

# Caregiver Infant Interaction: Behaviour Analysis of Play Setting Through Observer Behaviour Software (OBS)

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**Abstract:** *The study is an attempt to know the comparisons between rural and urban families using field video recordings of infant-care giver interaction and analyzing the behaviours using “Observer Behaviour Software (OBS)”. A sample number of 40 infants each in rural and urban areas was selected for the study. The results were analyzed by using OBS by calculating total time spent for positive and negative behaviours by caregivers and infants in play setting. The results of the play setting indicates that, caregivers vocalized, looked at the child, played along with the child and even involved in some care giving activities among the positive behaviours. Among the negative behaviours during play situation, looking at others, interacting with others, attending to work, and not responding to the child were more often observed. Regarding child behaviours child showed more positive behaviours in play situation than negative behaviours.*

**Keywords:** Behaviours, interactions, play and caregiver behaviours.

## 1. Introduction

Caregivers infant interaction is a mutual regulatory system, in which the baby and the caregiver have an influence on one another over time. The caregiver presence provides a feeling of safety and security for the infant. Soothing, comforting, and providing pleasure are primary elements of care giving.

There is research evidence that points to the fact that loving care, stimulating environment is as critically important as health care and nutrition for infants. Children who received healthcare, clean surroundings as well as regular feeds may still not survive if loving care and a stimulating environment with adults who are trustworthy are not present. All these are subsumed under “Quality Care” which comes naturally to some caregivers while others need assistance in developing skills for nurturant care giving.

Caregivers’ interaction with a child during this sensitive early period provides stimuli that will influence how the brain develops and how children respond to new situations and challenges. Many of the research scientists also confirmed that the way the caregiver interact with their young children and the experiences they provide them have a big impact on the child’s development, learning skills and its function later in life.

Family is the first and most important socializing agency, which integrates and regulates the individual's development and behavior. Family members particularly parents are the chief architects in shaping healthy personality of a child. Parents and others help the growing child in learning the basic principles of social control and self-control. It is therefore the family, which plays an important role in shaping the personality of the child (Eisenberg, 1996). There is considerable knowledge of parental socialization processes that directly and indirectly influence the

development of children’s emotion self-regulation, but little understanding of the specific beliefs and values that underlie parents’ socialization approaches (Sara Meyer et.al, 2014).

The caregiver’s role is to provide the child with a safe, secure, nurturing, loving and supportive environment that allows the children to have happy and healthy personalities. This sort of experience allows the children to develop the knowledge, values, attitudes and behaviors necessary to become an adult making a productive contribution to self, family, community and society (Lerner et.al, 1995).

During the early stages child’s play was considered a waste of time. Little thought was given to the importance that play contributed to the developing child. For the last few decades educators and researchers have been fascinated with how children play (Carolyn Tomlin, 2011). Parten’s Play Theory of 1932, Piaget of 1962 and Piaget and Inhelder of 1969 share different opinions, yet hold to common truths. Those who study the developmentally appropriate activities of children realize that play should begin early in life. And parents must provide opportunities for children to play and to learn from observations and actions as well as from being told. Play is the most spontaneous form of stimulation for infants. Parents begin to play with their babies from the moment she is few days old by talking, cooing and singing to her. Toys that the infants can manipulate, chew, reach out to pull or push enhance her cognitive development and her chief mode of interaction.

The present study titled “Caregivers Infant Interaction: Behaviour analysis of play setting using Observer Behaviour Software” is therefore an attempt to know the practices adopted by the caregivers and the interpersonal interaction with their infant and total time spent in positive and negative behaviours in natural settings by rural and urban care givers.

## 2. Method

### (i) Research Design

This study was carried out through non intrusive exploratory research design. The caregiver infant interactions were captured on video tape in natural settings.

### (ii) Sample

Infants as a sample in the present investigation were selected using purposive random sampling method. For rural sample due to the accessibility factor, three villages Kopparthi Camp, Nagannapally, and Kommanpally of Bodhan Mandal, from Nizamabad district were selected. Forty infants from three villages were selected for the study along with their caregivers. For urban sample, forty infants from four different areas of Hyderabad city i.e. Khairatabad, Begumpet, Kothapet and Saidabad were selected using purposive random sampling method for conducting study. The following criteria were followed for data collection.

### 1. Treatment groups

S.No	Treatment Groups	
	Urban Area	Rural Area
1	Urban educated family – mother house wife	Rural family – mother housewife
2	Urban educated family – mother employed	Rural family – mother working
3	Urban – Father	Rural family – Father
4	Urban - Other family members	Rural setting - Other family members

### 2. Sample - Number of Infants – 10 in each treatment group

Rural - 4 Treatment groups x 10 = 40  
 Urban - 4 Treatment groups x 10 = 40

### 3. Observation settings

- The natural settings & natural interaction ( General Interaction) – Home, front yard, backyard, neighborhood – play and general interaction situation
- The play situation – The researcher gave play material and asked the caregiver to play with the infant at specified times.

### (iii) Tools

A comparative study data of rural and urban families was be taken up using field video recordings of infant – caregiver interaction and analyzing the behaviours using the Observer Behaviour Software.

### Overview of OBS

**Table 1: A. Play setting differences – Positive behaviours (Frequencies)**

Sl.No	Positive Behaviours	U-M - H	R-M-H	U-M-W	R-M-W	U-others	R-others	U-F	R-F
1	Vocalizing with child	7	7	7	8	9	7	7	9
2	Looking at child	4	5	4	4	5	5	4	2
3	Showing play material	2	4	--	4	2	1	3	1
4	Smiling	3	1	2	--	2	1	2	3
5	Playing	4	3	2	2	2	4	2	5
6	Caregiving	4	5	3	2	3	5	3	3

R- Rural, U- Urban, M- Mothers, H-Housewives, W-working, F- Fathers

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The observer is an important tool for the study of behavioural processes when we need to record a level of detail that we cannot obtain without an automated system. We can use the observer whenever we need to record activities, postures, movements, positions, social interactions or any other aspect of the behavior of humans and animals.

In human psychology, the observer aids in collecting data on behavioral development, parent-child as well as any social interaction, communication, education, language acquisition, cognition, psychological assessment.

The entire process carried out by The Observer may be summarized as follows: a researcher watches one or more individuals (humans or animals) in a certain place, and enters the observations of their behavior in the form of codes according to what he/she or another collaborator has specified in an earlier phase, when he/she created the Coding Scheme. Simultaneously, the researcher can acquire physiological data from that individual. Depending on the External Data Acquisition (DAQ) system, a synchronization signal can be sent out from the Observer computer to the DAQ system.

Once the observation is complete, the observational data are stored in a computer file. Simultaneously acquired physiological data are imported into The Observer. From that moment the observational and physiological data, all or part of them, can be visualized and analyzed. The analysis functions of The Observer allow the researcher to produce lists, tables, graphical representations or statistical calculations to answer specific research questions.

### (iv) Procedure

The caregiver infant interactions were captured on video tape in natural settings. Parents were told that the videos were being taken to observe infant behaviours and their cooperation was sought. The parents were shown the videos at the end of each session so that they could reassure themselves as to the video content.

## 3. Results & Discussion

The video files were incorporated into the computer with the Observer Behaviour Software and meticulous coding and data entry were done. The following tables indicate the results in frequencies and duration. One - way ANOVA was calculated to observe the duration differences in different activities as expressed by both care givers as well as the children.

**Table 1: B. Play setting differences – Positive behaviours (Duration for 10 Minutes)**

Sl.No	Positive Behaviours	U-M - H	R-M-H	U-M-W	R-M-W	U-others	R-others	U-F	R-F	F-value	P-level
1	Vocalizing with child	0:1	1:50	2:03	2:16	2:08	1:51	2:03	2:08	2.46	0.23*
2	Looking at child	1:29	1:04	1:01	0:59	1:30	2:22	1:01	0:32	2.46	0.23*
3	Showing play material	0:18	0:47	--	1:15	0:22	0:09	0:20	0:09	0.31	0.81
4	Smiling	0:39	0:09	0:25	--	0:24	0:25	0:25	0:41	0.59	0.65
5	Playing	0:43	0:32	0:20	1:15	0:34	1:12	0:25	1:30	0.26	0.85
6	Caregiving	0:45	2:03	0:41	0:20	0:31	1:25	0:41	0:41	1.02	0.49*

R- Rural, U- Urban, M- Mothers, H-Housewives, W-working, F- Fathers

It was observed from the table that the rural caregivers compared to the urban caregivers were vocalizing with the child, looking at the child and involved much in play setting like showing play material, playing with the child and even involved in some care giving activities. It was clear from the table that rural care givers were spending much longer duration on above mentioned positive behaviours. This

could be due to the fact that, children were always kept close to the caregivers even when they themselves were involved in other work in the rural setting. Work environment in rural settings generally are more informal and therefore this interaction is possible.

**Table 2: A Play setting differences – negative behaviours (Frequencies)**

Sl.No	Negative Behaviours	U-M - H	R-M-H	U-M-W	R-M-W	U-others	R-others	U-F	R-F
1	Interacting with others	5	4	4	4	2	4	9	2
2	Looking at others	4	4	2	3	3	1	2	3
3	Attending work		4	3	2	1	1	4	3
4	Not responding	4	1	1	2	--	1	2	2
5	No eye contact	1	--		2	2	2	2	3
6	No verbal interaction with child	2	4	2	--	2	1	--	--

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**Table 2: B. Play setting differences – negative behaviours (Duration for 10 Minutes)**

Sl.No	Negative Behaviours	U-M - H	R-M-H	U-M-W	R-M-W	U-others	R-others	U-F	R-F	F-value	P-level
1	Interacting with others	2:03	2:04	2:32	1:30	1:33	2:42	2:32	0:56	0.08	0.96
2	Looking at others	1:15	1:56	1:50	1:50	0:47	1:40	0:58	1:0	11.5	0.03**
3	Attending work	--	1:46	1:44	1:55	0:27	0:23	0:56	0:57	1.83	0.31*
4	Not responding	1:15	0:09	0:11	0:33	--	0:27	0:22	0:46	0.31	0.81
5	No eye contact	0:18	--	--	01:16	0:54	0:56	0:30	0:39	0.86	0.54*
6	No verbal interaction with child	0:27	1:50	0:20	--	3:03	0:18	--	--	0.86	0.54*

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It was clearly noticed from the table that, both the caregivers in rural and urban areas expressed negative behaviours. The urban caregivers had much higher duration on some particular behaviour such as interacting with others, not responding to the child and no verbal interaction with the child. The reasons might be inability to adjust time between daily household activities as well as occupation related activities, and probably inability to understand the child's

need for such positive interaction. Regarding the duration of negative behaviours of rural caregivers had spent much longer duration on some behaviour like looking others, attending work and no eye contact with the child. They gave play material to the children and were attending to their duties. This might be because of lack of awareness of child's need for communication and attention from adults.

**Table 3: A Play setting differences – child behaviours (Frequencies)**

Sl.No	Child Behaviours	U-M - H	R-M-H	U-M-W	R-M-W	U-others	R-others	U-F	R-F
1	Playing	9	9	8	6	10	7	8	9
2	Looking at others	3	5	4	5	5	4	4	5
3	Smiling	3	1	2	1	3	3	2	
4	Self Vocalizing	--	2	2	3	--	3	5	3
5	Vocalizing with caregiver	4	7	5	4	2	3	5	2
6	Looking at caregiver	2	--	--	4	2	2	--	2
7	Angry vocalization	3	4	2	--	5	2	2	2
8	calm	--	1	3	4	3	--		3

**Table 3: B. Play setting differences – child behaviours (Duration for 10 Minutes)**

Sl.No	Child Behaviours	U-M - H	R-M-H	U-M-W	R-M-W	U-others	R-others	U-F	R-F	F-value	P-level
1	Playing	1:42	1:38	1:47	1:47	1:50	1:47	1:44	2:08	0.99	0.50*
2	Looking others	0:30	1:13	0:56	1:09	1:09	0:55	0:49	0:53	0.28	0.83
3	Smiling	0:32	0:13	0:46	0:07	0:37	0:26	0:25	--	1.86	0.31**
4	Self Vocalizing	--	0:36	0:56	0:37	--	0:28	0:088	0:16	0.94	0.51*
5	Vocalizing with caregiver	1:07:	1:33	1:09	0:50	1:25	0:45	1:04	0:42	0.67	0.62*
6	Looking at caregiver	0:37	--	--	0:56	0:29	0:15	--	0:25	0.09	0.95
7	Angry vocalization	0:29	0:30	0:49	--	0:47	0:19	0:23	0:36	0.06	0.97
8	calm	--	--	0:37	0:58	0:33	--	--	1:25	0.80	0.56*

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From the above tables it is clear that the child showed more positive behaviours in play situation than negative behaviours. The urban children were vocalizing and smiled more with their care takers, and sometimes the children were expressing angry vocalizations if they did not receive much attention from the care givers. Whereas the rural children were more playful, observing others and sometimes they were calm.

#### 4. Conclusion

The data thus indicates a need for intervention for both mothers and fathers followed by other caregivers to use their time with the infants more effectively, more positively and with concern for the child's needs. Caregivers themselves are the most effective resources in early developmental intervention for vulnerable infants. Development in early years is greatly facilitated with adequate and effective caregiver – infant interaction.

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