Infant temperament and its influence on infant's socio-emotional development

NIVEDITA PATIL and PUSHPA KHADI

Department of Human Development and Family Studies
College of Community Science, University of Agricultural Sciences
Dharwad 580005 Karnataka, India
Email for correspondence: nvdtpatil6@gmail.com

 Received: 1.7.2018/Accepted: 4.7.2018

ABSTRACT

Socio-emotional development of infants from Dharwad district was studied on a sample of 160 infants drawn equally from four age cohorts viz 0-6, 6-12, 12-18 and 18-24 months. The results revealed that majority of the urban and rural infants (72.50 and 75.00% respectively) were slow to warm up. Urban infants had significantly higher scores in temperament than rural infants. Majority of the infants from both urban (37.50%) and rural (50.00%) had average socio-emotional development. There was significant association between locality and infant socio-emotional development as urban infants were significantly better than the rural infants. Urban infants scored signifianctly higher (114.44) than rural infants (103.73). There was significant association between infant temperament and their socio-emotional development. Infants with difficult temperament were significantly lower in socio-emotional development than slow to warm up and easy infants. As the majority of the infants were slow to warm up/difficult there is a need for parents' education programme on handling infant temperament in order to ensure infants' optimum socio-emotional development.

Keywords: Infant; temperament; socio-emotional development; urban; rural

INTRODUCTION

Socio-emotional development is a fundamental part of a child's overall health and well-being as it reflects and impacts upon the developing brain's wiring and function. Socio-emotional development within the first few years of life sets a precedent and prepares children to be self-confident, trusting, empathic, intellectually inquisitive, competent in using language to communicate and capable of relating well to others. Early social experiences play a dominant role in determining the baby's future social relationships and patterns of behaviour toward others.

The psychological theory of socio-emotional development states that human personality is developed through a repeating series of crises and resolution which includes the child's experience, expression and management of emotions and the ability to establish positive and rewarding relationships with others (Harber and Cohen 2005). The core features of emotional development include the ability to identify and understand one's own feelings, accurately read and comprehend emotional states in others, manage strong emotions and their expression in a constructive manner, regulate one's own behaviour to develop empathy for others and establish and maintain relationships.

Infant temperament is one of the important aspects of socio-emotional development which has to do with babies' general emotional and social state. Temperament is the constellation of inborn traits, a combination of psychological features that have moderating stability over time and situations under some genetic influence and usually appearing during infancy (Kagan and Snidman 1991) determine a child's unique behavioural style in the way he or she experiences and reacts in the world.

Infant temperament proves to be predictive of the child's adjustment in middle childhood. The

empirical evidence for a relation between difficult temperament during early childhood and later behaviour problems is growing in particular in at-risk groups (Allen and Prior 1995, Caspi et al 1995. Guerin et al 1997, Rende 1993, Schwartz et al 1996). Also several researchers have reported links between temperament and social development (Rothbart et al 1994). The present study was undertaken with the objective to understand infant temperament and its influence on socio-emotional development.

METHODOLOGY

Study was conducted in the year 2016-2017 in Dharwad district of Karnataka state. A differential research design was employed. In total 160 infants were selected from two cities to make urban sample (80 infants) and from four villages to make rural sample (80 infants). Among 80 infants equal number of infants (10 male and 10 female) were selected from each age cohort viz 0-6, 6-12, 12-18 and 18-24 months. Infant temperament scale developed by Khadi et al (2007) was used to measure infant temperament. The inventory consisted of 36 statements which included both positive as well as negative statements. The statements were rated on 3-point rating scale. For positive statements 'Always', 'Usually' and 'Never' responses were assigned 5, 3 and 1 score respectively. For negative statements reverse scoring was done. The higher the scores better was temperament. Based on the scores infants were categorised as difficult (12-28), slow to warm up (29-45) and easy (46-60).

Bayley scale of infant development (http://dx.doi.org/10.1177/0734282906297199) was used to measure socio-emotional development of infants. The age appropriate tasks were administered with a provision of +2 months as advanced items and -2 months as early items. Every item was scored from zero to five. The raw scores were converted into standardized scores and standardized scores into composite scores. Based on composite scores infants were categorized as extremely low (69 and below), borderline (70-79), low average (80-89), average (90-109), high average (110-119), superior (120-129) and very superior (130 and above).

Frequency and percentages were used. Chi-square was used to know the association between locality and infant temperament, locality and infant socio-emotional development and infant temperament and their socio-emotional development. For testing differences in socio-emotional development indices by locality and infant temperament t-test and F-test were used.

RESULTS and DISCUSSION

The per cent distribution of urban and rural infants by age, gender and ordinal position is shown in Table 1. Equal number (25.00%) of infants were distributed in all four age cohorts viz 0-6, 6-12, 12-18 and 18-24 months in both urban and rural localities. Similarly with respect to gender equal number (50.00%) of male and female infants were distributed in both urban and rural areas. With regard to ordinal position of infants in urban group more than half (52.50%) of them were first born and remaining (47.50%) were later born and in rural group majority (65.00%) were later born and remaining 35.00 per cent were first born.

Table 2a indicates that majority of the urban infants (72.50%) were slow to warm up followed by easy (16.25%) and remaining (11.25%) were difficult. In rural group majority of the infants (75.00%) were slow to warm up followed by difficult (21.25%) and remaining (3.75%) were easy. The chi-square value 6.42 was significant at five per cent level indicating that there was a significant association between locality and infant's temperament. When the mean scores of temperament of infants were compared (Table 2b) with respect to locality it was observed that the mean score (39.32) of urban infants was higher than rural infants (34.75). The t-value was found to be statistically significant at one per cent level indicating that there was locality difference with respect to infant temperament. Urban infants were significantly better in their temperament than rural counterparts. Good parenting, right knowledge on infant development and appropriate parenting skills of parents may be the reasons for more number of easy infants in urban areas whereas in rural areas negligence, lack of knowledge and resources, inappropriate parenting styles of parents may the reasons for more difficult infants.

The per cent distribution of urban and rural infants by their socio-emotional development is presented in Table 3. More urban infants (37.50%) belonged to average level of socio-emotional development followed by low (30.00%) and high average (22.50%). In rural group half (50.00%) of the infants belonged to average category followed by low

Table 1. Distribution of urban and rural infants by their characteristics (n= 160)

Characteristic	Category	Urban (n= 80)	Rural (n= 80)
Age in months	0-6	20 (25.00)	20 (25.00)
	6-12	20 (25.00)	20 (25.00)
	12-18	20 (25.00)	20 (25.00)
	18-24	20 (25.00)	20 (25.00)
Gender	Male	40 (50.00)	40 (50.00)
	Female	40 (50.00)	40 (50.00)
Ordinal position	First born	42 (52.50)	28 (35.00)
	Later born	38 (47.50)	52 (65.00)

Figures in parentheses are percentages

Table 2a. Association between locality and temperament of infants (n= 160)

Temperament	Urban (n= 80)	Rural (n= 80)	Chi-square value
Difficult child	9 (11.25)	17 (21.25)	6.42*
Slow to warm up child	58 (72.50)	60 (75.00)	
Easy child	13 (16.25)	3 (3.75)	
Total	80 (100.00)	80 (100.00)	

Figures in parentheses are percentages, *Significant at 5 per cent level

Table 2b. Comparison of mean scores of temperament of infants by locality (n=160)

Locality	n	Infant temperament (mean ± SD)	t-value
Urban	80	39.32 ± 6.825	4.35**
Rural	80	34.75 ± 6.462	

**Significant at 1 per cent level

Table 3. Distribution of urban and rural infants by their socio-emotional development indices (n= 160)

Level of socio-emotional development	Urban (n= 80)	Rural (n= 80)
Very superior	0 (0.00)	0 (0.00)
Superior	4 (5.00)	1 (1.25)
High average	18 (22.50)	1 (1.25)
Average	30 (37.50)	40 (50.00)
Low average	24 (30.00)	25 (31.25)
Borderline	2 (2.50)	7 (8.75)
Extremely low	2 (2.50)	6 (7.50)

Figures in parentheses are percentages

average (31.25%). The results are similar to the earlier findings that majority of the rural infants had low socio-emotional indices (Ramitha and Khadi 2006).

Majority (37.50%) of the urban infants had average socio-emotional development followed by below average (35.00%) and above average (27.50%) (Table 4a). Half (50.00%) of the rural infants belonged to average category of socio-emotional development followed by below average (47.50%). The chi-square value indicated significant association between locality and socio-emotional development of infants wherein

Table 4a. Association between locality and socio-emotional development indices of infants (n= 160)

Locality	Level of socio-emotional development				Chi-square
	Below average	Average	Above average	Total	
Urban	28 (35.00)	30 (37.50)	22 (27.50)	80 (100.00)	7.64*
Rural	38 (47.50)	40 (50.00)	2 (2.50)	80 (100.00)	

Figures in parentheses are percentages, *Significant at 5 per cent level

Table 4b. Comparison of mean scores of socio-emotional development indices of infants by locality (n= 160)

Locality	n	Infants' socio-emotional development	
		Mean ± SD	t-value
Urban	80	114.44 ± 12.36	6.03**
Rural	80	103.73 ± 8.89	

**Significant at 1 per cent level

urban infants were at advantage as compared to rural infants. While comparing the mean scores of socio-emotional development of infants (Table 4b) by locality it was observed that urban infants (114.44) scored significantly better than the rural infants (103.73) indicating that urban infants were better in socio-emotional development than rural infants.

Table 5a illustrates the association between infant temperament and socio-emotional development of urban and rural infants. Considering urban infants with difficult temperament less than half (44.44%) of them had below average socio-emotional development followed by average (33.33%) and above average (22.22%). Regarding slow to warm up infants less than half (41.38%) of them had average socio-emotional development followed by below average (36.20%) and above average (22.42%). Among easy infants more than half (53.84%) had above average socio-emotional development followed by equal number (23.07%) of them belonging to average and below average categories. There was a significant association but non-significant correlation between the infant temperament and their socio-emotional development. In rural areas majority (70.58%) of the infants with difficult temperament had average socio-emotional development followed by below average (29.41%). Among slow to warm up infants more than half (53.33%) had below average socio-emotional development followed by average (45.00%) and above average (1.66%). Among easy infants equal number (33.33%) of them belonged to below average, average and above average categories. However there was significant association but non-significant correlation between the infant temperament and their socio-emotional development. The results are in line with the earlier research findings that internalizing and externalizing behaviours were lower in children with easy temperament and higher with increased environmental risk (child abuse potential). Easy temperament attenuated behavioural problems only in the setting of lower environmental risk. Children growing up in adverse social environments had increased behavioural problems. Conversely an easy temperament acts as a protective factor for socio-emotional development (Derauf et al 2011).

In urban group easy infants had higher mean score (116.04) for socio-emotional development than the slow to warm up (115.34) and difficult (111.98) infants. The F-value (9.81) was significant at one per cent level with the critical difference 3.14 indicating that there was a significant difference between the socio-emotional development of difficult and slow to warm up and also difficult and easy infants ie the socio-emotional development of easy infants was significantly better than that of slow to warm up and difficult infants but there was no significant difference between the socio-emotional development of slow to warm up and easy infants (Table 5b).

In rural group slow to warm up infants had higher mean score (105.34) for socio-emotional development than the easy (104.76) and difficult infants

Table 5a. Association between infants' temperament and socio-emotional development (n= 160)

Locality	Temperament	Socio-emotional development				Modified chi-square	Correlation coefficient (r-value)
		Below average	Average	Above average	Total		
Urban (n= 80)	Difficult	4 (44.44)	3 (33.33)	2 (22.22)	9 (100.00)	12.52*	0.11^{NS}
	Slow to warm up	21 (36.20)	24 (41.38)	13 (22.42)	58 (100.00)		
	Easy	3 (23.07)	3 (23.07)	7 (53.84)	13 (100.00)		
Rural (n= 80)	Difficult	5 (29.41)	12 (70.58)	0 (0.00)	17 (100.00)	10.08*	0.16^{NS}
	Slow to warm up	32 (53.33)	27 (45.00)	1 (1.66)	60 (100.00)		
	Easy	1 (33.33)	1 (33.33)	1 (33.33)	3 (100.00)		

Figures in parentheses are percentages, *Significant at 5 per cent level, NS: Non-significant

Table 5b. Comparison of mean scores of socio-emotional development indices of infants by their temperament (n= 160)

Locality	Temperament	n	Socio-emotional development		
			Mean ± SD	CD	F-value
Urban (n= 80)	Difficult	9	111.98 ± 12.68	3.14	9.81**
	Slow to warm up	58	115.34 ± 13.25		
	Easy	13	116.04 ± 11.32		
Rural (n= 80)	Difficult	17	101.14 ± 8.94	2.68	8.54**
	Slow to warm up	60	105.34 ± 10.03		
	Easy	3	104.76 ± 8.45		

**Significant at 1 per cent level

(101.14). The F-value (8.54) was significant at one per cent level with the critical difference of 2.68 indicating that there was a significant difference between the socio-emotional development of difficult and slow to warm up infants and also difficult and easy infants ie the socio-emotional development of easy infants and slow to warm up infants was significantly better than the socio-emotional development of difficult infants but there was no significant difference between the socio-emotional development of slow to warm up and easy infants (Table 5b). The study replicates the earlier findings that emotional temperament in infancy predicts children's overall behavioural scores, emotional difficulties, conduct problems and symptoms of hyperactivity/inattention at 5.5 years. Infants' active temperament predicts later conduct problems while shyness predicts later emotional problems (Abulizi et al 2017).

CONCLUSION

There existed temperamental differences in urban and rural infants of Dharwad district being urban infants in more positive side. The socio-emotional development of urban infants was significantly better than the rural infants. There was also significant association between infant temperament and their socio-emotional development.

REFERENCES

Abulizi X, Pryor L, Michel G, Melchior M and van der Waerden J 2017. Temperament in infancy and behavioral and emotional problems at age 5.5: the EDEN mother child cohort. PLoS One **12(2):** doi: 10.1371/journal.pone.0171971. eCollection 2017.

Allen K and Prior M 1995. Assessment of the validity of easy and difficult temperament through observed mother–child behaviours. International Journal of Behavioral Development **18(4):** 609-630.

Caspi A, Henry B, McGee RO, Moffit TE and Silva PA 1995. Temperamental origins of child and adolescent behaviour problems: from age three to fifteen. Child Development **66(1):** 55-68.

Derauf C, LaGasse L, Smith L, Newman E, Shah R, Arria A, Huestis M, Haning W, Strauss A, DellaGrotta

S, Dansereau L, Lin H and Lester B 2011. Infant temperament and high-risk environment relate to behavior problems and language in toddlers. Journal of Developmental and Behavioral Pediatrics **32(2):** 125-135.

Guerin DW, Gottfried AW and Thomas CW 1997. Difficult temperament and behaviour problems: a longitudinal study from 1.5 to 12 years. International Journal of Behavioral Development **21(1):** 71-90.

Harber KD and Cohen DJ 2005. The emotional broadcaster theory of social sha ring. Journal of Language and Social Psychology **24(4):** 382-400.

http://dx.doi.org/10.1177/0734282906297199

Kagan J and Snidman N 1991. Temperamental factors in human development. American Psychologist **46(8):** 856-862.

Khadi PB, Mayuri K, Manocha A, Bangaloe J, Thind SK, Vig D, Sharma S, Nandwana S, Baruah J, Ahuja A, Patil M, Badiger M and Ashalata KV 2007. Infant temperament scale: comprehensive child care through farm creche- an invention for optimum developmental outcomes of infants (Birth-36 months). Technical Bulletin VI, ICAR, New Delhi, India, pp 75-76.

Ramitha and Khadi PB 2006. Socio-emotional development of rural infants of northern Karnataka. Journal of Farm Sciences (Special Issue) **29(5):** 735-738.

Rende RD 1993. Longitudinal relations between temperament traits and behavioural syndromes in middle childhood. Journal of the American Academy of Child and Adolescent Psychiatry **32:** 287-290.

Rothbart MK, Ahadi SA and Hershey KL 1994. Temperament and social behavior in childhood. Merrill-Palmer Quarterly **40(1):** 21-39.

Schwartz CE, Snidman N and Kagan J 1996. Early childhood temperament as a determinant of externalizing behavior in adolescence. Development and Psychopathology **8(3):** 527-537.