

**Original article****Parenting style and Emotional regulation in children with Borderline and Average intellectual functioning**

Archana Kashyap, Thiyam Kiran Singh, Priti Arun

Address for correspondence: Ms. Archana Kashyap, Government Medical College & Hospital (GMCH), Chandigarh. Email: archana.kashyap01@gmail.com

---

**Abstract**

**Background:** Children with borderline intellectual functioning represent a unique course of behavioral and developmental challenges. One such issue is emotion regulation (ER), leading to poor interpersonal relationships and adjustment issues in adulthood. There are extensive studies highlighting the role of parenting style in emotion regulation.

**Aim:** The present study compares the emotion regulation and parenting style in children having borderline intellectual functioning (BIF) versus average intellectual functioning (AIF).

**Methods:** Fifty pairs of child-parent were recruited, 25 children with AIF, and 25 children with BIF. The intelligence quotient (IQ) score on Malin's Intelligence Scale for Indian Children (MISIC) was used to identify children as BIF and AIF. Emotional Regulation Questionnaire-Child and Adolescents (ERQ-CA) was used with children to assess ER. Parental Authority Questionnaire (PAQ) was administered to either parent to assess the parenting style of parents.

**Results:** Descriptive statistics and Chi-square test were used to analyze the data. The results suggested that children with BIF significantly differed ( $p=.004$ ) from children with AIF in emotion regulation strategy at .01 level of significance. Additionally, parents of children with

BIF were permissive, and the difference in parenting style was significant ( $p=.022$ ) at .05 level of significance.

**Conclusions:** The child's cognitive abilities might be influencing his functioning and interaction with parents. The intervention programs aiming at the regulation of emotions for children with BIF, along with parental training, might be helpful. More research is required to understand and assess issues of this vulnerable and neglected group.

**Keywords:** Borderline intelligence, average intelligence, IQ, emotion regulation, parenting style.

## **Introduction**

Borderline intellectual functioning (BIF) is a categorization of intelligence with below-average cognitive ability and identified as scoring between one and two standard deviations below the IQ mean on normal curve distribution of intelligence [1]. It is a kind of transition between intellectual disability (IQ less than 69) and average intellectual functioning (AIF). As per the normal distribution curve, intelligence is equally distributed. Accordingly, 68% of people fall under the category of average intelligence (IQ 90-109), and 13% comprise the borderline category of intelligence (IQ 70-79) [2]. Under the billable codes of ICD, the IQ score of 85 is considered as borderline intellectual functioning [3]. This is also supported by epidemiological studies where the prevalence of BIF is reported to be 12.3% in the general population [4].

Children having BIF often report academic difficulties as they progress to higher classes and are often labeled as slow learners or backward learners [5]. The difficulties are not limited only to academics but also in problem-solving, social interaction, and managing emotions [6]. This may cause or result in behavior problems in this population. The problems may also be rooted in parenting because parents are social role models and primary agents of socialization or social

learning having a significant impact on the temperament and conduct of the child[7]. Parental attachment and interaction with significant others in childhood determine the emotional regulation in adulthood [8]. In early years of life, emotional regulation is mostly exercised externally by the parents, whereas skills or coping learned by the child in the early years lay a foundation of coping and dealing with negative emotions /events and managing one's negative emotions arising out of difficult life situations[9]. Parenting is broadly alike for children achieving developmental milestones at a normative age and for those with delays, but it is the added demands in the care of a child having delayed milestones that exerts pressure on the parents. Thus parenting can be a significant factor in children with borderline intellectual functioning [7].

## **Methodology**

### *Setting and participants*

It is a cross-sectional study design using purposive sampling comparing the parenting styles of the parent and emotion regulation of the children in two groups. The sample was recruited from the clinical psychology services section of the out-patient department of psychiatry of a tertiary care center located in an urban area. Children between 6-13 years of age of both genders were included. The groups were based on the criteria of IQ. One group had children with BIF with IQ scores from 70 to 85, and the second group had children with AIF having IQ score in the range of 90-109. The Emotional regulation (ER) of 25 children with BIF and parenting style of the respective parent was compared with the ER of 25 children of AIF and parenting style of the respective parent. Thus, the entire sample comprised 50 pairs of child-parent in 2 groups study group (BIF) and control group (AIF).

### *Inclusion and exclusion criteria*

The children between 6-13 years of age, both sexes and those with IQ scores from 70 to 85, were included in the study group. Those in the control group included children between 6-13 years of age, both sexes and having IQ scores from 90 to 109. The exclusion criterion for children in both groups was children having any psychiatric morbidity or substance abuse. We did not use any diagnostic interview to rule out. Rather, clinical assessment by a psychiatrist was sought to rule out a psychiatric co-morbidity. Both the groups included either parent, as per the availability, with a minimum of 10 years of education. Those having any psychiatric morbidity on clinical evaluation were excluded.

### *Data collection tools*

The children were identified based on their IQ scores as per Malin's Intelligence Scale for Indian Children (MISIC) [10]. The corresponding parent was screened using the General Health Questionnaire (GHQ-12)[11], once the child-parent pair were recruited. The tools used for study measures were Emotion Regulation Questionnaire- Children and Adolescents (ERQ-CA) [12] to assess the emotional regulation of children and Parental Authority Questionnaire-Revised (PAQ-R) [13] to assess the parenting style.

*Malin's Intelligence Scale for Indian Children (MISIC):* It is the tool used to assess intelligence in Indian children. It is an adaptation of the Weschler Intelligence Scale for Children. The Indian adaptation comprises 11 sub-tests, further classified into verbal and performance scales. The test has obtained a test-retest reliability coefficient of 0.91 on Pearson's product-moment correlation. Concurrent and congruent validity is 0.63 [10].

*General Health Questionnaire (GHQ-12)*: It is a short version comprising 12- items of the 60-item instrument developed in 1970. There are 12-items in the test which detect mental health issues in the past four weeks. It has been comprehensively used in different settings and different cultures [11].

*Emotion Regulation Questionnaire-Children and Adolescents (ERQ-CA)*: ERQ-CA was developed by Gullone and Taffe in 2012, which is the children and adolescent version of the widely used Emotion regulation Questionnaire. Child and adolescent revision include simplifying the item language and reduced response scale from 7 points to 5 points. The test comprises 10- items to assess cognitive reappraisal and emotion suppression. Higher the score higher is the use of corresponding ER strategy. It has satisfactory internal consistency [12].

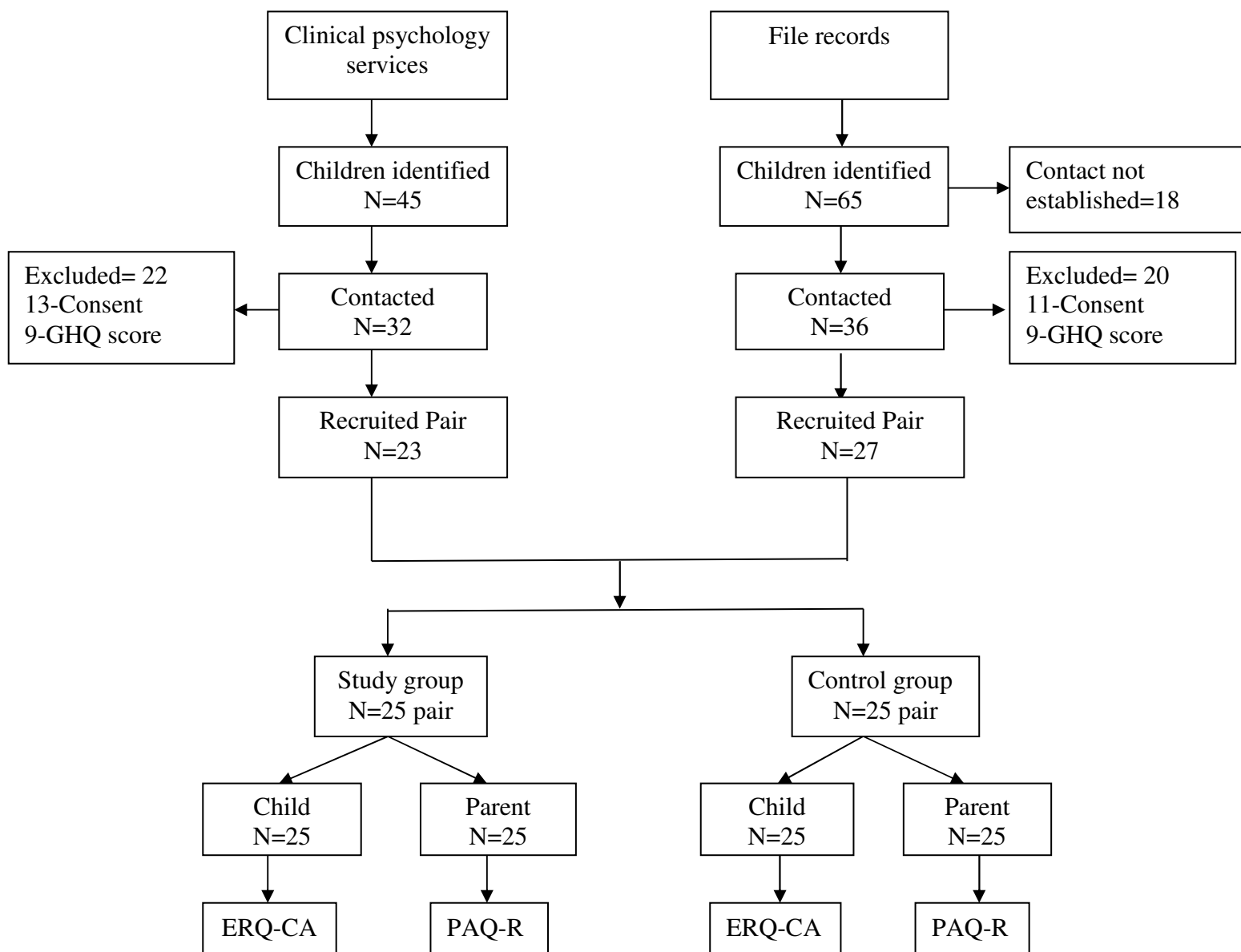
*Parental Authority Questionnaire-Revised (PAQ-R)*: It is the scale developed by Buri, based on the parenting styles proposed by Baumrind. It's a 30- item scale with reliability from 0.74 to 0.87. The parent marks each statement describing his belief about parenting on Likert scale [13].

### *Procedure*

The parents (n=110) of the children, having IQ scores indicating BIF and AIF, who were referred to the Clinical Psychology Services (CPS) of the out-patient department (OPD) of Psychiatry on a routine basis for assessment of intelligence were approached by the researcher.

Sixty- five were contacted through file records of the previous three months. Out of 45 who attended the OPD, 13 did not give consent, and out of 32 who gave consent, nine were excluded on GHQ. Those nine were advised to seek psychiatry consultation. 23 parents with the respective child were recruited after clinical evaluation of the child by the psychiatrist to rule out any psychiatric morbidity.

**Figure-1: Recruitment of children and their parents**



Out of 65 file records of the previous three months, 47 could be contacted through the telephone; others did not have a valid number or did not reply to the phone calls. Eleven did not give consent for the study, and 36 gave consent, and the appointment was fixed by the researcher. Nine of these 36 parents were excluded on GHQ, and 27 were approached whose children were further assessed by the psychiatrist. Each participant (child) was included after the assessment of psychiatric morbidity by the psychiatrist. Once recruited, the children were assessed using ERQ-CA, and parents were assessed for their parenting style using PAQ (Fig 1).

### *Statistical analysis*

The data was coded and computed using the statistical package for social sciences (SPSS) 20.0 version [14]. The descriptive statistics were computed for sociodemographic variables of the children and the parents as well as scores on measures of ERQ and PAQ. Chi-square test and its level of significance were computed to compare the differences in parenting style and emotional regulation between 2 groups.

## **Results**

### *Socio-demographic characteristics*

As depicted in table-1 that children in the two groups matched on sex ratio and education. The age range of children was  $10.08 \pm 3.463$  in the study group and  $10.88 \pm 2.297$  in the control group. The differences in mean and SD (Table 1) were minimal but statistically significant ( $p=0.042^*$ ).

**Table-1: Demographic profile of study group(BIF) and control group (AIF)**

| Variables           |      | Study group (BIF) | Control group (AIF) | $X^2$  | $P$    |
|---------------------|------|-------------------|---------------------|--------|--------|
| Age (Mean $\pm$ SD) |      | 10.08 $\pm$ 3.463 | 10.88 $\pm$ 2.29    | 17.486 | 0.042* |
| Sex (f)             | Male | 17 (68%)          | 19 (76%)            | .0397  | 0.529  |

|               |             |         |          |       |       |
|---------------|-------------|---------|----------|-------|-------|
|               | Female      | 8 (32%) | 6 (24%)  |       |       |
| Education (f) | Primary     | 8(32%)  | 3 (12%)  | 1.112 | 0.574 |
|               | Middle      | 8 (32%) | 12 (48%) |       |       |
|               | High school | 9 (36%) | 10 (40%) |       |       |

Note: BIF= Borderline intellectual functioning, AIF= Average intellectual functioning, f= Frequency, M=Mean, SD= Standard deviation,  $X^2$ =Chi square,  $*=p<0.05$ ,  $**=p<0.01$ ,  $***=p<0.001$

The parents of children in the two groups matched on sex, education, occupation, family type.

But they significantly differed on age ( $p=0.017^*$ ) and income ( $p=0.001^{***}$ ), as shown in table-2.

**Table-2: Demographics profile of Parents in study group (BIF) and control group (AIF)**

| Variables      |                   | Study group (BIF) | Control group (AIF) | $X^2$  | <i>P</i> |
|----------------|-------------------|-------------------|---------------------|--------|----------|
| Age (Mean±SD)  |                   | 34.45±5.69        | 34.24±4.93          | 31.610 | 0.017    |
| Sex(f)         | Male              | 9 (36%)           | 8 (32%)             | .089   | 0.765    |
|                | Female            | 16 (64%)          | 17 (68%)            |        |          |
| Education (f)  | High School       | 1 (4%)            | 1 (4%)              | .168   | 0.983    |
|                | Sr. Sec.          | 13 (52%)          | 14 (56%)            |        |          |
|                | Graduate          | 8 (32%)           | 7 (28%)             |        |          |
|                | PG                | 3 (12%)           | 3 (12%)             |        |          |
| Occupation (f) | Unemployed        | 5 (20%)           | 3 (12%)             | .937   | 0.817    |
|                | Clerk/Shop Owner  | 7 (28%)           | 6 (24%)             |        |          |
|                | Semi-Professional | 2 (8%)            | 2 (8%)              |        |          |
|                | Professional      | 11 (44%)          | 14 (56%)            |        |          |
| Income (f)     | 5000-10000        | 11 (44%)          | 1 (4%)              | 10.965 | 0.001*** |
|                | More Than 10000   | 14 (57%)          | 24 (96%)            |        |          |
| Family (f)     | Nuclear           | 9 (36%)           | 13 (52%)            | 4.306  | 0.116    |
|                | Joint             | 13 (52%)          | 6 (24%)             |        |          |
|                | Extended          | 3 (12%)           | 6 (24%)             |        |          |

Note: BIF= Borderline intellectual functioning, AIF= Average intellectual functioning, f= frequency, M=Mean, SD= Standard deviation,  $X^2$ =Chi square,  $*=p<0.05$ ,  $**=p<0.01$ ,  $***=p<0.001$

### *Emotional regulation in children*

Emotion regulation of the children in two groups differed significantly ( $p= .004^{**}$ ). The children with BIF follow suppression as a strategy for ER, whereas those with AIF follow reappraisal as



an emotion regulation strategy. Results indicate that (Chi-square= 8.117,  $p < 0.05$ ) there is a statistically significant association between emotion regulation (reappraisal/ suppression) and intelligence i.e., BIF and AIF. The strength of association between emotion regulation and intelligence has a very strong positive relationship ( $\phi = 0.40$ ) [15].

### *Parenting style*

The parenting style of the parents differed significantly in the two groups ( $p = 0.022^*$ ). The parents of the children with BIF had a permissive style of parenting (48%), whereas parents of children with AIF had an authoritative parenting style (64%). Results indicate that (Chi-square= 7.613,  $p < 0.05^*$ ), there is a statistically significant association between parenting style (permissive, authoritarian, and authoritative) and intelligence of the child i.e., BIF and AIF. The strength of the association between parenting style and intelligence is a very strong positive relationship. ( $\phi = 0.39$ ) [15] Comparison of emotion regulation in children and parenting style of parents between both the groups is given in table-3.

**Table-3: Emotion regulation of children and parenting style of the parents in study groups (BIF) and control group (AIF)**

| Variables     |                      | Study group<br>(BIF)<br>N=25<br><i>f</i> | Control group<br>(AIF)<br>N=25<br><i>f</i> | $X^2$ | <i>P</i>       | <i>Phi</i> |
|---------------|----------------------|--|--|-------|----------------|------------|
| <b>ERQ-CA</b> | <b>Reappraisal</b>   | 9 (36%)                                  | 19 (76%)                                   | 8.117 | <b>0.004**</b> | 0.403      |
|               | <b>Suppression</b>   | 16(64%)                                  | 6(24%)                                     |       |                |            |
| <b>PAQ- R</b> | <b>Permissive</b>    | 12 (48%)                                 | 4(16%)                                     | 7.613 | <b>0.022*</b>  | 0.390      |
|               | <b>Authoritarian</b> | 6 (24%)                                  | 5 (20%)                                    |       |                |            |
|               | <b>Authoritative</b> | 7(28%)                                   | 16 (64%)                                   |       |                |            |

Note: ERQ-CA= Emotion Regulation Questionnaire-Child And Adolescents, PAQ-R= Parental Authority Questionnaire-Revised, BIF= Borderline intellectual functioning, AIF= Average intellectual functioning,  $X^2$ = Chi square,  $*=p < 0.05$ ,  $**=p < 0.01$ ,  $***=p < 0.001$

It was observed that in children with AIF the dominant parenting style was authoritative and emotion regulation style was reappraisal in comparison to children with BIF (Table 4).

Table 4: Distribution of emotional regulation in study and control group having parent with permissive parenting style and authoritative parenting style

| <b>ERQ-CA</b> | <b>Study Group (BIF) with permissive parenting<br/>n= 12</b> | <b>Control Group (AIF) with authoritative parenting<br/>n= 16</b> |
|---------------|--|---|
| Reappraisal   | 6  | 14  |
| Suppression   | 6  | 2   |

Note: ERQ-CA= Emotion Regulation Questionnaire-Child And Adolescents, BIF= Borderline intellectual functioning, AIF= Average intellectual functioning

## **Discussion**

The present study aimed to compare parenting style and children's emotion regulation between children with BIF and children with AIF. The parents in these two groups were found to differ significantly in terms of income. This can have a significant impact on the children as lower levels of socio-economic status (SES) is associated with higher levels of emotional and behavioral difficulties, including social problems, delinquent behavior symptoms among children, and parenting practices [16].

The emotional regulation of parents has a role to play in children's emotional regulation. The emotional development of children is linked with the emotional socialization behavior of parents; parents who had better regulatory abilities scored higher on optimal socialization, affecting their emotional reactivity and expression. Therefore, parents who are better at regulating their own emotions may also be better at teaching effective emotional regulation strategies to the children under distressing circumstances [17]. Children with BIF are known to be vulnerable to greater adjustment difficulties; the parenting style can further limit the child's functioning as per their

intellectual capacity. In the current study, it was found that children with BIF have parents with a permissive parenting style, and this style of parenting is known to cause emotional dysregulation and other behavioral issues in children [18]. This implies that children with BIF have adjustment difficulties, which are further reinforced by negative parenting as permissive parents do not model adaptive coping and problem-solving skills. In another study, permissive maternal parenting was found to have a negative effect on the emotion regulation of the children[7], but it is unknown that if both parents differ in their parenting style, whether positive parenting style acts as a protective factor against the negative parenting.

The findings revealed that the authoritative parenting style was most dominant in the parents of children with AIF (64%). Authoritative parenting style (64%) was found to be dominant in children with AIF. This might imply that such parents inherit and teach adaptive coping mechanisms leading to socially well-adjusted individuals. Higher intelligence and authoritative parenting are usually seen as a protective factor in comparison to lower intelligence and permissive parenting [19], and children of authoritative parents usually grow as well socialized and independent adults [20]. Thus, parental control and freedom are significantly linked to a child's emotion regulation. This might be the reason that those with BIF have more psycho-social problems arising out of their intellectual resources as well as socialization from parents.

The results indicate greater use of reappraisal as an emotion regulation strategy in the AIF group (76%), whereas the BIF group was found to be using more suppression (64%). This difference might be due to the reason that children with AIF are found to appraise a situation logically and rationally without emotions overpowering them. On the other hand, children with BIF have more inclination to suppression of emotions instead of appraising the context or situation generating the emotion, which could account for more use of maladaptive strategies of emotion regulation

in BIF. Suppression leads to anxiety and depressive state in adulthood and dissatisfactory interpersonal relations [21].

Additional findings revealed that in children with BIF, having a parent with a permissive style of parenting tends to use both the emotional strategies i.e., reappraisal and suppression equally (Table 4). In the case of children with AIF most prominent parenting style used was that of an authoritative style of parenting. Children in this group used more of reappraisal as a way to deal with emotions. Research has documented negative effects of permissive maternal parenting on the emotion regulation of the children, and; authoritative and authoritarian style of parenting is positively correlated with emotional management skills in children, whereas negative relation was found with the permissive style of parenting [20].

Therefore, it can be understood that emotion regulation is the result of intellectual resources as well as socialization. A larger number of children with BIF used emotional suppression, whereas those with AIF used reappraisal. The children with BIF and AIF were exposed to significantly different parenting styles. Thus, parental training can be an integral part of the treatment while dealing with issues of children with borderline intelligence. Such training programs can help in preventing the adjustment issues faced by this population as they grow older. The limitations of the study included a small sample size and gender of the child, and the parent were not controlled. No objective assessment was used to rule out psychiatric morbidity in children. Future studies can use matched group study design to avoid the effect of confounding variables. The tool used to assess emotional regulation in children having vernacular translation would have been better rather than using a tool in English. Still, the study has significant implications as it provides understanding to the clinicians in planning intervention for children with BIF. Similar studies can be conducted for a greater understanding of individuals with borderline intelligence.

To conclude, the present study provides additional valuable empirical evidence for the use of emotion regulation in the population with BIF. An important aspect of treatment may include understanding, correcting misinterpretations of emotional stimuli, and adaptive ways of dealing with emotions.

### **Acknowledgment**

I am thankful to Aarzo Gupta, Assistant Professor, Clinical Psychology for her constant support and guidance in this process

### **Conflict of interest**

None declared

### **References**

1. Wieland J, Zitman F. It is time to bring borderline intellectual functioning back into the main fold of classification systems. *B J Psych Bull* 2015, 40:204-206.
2. Singh A. Tests, measurements and research methods in behavioral sciences. New Delhi: Tata McGraw-Hill, 1986.
3. The Web's Free 2019/2020 ICD-10-CM/PCS Medical Coding Reference. Available from: <https://www.icd10data.com/>
4. Hassiotis A, Strydom A, Hall I, Ali A, Lawrence-Smith G, Maltzer H, Head J, Bebbington P. Psychiatric morbidity and social functioning among adults with borderline intelligence living in private households. *J Intellect Disabil Res* 2008, 52:95-106.
5. Hassiotis A. Borderline intellectual functioning and neurodevelopmental disorders: Prevalence, co-morbidities and treatment approaches. *Adv Ment Health Intellect Disabil* 2015, 9:275-283.
6. Alesi M, Rappo G, Pepi A. Emotional profile and intellectual functioning: A comparison among children with borderline intellectual functioning, average intellectual functioning, and gifted intellectual functioning. *SAGE Open* 2015, 5:1.

7. Fenning R, Baker J, Baker B, Crnic K. Parent-child interaction over time in families of young children with borderline intellectual functioning. *J Fam Psychol* 2014, 28:326-35.
8. Schmidt S, Tinti C, Levine L, Testa S. Appraisals, emotions and emotion regulation: An integrative approach. *Motivation and Emotion* 2010, 34:63-72.
9. Pons F, Harris P, de Rosnay M. Emotion comprehension between 3 and 11 years: developmental periods and hierarchical organization. *Eur J Dev Psychol* 2004, 1:127-132.
10. Malin AJ. Manual for malin's intelligence scale for Indian children (MISIC). Lucknow: Indian Psychological Corporation, 1969.
11. Gautam S, Nijhawan M, Kamal P. Standardization of Hindi version of Goldberg's general health questionnaire. *Ind J Psychiatry* 1987, 29:63-66.
12. Gullone E, Taffe J. The emotion regulation questionnaire for children and adolescents (ERQ-CA): a psychometric evaluation. *Psychological Assessment* 2012, 24:409-417.
13. Buri J. Parental authority questionnaire. *J Pers Assess* 1991, 57:110-119.
14. Statistical Package for the Social Sciences. Armonk, New York: IBM; 2011.
15. Akoglu H. User's guide to correlation coefficients. *Turk J Emerg Med* 2018, 18:91-93.
16. Kaiser T, Li J, Pollmann-Schult M, Song AY. Poverty and child behavior problems: the mediating role of parenting and parental well-being. *Int J Environ Res Public Health* 2017, 14:981-987
17. Perlman S, Camras L, Pelphrey K. Physiology and functioning: parents' vagal tone, emotion socialization, and children's emotion knowledge. *J Exp Child Psychol* 2008, 100:308-315.
18. Zarra-Nezhad M, Aunola K, Kiuru N, Mullah S, Moazami-Goodarzi A. Parenting styles and children's emotional development during the first grade: the moderating role of child temperament. *J Psychol Psychother* 2015, 5:206-218.
19. Vanderbilt-Adriance E, Shaw D S. Protective factors and the development of resilience in the context of neighborhood disadvantage. *J Abnorm Child Psychol* 2008, 36:887-901.
20. Baumrind D. Effects of authoritative parental control on child behavior. *Child Development* 1966, 37:887-900.
21. Moore S A, Zoellner L A, Mollenholt N. Are expressive suppression and cognitive reappraisal associated with stress-related symptoms? *Behav Res Ther* 2008, 46:993-1000

---

Archana Kashyap, Clinical Psychologist, Thiyam Kiran Singh, Associate Professor Clinical Psychology, Priti Arun, Professor Psychiatry, MD Psychiatry, Department of Psychiatry, Level 5, Block D, Government Medical College & Hospital (GMCH), Sector 32 - B, Chandigarh