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Child temperament influence on social and emotional development of children in different ECCE centers

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Abstract

The study was conducted in Dharwad taluk of Karnataka state during the year 2018-20 to know the effect of child temperament on social and emotional development. Total sample of 208 children of age between 3-6 years of children attending different ECCE centers in rural and urban areas of Dharwad taluk. The study investigated the following objectives: To assess the social and emotional development of rural and urban children and to know the influence of child temperament on social and emotional development of children in rural and urban areas. Transdisciplinary Play Based Assessment-2 tool was used to assess the social and emotional development of children. Early Childhood Behavior Questionnaire scale was used to measure temperament of children between the ages of 3 years to 7 years. The qualitative approach involved naturalistic observation method to document, analyze and study the impact of play-based activities on social and emotional development. Naturalistic observation was made during children involved in free play through video recording which was complemented with participant observation which included by taking field notes. Results revealed that majority of the children in both rural and urban anganwadi belonged to watch and concern category of social and emotional development. The significant association was found between dimensions of temperament (surgency and effortful control) and social and emotional development of children. There was significant difference between levels of child temperament and social and emotional development. The difference value explained that among children with low (18.06), moderate (23.58) and high (23.87) levels of surgency there as significant difference between levels of child temperament and social and emotional development. Where as in case effortful control there was significant difference between levels of child temperament and social and emotional development. Higher the effortful control higher the social and emotional development.

Keywords: Child temperament, social, emotional development, children, ECCE centers

Introduction

Social and emotional development represents a specific domain of child development. It is a gradual, integrative process through which children acquire the capacity to understand, experience, express, and manage emotions and to develop meaningful relationships with others. (Cohen *et al.* 2005) ^[8].

Social and emotional development helps shape a child into what he will become later in life by teaching proper reactions to emotional matters. Social skills are all about a child's ability to co-operate and play with others, paying attention to adults and teachers, and making reasonable transitions from activity to activity. Emotional development is the process of learning how to understand and control emotions.

Healthy social and emotional skills developed allows children to develop relationships, master the ability to initiate, discover play and learn, develop persistence and attention, self-regulate their behavior and development entails the ability to form satisfying, trusting relationships with others, play, communicate, learn, face challenges, and experience and handle a full range of emotions. It is through relationships that young children develop these skills and attributes. Starting from birth, babies are learning who they

are by how they are treated. They teach young children how to form relationships, communicate emotions, and to deal with challenges.

Social and emotional development through play

Play can have an important role in social emotional development, allowing opportunities to engage in practice cooperation, negotiation, and conflict resolution skills. Play is often cited as a central building block to children's development, so much so that it has been stated as a human right of all children. Children's spontaneous play provides opportunities for exploration, experimentation, manipulation and problem solving that are essential for constructing knowledge. Play contributes to the development of representational as well as abstract thought. Children engage in various kinds of play, such as physical play, language play, object play, pretend or dramatic play, constructive play, and games with rules. This further influences their motivation, disposition and approaches to learning.

The complexity and diversity of play increases immensely in the preschool years, most notably with the onset of cooperative play, where children work toward a common goal and socio-dramatic play, where children act out make believe scenes. Cooperative play and socio-dramatic play

both bring about increased social interactions, where children play similarly next to each other without significant interaction (e.g., two children building their own towers). It is here where play becomes intertwined with social emotional development. Developing positive approaches to learning goes a long way to determine later academic success in life. Adults must provide opportunities for children to explore play and apply.

So with this background, a need was felt to study the effect of play based activities on social and emotional development of the preschool children in the present locality, the following objectives framed for the study:

1. To assess the social and emotional development of rural and urban children in different ECCE centers.
2. To know the effect of child temperament on social and emotional development of children in rural and urban areas.

Material and Methods

The study aimed to determine the social and emotional development of children attending different ECCE centers in rural and urban areas of Dharwad taluk. The qualitative approach involved naturalistic observation method to document, analyze and study the impact of play-based activities on social and emotional development. Naturalistic observation was made during children involved in free play through video recording which was complemented with participant observation which included by taking field notes. In quantitative research method, differential design and correlation design was employed to know the difference and relationship between social and emotional development of children attending different ECCE centers in rural and urban areas.

Population and Sample

Population: Children attending ECCE centers in rural areas of Dharwad taluk

Selection of ECCE centers

- Total eight Anganwadi’s and 2 preschools in rural areas of Dharwad taluk and six Anganwadi’s and six preschools in urban areas were visited to list out the social and emotional activities followed in the ECCE centers. Later self-structured checklist was prepared to select the ECCE centers in which similar play based activities followed ECCE centers were selected for the study.
- Based on the social and emotional development activities followed total eight ECCE centers were selected, four (two Anganwadi’s and two preschools) from rural area and urban area. Social and emotional development activities (fig 1).

Tool Description

The Transdisciplinary Play-Based Assessment-2 (TPBA-2) developed by Linder (2008) [20]. It measures social and emotional development of children between (0-6) years in different domains such as.

1. **Emotional expression:** Refers to the communication of reactions, feelings, or intentions to others through facial patterns, body posture and position of extremities, movements, gestures, and words. Includes overall

disposition or mood.

2. **Emotional/style/adaptability:** Typical affective response to different situations including:
 - a) Approach or withdrawal to new situations or stimuli and (2) adaptability to change.
 - b) Regulation of emotions & arousal states: Refers to the ability to regulate physiological states of awareness (sleeping, crying, etc.) and control emotional reactions to both internal and external stimuli, including being able to self-calm and inhibit impulsive actions and emotions.
3. **Behavioral regulation:** Refers to the ability to control impulses, monitor one’s actions and interactions, and respond within the parameters of culturally accepted behavior, including compliance with adult request, self-control over behaviors perceived as wrong, and use of social conventions.
4. **Sense of self:** Assesses one’s understanding of him/herself as a separate person capable of having an effect on his/her environment, including the desire to accomplish goals to be independent and competent.
5. **Emotional themes in play:** Refers to the expression of inner feelings, including worries, fears, and traumas through the actions of play – especially through the dramatic representations of self or dolls.
6. **Social interactions:** Assesses the ability to attend to social aspects of play, to read cues, to interpret and communicate social information, to get along with others, and to avoid negativity and conflict with others within isolated, parallel, associative, cooperative or complementary roles in play interactions.

Scoring pattern: Each item of emotional and social development of the children is observed during free play activity. Play activity observations are recorded through videotaped and also are noted in the observation note column which is further used for analysis. Based on the play activities performed between the children is analyzed through the levels of the child abilities which is scored between 1-9 score of social and emotional skill. Based on the obtained scores children were categorized as above average, typical, watch and concern.

Score	Category
7-20	Concern
21-34	Watch
35-48	Typical
49-63	Above average

Early Childhood Behavior Questionnaire (ECBQ, Rothbart, M. 2009), short form

The tool was used to assess temperament of children between the ages of 3 years to 7 years. It is a 36-item measure of toddler temperament assessing the three broad dimensions of temperament:

- a) **Surgency:** “When offered a choice of activities, how often did your child decide what to do very quickly and go after it?” “When told that loved adults would visit, how often did your child get very excited?”
- b) **Negativity:** “When told “no”, how often did your child become sadly tearful?” “When s/he asked for something and you said “no”, how often did your child

have a temper tantrum?"

- c) **Effortful Control:** "When asked to wait patiently for a desirable item (such as ice cream), how often did your child wait patiently?"

Teachers were asked to read questions about specific child behaviors and respond with the frequency in which their child behaves in that way on a scale of 1 (Never) to 7 (Always) with an eighth "Does not apply" option if that item is not relevant for their child.

Each of the sub-scale includes 12 items where the score ranges from 12-84 for each scale with higher score indicating higher surgency, negative affectivity and effortful control. The classification of all three sub-scales is as follows.

Sl. No	Levels	Scores
1	Low	12-35
2	Moderate	36-59
3	High	60-84

Results

Distribution of children attending different ECCE center of rural and urban areas of Dharwad taluk by child characteristics.

Results related to distribution of children according to child characteristics such as age, gender, socio-economic status and quality of home environment are presented in table 1.

With regard to age 38.46 percent of children in rural area of Anganwadi were belonged to 36-48 months, 32.69 percent of children belonged to 49-60 months and 28.85 percent of children belong to 61-72 months. In case of preschool 34.62 percent of children belonged to 36-48 months, 32.69 percent of children belong to 49-60 months and 32.69 percent of children belong to 61-72 months.

In urban locality, among Anganwadi 34.62 percent of children belong to 36-48 month and 49-60 months and 30.76 percent of children belong to 60-72 month. In case of preschool 40.38 percent of children belong to 36-48 month, 32.69 percent of children belong to 49-60 month and 26.93 percent of children belong to 61-72 month of age.

With regard to gender, in rural Anganwadi's 53.84 percent of children were girls and 46.16 percent of children were boys. In case of rural preschools 55.76 percent of children were boys and 44.24 percent of children were girls. In urban locality, majority (59.62%) of children in Anganwadi's were girls and 40.38 percent of children were boys. In preschools 51.92 percent of children were boys and (48.08%) of children were girls.

With regard to socio-economic status, majority (53.84%) of children in rural Anganwadi's belongs to poor socio-economic status and 46.16 percent of the children belong to lower middle category of socio-economic status. In case of preschools (61.54%) of children belongs to upper middle and 38.46 percent of children belong to lower middle. In urban locality, majority (67.30%) of children in Anganwadi's belonged to lower middle and 32.70 percent of children belong to poor category of socio-economic status. In case of preschools 69.23 percent of children belong to upper middle category and 30.77 percent of children belong to lower middle category of socio-economic status. With regard to quality of home environment, 53.84 percent of

children in rural Anganwadi were belonged to low quality home environment and 46.16 percent of children were belonged to moderate level quality home environment category. In case of preschools 59.62 percent of children were belonged to high level quality home environment and (40.38%) of children were belonged to moderate level quality home environment. In urban locality (57.69%) of children in Anganwadi's belonged to moderate level quality of home environment and 42.31 percent of children belonged to low level quality of home environment. In case of preschools 69.24 percent of children belonged to high level quality of home environment and 30.76 percent of children belonged to moderate level quality of home environment.

Social and emotional development of Anganwadi and preschool children in rural and urban areas.

The findings from Table 2 highlighted the results of association and comparison of type of school and social and emotional development of children in rural and urban areas. It was found that in rural areas the type of school and levels of social and emotional development of children was significantly associated with each other ($\chi^2 = 60.48$) at 1 percent level of significance. It was observed that among children in rural area, most of the children in Anganwadi's fell under watch (65.38%) category of social and emotional development, 34.62 percent fell under concern level of social and emotional development and none of the children from Anganwadi's belonged to typical level of social and emotional development.

Among children with attending preschools, majority (69.23%) of them belonged to typical level of social and emotional development and 30.76 percent of children belonged to watch level of social and emotional development.

Considering urban area type of school and levels of social and emotional development of children was significantly associated with each other ($\chi^2 = 32.39$) at 1 percent level of significance. It was observed that among children in urban area, most of the children in Anganwadi's fell under watch (59.62%) category of social and emotional development, followed by 26.92 percent fell under concern and 13.46 percent of children fell under typical level of social and emotional development. Among children attending preschools, majority (61.53%) of children belonged to typical level of social and emotional development and 38.47 percent of children belonged to watch level of social and emotional development.

The difference value explained that children attending preschools had significantly higher scores on social and emotional development (36.13) as compared to children from Anganwadi's (22.04) in rural and (26.38) in urban area.

Results in the table 2a showed that comparison of domains of social and emotional development of children by type of school in both rural and urban area showed significant difference under domains of social and emotional development i.e emotional expression, emotional adaptability, regulation of emotions, and arousal states, behavioral regulation, sense of self, emotional themes in play and social interaction. The difference value explained that children attending preschools scored higher mean

scores than children attending Anganwadi's under the domains of social and emotional development, i.e emotional expression (5.23), emotional adaptability (5.19), regulation of emotions and arousal states (5.15), behavioral regulation (5.19), sense of self (4.90), emotional themes in play (5.00) and social interaction (5.46).

In case of urban area the difference value showed that children attending preschools scored higher mean scores than children attending Anganwadi's under the domains of social and emotional development, i.e emotional expression (5.28), emotional adaptability (5.29), regulation of emotions and arousal states (5.25), behavioral regulation (5.31), sense of self (4.89), emotional themes in play (5.05) and social interaction (5.65).

Influence of child temperament on social and emotional development of Anganwadi and preschool children in rural and urban areas.

The results of Table 3 to 3b depict the association between social and emotional development of children and temperament in terms of surgency, negative affectivity and effortful control.

With regard to children from rural Anganwadi, the findings from Table 3 to 3b show the association between surgency (temperament dimension) and levels of socio-emotional development. Among children low in surgency, cent percent of them fell under concern level of social and emotional development and among children with moderate level of surgency, most of them (89.65%) belonged to watch category of social and emotional development. Among children with high level of surgency, cent percent of them fell under watch level of social and emotional development. The chi square value of 40.11 showed significant association.

Considering children from rural preschool, among children with low surgency, cent percent of them belonged to watch level of social and emotional development. Majority (69.23%) of children with moderate level of surgency fell under typical level of social and emotional development and remaining four children (30.27%) belonged to watch level of social and emotional development. Among children with high surgency, majority (87.09%) of them fell under typical level of socio-emotional development. The association ($\chi^2=22.64$) between surgency and social and emotional development was significant among rural preschool children.

The result from Table 3 presents the association between negative affect (temperament dimension) and social and emotional development of children in rural Anganwadi and preschool.

Regarding rural Anganwadi, among children with low in negative affectivity, cent percent of them belonged to typical level of social and emotional development. Among children with moderate level of social and emotional development 63.88 percent of children belonged to watch level of social and emotional development and 36.12 percent of them belonged to concern category. Among children with high negative affectivity, equal percent (50%) of children belonged to watch and concern category of social and emotional development. There was no significant association between negative affectivity and social and emotional development of rural Anganwadi children.

With regard to children of rural preschools, among children with low level of negative affectivity, cent percent of them fell under watch level of social and emotional development. Within the group of children with moderate level of negative affectivity, 55.55 percent belonged to typical level and 44.45 percent of them belonged to watch level of social and emotional development. The significant association between levels of socio-emotional development and negative affect was evidenced ($\chi^2=10.27$).

With regard to association between effortful control and levels of social and emotional development of children under rural Anganwadi, chi square of 33.15 explained significant association (Table 13). Among children with low effortful control, (100%) of them fell under concern level of social and emotional development and among children with moderate level of effortful control 85.29 percent belonged to watch level of social and emotional development. Among children with high effortful control, (100%) of them fell under watch level of social and emotional development.

Regarding rural preschool, among children with low effortful control, cent percent belonged to watch level of social and emotional development. Among children with moderate level of effortful control, most (71.87) of the children were in typical level of social and emotional development, 28.13 percent of them fell under watch level of social and emotional development. Cent percent of rural preschool children with high effortful control belonged to typical level of social and emotional development. The significant association between levels of social and emotional development and effortful control was evidenced ($\chi^2=21.63$).

Results related to outcome of comparison of social and emotional development by child temperament are illustrated in table 3a.

Regarding rural Anganwadi, comparison of levels of child temperament and social and emotional development there was significant difference. The difference value explained that among children with low (18.06), moderate (23.58) and high (23.87) levels of surgency there as significant difference between levels of child temperament and social and emotional development. With respect to negative affectivity the significant difference between the levels of child temperament and social and emotional development was not found. Where as in case effortful control there was significant difference between levels of child temperament and social and emotional development. Higher the effortful control higher the social and emotional development.

With respect to rural preschool, comparison outcome of child temperament and social and emotional development of children, there was significant difference. The difference value explained that, among children with high surgency scored high (37.77) mean scores than moderate (35.38) and low (31.00) level on social and emotional development. With regard to negative affectivity, children with low negative affectivity scored higher mean scores than moderate and high level on social and emotional development. With regard to effortful control, children with high level of effortful control scored higher mean scores (38.53) than moderate level and low level on social and emotional development. The difference found to be significant.

Results regarding comparison of domains of social and emotional development by child temperament presented in table 3 b. Among children in rural Anganwadi with respect to surgency, children with high surgency scored significantly higher scores on emotional expression (3.37), emotional style/adaptability (3.25), regulations of emotions and arousal states (3.25), behavioral regulation (3.25) and social interaction (4.37). Among children in rural preschool with respect to surgency, children with high surgency scored higher mean scores on emotional expression (5.48), emotional adaptability (5.38), regulations of emotions and arousal states (5.58), behavioral regulation (5.38) and social interaction (5.20).

With respect to negative affectivity, children in rural Anganwadi, children with low negative affectivity scored higher mean scores on domains of social and emotional development but the significant difference was not found. Among children in rural preschool, children with low negative affectivity scored significantly higher mean score on domains of social and emotional development i.e emotional adaptability (5.56) and social interaction (5.93).

With respect to effortful control, children in rural Anganwadi, children with high effortful control scored higher mean scores on domains of social and emotional development i.e emotional style/adaptability, regulations of emotions and arousal states, behavioural regulation and social interaction. The difference between children with high, moderate and low effortful control the significant difference was found. Among children in rural preschool, with high effortful control scored significantly higher mean scores on emotional adaptability (5.38), regulations of emotions and arousal states (5.53) and social interaction (6.07).

Among children in urban Anganwadi, children with low in surgency, (100%) of them fell under concern category of social and emotional development and among children with moderate level of surgency, most of them (90.32%) belonged to watch category and 9.68 percent of them feel under concern category of social and emotional development. Among children with high level of surgency, cent percent of them fell under watch level of social and emotional development. The chi square value of 70.26 showed significant association.

Considering children from urban preschool, among children with low surgency, cent percent of them belonged to watch category of social and emotional development. More than half (58.33%) of children with moderate level of surgency fell under typical level of social and emotional development and (41.67%) belonged to watch level of social and emotional development. Among children with high surgency, (100%) of them fell under typical level of social and emotional development. The association ($\chi^2=15.03$) between surgency and social and emotional development was found to be significant among rural preschool children.

The result from Table 4 presents the association between negative affect (temperament dimension) and social and emotional development of children in urban Anganwadi and preschool.

Regarding urban Anganwadi, among children with low in negative affectivity, cent percent of them belonged to watch level of social and emotional development. Among children with moderate level of social and emotional development

80.00 percent of children belonged to watch category and 20.00 percent of them belonged to concern category. The significant association was not found between negative affectivity and social and emotional development.

With regard to urban preschool children, among children with low negative affectivity, (100%) of children belonged to typical category of social and emotional development. Children with moderate level category, 69.69 percent of them belonged to typical category and 30.31 percent of them belonged to watch category. Children with high negative affectivity, 83.34 percent of them belonged to watch category and 16.66 percent of them belonged to typical category. There was significant association between negative affectivity and social and emotional development of urban Anganwadi children ($\chi^2=15.51$).

With regard to association between effortful control and levels of social and emotional development of children under urban Anganwadi, chi square of 62.93 explained significant association (Table 4). Among children with low effortful control, (100%) of them fell under concern level of social and emotional development and among children with moderate level of effortful control 89.65 percent belonged to watch category and 10.35 percent of them belong to concern level of social and emotional development. Among children with high effortful control, (100%) of them fell under watch level of social and emotional development.

Regarding urban preschool, among children with low effortful control, cent percent belonged to watch level of social and emotional development. Among children with moderate level of effortful control, most (67.85) of the children were in typical level of social and emotional development, 32.15 percent of them fell under watch level of social and emotional development. Majority (81.25) percent of urban preschool children with high effortful control belonged to typical level and 18.75 percent of them belonged to watch category of social and emotional development. The significant association between levels of social and emotional development and effortful control was evidenced ($\chi^2=15.89$).

Results related to outcome of comparison of social and emotional development by child temperament are illustrated in table 4a.

Regarding urban Anganwadi, comparison of levels of child temperament and social and emotional development there was significant difference. The difference value explained that among children with high level of surgency scored higher (35.70) mean score than moderate level and low level category of social and emotional development there was significant difference between levels of surgency and social and emotional development. Higher the surgency higher the social and emotional development. With respect to urban preschool also children with low level of negative affectivity scored significantly higher mean scores on social and emotional development. The significant difference was not found. In case effortful control there was significant difference between levels of child temperament and social and emotional development in both urban Anganwadi and preschool. Children in high level of effortful control scored higher on social and emotional development.

With respect to urban preschool, comparison outcome of child temperament and domains of social and emotional development of children is presented in the table 4b, Among

children in urban Anganwadi with respect to surgency, children with high surgency scored significantly higher score on emotional style/adaptability (4.90), regulations of emotions and arousal states (4.90), behavioral regulation (3.90) and social interaction (6.00).

Among children in urban preschool with respect to surgency, children with high surgency scored significantly higher score on emotional style/adaptability (5.49), regulations of emotions and arousal states (5.47), behavioral regulation (5.50) and social interaction (6.45).

With respect to negative affectivity, children in urban Anganwadi, children with low negative affectivity scored higher mean scores on domains of social and emotional development but the significant difference was not found. Among children in urban preschool, children with low negative affectivity scored significantly higher mean score on domains of social and emotional development i.e emotional adaptability, behavioural regulation and social interaction.

With respect to effortful control, children in urban Anganwadi, children with high effortful control scored higher mean scores on domains of social and emotional development i.e emotional style/adaptability, regulations of emotions and arousal states, behavioral regulation and social interaction. The significant difference between child temperament and social and emotional development was found. Among children in urban preschool, with high effortful control scored significantly higher mean scores on emotional adaptability (5.50), regulations of emotions and arousal states (5.43), behavioral regulation (5.68) and social interaction (6.18).

Discussion

Results in the table 2, reveals that association between type of school and social and emotional development of Anganwadi and preschool children in rural and urban areas found to be significant. Majority (65.38%) of children in Anganwadi's belonged watch category and 34.62 percent of children belonged to concern category and none of them belonged to typical category of social and emotional development.

This may be due to poor quality of ECCE environment, where Anganwadi's programs give less importance to learning activities. Though Anganwadi teachers undergo trainings on teaching and learning materials and its development, they fail in implementation of the play-based learning in their classroom due to poor the teacher-child ratio, less space availability and teacher faces difficulty to handle children in a large group due to other corporate duties.

It was observed that, though the Anganwadi's are provided with stimulating play materials, they are rarely used by the children as the materials were not given by the teacher to play because in Anganwadi's the play materials are insufficient due to class size and teacher may not be able to give attention to each child during activities.

Observations recorded also show that when the children were provided with the play materials they rushed to get the materials, they even denied to share with their friends and started fighting among themselves. As these play materials were novel to them they were fascinated and wanted to play all alone, children love to play with the play materials, each

child wanted to play all alone.

Where as in preschool children majority (69.23%) of the children belonged to typical category and none of the children belonged to concern category. This may due to the quality of the ECCE environment, which included play-based activities followed in the preschool like dance, songs, storytelling, games, theme wise teaching, which help the child in learning through play. It was clear from the observation that the children enjoyed learning through play and appeared to be interested in other activities also. The most significant point was appropriate teacher-child ratio, optimum space availability to conduct play based group activities. The significant difference was found between Anganwadi and preschool children in social and emotional development.

Under the domains like emotional expression, emotional adaptability, emotional regulation, behavioral regulation, sense of self, emotional themes in play and social interaction, the difference was found, which may be due to the less activities given to the child.

The results of the present study are in line with the Wangui (2013) ^[34] who evidenced that the type of play materials, availability of play materials to the children and providing the play materials children has positive effect on social and emotional development of the preschool children. Murundu *et al.* (2014) ^[38] also found that interaction of play in early childhood education curriculum by teachers promotes learning. Wathu (2016) ^[35] revealed that there was a there was a strong positive correlation between availability of play materials and social skills development of children in pre-schools. There was a significant association between play time and children social emotional development and there was a strong positive correlation between presence of the teacher in children's play and children's social emotional skills development.

Yildirim and Akamca (2017) ^[37] found out the outdoor activities improved cognitive, linguistic, social-emotional and motor skills of preschool children. The children's linguistic skills significantly improved after the outdoor education programme. The children's cognitive skills significantly enhanced after the 10-week outdoor education. The children had significantly better social-emotional skills after the outdoor education programme was implemented.

Results (table 3 to 4b) showed that, majority of the rural and urban Anganwadi and preschool children with low surgency and low effortful control trait of child temperament fell under low level of social and emotional development and the significant association was found between child temperament and social and emotional development of the children. Whereas the significant association was not found between negative affectivity and social and emotional development of the children.

Surgency trait refers to spontaneity and sociability and hence as positive effects on social and emotional development of the children.

A girl age 5 year in preschool with high surgency who was, cheerful and calm interacted in a better manner with other children, shared toys and played with other children while, a girl child of 4 year old who was low in surgency was less active in play, and exhibited low interaction with other children and isolated herself.

In another case a 5 year old boy in Anganwadi with high

negative affect had poor social and emotional development, he would hit a younger child and snatch the toys from them and used foul language frequently and he was poor in social and emotional development.

Effortful control allows increased control over action and adjustment to situational demands in a flexible and willful manner.

A 5 year old child in preschool with high effortful control observed that though he wanted the other play material to play but he was just waiting for his turn to get the toy and never rushed to get it and he has high social and emotional development.

Salley *et al.* (2013) [25] Children who were temperamentally more positive (e.g., adaptability, positive effect, soothability) and/or high in effortful control (e.g., self-regulation of distress and inhibition, attention regulation) have increased opportunities for participating in social exchange, as their positive emotionality and capacity for

self-regulation supported their interaction with others; in contrast, temperamental negativity (e.g., fear, frustration, sadness, discomfort) and/or low effortful control compromised social exchange. They also observed that effortful control to be associated with lower levels of externalizing problems and with better social skills and social competence.

Dollar and Stifter (2012) [11] revealed that low-surgent children exhibited high levels of distraction and were more likely to show behavioral wariness around unfamiliar peers. Blair *et al.* (2004) [39] found that good temperament and emotional regulation predicted better socially skilled behaviors, prosocial behaviors, adjustment and peer acceptance, in particular for young boys displaying externalizing and internalizing problems had predisposition to highly negative, sad-fearful or irritable temperament. Similarly girls who were highly irritable were less passive and poor in coping with emotional situations.

Table 1: Activities for social and emotional development

Activities	Rural								Urban							
	School 1		School 2		School 3		School 4		School 5		School 6		School 7		School 8	
	Daily	Weekly	Daily	Weekly	Daily	Weekly	Daily	Weekly	Daily	Weekly	Daily	Weekly	Daily	Weekly	Daily	Weekly
Rhymes	YES		YES		YES		YES		YES		YES		YES		YES	
Informal talk	YES		YES		YES		YES		YES		YES		YES		YES	
Dance		YES		YES		YES		YES		YES		YES		YES		YES
Story telling		YES		YES		YES		YES		YES		YES		YES		YES
Story book reading				YES				YES				YES				YES
Drawing				YES				YES				YES				YES
Painting				YES				YES				YES				YES
Arts and crafts				YES				YES				YES				YES
Passing the ball			YES				YES				YES				YES	
Circle time		Yes		YES		Yes		YES		Yes		YES		Yes		YES
Dramatic play	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Play dough	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sharing the news	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Science activities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Theme based play	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	05		10		05		10		05		10		05		10	

Table 2: Demographic characteristics of anganwadi and preschool children in rural and urban areas

Child characteristics	Categories	Rural (n=104)		Urban (n=104)	
		Anganwadi	Preschool	Anganwadi	Preschool
Age (months)	36-48	20 (38.46)	18 (34.62)	18 (34.62)	21 (40.38)
	49-60	17 (32.69)	17 (32.69)	18 (34.62)	17 (32.69)
	61-72	15 (28.85)	17 (32.69)	16 (30.76)	14 (26.93)
	Total	52 (100)	52 (100)	52 (100)	52 (100)
Gender	Boys	24 (46.16)	29 (55.76)	21 (40.38)	27 (51.92)
	Girls	28 (53.84)	23 (44.24)	31 (59.62)	25 (48.08)
	Total	52 (100)	52 (100)	52 (100)	52 (100)
SES	Upper high	-	-	-	-
	High	-	-	-	-
	Upper middle	-	32 (61.54)	-	36 (69.23)
	Lower middle	24 (46.16)	20 (38.46)	35 (67.30)	16 (30.77)
	Poor	28 (53.84)	-	17 (32.70)	-
	Very poor	-	-	-	-
Total	52 (100)	52 (100)	52 (100)	52 (100)	

Table 3: Association and comparison between type of ECCE and social and emotional development in rural and urban areas N=208

Social and emotional development	Rural (104)		Modified χ^2	Urban (104)		Modified χ^2
	Anganwadi (n=52)	Preschool (n=52)		Anganwadi (n=52)	Preschool (n=52)	
Typical	-	36 (69.23)	36.48**	-	32 (61.53)	32.39**
Watch	34 (65.38)	16 (30.76)		38 (73.07)	20 (38.47)	
Concern	18 (34.62)	-		14 (26.93)	-	
Total	52 (100)	52 (100)		52 (100)	52 (100)	
Mean \pm S.D	22.04 \pm 3.44	35.13 \pm 4.14		24.38 \pm 6.42	36.13 \pm 4.14	
t-value	12.84**			16.19**		

Table 3a: Comparison of mean scores of domains of social and emotional development in rural and urban areas N=208

Domains	Rural (n=104)			Urban (n=104)		
	Anganwadi Mean \pm S.D	Preschool Mean \pm S.D	t-value	Anganwadi Mean \pm S.D	Preschool Mean \pm S.D	t-value
Emotional expression	3.09 \pm 0.77	5.23 \pm 0.87	13.16**	3.76 \pm 0.94	5.28 \pm 0.87	8.19**
Emotional style/adaptability	3.92 \pm 0.62	5.19 \pm 0.97	14.19**	3.61 \pm 1.08	5.29 \pm 0.97	7.80**
Regulations of emotions and arousal states	3.11 \pm 0.61	5.15 \pm 0.99	12.54**	3.75 \pm 0.83	5.25 \pm 0.99	7.77**
Behavioral Regulation	3.19 \pm 0.56	5.19 \pm 0.86	13.99**	3.80 \pm 0.92	5.31 \pm 0.86	7.86**
Sense of Self	3.00 \pm 0.65	4.90 \pm 0.77	13.52**	3.73 \pm 1.01	4.89 \pm 0.77	6.64**
Emotional Themes in Play	3.00 \pm 0.56	5.00 \pm 0.65	16.70**	3.55 \pm 1.16	5.05 \pm 0.65	7.79**
Social interaction	3.71 \pm 1.03	5.46 \pm 0.93	9.03**	4.15 \pm 1.25	5.65 \pm 0.93	6.00**

*Significant at 0.05 level

Table 4: Association between child’s temperament and social and emotional development in rural area N=104

Social and emotional development	Anganwadi (n=52)			Preschool (n=52)			f-value
	Surgency			Surgency			
	High	Moderate	Low	High	Moderate	Low	
Typical (Average)	-	-	-	27 (87.09)	09 (69.23)	-	22.64**
Watch (Below Average)	08 (100)	26 (89.65)	-	04 (12.90)	04 (30.27)	08 (100)	
Concern (Poor)	-	03 (10.35)	15 (100)	-	-	-	
Total	08 (100)	29 (100)	15 (100)	31 (100)	13 (100)	08 (100)	
Negative affectivity			Negative affectivity			10.27**	
Typical (Average)	-	-	-	05 (55.55)	15 (55.55)		16 (100)
Watch (Below Average)	05 (50)	23 (63.88)	06 (100)	04 (44.44)	12 (44.44)		-
Concern (Poor)	05 (50)	13 (36.12)	-	-	-		-
Total	10 (100)	36 (100)	06 (100)	09 (100)	27 (100)	16 (100)	
Effortful control			Effortful control			33.15**	
Typical (Average)	-	-	-	13 (100)	23 (71.87)		-
Watch (Below Average)	05 (100)	29 (85.29)	-	-	09 (28.13)		07 (100)
Concern (Poor)	-	05 (14.71)	13 (100)	-	-		-
Total	05 (100)	34 (100)	-	13 (100)	32 (100)	07 (100)	

Figure in parentheses indicates percentage

**Significant at 0.01 level

Table 4a: Comparison of mean scores of social and emotional development by child’s temperament in rural area N=104

Child temperament	Anganwadi (n=52)		Preschool (n=52)	
	Mean \pm S.D	f-value	Mean \pm S.D	f-value
Surgency				
High	23.87 \pm 2.23	29.90*	37.77 \pm 2.95	12.81*
Moderate	23.58 \pm 2.61		35.38 \pm 4.89	
Low	18.06 \pm 1.83		31.00 \pm 2.00	
Negative affectivity				
High	21.90 \pm 3.41	2.60	35.22 \pm 4.65	4.24*
Moderate	21.83 \pm 3.63		35.03 \pm 4.29	
Low	23.50 \pm 2.16		38.50 \pm 2.52	
Effortful control				
High	24.00 \pm 2.00	20.27*	38.53 \pm 2.14	21.21*
Moderate	23.26 \pm 2.86		36.12 \pm 4.37	
Low	18.07 \pm 1.93		31.71 \pm 1.70	

Table 4b: Comparison of mean scores of domains of social and emotional development by child’s temperament in rural area N=104

Domains	Anganwadi				Preschool			
	High Mean ± S.D	Moderate Mean ± S.D	Low Mean ± S.D	F-value	High Mean ± S.D	Moderate Mean ± S.D	Low Mean ± S.D	F-value
Surgency								
Emotional expression	3.37 ± 0.74	3.34 ± 0.72	2.46 ± 0.51	9.24*	5.48 ± 0.88	5.00 ± 0.81	4.62 ± 0.51	4.09*
Emotional style/adaptability	3.25 ± 0.46	3.13 ± 0.51	2.33 ± 0.48	14.78**	5.38 ± 1.26	5.29 ± 0.86	4.50 ± 0.53	3.60*
Regulations of emotions and arousal states	3.25 ± 0.46	3.31 ± 0.60	2.66 ± 0.48	6.95*	5.58 ± 1.02	4.69 ± 0.48	4.25 ± 0.46	10.22**
Behavioral Regulation	3.25 ± 0.46	3.37 ± 0.49	2.80 ± 0.56	6.44*	5.29 ± 0.82	5.38 ± 0.96	4.50 ± 0.53	3.37*
Sense of Self	3.50 ± 0.53	3.17 ± 0.53	2.40 ± 0.50	3.73	5.12 ± 0.49	4.84 ± 0.89	4.12 ± 0.99	2.58
Emotional Themes in Play	2.87 ± 3.53	3.24 ± 0.51	2.60 ± 0.50	3.76	5.19 ± 0.65	4.8 ± 0.55	4.50 ± 0.53	2.58
Social interaction	4.37 ± 0.91	4.00 ± 0.96	2.80 ± 0.56	12.42*	5.80 ± 0.83	5.2 ± 0.92	4.50 ± 0.53	8.70**
Negative affectivity								
Emotional expression	3.20 ± 0.91	3.02 ± 0.73	3.33 ± 0.81	0.50	5.22 ± 1.20	4.96 ± 0.75	5.68 ± 0.70	3.80
Emotional style/adaptability	2.70 ± 0.48	2.94 ± 0.67	3.16 ± 0.40	1.13	4.66 ± 0.50	5.14 ± 1.02	5.56 ± 0.96	4.67*
Regulations of emotions and arousal states	3.10 ± 0.56	3.08 ± 0.64	3.33 ± 0.51	0.41	5.22 ± 1.09	4.92 ± 0.99	5.50 ± 0.89	1.73
Behavioral Regulation	3.10 ± 0.56	3.22 ± 0.59	3.16 ± 0.40	0.18	5.22 ± 0.83	5.03 ± 0.80	5.43 ± 0.96	0.34
Sense of Self	3.10 ± 0.73	2.91 ± 0.64	3.33 ± 0.51	1.18	4.66 ± 1.11	4.88 ± 0.80	5.06 ± 0.44	0.75
Emotional Themes in Play	2.80 ± 0.42	3.05 ± 0.62	3.00 ± 0.20	0.80	4.77 ± 0.44	4.88 ± 0.69	5.31 ± 0.60	2.91
Social interaction	3.90 ± 1.10	3.58 ± 1.02	4.16 ± 0.98	1.02	5.44 ± 1.01	5.18 ± 0.96	5.93 ± 0.68	4.55*
Effortful control								
Emotional expression	3.00 ± 0.00	3.32 ± 0.80	2.53 ± 0.51	2.80	5.61 ± 1.04	5.18 ± 0.82	4.71 ± 0.48	2.66
Emotional style/adaptability	3.20 ± 0.44	3.11 ± 0.53	2.30 ± 0.48	12.33*	5.38 ± 0.65	5.28 ± 1.08	4.42 ± 0.53	3.75*
Regulations of emotions and arousal states	3.20 ± 0.44	3.29 ± 0.57	2.61 ± 0.50	7.17*	5.53 ± 1.05	5.18 ± 0.96	4.28 ± 0.48	4.07*
Behavioral Regulation	3.60 ± 0.54	3.29 ± 0.52	2.76 ± 0.43	6.84*	5.38 ± 0.76	5.25 ± 0.91	4.57 ± 0.53	2.31
Sense of Self	3.40 ± 0.54	3.17 ± 0.57	2.38 ± 0.50	2.91	5.38 ± 0.65	4.81 ± 0.69	4.42 ± 0.97	2.63
Emotional Themes in Play	3.40 ± 0.54	3.08 ± 0.51	2.61 ± 0.50	2.62	5.15 ± 0.37	5.03 ± 0.73	4.57 ± 0.53	1.95
Social interaction	4.20 ± 1.09	3.97 ± 0.99	2.84 ± 0.55	7.80*	6.07 ± 0.64	5.37 ± 0.97	4.71 ± 0.48	6.19*

Table 5: Association of mean scores of social and emotional development in urban area by level of child’s temperament N=104

Social and emotional development	Anganwadi				Preschool			
	Surgency				Surgency			
	High	Moderate	Low	Modified χ^2	High	Moderate	Low	Modified χ^2
Typical (Average)	-	-	-	70.26**	11 (100)	21 (58.33)	-	15.03**
Watch (Below Average)	10 (100)	28 (90.32)	-		-	15 (41.67)	05 (100)	
Concern (Poor)	-	03 (9.68)	11 (100)		-	-	-	
Total	10 (100)	31 (100)	11 (100)		11 (100)	36 (100)	05 (100)	
Negative affectivity								
Typical (Average)	-	-	-	3.39NS	02 (16.66)	23 (69.69)	07 (100)	15.51**
Watch (Below Average)	03 (27.27)	24 (80)	11 (100)		10 (83.34)	10 (30.31)	-	
Concern (Poor)	08 (72.73)	06 (20)	-		-	-	-	
Total	11 (100)	30 (100)	11 (100)		12 (100)	33 (100)	07 (100)	
Effortful control								
Typical (Average)	-	-	-	62.93**	13 (81.25)	19 (67.85)	-	15.89**
Watch (Below Average)	12 (100)	26 (89.65)	-		03 (18.75)	09 (32.15)	08 (100)	
Concern (Poor)	-	03 (10.35)	11 (100)		-	-	-	
Total	12 (100)	29 (100)	11 (100)		16 (100)	28 (100)	08 (100)	

Figure in parentheses indicates percentage

**Significant at 0.01 level

Table 5a: Comparison of mean scores of social and emotional development in urban area of by child temperament

Child temperament	Anganwadi		Preschool	
	Mean ± S.D	f-value	Mean ± S.D	f-value
Surgency				
High	35.70 ± 2.58	26.31**	38.18 ± 2.22	29.25*
Moderate	25.96 ± 4.38		36.19 ± 6.88	
Low	19.09 ± 0.94		29.60 ± 1.51	
Negative affectivity				
High	22.27 ± 6.00	4.13	31.50 ± 5.53	15.03*
Moderate	26.20 ± 5.60		36.96 ± 6.31	
Low	31.00 ± 6.41		39.00 ± 2.16	
Effortful control				
High	32.58 ± 6.06	24.28**	9.31 ± 4.72	19.86**
Moderate	26.58 ± 4.79		36.07 ± 6.24	
Low	19.09 ± 0.94		29.00 ± 1.69	

**Significant at 0.01 level, *Significant at 0.05 level

Table 5b: Comparison of mean scores of domains of social and emotional development in urban area by child's temperament N=104

Domains	Anganwadi				Preschool			
	High Mean \pm S.D	Moderate Mean \pm S.D	Low Mean \pm S.D	F-value	High Mean \pm S.D	Moderate Mean \pm S.D	Low Mean \pm S.D	F-value
Surgency								
Emotional expression	4.90 \pm 0.31	3.80 \pm 0.70	2.63 \pm 0.50	3.10	5.10 \pm 0.83	5.02 \pm 0.99	4.00 \pm 0.00	3.85
Emotional style/adaptability	4.90 \pm 0.87	3.61 \pm 0.80	2.45 \pm 0.52	6.48*	5.49 \pm 0.94	5.09 \pm 1.23	3.80 \pm 0.44	3.31*
Regulations of emotions and arousal states	4.90 \pm 0.56	3.64 \pm 0.66	3.00 \pm 0.00	6.25*	5.47 \pm 0.78	5.02 \pm 1.23	3.40 \pm 0.54	4.06*
Behavioral Regulation	3.90 \pm 0.82	3.70 \pm 0.00	3.00 \pm 0.00	6.73*	5.50 \pm 0.77	5.15 \pm 1.13	4.20 \pm 0.44	4.36*
Sense of Self	4.90 \pm 0.87	3.74 \pm 0.72	2.63 \pm 0.50	2.91	5.09 \pm 0.83	5.05 \pm 1.06	4.20 \pm 0.83	1.67
Emotional Themes in Play	5.10 \pm 0.73	3.48 \pm 0.85	2.36 \pm 0.50	2.27	5.36 \pm 0.67	4.94 \pm 1.28	4.00 \pm 0.70	2.43
Social interaction	6.00 \pm 0.94	3.96 \pm 0.87	3.00 \pm 0.00	9.40*	6.45 \pm 0.52	5.69 \pm 1.09	5.00 \pm 0.00	4.58*
Negative affectivity								
Emotional expression	3.18 \pm 1.07	3.73 \pm 0.86	4.45 \pm 0.52	2.08	4.33 \pm 0.77	5.21 \pm 0.99	5.23 \pm 0.86	2.62
Emotional style/adaptability	3.00 \pm 1.18	3.53 \pm 0.89	4.45 \pm 1.03	1.15	4.58 \pm 1.16	5.15 \pm 1.22	6.28 \pm 0.95	3.19*
Regulations of emotions and arousal states	3.27 \pm 0.46	3.73 \pm 0.73	4.27 \pm 1.10	1.47	4.50 \pm 1.00	5.15 \pm 1.14	5.28 \pm 0.95	1.80
Behavioral Regulation	3.45 \pm 0.82	3.83 \pm 0.91	4.09 \pm 1.04	1.33	4.58 \pm 0.90	4.24 \pm 1.11	5.68 \pm 0.75	3.92*
Sense of Self	3.00 \pm 0.63	3.73 \pm 0.98	4.45 \pm 0.93	2.02	4.66 \pm 1.07	5.06 \pm 0.99	5.14 \pm 1.06	0.75
Emotional Themes in Play	2.81 \pm 1.16	3.60 \pm 1.06	4.18 \pm 1.16	2.33	4.83 \pm 0.93	5.24 \pm 1.09	5.42 \pm 0.8	2.23
Social interaction	3.54 \pm 1.03	4.03 \pm 1.09	5.09 \pm 1.44	2.21	5.00 \pm 0.73	5.90 \pm 1.01	6.57 \pm 0.53	7.41*
Effortful control								
Emotional expression	4.50 \pm 0.67	4.89 \pm 0.77	3.63 \pm 0.50	3.22	5.37 \pm 0.71	4.32 \pm 1.09	3.87 \pm 0.35	2.76
Emotional style/adaptability	4.50 \pm 1.00	3.68 \pm 0.89	2.45 \pm 0.52	6.61*	5.50 \pm 0.89	5.10 \pm 1.25	3.87 \pm 0.64	6.11*
Regulations of emotions and arousal states	4.50 \pm 0.90	3.72 \pm 0.70	3.00 \pm 0.00	4.92*	5.43 \pm 1.03	4.96 \pm 1.20	4.37 \pm 0.51	3.67*
Behavioral Regulation	4.45 \pm 1.00	3.82 \pm 0.84	3.01 \pm 0.01	6.18*	5.68 \pm 0.94	5.01 \pm 0.91	3.87 \pm 0.64	5.01*
Sense of Self	4.66 \pm 0.98	3.73 \pm 0.79	3.27 \pm 0.46	1.26	5.50 \pm 0.96	4.92 \pm 0.97	4.12 \pm 0.64	3.87
Emotional Themes in Play	4.58 \pm 1.08	3.62 \pm 0.90	3.27 \pm 0.46	1.96	5.62 \pm 1.04	4.78 \pm 1.19	4.12 \pm 0.64	3.76
Social interaction	5.33 \pm 1.43	4.10 \pm 0.97	3.00 \pm 0.00	5.59*	6.18 \pm 0.83	5.85 \pm 1.04	4.75 \pm 0.46	6.69*

*Significant at 0.05 level

Conclusion

Majority of the children in both rural and urban Anganwadi belonged to watch and concern category of social and emotional development. The significant association difference was found between type of ECCE center and social and emotional development of children. The significant association was found between quality of home environment and social and emotional development of children. Children with high quality home environment found to be significantly higher on social and emotional development and its domains in both rural and urban of Anganwadi's and preschools.

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