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**RESEARCH ARTICLE**
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# PSYCHOLOGICAL ASSESSMENT OF CHILDREN WITH SHORT STATURE

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## ABSTRACT

**Background**: Physical competence is a matter of normal & healthy living among all but adolescent population has a major concern, because during this period confidence & adequate body images are inculcated. If by chance it is disturbed due to any reason it develops lots of behavioral complexities like inferiority, poor body images & various psychological disturbances.

**Aim & Objective:** This investigation has observed psychological impact on children who carry short stature therefore their level of anxiety, depression, temperament & personality were being assessed.

**Methods:** The proposed study was cross-sectional study and study period was of 1 year (2017-2018). We selected cases of short stature both boys & girls (12-16 years of age) after informed consent without any history of trauma or neurological disease from our hospital. After taking consent from the parents of the children, their physical as well as psychological condition including Anxiety, General Health, Depression, Personality & Temperament were assessed by using different standardized psychological scales.

**Results:** We found males have higher health issues while females have moderate health issues. Anxiety level of entire group was ranged from mild to moderate. They also reflected higher tendency to be depressed ranging from mild to moderate. Even their temperamental issues also fell at moderate range. Personality wise significant findings are marked.

**Conclusion:** On correlation analysis there was no correlation between short stature and anxiety or depression. However there seems to be a positivecorrelation with health issues and anxiety only in females.

**Relevance:** It is important to study this impact because in case children are found to be negatively affected by their short statured physique, appropriate counseling can be done at an appropriate time, so that these children can achieve their goals to their utmost potential.

## INTRODUCTION

Being a short Stature is highly challenging for physical competence though it is rare approximately 3% among children in India. It's more disturbing during adolescence because such children remain under inferiority complexes because it disturbs the body images, level of confidence and as a result the psychological impact is noticeable1.

In the present investigation we have deliberately concentrated on adolescent population comprising both the gender with short stature evidence.

Short stature is defining as height below 3rd percentile or more than two standard deviations (SD +-) below the median height for age and gender (>-2SD) according to the standard population1. It is evidence for the definition approximately 3% of children in any given population will be short. Children who stature is (< than 3 SD) below the population mean for age and gender (<- 3 SD) are more likely to be suffering from pathological characteristics with short stature, as compared to these with stature between (-2 -3 SD), who are more likely to be affected by physiological impact that is familiar or constitutional short stature1. Adolescence is a time of change when suffering from obvious physical conditions, medical condition such as short stature can impact the emotional well-being of adolescents2. One of the most important factors is height which every adolescent carries a sincere concentration so that he/she may seek an overall competence in a desired manner. Being short in height definitely impact adolescents' overall development & competence.
Psychological impact of significantly short stature is also seen among affected adolescents3. Concerned studies have confirmed that many children & adolescents with significantly short stature are vulnerable to diverse developmental, social and educational problems, and substantiate the importance of a multidisciplinary treatment approach that includes a comprehensive psychological and medical assessment. Short stature is defined as height below third centile or more than 2 standard deviations (SDs) below the median height for age and gender (<-2 SD) according to the population standard2. As is evident from the definition, approximately 3% of children in any given populations will be short. Children whose stature is more than 3 SD below the population mean for age and gender (<-3 SD) are more likely to be suffering from pathological short stature, as compared to those with stature between -2 and -3 SD, who are more likely to be affected by physiological, i.e. familial or constitutional short stature.

There are many causes of short stature. The common etiological factors are under nutrition and chronic systemic illness, followed by growth hormone deficiency (GHD) and hypothyroidism1.
According to various researches children with short stature have poor body image, poor confidence, poor performance, poor adjustment, poor emotional wellbeing and poor physical wellbeing4.
If we trace back the etiology behind the psychological problems in children with short stature are mainly because of societal bias towards tallness, which ultimately leads to poor achievement in competition with their own siblings and peers, failure to attain developmental skills and difficulty in coping with the physical environment5. The societal bias towards tall males varies from preference being given to taller person for higher jobs, to electing tall
presidents and choosing tall husbands. Short children are reportedly vulnerable to developmental delays and low self-esteem problems because they are treated on the basis of their height rather than their actual age3. From adolescence, many are physically unable to compete socially or in sports with their age-peers, and then as adults, they are less likely to marry or live independently5.

A psychological profile of children with significantly short stature (height below the 3rd centile) resulting from various biological conditions (e.g. growth hormone deficiency (GHD), Turner's syndrome, constitutional delay of growth and adolescence)1 has emerged from almost three decades of research. Although little effort has been made to differentiate any etiology specific psychological effects of growth delay, most investigations have focused on two major areas: cognitive functioning and psychosocial adjustment. Studies in the cognitive domain have focused on intelligence and academic achievement, while studies in psychosocial adjustment have addressed social competence and behavioural problems3. In this strive the it is necessary to check following psychological measures – overall health, level of anxiety, level of depression & organization of personality.

**Need for the study:** Short stature is not an uncommon finding in pediatric picture. Review of recent literature has clearly outlined the psychological ill effects and negative impact of short stature in adolescents. If we see the prevalence of short stature in India, A study of 200 children referred to the hospital for their short stature demonstrated that 132 (66%) were below the 5th percentile of the Indian standard. 67.8% of the children between the Indian standard's 5th percentile

and the Western standard's 3rd percentile were of normal variant short stature6. It is important to study this impact because in case children are found to be negatively affected by their short stature, appropriate counseling can be done at an appropriate time, so that these children can achieve their goals to their utmost potential7.

**METHODOLOGY** This study has been conducted in collaboration with Clinical Psychology, Santosh Medical College, Hospitals, Ghaziabad, UP. **Design:** The design of the study was observational (cross sectional) in nature & date collection was done in the period of one year (2017-2018). **Sample & sampling:** After having ethical clearance by departmental & institutional ethical committee, total 30 subjects (both males & females- (15+15) with short stature, who visited in the department in said period, were selected after informed consent.
**Sampling frame** Adolescents subjects with short stature selected from Pediatric Out Patient Department, Santosh MedicalCollege, Hospital, Ghaziabad, UP.

30 subjects (of both gender belonging to12-18 yrs (who were less than 2 Standard deviation for their expected height for age of WHO charts) were attending OPD due to any illness except history of trauma or any neurological disease were enrolled. After taking detailed history anthropometry and complete physical examination was done for each child. Height of the subject was compared on the W.H.O. charts and degree of short stature was assessed and compared with mean parental height. Arm span and US/LS ratio was used to assess the types of short stature whether proportionate/ disproportionate. Bone age assessment was done for all patients by X- ray elbow AP. Tanner & Whitehouse charts were used.

**TABLE No 1 Showing gender & age wise distribution, (round off to nearest one month)**

| AGE | BOYS | GIRLS | TOTAL |
|---|---|---|---|
| **MEAN AGE** | 13.66 | 13.5 | 14.55 |
| **S.D.** | +1.50 | +1.41 | +1.49 |
| 12-12yrs 11month | 3 | 4 | 7 |
| 13-13 yrs 11month | 3 | 2 | 5 |
| 14-14 yrs 11month | 2 | 3 | 5 |
| 15-15 yrs 11month | 3 | 4 | 7 |
| 16-16 yrs 11month | 4 | 2 | 6 |
| **TOTAL** | 15 | 15 | 30 |

**Test Measures**
To assess the psychological impact, the following tests were administered. General Health Questionnaire **(GHQ),**Brief Anxiety scale **(BAC),** Depression scale**(DS),** High school personality questionnaire **(HSPQ),**The Early Adolescent Temperament Questionnaire **(EATQ-R)**

**RESULTS**
Appropriate statistical tests were deployed to assess the statistical significance. SPSS 22 software was used to collate the data and for statistical analysis.

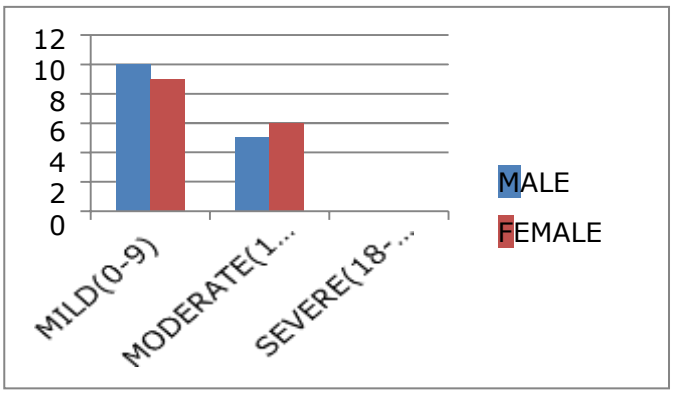


**Figure-1. COMPARISION OF DEPRESSION SCORES BETWEEN BOYS & GIRLS**

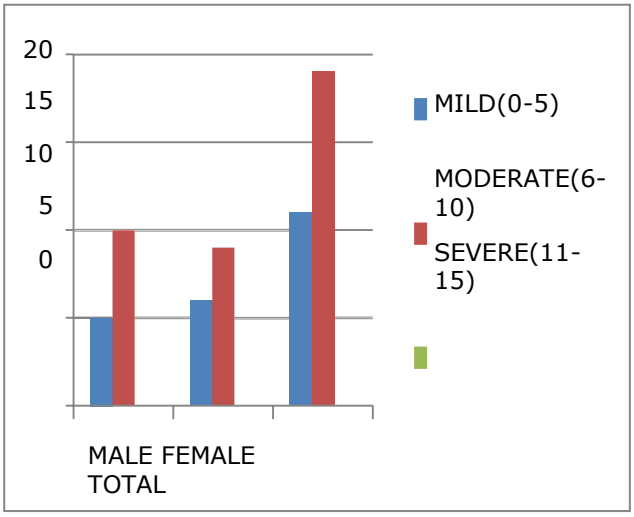


**Figure-2. COMPARISION OF ANXIETY SCORES BETWEEN BOYS & GIRLS**

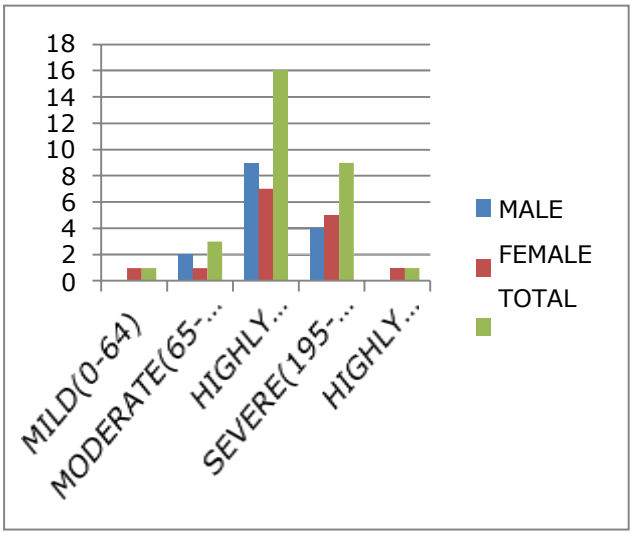


**Figure-3. COMPARISION OF TEMPERAMENT SCALE BETWEEN BOYS & GIRLS**

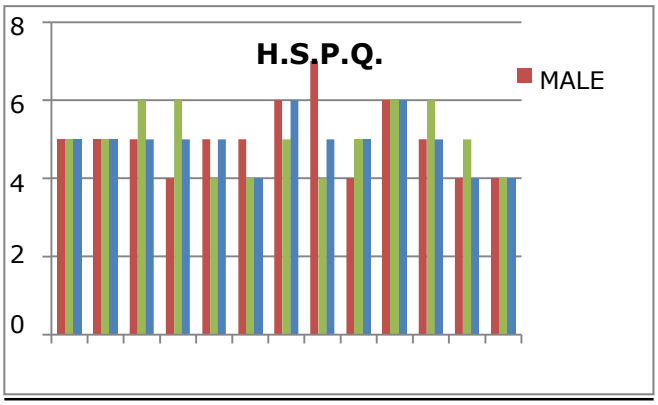


**Figure-4. MEAN VALUES OF Jr.-Sr.**H.S.P.Q TEST PROFILE

| LEVEL | HEALTH ISSUES | | DEPRESSION | | ANXIETY | |
|---|---|---|---|---|---|---|
| | M | F | M | F | M | F |
| MILD | 10 (66.6%) | 7 (46.6%) | 10 (67%) | 9 (60%) | 5 (33.3%) | 6 (40%) |
| MODERATE | 4 (26.6%) | 7 (46.6%) | 5 (33%) | 6 (40%) | 10 (66.7%) | 9 (60%) |
| SEVERE | 1 (6.6%) | 1 (6.6%) | 0 | 0 | 0 | 0 |

**TABLE NO 2. SHOWING SCORES OF HEALTH, DEPRESSION & ANXIETY**

## DISCUSSION

All cases were found to have health issues, 56.6% had mild, 36.6% had moderate & 6.6% had severe health issues. On gender analysis it was evident males had higher degree of mild health issues (66.6%) and females were more affected (46.6%) by moderate health issues. Therefore pediatric intervention is very much required. We could not find any previous study assessing the general health of short stature adolescents to compare the results. Anxiety is extremely common in adolescent age group. In the present study, entire group anxiety levels ranged from mild (36.7%) to moderate anxiety (63.3%) REF: Table no 2,figure no.2) . No significant difference was observed between males and females. In the present study 33.3% of males & 40% of females with short stature had mild anxiety disturbance, while 66.7% & 60% of moderate anxiety disturbance respectively in males and females. A study by Siegel et. al. on psychological impact of short stature in children also revealed similar results which re-emphasizes no significant difference between anxiety levels in males and females. However their study could not correlate a positive relationship between anxiety & short stature.

In moderate cases it is advisable to start intervention comprising of relaxation and stress coping which is noticeable, as it seems to be due to poor body images. The analysis of depression scores (Ref: table no 2) indicated that children with short stature tend to get depressed, which may range from mild (63.3%) to moderate (36.7%). This shows an immediate need to provide counseling. Females were found more prone to get moderate depression (40%) as compared to males (33%) because of poor body images. Therefore it is suggested that group counseling can be applied with same gender. A similar study comparing the short stature and average stature on depression severity revealed a significantdifference. Pair wise comparisons showed that short individuals had significantly higher prevalence of depression than average stature individuals. The score of temperament(figure no.3) of such adolescents had detected mild (3.3%), moderate (10%), highly moderate (53.4), severe (30%) & very severe (3.3%). Though gender wise analysis reveal males were having disturbed temperament (60%) at highly moderate level. When the temperament of their respective parents was analyzed the score were higher in the severe temperament disturbances (53.3%). There is a need to counsel parents also in order to improve their handling capacity and the adjustment issues with their children.

Several studies suggested that parents of short stature children who worry about current or future functioning of their children are usually responsible for hormone treatment of their child, while only a small number of referred adolescents appeared motivated by psychosocial problems (8). While studies that examined family functioning did not find major differences between families with short stature children & families with children of normal stature.

**PERSONALITY:**

14 personality traits (Ref: FIGURE no. 4) in both the girls and boys were tested by High School Personality Questionnaire. The entire group of girls on the basis of personality test H.S.P.Q. showed that they were averagely extraverted(A,5) & can manage their feeling(C,5),at times become inpatient but as a whole were able to manage their emotions(D,5),ego strength was weak(C,5),therefore might be facing confusions while decision making but their tough mindedness(I-4) making them to cope up with their deformed body images. At present they appeared relaxed, but in future they may face problems as their score was at just average and tended towards higher limit of average score. Hence if they are immediately taken care of, they may get benefit easily.

As such group doesn't have much of a difficulty, probably statistically many major trait values have been smoothed therefore it is indicted that gender wise observations were much more desired because group wise findings are not supportive.

Study by zimet, Owens etal show that children with short stature were significantly associated with lower educational achievement, lower self- esteem, and greater emotional distress in the adulthood (9). GroupWise co relation between short stature and depression as well as anxiety were not noticeable but gender wise there seems to be positive tendency with the health issues and anxiety in females. It means if the complexity in relation to height will increase, then the level of health issues and anxiety will increase. While in case of males nothing is significant which means female group who was carrying the problem of short stature were needed to be taken care of priority group.

**CONCLUSIONS AND SCOPE FOR THE FUTURE** Short stature is not an uncommon problem characterized by visible effects on Psychology of the child. In the present study, on co relation analysis there was no correlation between short stature and anxiety or depression. However there seems to be a positive corelation with health issues and anxiety only in females, where health issues and anxiety level will increase in proportion to shortness of stature.

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