not been previously examined in great detail. The fact that type of school is the most potent predictor, highlights its strong association with mental health of visually impaired. Although, research on other factors contributing to mental health of visually impaired is needed as theses three variables explains only 22.1 percent of variation in mental health. Further studies on these variables can be conducted for better generalization, as identification and understanding of the factors associated with mental health would facilitate the development of intervention and targeting problems of visually impaired in two separate school settings.

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