

*Assessing the Attachment Patterns  
of Metu Town Infants*

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**Addis Ababa University  
School of Graduate Studies  
Department of Psychology**

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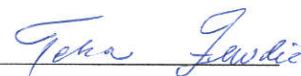
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## Abstract

This study has been designed with the main objectives of identifying the different attachment patterns of infants', and replicating Ainsworth's Strange Situation Experiment. The researcher used observation as the main tool for data gathering supplementing with interview. Data collected using these techniques have been described qualitatively.

The collected data revealed three basic attachment patterns in infants: secure, insecure and ambivalent ones. The present study hasn't come up with the disorganized type of attachment pattern like that of pioneer researchers. The interview questions were resulted in explaining issues related to basic socio-economic problems of mothers which hinder secure infant attachment to mothers in most cases even though respective mothers involved in this particular research were involved in different activities of home management (failure to give much time to their respective infants). Despite respective mothers' involvement in different activities of home management, 53.33% of the sample groups became securely attached 33.33 insecure and only 13.33% showed ambivalent type of attachment pattern.

The research also revealed that the strength of infants' attachment to the mother generally was determined by the nature of early infant mother interaction and the extent to which mothers responded to each infant's needs at appropriate time.

# Chapter One

## 1. Introduction

Research findings and day-to-day empirical experiences have shown that the nature of infant-mother relationship needs careful attention since it is the basis for psychological, social and emotional health of the child. With this regard, Fabes and Martin (2000) indicated that the child's ability to develop a sense of trust towards mothers does determine the state of the emotional, health, security and safety of the child as well as the development of the child's future interpersonal relationship.

This strong and long-lasting psychological and emotional connection between the child and the mother doesn't happen within a short period of time. That is, the bond gets strength through time provided that the expressed needs of the child are fulfilled by the mothers. A well attached child assumes the mother as a secure base from which he/she explores his/her surroundings. A well attached child feels secured and loved.

Ainsworth (1967) indicated that where infant-mother relationship is loose, infants and young children become poorly attached to the situation. This results in the child's failure to learn how to trust and form lasting relationships with others. Findings by Spitz (1980) and others indicated that such poorly attached children show lack of eye contact, indiscriminate affection with strangers, fail to give and receive affection, and develop a feeling of being separated. Further more, such children may show poor attachment as a result of disruptions, abuse of neglect during early years of life.

To realize the situation, Spitz (in Papalia 1980) made comparison between babies reared at home (with parents) and those who were institutionalized. After a year, he found that children who were reared by parents became well-developed while those who were reared in institutions became retarded in height and weight.

Ainsworth (1967) too attributed the difference in behavior pattern between the home – reared and the institutionalized ones to two basic reasons: first Ainsworth cited that children reared at home have opportunity to receive full time care from their own mothers. In case of institutionalized children what was observed was that a single care giver was responsible to treat a number of children in which case making a strong early emotional bond became difficult.

In Ethiopia, where factors like socio- economic problems, divorce and death of parents due to HIV/AIDS and other related problems prevail there is a possibility that the infant-mother relationship gets weakened.

### **1.1 Theoretical Background**

Attachment of an infant to the mother as a determinant factor in enhancing the psychological bond has been explained by different theories of human development. Here the emphasis of the researcher is on the three broad and frequently used theories of development: psychoanalytic theory, learning theory and Ethological theory. Each theory makes different assumptions about the role of the infant in the development of different patterns of attachment.

### **1.1.1 Psychoanalytic Theory**

According to Freud, (stated in E.Mavis Hetherington 1979) much of the work on the development of attachment has been directly or indirectly influenced by psychoanalytic theory. That is, parental care-taking activities like feeding which are essential for the survival of the child were assumed to be critical in attachment formation. Freudians postulate that the infant has an innate need to suck, which interacts with and is modified by actual feeding experiences. The need for oral gratification through sucking and other forms of stimulation resulted in the infant becoming attached to the satisfying mother's breast and ultimately to the mother herself.

### **1.1.2. Learning Theory**

Levin (1957) says that like psychoanalysts, learning theorists have stressed the importance of the feeding situation for the development of attachment. According to a learning view, a care-taker acquires positive value through association with the satisfaction and reduction of hunger as a primary drive. The mother, as a result of being paired with drive-reducing feeding activity, acquires secondary reinforcement properties and consequently is valued in her own right. This means that, eventually the presence of the mother is just enough to become satisfying and to influence the child develop an acquired need for contact/attachment with the mother.

Few people accept the view that the feeding situation is the critical context for the development of social attachment. The most famous challenge to this traditional view came from the Harlow and Zimmerman (1959) study of cloth and wire surrogate mother monkeys, which showed that infants preferred cloth "mothers" even though they were fed

on the wire "mother". Hunger reduction was clearly not necessary for the development of attachment behavior among these infant monkeys.

Human studies tell a similar story. That is, variations in routine care-taking practices are poor predictors of infant attachment. For example, in one study of attachment in Scotland, (indicated in Robert L.Munroe and Ruth H.Munroe 1994) it was found that infants formed attachments to such individuals, as fathers and other relatives, who played little or no role in routine child care.

Adults, however, do more than feed; they provide a wide variety of other types of auditory, and tactual stimulation in the course of their daily interactions with the infant. This provides the basis for the development of attachment (Gewirtz; 1969). An infant is initially attracted to people because they are the most important and reliable sources of stimulation. As a result of specific individuals regularly providing this satisfying stimulation, these individuals are valued by the infant and become the objects of attachment. The important feature of the learning theory explanation, however, is that attachment is not an innate or instinctual process, but rather develops over time as a result of satisfying interaction with key people in the child's environment. Learning theorists as well as others view attachment as a two-way process with both the infant and the parent developing attachment to each other. Generally, the process of mother-to-infant attachment probably begins very soon after birth, while infant-to-mother attachment develops more gradually over the first six to seven months of life.

### 1.1.3. Ethological Theory

John Bowlby's ethological theory (1973) is a theory that emphasizes the reciprocal nature of attachment. Under the influence of both evolutionary theory and observational studies of animals, Bowlby suggested that attachment is a result of a set of instinctual responses which are important for the protection and survival of the species. These infant behaviors—crying, smiling, sucking, clinging etc. elicit necessary parental care and protection for the infant and promote contact between mother and infant. The mother is biologically prepared to respond to these infant elicitors, just as the infant is predisposed to respond to the sights, sounds, and nurturance provided by its mother. It is a result of these biologically programmed systems that both mother and infant develop as the result of their mutual attachment to each other.

B. Kuppaswamy (1984) in his book pointed out that the concept of attachment is relatively new in theorizing about child development. It was introduced by Bowlby (1958) and was described as a tie between mother and infant indicating the affective bond that develops between an infant and primary care giver. Ainsworth (1973) further defined attachment as “an affection tie that one person forms to another specific person binding them together in space and enduring overtime.” Bowlby (1969) presented that the infant is ready to make his/her first attachment to a specific person in the second quarter of the first year. The idea forwarded by Bowlby was supported by Erikson's idea of trust vs. mistrust where a primary socialization takes place. Lorenz's (1952) work also inspired Bowlby to give attention to the importance of early attachment patterns in determining latter behavior of the child. He had a belief that a human baby like the young of most

animal species is equipped with the behavior that helps keep the parent nearby so that the infant gets chance to be protected from any external dangers.

Sroufe (1996) explained the attachment relationships between the mother and the infant in terms of the dynamic regulation of the infant's emotions and arousal. That was to mean that, young infants are not capable of regulating their emotions without the assistance of the mother/ care giver.

## **1.2 Attachment from the view point of Research findings**

### **1.2.1 Attachment patterns in children**

In their attempt to classify attachment patterns in children, Ainsworth and her colleagues (1967) used to rate the responses of children in a stranger situation. In Ainsworth's research (1967), the Strange Situation Experiment was conducted in a room where infants were playing (exploring their surrounding) in the presence of their mothers. It was during this time that Ainsworth observed the infants with a stranger how they reacted to the unfamiliar person (stranger). Then based on the infants' reaction Ainsworth made an inference concerning the main patterns of attachment of those infants with their mothers (William Crain 2000). They examined the responses of their participants (Infants) in a strange situation and found the following results.

Accordingly, 60-70% of the securely attached children freely explored while their mothers were in a room but got upset during times of separation. They showed warm greeting upon her return so that the researchers concluded that such securely attached children considered their mothers as a secure base for survival. The research also indicated that 15-20% of the children became insecure avoidant who have been observed

ignoring the mother when she was present. They had a feeling of little distress and this characterized 5-10% of the participants.

In general, the above research results indicated that early attachment relationship provides an important foundation for later development and that a secure attachment serves as a protective factor against risk factors.

Ainsworth along with her colleagues (1967) set a study in which three patterns of attachment were identified and they are:

### **A. Securely attached children**

One of the outcomes of Ainsworth's observation was the securely attached pattern of behavior observed in children. In this pattern, children were carefully given care by their mothers. That is, the mother gave proper attention each time. This indicated the situation in which attachment resulted in long-lasting psychological and emotional connection between the child and the mother which of course doesn't happen overnight. Here the child expresses his/her needs and this need is met by the mother in which case the child develops a sense of security and trust and becomes well attached to the mother.

### **B. Insecure – avoidant children**

In this pattern of behavior, the child remains independent of the primary care-giver or the child fails to consider the mother as a secure base hinting that painful separations have been experienced. Based on her home observations, Ainsworth assumed that such mothers are relatively insensitive, interfering and rejecting so that children usually seem insecure. Based on her thorough observation, Ainsworth was able to interpret the whole situation in that such apparently rejected children tend not to depend on their primary care givers for support. They therefore react in a defensive way.

### **C. Insecure-ambivalent children**

In this pattern, the way the mother treats the child lacks consistency. That is, the mother becomes warm and responsive on some occasions but not on other occasions. As to Goldbery (1995) and Van Ijzendoorn (1999) such children's mother's reaction is rated as inconsistent. The ambivalent pattern is usually called "resistance" in that children who have been exposed to such situations not only desperately seek contact but also resist it.

Ainsworth's work (1967) was the basis for all other investigations concerning the attachment patterns of children in a strange situation. It was through observation that Ainsworth was able to identify the three main attachment patterns discussed above. Ainsworth noted that one group of infants protested and cried on separation, but when the mother returned, they greeted her with pleasure and she classified this group as a securely attached. Ainsworth's study also resulted in the behavior pattern of the insecure-avoidant group. Ainsworth stated that the warmth and affection to be expressed by the mother's interaction with her infant would have much to do with how secure and attached one becomes. As to her, animal babies as well as human babies seek the proximity of the mother and each species has its own characteristic attachment patterns.

According to Cafe, et al (1996), an infant's firm attachment is usually formed with its mother, although in some situations another adult can become the primary attachment figure. This may be a father, grand parent, or an unrelated adult. Attachment is a process made up of interactions between a child and his /her primary care giver. The process begins at birth enabling the child develop intellectually, organize perception, think logically, develop a conscience, become self-reliant, develop coping mechanisms and form healthy and intimate relationships (Allen, et al, 1983).

Peg Hess (1982), also indicates three conditions should be present for strong attachment to occur in infant-mother relationships. These are continuity, stability and mutuality. Research has demonstrated that two primary parenting behaviors are most important in developing an infant's attachment to the mother. Optimal attachment occurs when a caregiver recognizes and responds to the infant's signals and cues, meeting the infant's physical and emotional needs and regularly engaging the child in lively social interactions.

In general, the above theoretical and research findings have something in common. That is, both invite the concerned bodies to make further study of parental care and patterns of attachment in Ethiopian situation.

### **1.3 Infant-mother factors affecting patterns of attachment**

Papalia and Olds (1999) identified two major factors that appear to influence the quality of attachment between children and their mothers as well as with important care takers. These factors include: (1) infant characteristics, and (2) maternal care variables.

#### **A. Infant's Characteristics**

According to Anisworth and her colleagues (1967), quality of attachment depends solely on the caregiver's behavior. Other researchers, however, believe that characteristics of an infant by itself play an important role in influencing the mother's behavior (Fabes and Martin, 2000).

Theories of attachment suggest that children react very differently; for example, some children are more responsive to their environments than others, and some are more resistant to being held and cuddled than others (Parke, 1993). Children who like to be

held, cuddled, and looked at tend to foster mother's sensitivity, whereas those who are difficult to soothe or are easily over stimulated may discourage maternal sensitivity.

Additional evidence of infant's characteristics and the role they play in the formation of attachment comes from studies of children who have disabilities or are at risk. For example, deaf or blind children often are slow to develop secure attachment to their respective mothers (Fabes and Martin, 2000). Compared to non disabled children, these children may respond in ways that are less likely to promote sensitive care giving: blind children for instance, can not use their gaze to attract their care givers' attention the way the sighted children can. Similarly, very-low birth weight/ pre-term infants are likely to be insecurely attached because they are less socially responsive and more difficult to soothe than are full-term infants. Although disabled and at risk children can form healthy attachment, their behaviors do not encourage maternal responsiveness to the extent that other children's behaviors do.

### **B. Maternal –care variables**

Mother's practice of infant care seems to affect the strength and security of attachment in two ways: Firstly, through feeding situation and secondly, through the provision of comfort (Du Bios, 1944). Here those which are not directly associated with feeding will be considered first. A classic study conducted by Harry Harlow and Robert Zimmerman (1959) gave emphasis to the relative importance of feeding or contact comfort in strengthening infant-mother attachment. In their study these researchers arranged their experiment in such away that they removed infant monkeys from their mothers at birth and reared for six months by surrogate (substitute) "mothers". In this specific experiment one of the mothers was made of wire, the other of cloth. The situation was that half of the

infant monkeys were fed by wire mother while half of them by the cloth mother on a given period of time. The amount of time each group of the infant monkeys spent with either the wire or with the cloth monkeys was compared. Regardless of whether they were fed by the wire or the cloth mother, infant monkeys spent far more time with the cloth mother. This study clearly indicated that feeding is not the critical element in the attachment process and that contact comfort is more important. Erik Erickson (1968) also strengthened that a sense of trust requires a feeling of physical comfort. As to Erickson, trust in infancy could set a stage for a life long expectation that the world will be a good and pleasant place to live in.

Complementing the above idea of contact comfort, Freud (stated in E.Mavis Hetherington 1979) believed that infants become attached to the person or object that provides oral gratification. For most infants, this object that provides gratification and secures attachment is the mother, who most likely feeds the infant. Ainsworth (1967) believes that attachment security depends on how the mother is sensitive and responsive to an infant's signals.

### **C. Warmth of the mother**

The warmth and affection expressed by the mother in interaction with her infant would have much to do with how secure and attached an infant becomes (Ainsworth, 1967). Harlow's (in Santrock, 1999) comparative study of cloth and wire surrogate mother monkeys, in which he found the infant monkeys were more attached to the cloth mothers even though they were fed by the wire mothers was an evidence that only feeding is not necessarily important in the development of secure attachment of especially human infants.

## 1.4 Stability of Attachment

Attachment does not develop suddenly, but emerges in a consistent series of steps in the first six months of life. In the first place, an infant is attracted to all social objects and later to humans and animate objects. Secondly, the infant gradually learns to discriminate familiar from unfamiliar people. Finally, the infant develops the capacity to form a special relationship with certain specific individuals especially the mothers with whom he or she actively seeks to maintain contact. This final phase is the beginning of attachment (William Crain 2000).

Infants' behavior in a strange situation can be linked to their perceptual preferences where infants are attracted to unfamiliar and familiar faces from a very early stage. Carpenter's (1975) study suggests that infants can recognize their mothers as early as two weeks of age. When infants were presented with the mother's face or stranger's face, they were able to discriminate between the two.

The process of familiarization continues over the next few months, with parents becoming increasingly acquainted with the unique characteristics of their infants. They learn what makes them smile and laugh and they learn how to calm and soothe their infants. The same way, the infants learn the unique features of their mother's faces, voices and movements.

At about six or seven months, a new phase of attachment begins. Beginning from this age, an infant actively seeks contact with the mother and may protest when she departs. This general emergence of attachment has been well illustrated in a famous study of sixty Scottish infants by Shaffer and Emerson (1964).

Many research findings have shown that attachment patterns are remarkably stable once formed.<sup>4</sup> Waters (in Parke, 1993) found that infants tested in the “strange situation” at 12 months with their mothers and again at 18 months were generally classified in the same way at the two points. Infants who showed secure attachment at 12 months were rated secure at 18 months just as the infants with Avoidant and ambivalent attachment patterns showed stability over the six – month interval. Further, Main and Cassidy (in Parke, 1993) evaluated the stability of attachment classifications from 1 year to 6 years, while 75 percent of the children who had been judged to be insecurely attached to (Avoidant) their mothers during infancy were judged avoidant five years later. Although not enough insecure ambivalent babies were available to evaluate this group, 66 percent of infants in the disorganized attachment category showed stability from infancy to age 6. A related study by the same persons, Main and Cassidy (indicated in B.Kuppuswamy 1984) revealed that the insecure- ambivalent group was stable at 6 years over a brief time period of one month.

There is also a possibility that attachment relationships can be modified. This is true in the case of infants, who encounter stressful changes in their family circumstances such as divorce, jobless, or residence change. The reverse can also be true if there is a relief in the family which had been in stressful situation. This was proved to be true in the study conducted by Thompson, Lamb and Estes (in Parke, 1993) in which some infants showed a shift from secure to anxious attachment especially those whose family’s level of stress was high. Mother-infant who shifted toward greater security of attachment over time, displayed family situation that was generally associated with relief from tension.

### **1.4.1 The Impact of culture on Attachment Patterns**

Ainsworth's (1967) study showed that East African Basanda infants developed separation anxiety about four months earlier than American infants at the age of six months versus ten months. The expression of both separation and stranger anxiety seems to appear earlier when an infant is confronted by a strange human face. This was most observed on the Guatemalan Ladino infants than on the American infants. This expression of both separation and stranger anxiety in the absence of the mother probably requires that infants have ability to develop a sense of representation of the mother or to remember her actions.

Margaret Mead's (1928) study came up with the result that the Samoan adult tended to display only shallow emotional ties because of large number of caretakers in the extended family arrangement which may prevent formation of intensive affective relationships.

Similarly Ainsworth's (1967) repeated study indicated that the more the number of people in the house, the less attached is the infant to the mother.

Another study conducted by Margaret Mead (1928) with regard to one year old American infants showed more emotionality and dependence on their mothers who were involved with more emotional interaction and exclusive rearing.

### **1.4.2 Consequences of Attachment**

The early development of a strong bond between parent and child seems to have far-reaching effects. Supporting this view, Parke (1993) indicated that early social interactions with attachment figures do shape the child's later attitudes and behavior

including their cognitive and social development. In cognitive development, this is most notable in exploratory behavior and problem solving style. According to Main (in Parke, 1986) an early “secure” attachment promotes more complex exploratory behavior at two years of age.

The quality of attachment in infancy is related to the child’s peer relationships. To illustrate these links between attachment and peer relations, Sroufe (in Parke, 1986) followed forty children from 12 months to 3<sup>1/2</sup> years. Infants who were rated as securely and insecurely attached at 12 months developed very different social and emotional patterns. Teachers rated the securely attached children as higher in self-esteem, empathy, and positive affect and lower on negative affect. Similarly, these children whined less, were less aggressive, and displayed fewer negative reactions to institutions. Not surprisingly, teachers rated the secure children as more socially competent and socially skilled.

In summary, a healthy attachment to parents facilitates rather than stifles exploration, curiosity and mastery of the social and physical environment. At the same time, early attachment increases the child’s trust in other social relationships and permits the subsequent development of mature affection relationships with peers.

#### **1.4.3 Responsiveness of the Mother to Infants’ Signals**

The quality of infant- mother relationship during the first year of life is found to be a major determinant of individual differences in attachment among infants (Seitert & Hoffnung, 1997). In giving much emphasis to the quality of mothers responsiveness to the signals of infants rather than the amount of contact, Seitert & Hoffnung (1994) stated

as follows. A mother's capacity to respond sensitively and appropriately to her infant and to see positively about her baby and the baby's strengths and limitations appears to be more important than the amount of contact or care giving. Accordingly, Seitert & Hoffnung (1994) indicated that mothers of securely attached infants are more responsive to their crying, more careful and tender in holding them, and more responsive to their particular needs and feeding during both feeding and non feeding interactions than are mothers of less securely attached infants.

In general, Ainsworth (1967) concluded that initial stage of attachment is fairly rapidly supplemented by further attachments provided that the mother is responsive and sensitive to the signals of an infant in a given culture.

Securely attached infants have confidence in the availability of their mothers as a source of comfort in times of distress. Through their prior experience with a sensitive and responsive mother these infants develop confidence that supportive care is available to them. This is because of the fact that their cues and signals have been responded to, they develop confidence in their own ability to solicit the care they need.

As to Pedersen and Huffman (1993) an infant's working model of attachment is related to Erickson's concept of basic trust where secure attachment evolves from trust while insecure attachment grows from mistrust. Securely attached infants have learned to trust not only their mothers but also their own ability to get what they need. Thus infants who cry a lot and whose mothers respond by soothing them tend to be securely attached.

Study by Ainsworth (1978) shows that mothers of securely attached infants tend to be sensitive and responsive. Even though this is true, sensitivity is not the only important

factor. Equally important are other aspects of mothering such as mutual interactions, stimulation, positive attitude, warmth and acceptance, as well as emotional support.

According to Dewolff and Van Iizendoorn (1997) the relationship between the mother's behavior and her baby's attachment is strong in middle class families, and weaker among lower-class families. This leads to the conclusion that socio-economic factors in combination with what the mother does may influence the patterns of attachment.

The more secure an infant's attachment to a nurturing adult the easier it seems to be for the child to become independent of that adult and develop good relationship with others. The relationship between attachment and characteristics observed years later underscores the continuity of development and the interrelationship of emotional, cognitive and physical development. Securely attached infants are more sociable with peers and unfamiliar adults than those who are anxiously attached (Ainsworth 1967).

Relationship with parents and other care givers helps infants learn to read others' behavior and develop expectations about it. Very young infants can perceive emotions expressed by others and can adjust their own behavior accordingly. Nine month old show more joy, play more and look at their mothers longer when mothers seem happy, they look sad and then turn away when their mothers seem sad (Termine and Izard, 1988).

#### **1.4.4 Feeding Patterns and Attachment Behaviors in Infants**

Ainsworth (1997) identified three forms of breast feeding mothers: those who breast feed infants on demand, those who feed judging the infants to be hungry, and those who breast feed infants to comfort them. She found that there is a tendency for the mothers of the

secure-attached babies to give the breast for comfort, even though they were obviously not hungry, whereas none of the mothers of the non-attached babies did so.

### **A. Mother's Milk Supply**

Ainsworth (1967) indicated that some of the mothers claimed to have considerable difficulty in maintaining an adequate supply of milk. If the difficulty is a real one, it could contribute to insecurity as well as hunger in the baby. If the difficulty is imagined, it could nevertheless affect the baby through the mother's anxiety.

### **B. Mothers' Attitude toward Breast Feeding**

Ainsworth (1967) found out that there is significant correlation between mother's attitude towards breast feeding and the development of infant's security attachment i.e. infants who breast feed were found to show more secure attachments than who do not; because beyond its nutritional value breast feeding has psychological satisfaction especially for the infants.

Maternal- personality that is discussed below is one of a major factor influencing attachment formation. Researchers have observed that there are four types of mother's personality, which at least have co relational relationships with four types of attachment patterns of infants:

(A) Avoidant (B) Secure (C), Ambivalent (D) and disorganized.

1. Mothers of type A infants tend to be low in both warmth and responsiveness. They seemed rather aloof and uncaring about the infant.
2. Mothers of type B infants tended to be high in both warmth and responsiveness. They obviously liked the child and were skilled at anticipating and responding to her/his needs.

3. Mothers of type C infants tended to be high in warmth, but low in responsiveness. They care about their child and obviously want to connect with her/him, but appear awkward at it --- not knowing to “read” what the child wants and often guessing wrong.
4. Little research exists on the characteristics of mothers of type D babies, since these are so few of them.

#### **1.4.5 The impacts of Attachment disorders**

Attachment disorder results when there is a serious interruption of bonding during the early critical stages of life, i.e. conception through the first 26 months. One of the basic reasons for this interrupted attachment pattern is the separation of infants from primary care takers and placement in child rearing institutions. As a result children with attachment disorders fail to trust others, are angry and dangerous both to themselves and to others (Ainsworth 1967).

Evidences by different researchers indicate that the impact of impaired bonding in early childhood shows great variation. Severe emotional neglect in early childhood can result in damaging effects. Without stimulation and proper care, children can lose the capacity to form any meaningful relationships for the rest of their lives even though such degree of severe neglect does not happen frequently. Problems that result from such situations can range from mild interpersonal discomfort to profound social and emotional problems.

In supporting the above idea Warren, Huston, England and Sroufe, (1997) described that from preschool through adolescence; children with anxious attachment histories were more likely to have behavioral and emotional problems. The developmental pattern

associated with antisocial behavior resulted from anxious avoidant attachment leads to isolation and difficulty in regulating emotions.

### **1.5 Statement of the Problem**

The issue of Patterns of attachment behavior of infants and their mothers is an important research focus in Ethiopia. The issue becomes more important in countries like Ethiopia where mothers' knowledge of child-rearing practices is so low and culture oriented than based on the results of scientific research findings. This low state of maternal knowledge was therefore felt to be examined. Hence, the present study has been designed to answer the following basic questions.

- A. What are the main attachment patterns that are observed in selected infants in the area?
- B. How do infants behave during separation from their mothers and reunion with their mothers in a strange situation?
- C. Does the current mother-infant interaction encourage secure attachment pattern?
- D. Which infants' group (age and sex) show a better patterns of adjustment?
- E. Could Ainsworth's experimental work in strange situation be replicated in the Metu cultural group of mother-infant pairs?

### **1.6 Objectives of the study**

This study has two main objectives and these are:

1. Assessing the attachment patterns observed in selected infant-mother pairs.
2. Replicating Ainsworth's strange situation experiment to see whether it works or not in a specific culture under consideration.

### 1.7 Delimitation of the Study

The present study is delimited to infants in Metu town and more specifically to those infants in 'kebele' 03. This site has been chosen by the researcher with an assumption that the researcher knows the site well so that cooperation by the randomly selected mothers and the 'kebele' officials could be easily secured.

### 1.8 Significance of the Study

In our case where the concept of child infant-mother relationship is given less value due to some social and economic factors, conducting research by concerned bodies would therefore be of significance for many reasons. First of all, the study provides the surrounding society with some insights concerning the role of early attachment in children's future emotional, social and intellectual development. This helps in taking the necessary measures in the process of assuring a secure type of attachment. Furthermore, since it is a study conducted in an area where there has been no research it would cer

## Operational Definition of Basic Terms Used

Attachment - in this study refers to the strong emotional bond between an infant and its mother where an infant assumes the mother as a secure base for survival provided that the mother responds to all its signals.

Strange situation - in this study refers to the situation where an infant's reaction to unfamiliar person in the presence and absence of the mother in a room is examined through observation.

Infants - in this study refers to infants whose age ranges between six to twelve months. tainly serve as a basis for further research.

## CHAPTER TWO

### 2. Methods

This section of the study presents the design of the study, population and sampling tools and procedures for data collection and methods used for analysis of data.

#### 2.1. Design of the Study

This study was designed to make assessment concerning the main attachment patterns exhibited by the selected infants on the basis of Ainsworth's and Bowlby's findings.

The researcher selected the sample group as quality attention is not given to infants due to socio-economic related factors and lack of research-based child rearing knowledge and practices. So, the researcher's assumption is that there is such a gap in terms of quality of attention to be given to the mothers and infants of that area.

The study is designed not only to assess the attachment patterns among infant-mother pairs but also to know the level of understanding about the importance of attachment at early stages by the mothers and the extent to which infant –mother relation ship affects the attachment patterns to be developed in infants.

#### 2.2. Population and Sampling

As indicated earlier, the 'kebele 03' where the study was conducted was purposely chosen for the very reason that success in achieving the designed objectives was mainly the result of the cooperation by the 'kebele' and the respective mother participants.

In the 'kebele' under consideration a great number of infant-mother pairs live, where only 30 infants who live with their mothers (unemployed mothers) were randomly selected. The reason behind selecting this group of mothers is that they rear their infants by themselves than using baby sitters since they are unemployed. These mothers usually stay at homes with their respective infants. The number has been decided to be few (30) due to the fact that the researcher planned to use observation of infants' characteristics in a strange situation in an attempt to replicate Ainsworth's experiment.

**Characteristics of infants in the strange situation in an attempt to replicate Ainsworth's experiment.**

Table 1. Infants' classification by age and sex

Characteristics		n	Percentage
Age	6-8 months	8	26.66
	9-12 months	22	73.33
Sex	Males	13	43.33
	Females	17	56.66

n = number of infants

### 2.3. Tools of data collection and their justification

The present study mainly focused on the use of observation as a main tool for data collection based on the primary purpose of replicating Ainsworth's strange situation experiment where infants were observed during different episodes. Mothers were also interviewed so as to support the data gathered through observation with additional information.

#### **2.4. Procedures of data collection**

During each episode each infant's specific behavior was carefully attended and recorded by the researcher when a stranger enters each home together with the researcher. The behavior of each infant at each home was carefully attended and recorded while both the mother and a stranger were at home, when the researcher and a stranger remained at home with an infant and the mother leaves home for at least ten minutes and also upon reunion of the mother and an infant.

During each episode each infant's reaction to a stranger was observed. This included the presence of the mother observing whether an infant shakes a stranger, stares at him at a distant position, smiles, cries when a stranger enters home; observing the nature of each infant's voice, when the stranger enters the room and observing, the intensity of freely playing in the presence of the stranger etc.

Throughout the process of data collection, similar behavior patterns of infants' were seen together in order to simplify issues related to discussion and interpretation.

In addition to the above, what happened to each infant when each mother left was observed. This included observing each approach of the infant in the presence of a stranger during his/her crying, feeling anxiety, Observing the crawling behavior of infant after the mother, observing the behavior of maternal whereabouts responding to some sounds out-side home, expectancy of the mother's coming back, observing the reaction of each infant to the mother during reunion (smiling, babbling sounds, looking at mother's face and physical contact etc).

## **2.5. Methods of data Analysis**

The results gained through observation were qualitatively expressed indicating specific reactions of infants to the strange situation while maternal response to the interview questions which emphasizes the idea of contact comfort in attachment was analyzed using measures of central tendency. The second interview question which deals with child-rearing practices was also qualitatively explained.

## CHAPTER THREE

### 3. Analysis and Results

The main results of this study can be summarized under the following sub headings.

#### 3.1 Attachment Patterns as Observed

The attachment patterns inferred from the actions of the infants during observation were recorded, showing the following three broad classifications.

Table 2. Infants classified under secure patterns of attachment

Pattern of Attachment	Characteristics of infants in the pattern along with their general characteristics	Total number of infants in the pattern	Percentage
Secure	<ul style="list-style-type: none"> <li>- They use their respective mothers as a secure base to explore their surroundings</li> <li>- They seek and maintain contact with the mother at reunion</li> <li>- They show little or no resistance to make contact with the mother</li> <li>- They show clear distress during separation</li> </ul>	16	53.33

Table 3. **Infants classified under insecure pattern of attachment.**

Pattern of attachment	Characteristics of infants in the pattern	Total number of infants in the pattern	Percentage
Insecure	<ul style="list-style-type: none"> <li>- They don't seek or maintain contact with the mother</li> <li>- They were observed responding positively to the stranger</li> <li>- They show little or no distress at separation from mother</li> <li>- They show some avoidance (or show no particular interest) of the mother at reunion</li> </ul>	10	33.33

Table 4: **Infants classified under ambivalent pattern of attachment.**

Pattern of attachment	Characteristics of infants in the pattern	Total number of infants in the pattern	percentage
	<ul style="list-style-type: none"> <li>- They appear nervous and timid in exploration episodes</li> <li>- Seek contact with and resist release from the mother but also are openly resistant to interact with the mother</li> </ul>		

Ambivalent	<ul style="list-style-type: none"> <li>- They were distressed during separation but have difficulty settling down during reunion episodes</li> <li>- Often become angry, hit, kick the mother while being held by the mother</li> <li>- They sometimes appear passive, unhappy or helpless</li> </ul>	4	13.33
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### 3.2. Mother's concern for physical comfort

Table 5: The average mother infant physical contact per day

No	Mothers interviewed	Mothers' educational background (grades)	Approximate number of hours per day (the whole night is included)
1	M <sub>1</sub>	11	16
2	M <sub>2</sub>	12+1	8
3	M <sub>3</sub>	6	24
4	M <sub>4</sub>	Adult Education	17
5	M <sub>5</sub>	12	20
6	M <sub>6</sub>	5	18
7	M <sub>7</sub>	7	12
8	M <sub>8</sub>	8	22
9	M <sub>9</sub>	12	15

10	M <sub>10</sub>	11	10
11	M <sub>11</sub>	Adult Education	13
12	M <sub>12</sub>	9	17
13	M <sub>13</sub>	12	15
14	M <sub>14</sub>	5	20
15	M <sub>15</sub>	3	6
16	M <sub>16</sub>	6	9
17	M <sub>17</sub>	3	12
18	M <sub>18</sub>	7	12
19	M <sub>19</sub>	8	10
20	M <sub>20</sub>	6	15
21	M <sub>21</sub>	5	5
22	M <sub>22</sub>	9	17
23	M <sub>23</sub>	11	6
24	M <sub>24</sub>	7	8
25	M <sub>25</sub>	10	7
26	M <sub>26</sub>	5	20
27	M <sub>27</sub>	11	12
28	M <sub>28</sub>	5	16
29	M <sub>29</sub>	9	16
30	M <sub>30</sub>	7	21

M-stands for mother

∞ = 30

$$\bar{x} = \frac{\Sigma x}{n} = \frac{419}{30} = 14 \text{ (hrs)}$$

### 3.3. Typical Characteristics of infants in a strange situation

Observation of each infant each time in a strange situation resulted in different behavioral characteristics which altogether can be seen in the following table.

Table 6. Summary of infants' reactions to strange situation

No	Behavioral characteristics observed most of the time	Approximate number of infants	Percentage
1	Feelings of unhappiness when a stranger enters home	3	10
2	Staring at a stranger with babbling sounds	6	20
3	Approaching stranger and attempting to make physical contact with a stranger	2	6.66
4	Continuously crying when the mother leaves home in the presence of a stranger	14	46.66
5	Searching for mothers' whereabouts	5	16.66

### 3.4 Infants' families' ethnic origin (cultural variation)

Observation also took place giving due consideration to each infant's ethnic background to see if ethnic origin's cultural variation does have any impact up on childrearing practices.

**Table 7: Ethnic background of infants' families**

N <sup>o</sup>	Ethnic origin	Number	Percentage
1	Oromo	21	70
2	Amhara	7	23.33
3	Gurage	2	6.66

### 3.5 Child rearing practices and attachment patterns

An interview question was presented to respective mothers in an attempt to assess whether the child rearing practices they experience promotes secured attachment patterns or not.

**Table 8: Child rearing practices**

Responses	The existing child rearing practices promote secure attachment	
	Yes	No
N	9	21
%	30	70

Respective mother's awareness about the existing child rearing practice in promoting secure attachment or not was examined through interview (table 8) and showed the degree of mothers' awareness about the existing culture as explained in the discussion section

### 3.6 Possibility of replicating Ainsworth's Strange Situation Experiment

An attempt was made to investigate the possibility that Ainsworth's Strange Situation Experiment can be replicated in the cultural setting of Metu town's infant-mother pairs. Table 9 below indicates how many times (frequency) a given behavior pattern of an infant occurs approximately within a given time allocated for observation.

**Table 9 Summarized behavior patterns of infants in a strange situation**

Infant(s)	Frequently observed behavior pattern while the mother is at home (in the presence of the stranger)	Time used for observation (in minutes)	Approximate frequency of behavior pattern (in terms of time)	Assumed pattern of attachment	Age (in months)
Infant 1	1. Tending to approach the mother	30	2	Secure	7
	2. Hugs the mother		2		
	3. Babbling looking at the mother		4		
	4. Following the mother		2		
Infant 2	1. Moving towards the mother	30	6	Secure	12
	2. Staring at the stranger		2		
	3. Tending to explore his surrounding		5		
Infant 3	1. Feelings of hunger	20	4	ambivalent	6
	2. Tending to approach the mother and at the same time avoiding her		1		
Infant 4	1. Crying	20	almost the whole 20 minutes	ambivalent	10

	2. Moving towards the mother when gets anger		2		
Infant 5	1. Feelings of happiness (Laughing)	30	almost the whole 30 minutes	Secure	8
	2. monitoring the mother's movement within a given time		6		
Infant 6	1. Showing feelings of happiness (Laughing in between)	40	8	insecure	9
	2. Monitoring the mother's movement with careful attention		5		
Infant 7	1. Playing independently	30	almost the whole 30 minutes	insecure	11
	2. approaching the mother when angry		2		
Infant 8	1. Feels unhappy	30	Almost the whole 30 minutes	insecure	10
	2. Staring at the stranger		4		
Infant 9	1. Tending to be on mother's back	20	2	secure	6
	2. hugs his mother		6		
Infant 10	1. Being confused of approaching the mother	30	almost the whole 30 minutes	insecure	10

	2. Crying now and then				
Infant 11	1. monitoring every act of the mother	20	7	secure	9
	2. Physical contact with the mother		2		
Infant 12	1. Playing with happy feeling	30	almost the whole 30 minutes		12
	2. Approaching the stranger		7		
	3. Monitoring the mother's presence		2		
Infant 13	1. Showing a smiling face	20	2	secure	11
	2. Cries when hungry		3		
Infant 14	1. Hitting the mother	20	1	insecure	7
	2. pushing away her mother		almost for 10 minutes		
Infant 15	1. making physical contact with the stranger	30	1	insecure	12
Infant 16	1. Crying all the time	10	almost the whole 20 minutes	insecure	12
	2. Trying to approach his mother		1		
Infant 17	1. Concentrates on playing	20	almost the whole 20 minutes	insecure	6
Infant 18	1. Avoiding her mother's attempt to	30	5	insecure	11

	comfort her.				
	2. Gets smile when comforted by her elder sister		4		
Infant 19	1. constantly monitoring his mother's movements	20	almost the whole 20 minutes	secure	9
	2. Trying to talk to his mother		4		
Infant 20	1. Following her mother's movement	20	almost the whole 20 minutes	secure	9
Infant 21	1. Searches for his mother when angry	30	3	insecure	7
Infant 22	1. explores the environment keeping eye contact with his mother	30	10	secure	8
	2. running towards his mother		6		
Infant 23	1. Tending to be on his mother's back	30	almost the whole 30 minutes	secure	12
Infant 24	1. monitoring her mother's acts	30	11	secure	10
	2. Attempting to inform her mother what she does ( in action )		2		
Infant 25	1. Cries due to common cold	30	Almost the whole 30 minutes	secure	10
Infant 26	1. avoiding everybody except playing	30	4 (avoided his	insecure	9

			mother)		
Infant 27	1. Feeling happy (laughing)	30	1	ambivalent	11
	2. Crying		5		
Infant 28	1. shows feelings of happiness	30	almost the whole 30 minutes	secure	
	2. exploring her surrounding monitoring her mother		6		
Infant 29	1. Tending to be on her mother's back	30	3	secure	10
	2. Tending to touch materials around her being on her mothers back		2		
Infant 30	1. pushes away his mother	60	4	ambivalent	9
	2. approaches his elder sister		almost the whole minutes		

## CHAPTER FOUR

### 4. Discussion

#### 4.1. Description of attachment patterns of infants in a strange situation.

This section discusses the results of an interview and observation and examines if the results of observation are consistent or not with the findings of previous pioneer researchers.

#### 4.2 The main patterns of attachment in infants

Infants' patterns of attachment were assessed primarily using Ainsworth's strange situation with the primary purpose of identifying the distinct patterns of attachment observed in infants under consideration.

Accordingly as indicated in table 2, from 30 infants observed in a strange situation almost more than half (16) or 53.33 were found to be securely attached to their mothers. This concept of secured pattern of attachment has been inferred from the different patterns of behavioral reactions infants showed during each episode of strange situation observation. Infants who were observed to have secure patterns of attachment in general freely explored the room in the presence of their mothers showing feelings of happiness. The moment the mother left home in the presence of the stranger these infants' facial expression showed that they were hungry. They were observed showing clear distress during separation. Moreover most of these infants with securely attached pattern of attachment behavior were observed crying and crawling after their mothers during separation.

The above behavior patterns were almost changed immediately upon the mothers' return. This situation can be explained on the basis of such behaviors; feeling of happiness, warm greeting, attempting to talk to one's mother and approaching one's mother for breast feeding. This implies that these mothers were secure basis for these infants. On the occasion of reunion, the mothers also showed responsive signals to their respective infants.

Ainsworth's (1967) research findings also indicated that 60-70% of infants observed in the strange situation had secured type of attachment pattern. Participants (infants) in Ainsworth's research showed similar pattern of behavior in which case infants felt happy in the presence of their mothers and upset during separation.

As indicated in table 3 the second type of attachment pattern found was insecure. From 30 infants observed, 10 of them (33.33) almost had possessed the behavior of insecure avoidant attachment. This type of attachment pattern was characterized by such behavior patterns like lack of concern for mothers when the mothers were available, giving more emphasis to exploring the environment around (the room), little feeling of unhappiness during separation from mother and giving little attention to the mother during reunion. These infants were observed to be independent of their mothers most of the time. They were observed searching for their respective mothers whenever they got hungry. With regard to insecurely attached pattern of behavior, Ainsworth's home observation (1967) indicated that 15-20% of the research participants were found to have insecure avoidant pattern of attachment. As to Ainsworth, such groups of infants were characterized by ignoring their respective mothers when they were present in the room. Generally,

Ainsworth concluded that such infants fail to consider their respective mothers as secure base if painful separations were experienced.

The third group of infants observed became part of the group where the infants were observed giving very little attention to their respective mothers. This comprised of 4 infants (13.33%) among the totally observed infants. They were observed being characterized by great discomfort when their respective mothers were separated from them in the presence of the stranger. Whenever the stranger attempted to comfort them they became resistant. Immediately when their respective mothers came back to the room, these infants were observed giving very little attention to their mothers. They specially didn't want to make any physical contact with their respective mothers. But their respective mothers frequently attempted to hold them and comfort them.

In the present study, the researcher didn't find out the fourth type of attachment pattern, the disorganized one which was characterized by confusion about approaching or avoiding the mother in a strange situation. The absence of this group may imply the presence of mother's responding to the needs of an infant or lack of symptoms of maternal rejection of infants by in the sample.

#### **4.3. Comforting infants through physical contact and initiating to talk**

The result gained from an interview of the sample group (the mothers) was summarized as follows.

Almost all mothers responded that they often give time to comfort their respective infants and initiate them to talk so that promising emotional intimacy was there. The researcher's home observation for five weeks also proved this fact that almost the mothers gave much time to comfort their infants. The interview result in which mothers were asked to guess

the relative hours they spent with their respective infants was 14 hrs on the average. Oral explanation of most mothers showed that they don't want to handover their infants to the second body (the care givers) including siblings and fathers. This was for the very reason that infants can not express their emotions (feelings) through verbal communication. The tradition among these sample mothers seems good in that infants pass the night time with their respective mothers. Throughout their talk, almost all mothers explained that they needed to pass most of their time with their infants. But if some one takes the mother's time spent with their respective infants almost all infants receive little attention from their mothers. This is mainly due to the fact that most mothers' income is very low so that they spend most of their time working in and around homes. The researcher was able to observe that most infants get access to breast whenever they cry the situation which is similar to the Alorese tribe's infants (Rober L.Munroe and Ruth H.Munroe, 1975) That is, in Alorese tribe women are the principal food producers, being responsible for the cultivation and collection of vegetable foods so that they don't give sufficient time to their infants. (Du Bios, 1944).

The importance of physical comfort and warmth of the mother's expression comes from Ainsworth's (1967) study and Harlow's (1999) comparative study of cloth and wire surrogate mother monkeys, in which they found that children were more attached to the cloth mothers than wire fed mothers. In addition to the above observed situations, the home observation indicated the importance attached to physical contact. The researcher gave special attention to an infant whose mother and father were imprisoned for six months. He was five months old when the parents were taken to prison. The time during which this study took place the infant's parents were released from jail. This offered a

good opportunity to observe an infant's reaction to his parents. The researcher made an observation of 30 minutes per week a week and found that an infant took his own parents for strangers. For six solid months, an infant was treated by his elder sister so that he considered her his mother and father. This idea goes with Harlows and Zimmer Land's (1959) findings that emphasized the importance of contact comfort.

#### **4.4 Strange situation and typical characteristics observed in infants**

The observation time was interesting in that each infant showed its own typical behavior without reservation. Accordingly, table 6 indicated the basic categories of behavior patterns observed frequently putting combination of related characteristics together.

Accordingly, 10% of the infants were observed showing feelings of unhappiness when a stranger came in, 20% were observed making frequent staring at a stranger with babbling sounds. Only 6.66% of the infants were observed attempting to make physical contact with the stranger frequently.

Large numbers of infants (46.66%) were observed crying continuously whenever their respective mothers left home in the presence of a stranger. As to Ainsworth, this might be an indicator of considering their respective mothers a secure base for survival. Searching for their respective mother's whereabouts was frequently done by 5 infants who were among the 46% who were characterized by continuous crying in the absence of the mother. A group of infants being characterized by continuous crying were comforted by the stranger even though they were observed resisting a stranger's attempt.

#### **4.5 Patterns of Attachment and Adjustment to Strange Situation (age and sex factors)**

In this study there was an attempt to investigate the relationship between patterns of attachment and Adjustment to strange situation giving emphasis to age and sex related factors. As a result 13 male infants and 17 female infants were observed in which case significant difference was not observed between males and females in terms of adjusting themselves to the strange situation. However, in both groups of males and females age factor was decisive in that those who are between 9-12 months were observed making better adjustment to a strange situation than those below nine months.

#### **4.6 The impact of culture on attachment patterns**

Researchers in the area of cross- cultural developmental psychology give due attention to the impact of culture on the early attachment patterns of infants of different ethnic origins. In this specific study, the researcher made an attempt to make careful observation among the infants observed with an assumption that they are from different ethnic origins. But as indicated in table 5 even though it is possible to get families from different ethnic origins the dominant culture in the town, the Oromo culture of child rearing applies to other ethnic groups due to acculturation. This is maybe due to the fact that these ethnic groups have been living together for the last many years and all became Oromo language speakers so that the attachment patterns observed in their respective infants goes similar way.

#### **4.7. Child rearing practices and early attachment**

The nature of attachment in infants in any culture is highly related to the actual child rearing practice by mothers and other care givers. Good child rearing practices promote

secure attachment patterns in infants in that mothers become responsible to form emotional intimacy especially during the first few years of life.

The interview result in table 8 of this study resulted in an assumption that mothers have knowledge that the existing child rearing practices in that specific area fails to promote secure type of attachment. That is, 70% of the mothers interviewed frankly indicated that they were not practicing appropriate child rearing practices. Even though these mothers knew that infants need to be reared in appropriate ways, they attributed their failure to the socio-economic factors. Within the same table, only 30% of the mothers were able to respond that appropriate child rearing practices prevail in the area. As to the researcher's opinion, their success may be attributed to their relative educational background and fathers income which mainly gives opportunity for these mothers to treat their respective infants in a relatively good manner.

### **1.8 Ainsworth's strange situation Experiment and cultural Variations**

As indicated in the statement of the problem one of the basic questions was the possibility that Ainsworth's strange situation experiment could be replicated in the cultural group of Metu infant-mother pairs. To come across concrete results, the researcher tried to replicate Ainsworth's strange situation Experiment by giving due attention to the different behavior patterns observed in each infant's reaction to the strange situation along with their frequency of occurrence and inferred basic attachment patterns. (The classification of Attachment patterns gained from Ainsworth's strange situation Experiment).

So, the summarized result in table 9 clearly indicated the possibility that Ainsworth's strange situation experiment could be replicated in Metu town's cultural group of infant- mother pairs. For example, on the basis of results gained from Ainsworth's experiment one can conclude that

infant I's behavior patterns showed almost secure type of attachment pattern and the same procedure of making inference is true for other infants included in this study.

Supporting the above idea, Ainsworth's experiment revealed almost similar results in cultural groups of Africa (mainly Uganda) and America infant-Mother pairs (Goldberg 1995).

In general, the researcher was able to gather information from all mothers included in the study that mothers believed the importance of the infancy stage as a period when affect gets developed provided that conditions allow appropriate child rearing practices. With this regard, the case study by Du Bois (1944) indicated that where the mother begins dealing with different activities immediately following the birth of a neonate, the newly born infant faces different problems specially hunger so that the attachment pattern is disordered.

## CHAPTER FIVE

### Summary, Conclusion and Recommendations

#### 5.1. Summary

The objective of this study was to assess the basic attachment patterns of infants under consideration. To achieve this end, the following five basic questions were raised.

- A. What were the main attachment patterns that are observed in selected infants in the area?
- B. How do infants behave during separation from their mothers and reunion with their mothers in a strange situation?
- C. Does the current mother-infant interaction encourage secure attachment pattern?
- D. Which infant group (age and sex) shows a better pattern of adjustment?
- E. Could Ainsworth's experimental work in strange situation be replicated in the Metu cultural group of mother-infant pairs?

In order to search answer for these basic questions related topics in the literature were reviewed. The study was conducted in 'kebele 03' of Metu town. As estimated by the 'kebele' representatives of social affairs branch, there are more than one thousand infants in the 'kebele' under consideration. The researcher was interested in using observation as the main tool in gathering necessary data as the nature of the topic (attachment patterns) required decision on the part of the researcher to use only 30 randomly selected infants.

In addition to making qualitative description of the observed behavior patterns of the infants' in a strange situation, two basic interview questions dealing with the average contact hours per day between mothers and infants and child rearing practices were raised. (See appendix III).

The continuously conducted observation has revealed the prevalence of three dominant infant attachment patterns to the mother. These patterns when presented in terms of their respective magnitude can be ordered as securely attached, insecurely attached and ambivalent infants.

## **5.2 Conclusion**

It is clear that the nature of an infants attachment to his/her mother is related both to earlier interaction with the mother and to various aspects of later development. The practical implication is that the way in which the infant organizes his/her behavior toward others in a strange situation is highly affected by the nature of interaction between an infant and a mother. This organization of behavior is determined by the type of infant-mother relationship.

The time of separation and union between the mother and the infant was a good measure for testing the strength of attachment.

The study came up with three distinct patterns of attachment: the secure, the insecure and ambivalent ones.

-Difference in ethnic origin of mothers was not resulted in significant difference in infant attachment patterns due to acculturation among the ethnic groups included in this study.

In general, replicating Ainsworth's strange situation Experiment in an area under consideration was possible even though it had ups and downs mainly in terms of

arranging time for mothers included in the sample due to the fact that they are occupied with different activities at home. In addition to time shortage, they suspected the purpose of the research itself so that it took the researcher two weeks to convince them.

### **5.3 Recommendations**

Based on the above results the following practical and theoretical recommendations can be given.

1. Mothers need to get access to continuous education programs in order to have healthy practices of early attachment and healthy infant-mother relations.
2. Concerned professionals should undertake broad research activities in the area of early attachment since it is the basis for later development of infants' personality.
3. Mothers need to have the right place and time for treating their infants during the first few years of life in order to assure secure type of attachment.

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## Appendix I

**Format for recording happenings during each Observation time (of each infant).**

Infant (s)	Behavior of an infant while the mother is at home	Behavior of an infant when the mother leaves home (the stranger is at home )	Behavior of an infant When the mother comes back	Behavior of an infant when the stranger leaves home	Observation rounds			Time allotted for observing each infant
					R <sub>1</sub>	R <sub>2</sub>	R <sub>3</sub>	
Infant 1	<ul style="list-style-type: none"> <li>-continuous babbling</li> <li>-smiling face</li> <li>-following the mother,</li> <li>-stares at the stranger</li> <li>-follows mother's gestures</li> <li>-freely explores the surrounding environment</li> <li>-hugs the mother now and then</li> </ul>	<ul style="list-style-type: none"> <li>-immediately gets up set</li> <li>-cries to the extreme</li> <li>-never approaches the stranger</li> <li>-searches for the mother's whereabouts quickly.</li> </ul>	<ul style="list-style-type: none"> <li>-smiling face</li> <li>-runs towards mother</li> <li>-monitors the mother's presence</li> <li>-shows great babbling sounds</li> </ul>	<ul style="list-style-type: none"> <li>-generally observed showing feelings of happiness</li> </ul>	✓	✓	✓	30

Infant 2	<ul style="list-style-type: none"> <li>-plays with great pleasure</li> <li>-goes to his mother for breast sucking now and then</li> <li>-laughs at the stranger from a distant position.</li> </ul>	<ul style="list-style-type: none"> <li>-He continuously cries until the mother comes back sitting at a given place.</li> </ul>	<ul style="list-style-type: none"> <li>-quickly runs to the mother to be picked up and touches her face before he begins to suck breast</li> </ul>	<ul style="list-style-type: none"> <li>-immediately begins showing babbling sounds loudly and begins exploring the surrounding areas</li> </ul>	✓	✓	✓	30
Infant 3	<ul style="list-style-type: none"> <li>-she sometimes becomes happy, and at the same time she shows feelings of hunger</li> <li>-she seems confused in approaching the mother</li> <li>-she doesn't give attention to playing and this is may be due to illness she experiences.</li> </ul>	<ul style="list-style-type: none"> <li>-she cries for a brief time and remain calm.</li> <li>-when the stranger tries to comfort her, she runs away and stare at him</li> </ul>	<ul style="list-style-type: none"> <li>-she moves towards the mother</li> <li>-No change in terms of facial expression happens.</li> </ul>	<ul style="list-style-type: none"> <li>-she simply looks after him</li> </ul>	✓	✓	✓	
Infant 4	<ul style="list-style-type: none"> <li>He was characterized by continuous crying.</li> <li>-simply moves towards</li> </ul>	<ul style="list-style-type: none"> <li>-He cries,</li> <li>-not willing to keep quiet even comforted by the</li> </ul>	<ul style="list-style-type: none"> <li>-Gets relief by sucking breast and then begins playing</li> </ul>	<ul style="list-style-type: none"> <li>-He doesn't give any attention to the stranger's leaving</li> </ul>	✓	✓	-	20

	the mother when becomes angry	siblings.	-He doesn't want any part of his play material touched.	home				
Infant 5	- She is very happy, laughs all the time exploring every thing in the surrounding and at the same time highly monitors her mother's presence	- She cries extremely and comforted only by her grand mother. - Never involved her self in playing or exploring the surrounding environment until the mother comes back	- She gets smiled to the extreme - she seems that she suspects that her mother goes again	- she becomes - happy, laughs and begin to explore the surrounding environment	✓	-	✓	30
Infant 6	- She feels happy - She continuously follows her mother and never give attention to any other thing	- She cries to the extreme. - She begins sleeping while crying	- Once entered into a state of sleeping, she is taken away to the bed by her elder sister	- She shows no action as a result of being in a state of sleeping	✓	✓	✓	
Infant 7	- Most of the time she plays independently without giving attention	- She cries for a very brief time and start playing - Never approach any	- She looks at her mother showing smiling face sucks breast and return to playing	- She doesn't give any attention to the stranger's leaving	✓	✓	✓	

	<p>to the mother.</p> <ul style="list-style-type: none"> <li>- She approaches the mother when she becomes angry.</li> </ul> <p>Following breast sucking, she immediately goes to exploring the environment</p>	<p>person except other infants</p>	<p>independently</p>	<p>home</p>				
Infant 8	<ul style="list-style-type: none"> <li>- He doesn't want to approach his mother except when he gets angry</li> <li>- He stares at the stranger from a distant position and makes babbling sounds</li> </ul>	<ul style="list-style-type: none"> <li>- Follows the mother for a brief time and returns back to and continues playing</li> </ul>	<ul style="list-style-type: none"> <li>- He gets smile, and approach the mother for sucking breast</li> </ul>	<ul style="list-style-type: none"> <li>- Shows no concern at all</li> </ul>	✓	✓	✓	30
Infant 9	<p>He seems happy and almost all the time hugs his mother; explores the</p>	<ul style="list-style-type: none"> <li>- Cries until the mother comes back lying on ground</li> </ul>	<ul style="list-style-type: none"> <li>- Smiles into the mother's eyes</li> <li>- Searches for where abouts</li> </ul>	<ul style="list-style-type: none"> <li>- He gets happy extremely</li> </ul>	✓	✓	-	20

	surrounding environment being on his mother's back		when he hears his mother's sound					
Infant 10	<ul style="list-style-type: none"> <li>- He seems very confused in approaching the mother</li> <li>- He cries most of the time and this is may be due to health problem as explained by his mother</li> </ul>	<ul style="list-style-type: none"> <li>- Simply sits at a given place and cry</li> <li>- Sometimes he is willing to be comforted by the stranger</li> </ul>	<ul style="list-style-type: none"> <li>- He moves towards her with happiness and sucks breast</li> </ul>	<ul style="list-style-type: none"> <li>- He looks after the stranger</li> </ul>	✓	✓	✓	30
Infant 11	<ul style="list-style-type: none"> <li>- She explores every act of the mother</li> <li>- She also makes continuous physical contact with her grand mother</li> </ul>	<ul style="list-style-type: none"> <li>- She cries extremely but easily comforted by her grand mother</li> </ul>	<ul style="list-style-type: none"> <li>- She moves towards the door if she hears any sound</li> </ul>	<ul style="list-style-type: none"> <li>- She smiles</li> <li>- She follows the stranger and checks that he has gone</li> </ul>	✓	-	✓	20
Infant 12	<ul style="list-style-type: none"> <li>- He plays with happy feeling</li> <li>- Approaches the stranger with his elder</li> </ul>	<ul style="list-style-type: none"> <li>- He cries for a brief time and then gets depressed or becomes calm and approaches no one</li> </ul>	<ul style="list-style-type: none"> <li>- He stands and runs towards the door when he hears his mother's sound. He discriminates between</li> </ul>	<ul style="list-style-type: none"> <li>- He laughs by running here and there</li> </ul>	✓	✓	✓	30

	<p>sister</p> <ul style="list-style-type: none"> <li>- Each time he monitors the mother's presence making babbling sounds facing her</li> </ul>		<p>his mother's sound and that of others</p>					
Infant 13	<ul style="list-style-type: none"> <li>- He is very happy showing a smiling face</li> <li>- If any resistance comes to what he wants to do, he cries to the extreme (becomes hungry) even in the presence of his mother</li> </ul>	<ul style="list-style-type: none"> <li>- He follows her crying</li> <li>- His father and sisters attempt to comfort him; but doesn't give any response to them until his mother comes back</li> </ul>	<ul style="list-style-type: none"> <li>- He becomes happy to the extreme and never wants to go away from his mother once is picked up</li> </ul>	<ul style="list-style-type: none"> <li>- He doesn't give any attention to the stranger's leaving</li> </ul>	✓	✓	-	20
Infant 14	<ul style="list-style-type: none"> <li>- She hits her mother</li> <li>- She pushes away her mother after sucking the breast</li> </ul>	<ul style="list-style-type: none"> <li>- She simply looks after her and return to exploring her surrounding</li> </ul>	<ul style="list-style-type: none"> <li>- She shows smiling face but resist approaching the mother until she wants breast. If she gets cooked egg she doesn't make any movement towards her mother</li> </ul>	<ul style="list-style-type: none"> <li>- She looks after him and laugh</li> </ul>	x	✓	✓	-

Infant 15	- Her whole condition is surprising that she made physical contact with the stranger while all family members are around	- She stayed with the stranger without bothering about her mother's whereabouts	- She was confused in leaving the stranger and approaching the mother or not	- She cried highly so that the stranger was departed from her by buying biscuit for her	✓	✓	✓	30
Infant 16	- His internal state is not good (illness) so that cries all the time - Even though he tries to approach her, his mother doesn't show much concern mainly due to her responsibility to treat the whole family members including her daughter's children (her husband died)	- He continuously cries - The stranger's attempt to comfort him was not successful in that an infant generally was not in a normal condition	- He moves towards his mother even though she doesn't allow him stay with her for a long period of time	- he shows no different behavior pattern	✓	-	-	10
Infant 17	- he simply plays using	- He simply once noticed	- He showed some sort of	- He laughed at the	✓	✓	-	20

	<p>some play materials than moving towards his mother</p> <p>- He doesn't give attention to any one in the room except playing</p>	<p>her leaving and the then returned back to playing</p>	<p>smiling which of course was confusing being mixed with crying</p>	<p>stranger and started holding his play materials</p>				
Infant 18	<p>- She avoids her mother's attempt to comfort her. Rather she gets smile when her elder sister comforts her. This is may be due to the fact that his mother treats many children including that of her daughter</p>	<p>- She shows some sort of crying and immediately began to explore her surrounding. If other children touch what she plays with, she gets very hungry</p>	<p>- She moves towards her mother only when she gets angry</p>	<p>- She shows no new behavior patter</p>	✓	✓	✓	30
Infant 19	<p>- He is happy and highly explores his surrounding with his eyes constantly monitoring his</p>	<p>- He follows her crying and gets hungry where his father cannot comfort him. He cries by lying on the</p>	<p>- He begins laughing continuously showing some sort of getting relief.</p> <p>- Once his mother comes</p>	<p>- He becomes happy and stares at him</p>	✓	✓	-	20

	surrounding with his eyes constantly monitoring his mother's whereabouts. He tries to talk to her using babbling sounds	ground especially near the door	back, he doesn't want to be departed from her					
Infant 20	- She explores the surrounding environment following her movement. That is she goes where her mother goes with in the room	- she cries and gets hungry to the extreme and resist approaching any body until her mother comes back	- She runs into the direction that she hears her mother's sound - She begins laughing to the extreme	- She follows the stranger and checks that he has gone and the returns back laughing	✓	✓	-	20
Infant 21	- He seems that he doesn't have any concern to his mother unless he gets angry	- He simply looks after her and begin playing - He cries only when he gets angry	- If he gets angry he moves towards his mother showing unhappy face. - He some times hits her while sucking breast	- He shows no new feeling	✓	✓	✓	30
Infant 22	- He seems happy, explores his	- He begins crying but can be easily comforted by his	- he feels very happy - He laughs crawling her	- He stares at the stranger and shows to	✓	✓	✓	

	surroundings keeping eye contact with the mother. Some times unexpectedly he runs and come to his mother many times	elder brother	and there	his mother when he leaves the room				
Infant 23	- He is interested in his mother's holding him on her back	- He resists her departure from him by pulling her hands and at the same time crying	- He shows continuous laugh expressing his happiness	- he raises his right hand shows a sign of saying "bye bye" and this is in case of any guest person	✓	✓	✓	30
Infant 24	- She monitors her mother's acts while exploring his surrounding - She tries to inform her though she hasn't began using words precisely	- She cries to the extreme but can be comforted by her elder brother after few minutes	- She gets smile to tell her something using babbling sounds	- She shows no new behavior pattern	✓	✓	✓	30
Infant 25	- She is happy but cries sometimes due to being	- He cries until she comes back	- He gets smile and stops crying, but begins crying	- Feels happy	✓	✓	✓	30

	<p>caught common cold</p> <p>- Tends to sleep</p>	<p>- Does not want to be touched by the stranger when the stranger attempts to comfort him</p>	<p>after few minutes</p>					
Infant 26	<p>- She avoids everybody except her play materials</p>	<p>- She continues playing and begins crying if she gets angry</p>	<p>- She tries to approach his mother and moves to her play material within few minutes</p>	<p>- She simply</p> <p>- Looks after the stranger</p>	✓	✓	✓	30
Infant 27	<p>- She sometimes feels happy and sometimes cries</p> <p>- She explores her surrounding and begins crying, then playing so that determining her behavior pattern is difficult.</p>	<p>- She looks after her mother, cries for few minutes and then begins playing</p>	<p>- She feels happy and immediately hits his mother with his play material</p>	<p>- She stares at the stranger until he leaves the room</p>				30
Infant 28	<p>- She seems happy</p>	<p>- She cries to the extreme</p>	<p>- She laughs and move</p>	<p>- She feels free</p>	✓	✓	✓	30

	- Explores his surrounding freely monitoring his mother's movements	and never gets relief until her mother comes back	towards his mother and immediately leaves crying when he gets breast					
Infant 29	- She is extremely happy only when she is on the back of her mother - She explores her surrounding by being on her mother's back	- She cries continuously and she doesn't want any other body touches her	- She starts crying when she hears her mother's sound	- She feels happy	✓	✓	✓	30
Infant 30	- He gives no place to his mother and his father. - He freely explores his surrounding by being near by his elder sister	- He doesn't give any attention to mother's leaving - He cries seriously when his elder sister leaves home	- He doesn't approach his mother. Instead he gets smile when his sister comes back	- He doesn't show any behavioral change	✓	✓	✓	60

## Appendix II

Frequency of observation of each infant

No	Infants	Observation rounds			Number of minutes each infant (in group of 5 ) observed during a strange situation)
		round 1	round 2	round 3	
1	I <sub>1</sub>	✓	✓	✓	30
2	I <sub>2</sub>	✓	✓	✓	30
3	I <sub>3</sub>	✓	✓	-	20
4	I <sub>4</sub>	✓	✓	-	20
5	I <sub>5</sub>	X	✓	✓	30
6	I <sub>6</sub>	✓	✓	✓	40
7	I <sub>7</sub>	✓	✓	✓	30
8	I <sub>8</sub>	✓	✓	✓	30
9	I <sub>9</sub>	✓	✓	-	20
10	I <sub>10</sub>	✓	✓	✓	30
11	I <sub>11</sub>	✓	X	✓	20
12	I <sub>12</sub>	✓	✓	✓	30
13	I <sub>13</sub>	✓	✓	-	20
14	I <sub>14</sub>	-	✓	✓	20
15	I <sub>15</sub>	✓	✓	✓	30
16	I <sub>16</sub>	✓	-	-	10

17	I <sub>17</sub>	✓		-	20
18	I <sub>18</sub>	✓	✓	✓	30
19	I <sub>19</sub>	✓	✓	-	20
20	I <sub>20</sub>	✓	✓	-	20
21	I <sub>21</sub>	✓	✓	✓	30
22	I <sub>22</sub>	✓	✓	✓	30
23	I <sub>23</sub>	✓	✓	✓	30
24	I <sub>24</sub>	✓	✓	✓	30
25	I <sub>25</sub>	✓	✓	✓	30
26	I <sub>26</sub>	✓	✓	✓	30
27	I <sub>27</sub>	✓	✓	✓	30
28	I <sub>28</sub>	✓	✓	✓	30
29	I <sub>29</sub>	✓	✓	✓	30
30	I <sub>30</sub>	✓	✓	-	60

## **Appendix III**

**Addis Ababa University**

School of graduate studies

Department of Developmental psychology

Interview Questions

Participants - Infants' respective mothers

Site - Metu 'kebele' 03

### **Instruction**

Answer the following questions based on your daily experiences.

1. How many hours per day do you make close contact with your infant?
2. Do you think that the practically existing child rearing practices in your surrounding promote secure type of attachment in infants?

**Thanks!**

## DECLARATION

The thesis is my original work and has not been presented for a degree in any other University and that all source of material used for the thesis have been duly acknowledged.

Name Gadissa Kebede  
Signature Gmg.  
Date 18/07/06

## CONFIRMATION

This thesis has been submitted for examination with my approval as University advisor.

Name John Awolli  
Signature [Signature]  
Date June 21, 2006

July, 2006