International Journal of Advanced Biochemistry Research

Dr. Sumedha Chaudhary
Teaching Faculty, Department of Human Development and Family Studies, Chandra Shekhar Azad University of Agriculture & Technology, Kanpur, Uttar Pradesh, India

Divya Kaushik
Research Scholar, Department of Human Development and Family Studies, Chandra Shekhar Azad University of Agriculture & Technology, Kanpur, Uttar Pradesh, India

Ayushi Mishra
Research Scholar, Department of Human Development and Family Studies, Chandra Shekhar Azad University of Agriculture & Technology, Kanpur, Uttar Pradesh, India

Dr. Shashi Yadav
Ph.D. Department of Human Development and Family Studies, Acharya Narendra Deva, University of Agriculture & Technology, Ayodhya, Faizabad, Uttar Pradesh, India

Corresponding Author:
Dr. Sumedha Chaudhary
Teaching Faculty, Department of Human Development and Family Studies, Chandra Shekhar Azad University of Agriculture & Technology, Kanpur, Uttar Pradesh, India

Comparing the impact of intervention on depression levels between boys and girls

Dr. Sumedha Chaudhary, Divya Kaushik, Ayushi Mishra and Dr. Shashi Yadav

DOI: https://doi.org/10.33545/26174693.2024.v8.i4Sc.952

Abstract
This research was carried out in Prayagraj city with the objectives 1) To find out the prevalence of depression in boys and girls across SES and to check the efficacy of the intervention package. Total of 180 children were taken (90 boys and 90 girls). For the intervention a group of 103 children (48 boys & 55 Girls) with moderate and mild depressive symptoms were taken as it was advised by the experts not to include children with severe depression in the programme. Kuppuswami's Socioeconomic Status scale (1962) revised in (2014) by Kumar and Tiwari was used. CES-DC scale developed by Laurie Radloff was used to check the levels of depression. The intervention package contained one activity booklet and Counseling sessions: 1) Group Counseling and 2) Individual Counseling. Results showed that depression in children was reduced significantly ($p<0.05$) after intervention.

Keywords: Depression, intervention, children

Introduction
Nowadays in modern society due to increasing in child related crimes, children have ceased to be the carefree epitome of peace and mental harmony that they were thought to be in the earlier times. Many changes have come in with the ever changing ways of life of a modern man. Children are affected by different kinds of mental and emotional complexities, unlike their earlier counterparts. It is the very sad scenario and really a heart sprain fact that drastic changes even children are falling prey to the vice called "DEPRESSION". It is appalling but never the less it's true. More and more children are becoming victims of depression of an entire world. There are many changes in modern life like an increase in the number of working mothers, over exposure to media, loss of a dear one, lack of confidence and inability to confide in others are some of the major causes of depression in children. Children and adolescents with good mental health are able to attain and maintain optimal psychological, social functioning and well-being. They have a sense of identity, self-worth, an ability to be productive, have the capacity to tackle developmental challenges and use of cultural supports maximize growth. Moreover, a good mental health of children and adolescent is crucial for their active socio economic participation. Their mental disorders manifest themselves in many areas. In different ways which are poorly understood and affected, children are mistakenly viewed as "not trying hard enough" or as troublemakers. It is further made worse by stigma and discrimination in our society today (WHO, 2001) [5]. Awareness, early prevention, and early help through professional treatment could help curb the numbers of children who have depression.

Materials and Methods
Prayagraj city of Uttar-Pradesh was selected purposively because the researcher was familiar to this city so that the data could properly collect. The sample universe of the study consisted of 90 girls between the age group of 8-12 years through stratified sampling, 30 each from upper, middle and lower socio-economic status from the schools of Allahabad.

Data Analysis: The data was scored, tabulated, analyzed using statistical techniques like frequency and percentage, Mean, Standard Deviation, 't' Test.

Intervention package
Activity booklet: An activity booklet was developed for children with depression which contained instructions for the activities like rating oneself, identifying positive traits within, recognition and expression of feelings, anger management, and conversion of negative thinking into positive thinking. Ways to reduce stress factors, scheduling of leisure activities, structuring daily life, awareness of the available resources, training in social competences, problem solving strategies, activities to increase self-confidence and self- esteem.

Counseling for Children
1. **Group Counseling:** Group counseling was done for children. In children groups 4 to 5 of them were taken for group discussion with purpose to identify in depth the reasons for depression in them, which could be handled intensively. Children were constantly advised to engage in constructive outdoor and indoor games, spend minimum time with gadgets, to be involved in family and school activities as much as possible. Later in individual counseling sessions regularly for the period of three months.

2. **Individual counseling:** Individual counseling was also done for the children for the period of 3 months. Session with each individual was held thrice. In individual sessions problems of each individual were heard and suggestions were given accordingly.

Results and Discussion

Table 1: Distribution of the boys before and after intervention across socio economic strata in reference to their level of depression

Depression Levels	Boys											
	Lower SES				Middle SES				High SES			
	Before Inter.		AI		Before Inter.		AI		Before Inter.		AI	
	F	P	F	P	F	P	F	P	F	P	F	P
Moderate	12	44.44	7	25.92	6	24.00	3	12.00	9	34.62	2	7.69
Mild	11	40.74	3	11.11	3	12.00	1	4.00	7	26.92	1	3.84
Normal	4	14.82	17	62.97	16	64.00	21	84.00	10	38.46	23	88.47
Total	27	100	27	100	25	100	28	100	26	100	26	100

F=Frequency, P= Percentage

The results indicate that after intervention, in the lower socioeconomic group, the maximum percentage of boys found in the category of normal mental health increased to 62.97%, compared to 14.82% before intervention. Conversely, the percentage of boys showing mild depression decreased to 11.11% from 40.74% before intervention, while the percentage of boys with moderate depression decreased to 25.92% from 44.44%. These findings highlight the efficacy of the intervention, as there was a significant reduction in the number of boys experiencing mild and moderate depression.

In the middle socioeconomic group, 84% of boys had normal mental health after intervention, compared to 64% before intervention. The percentage of boys with mild depression decreased to 4% from 12%, and those with moderate depression decreased to 12% from 24%.

Similarly, in the high socioeconomic group, there was a decrease in the percentage of boys experiencing depression after intervention. 88.47% of boys had normal mental health post-intervention, compared to 38.46% before intervention. The percentage of boys with mild depression decreased to 3.84% from 26.92%, and those with moderate depression decreased to 7.69% from 34.62%. These results demonstrate the effectiveness of the intervention in reducing symptoms of depression in boys across all socioeconomic groups.

Table 2: Distribution of girls across socio economic groups before and after intervention with reference to their level of depression

Level of Depression	Girls (N=74)											
	Lower SES (n=28)				Middle SES (24)				High SES (22)			
	BI		AI		BI		AI		BI		AI	
	F	P	F	P	F	P	F	P	F	P	F	P
Normal	2	7.14	15	53.58	9	37.5	18	75	8	36.66	16	72.72
Mild	14	50	6	21.42	6	25	2	8.33	7	31.82	2	9.09
Moderate	12	42.86	7	25.00	9	37.5	4	16.67	7	31.82	4	18.19
Total	28	100	28	100	24	100	24	100	22	100	22	100

F=Frequency, P=Percentage

The table illustrates the distribution of girls before and after intervention across socioeconomic groups in relation to their level of depression. The results indicate a notable shift after intervention, particularly in the lower socioeconomic group, where 53.58% of girls were classified as having normal mental health post-intervention, compared to only 7.14% before intervention. Additionally, the percentage of girls with mild depression decreased from 50% to 21.42% after intervention, while those with moderate depression decreased from 25% to 14.29%. This highlights the efficacy of the intervention, as there was a significant reduction in the number of girls experiencing mild and moderate depression.

In the middle socioeconomic group, 75% of girls had normal mental health after intervention, compared to 37.5% before intervention. The percentage of girls with mild depression decreased from 25% to 8.33%, and those with moderate depression decreased from 37.5% to 16.67%. The effectiveness of the intervention was evident in reducing symptoms of mild and moderate depression in this group as well.

Similarly, in the high socioeconomic group, there was a decrease in the percentage of girls experiencing depression after intervention. 72.72% of girls had normal mental health post-intervention, compared to 36.66% before intervention. The percentage of girls with mild depression decreased from

31.82% to 9.09%, and those with moderate depression decreased from 31.82% to 18.19%. This further underscores the effectiveness of the intervention in reducing symptoms of mild and moderate depression in girls from the high socioeconomic group.

The results indicate that the intervention activities were effectively followed by the girls, resulting in a decrease in symptoms of mild depression after intervention. The intervention program included relaxation techniques, cognitive restructuring, scheduling leisure activities, etc., which helped prevent depression and reduce negative thoughts and sources of stress for the children. Rosanna Rooney (2013) [2] conducted a longitudinal study on reducing depression in 9–10 year old girls from low socioeconomic backgrounds and concluded that children in the intervention condition reported a significant reduction in depressive symptoms post-intervention, while no changes were evident in the control group.

Table 3: Comparison of depression levels of boys belonging to the lower socio economic group before and after intervention

Level of Depression	Lower Socio economic group					
	BI		AI		t-cal	T tab at 0.05%
	Mean	S.D	Mean	S.D		
Normal	7.25	0.95	8	0.86	3.18*	2.08
Mild	16.36	1.43	13.67	1.15	4.38**	2.14
Moderate	23.33	2.53	21.4	2.3	3.86*	2.09

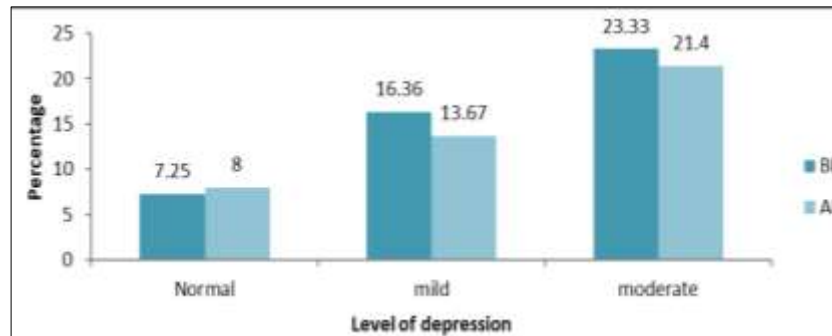*Significant $p \leq 0.05$, ** Highly significant, $p \leq 0.01$

Fig 1: Comparison of depression levels of the boys belonging to the lower socio economic group before and after intervention

The table and Figure 3 above display the comparison of depression levels before and after intervention among boys from the lower socioeconomic group. The results indicate a significant improvement in the mental health of the boys in this socioeconomic group. With the calculated 't' value (3.18) exceeding the tabulated 't' value (2.08) at a 0.05 significance level, there is a significant difference in the mental health of boys pre and post-intervention. Furthermore, the post-intervention mean value (8) surpassing the pre-intervention mean value (7.25) of mental health indicates that the children with sound mental health increased after intervention, demonstrating the effectiveness of the conducted intervention in reducing depression in the boys. In the mild level of depression in children, a highly significant reduction was observed after intervention, as the calculated 't' value (4.38) was higher than the tabulated 't' value (2.46) at a 0.01 significance level, indicating a highly significant difference in the mental health of boys pre and post-intervention. The pre-intervention mean value of depression (16.36) was higher than the post-intervention mean value (13.67) of mild level depression, suggesting that the depression level decreased after intervention, reflecting the effectiveness of the conducted intervention in reducing depression in the boys.

Similarly, moderate level depression in children was also significantly lower after intervention, as the calculated 't' value (2.86) exceeded the tabulated 't' value at a 0.05 significance level, indicating a significant difference in the mental health of boys pre and post-intervention. The pre-intervention mean value of moderate level depression (23.33) was higher than the post-intervention mean value (21.4), indicating a reduction in the number of children with depression after intervention, demonstrating the effectiveness of the conducted intervention in reducing depression in the boys.

Table 4: Comparison of depression levels of boys belonging to middle socio economic group before and after intervention

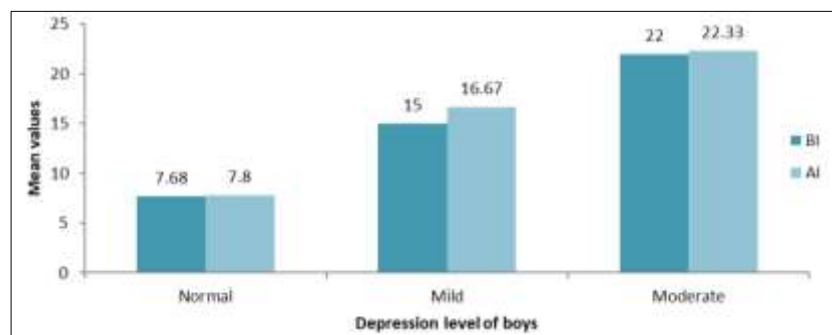| Level of Depression	Middle Socio-economic group					
	BI		AI		t-cal	T tab at 0.05%
	Mean	S.D	Mean	S.D		
Normal	7.68	1.19	7.8	1.23	2.44*	1.725
Mild	15.0	1.52	16.67	2.6	2.67	2.92
Moderate	22.0	3.72	23.33	3.0	2.052	2.015

*Significant $p \leq 0.05$

Fig 2: Comparison of depression levels of the boys belonging to middle socio economic group before and after intervention

The table and Figure 4 above illustrate the comparison of depression levels before and after intervention among boys from the middle socioeconomic group. The results indicate a significant improvement in the mental health of the boys in this socioeconomic group. With the calculated 't' value (2.67) surpassing the tabulated 't' value (1.725) at a 0.05 significance level, there is a significant difference in the mental health of boys pre and post-intervention. Furthermore, the post-intervention mean value of normal mental health (7.8) exceeding the pre-intervention mean value (7.68) suggests that the conducted intervention effectively reduced depression in the boys.

In the category of mild depression, a non-significant reduction in the number of children with depression was found after intervention, as the calculated 't' value (2.67) was lower than the tabulated 't' value (2.92) at a 0.05 significance level. Similarly, in the moderate level of depression, a non-significant reduction was observed in the level of depression, as the calculated 't' value (2.052) was lower than the tabulated 't' value (2.015) at a 0.05 significance level.

Overall, the results indicate a significant improvement in the mental health of boys after intervention. Maximum boys showed some improvement in their mental health, with some showing no signs of depression after the intervention. Although the improvement was not statistically significant in the categories of mild and moderate depression, a slight improvement was observed in the mental health status of the boys, indicating the effectiveness of the intervention program in reducing depression levels in children. A similar interventional study was conducted by Tompson *et al.* (2001), who also found a significant effect of the intervention program in reducing levels of depression in children.

Table 5: Comparison of depression levels of boys belonging to high socio economic group Pre and post Intervention

Level of Depression	High Socio economic group					
	Pre-Intervention		Post- Intervention		t-cal	T tab at 0.01%
	Mean	S.D	Mean	S.D		
Normal	5.5	1.18	6.91	1.37	4.765**	1.717
Mild	15.85	1.57	14.0	2.8	4.312**	1.943
Moderate	21.67	2.5	20.5	2.12	4.769**	1.86

** Highly significant $p \leq 0.01$

The table above presents the comparison of depression levels before and after intervention among boys from the high socioeconomic group. The results indicate a highly significant improvement in their mental health. With the calculated 't' value (4.765) exceeding the tabulated 't' value (1.717) at a 0.01 significance level, there is a significant difference in the mental health of boys pre and post-intervention. Furthermore, the post-intervention mean value of normal mental health (6.91) surpassing the pre-intervention mean value (5.5) suggests that the conducted intervention effectively reduced depression in the boys.

A highly significant improvement was also observed in the children having mild level of depression. As the 't' calculated (4.312) was higher than the 't' tabulated (1.943) at 0.01 per cent probability level showing a significant difference in the mental health of boys pre and post intervention. The pre intervention mean value of depression (15.85) was higher than the post intervention mean value (14) which indicates that the level of depression in children had reduced which shows that the conducted intervention was effective in reducing the depression in the boys.

A highly significant improvement was also observed in the moderate level of depression. As the 't' calculated (4.769) was higher than the 't' tabulated (1.86) at 0.01 per cent probability level showing a significant difference in the mental health of boys pre and post intervention. The pre intervention mean value of moderate depression (21.67) was higher than the post intervention mean value (20.5) revealing the effectiveness of the intervention in reducing the depression in the boys.

The results clearly demonstrate that the implemented intervention significantly decreased the level of depression among boys from the higher socioeconomic group. Post-intervention, the majority of boys exhibited normal mental health, indicating the absence of depressive symptoms. Moreover, there was a reduction in the number of boys experiencing mild and moderate levels of depression following the intervention, suggesting the effectiveness of the intervention program in reducing depression prevalence among children. Gold *et al.* (2004) [1] also conducted a study examining the impact of intervention on depression. Their analysis revealed that the intervention program's activities had medium to large positive effects on clinically relevant outcomes, which were statistically highly significant (p < .001) and statistically homogeneous.

Table 6: Comparison of depression levels of girls belonging to lower socio economic group before and after intervention

Level of Depression	Lower Socio economic group					
	BI		AI		t-cal	T tab at 0.05%
	Mean	S.D	Mean	S.D		
Normal	5.87	0.70	6.73	1.42	4.30**	1.761
Mild	15.14	2.2	15.0	2.16	3.71*	1.771
Moderate	23.0	2.62	22.14	3.18	2.713*	1.796

*Significant $p \leq 0.05$ ** Highly significant $p \leq 0.01$

Above table shows the comparison of depression levels of girls belonging to lower socio economic group before and after intervention. Results reveal that in the lower socio economic group a highly significant improvement was observed in the mental health of girls. As the 't' calculated (4.30) was higher than the 't' tabulated (1.761) at 0.01 per cent probability level showing a significant difference in the mental health of girls pre and post intervention. The post intervention mean value of the normal mental health (6.73) was higher than the pre intervention mean value (5.87) which indicates that the level of depression reduced after intervention which shows that the conducted intervention proved to be effective in reducing the depression in the girls.

After intervention a significant improvement in the mental health was also observed in the girls with mild level of depression. As the t calculated (3.71) was higher than the t tabulated (1.771) at 0.05 per cent probability level showing a significant difference in the mental health of girls pre and

post intervention. The pre intervention mean value of depression (15.14) was higher than the post intervention mean value (15) which indicates that the conducted intervention was effective in reducing the depression in the girls.

After intervention a significant reduction was observed in the moderate level of depression in girls of lower socio economic group. As the t calculated (2.713) was higher than the t tabulated (1.796) at 0.05 per cent probability level showing a significant difference in the mental health of girls before and after intervention. The pre intervention mean value of depression (23) being higher than the post intervention mean value (22.14) indicates that the intervention played a pivotal role in reducing the depression in the girls.

It is clear from the above results that intervention was effective in bringing about the significant improvement in the depressive state of the girls. After intervention maximum girls showed normal mental health which indicates the efficacy of the implemented intervention.

Table 7: Comparison of depression levels of girls belonging to middle socio economic group before and after intervention

Level of Depression	Middle Socio economic group				t-cal	T tab at 0.05%
	BI		AI			
	Mean	S.D	Mean	S.D		
Normal	7.33	1.0	7.96	1.5	2.328*	1.74
Mild	16.67	1.36	14.33	2.3	2.884*	2.015
Moderate	22.11	3.33	22.0	1.63	2.083*	1.86

*Significant $p<0.05$

The table above illustrates the comparison of depression levels before and after intervention among girls from the middle socioeconomic group. The results indicate a significant improvement in the mental health of girls in this socioeconomic group. With the calculated 't' value (2.328) surpassing the tabulated 't' value (1.74) at a 0.05 significance level, there is a notable difference in the mental health of girls pre and post-intervention. Moreover, the post-intervention mean value (7.96) exceeding the pre-intervention mean value (7.33) for girls with normal mental health suggests that the intervention effectively alleviated depression in these girls.

After intervention a significant improvement was observed in the children with mild level of depression. As the t calculated (2.884) was higher than the t tabulated (2.015) at 0.05 per cent probability level showing a significant difference in the mental health of girls before and after intervention. The pre intervention mean value of depression (16.67) were higher than the post intervention mean value (14.33) which indicates that the conducted intervention did work in reducing depression in girls.

After the intervention, a notable improvement was observed in children with moderate levels of depression. The calculated t-value (2.083) exceeded the tabulated t-value (1.86) at a 0.05 significance level, indicating a significant difference in the mental health of girls before and after intervention. The pre-intervention mean depression score (22.11) was higher than the post-intervention mean score (22), suggesting that the intervention effectively reduced depression in the girls. Thus, it is evident that girls from the middle socioeconomic group experienced a significant enhancement in their mental health post-intervention, indicating the success of the intervention. Gold *et al.* (2004)

[1] similarly noted that the intervention program's activities had a medium to large positive impact on clinically depressed children.

Table 8: Comparison of depression levels among girls from high socioeconomic backgrounds before and after intervention

Level of Depression	High Socio economic group				t-cal	T tab at 0.05%
	BI		AI			
	Mean	S.D	Mean	S.D		
Normal	6.75	1.16	7.11	1.49	2.428*	1.74
Mild	16.14	1.34	15.5	1.70	2.668*	1.943
Moderate	22.5	1.98	21.0	1.15	2.213*	1.943

*Significant $p \leq 0.05$

Above table shows the comparison of depression level before and after intervention of the girls belonging to high socio economic group. Results reveal that in the high socio economic group a significant improvement was observed in the girl's mental health. As the 't' calculated (2.428) was higher than the 't' tabulated (1.74) at 0.05 per cent probability level showing a significant difference in the mental health of girls pre and post intervention. The post intervention mean value of the normal mental health (7.11) was higher than the pre intervention mean value (6.75) which indicates that the conducted intervention was effective in reducing the depression in the girls.

After intervention a significant reduction was observed in the mild depression in children. As the 't' calculated (2.668) was higher than the 't' tabulated (1.943) at 0.05 per cent probability level showing a significant difference in the mental health of girls before and after intervention. The pre intervention mean value (16.14) was found higher than the post intervention mean value (15.50) which indicates that the conducted intervention proved effective in reducing the depression in the girls.

After intervention a significant improvement was observed in the moderate level of depression as well. As the 't' calculated (2.213) was higher than the t tabulated (1.943) at 0.05 per cent probability level showing a significant difference in the mental health of girls pre and post intervention. The pre intervention mean value (22.5) was higher than the post intervention mean value (21), which reflects that the conducted intervention was helpful in reducing depression in the girls.

After intervention, a notable decrease in depression was evident among girls from high socioeconomic backgrounds. Following the intervention, either the girls exhibited no signs of depression or experienced a significant reduction in depressive symptoms, indicating the effectiveness of the intervention program in reducing depression prevalence in children. A similar study conducted by Asarnow (2003) [4] also demonstrated significant intervention effects, where all 69 treated children exhibited decreased levels of depressive symptoms and better mental health immediately after the intervention compared to 73 untreated children.

Conclusion

This research suggests that there is a significant prevalence of depression among children. The findings of the study highlight the importance of taking proactive measures to address childhood depression through constructive activities and regular counseling. Effective communication and fostering a positive parent-child relationship can also play a

vital role in mitigating the occurrence of depression in children.

References
1. Gold C, Voracek M, Wigram T. Effects of music therapy for children and adolescents with psychopathology: A meta-analysis. J Child Psychol Psychiatry. 2004;45:1054-1063.
2. Rooney R. Reducing depression in 9-10 year old children in low SES schools: A longitudinal universal randomized controlled trial. J Behav Ther. 2013;51(12):845-854.
3. Ross. Depression, anxiety, and drug use among college students. Retrieved from Education Development Center; c2013.
4. Tompson MC, Asarnow J, Jaycox LH. Depression in youth: Psychological interventions. J Clin Child Psychol. 2003;30:33-47.
5. World Health Organization. The World Health Report 2001: New Understanding, New Hope. Geneva, WHO; c2001.