The RELATIONSHIP BETWEEN MATERNAL ATTACHMENT AND ACADEMIC PERFORMANCE

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DECLARATION

I hereby declare that this project has been written by me and that it is a record of my own original research. It has not been presented in any application for a higher degree before. All quotations are specifically acknowledged by means of reference.

E. IKE.

DEDICATION

This work is dedicated to my husband and children for their sincere co-operation with me throughout the period of my studies.

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ABSTRACT

The study was designed to find the relationship between academic performance and maternal attachment of six to seven year old children. The sample was randomly selected from Class I of the Ahmadu Bello University Staff School. It consisted of 125 pupils who had been living with their parents and who had the record of their academic performance in the school.

The study was carried out through the use of questionnaire which indicated the family background and attachment behaviours of the subjects. Another instrument used was the recorded mean scores from the children's monthly tests. This was computed to give the academic performance scores while the responses on the attachment behaviours were computed to give maternal attachment indices.

To find the relationship between the two variables five techniques were used. The raw data were analysed using scattergrams, product-moment correlation coefficient, regression analysis and analysis of variance. But the frequency data were analysed by the use of percentages and chi square technique.

The following findings.were made:

(a) There was some relationship between maternal attachment and academic performance but the relationship was insignificant. Addition of other family variables showed that ttiese variables influence maternal attachment as well as academic performance,

(b) There was negative and significant relationship between number of children in the family and maternal attachment as well as academic performance.

(c) Age of mother had a slight and insignificant negative influence on maternal attachment, and thus had a slight negative influence on academic performance, too.

(d} it was found that the more highly educated the mother, the more SECUE her attachment to the children and the higher the academic achievement of the children.

Considering the findings it was recommended that:

(a) Families should reduce emphasis on number of children and have fewer children that can be taken adequate care of. What matters is the quality, not the quantity.

(b) That more and more Nigerian women should place education of themselves as a matter of primary importance because it is an enlightened mother that can bring up enlightened children. Enlightened children make an enlightened society and enlightened society is a disciplined society. Adequate education of Nigerian women would go a long way to fight the war against indiscipline.

(c) That adolescents be given family education before they start making their own homes. This would help them plan their families in a way to place child bearing at its right time, when the children can enjoy maximum attention from the mother.

The suggestion on further research on this topic included a study of a typical Nigerian environment, a study of the relationship between academic performance and other attachments in the family; a study of the relationship between the two variables among younger children.

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LIST OF ABBREVIATIONS

A.P.S. : Academic Performance Scores.

A.T.P. : Advance Teachers Training and Polytechnic. This refers to the respondents who went through these courses of studies.

Df : Degree of freedom.

Ed.M. : Education of Mother.

MAI: : Maternal Attachment Index.

N.C. : Number of Children.

N.P. : No formal education and primary school graduates.

NU. : Nursing schools and University graduates.

MS. : Mean Square.

SS. : Sum of Squares.

T.C.S. : Teacher Training and Secondary Schools.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The purpose of this research is to determine the relationship between maternal attachment and academic achievement of the child. The term attachment was coined by Bowlby (1958) to denote the concept of the child's emotional tie to the mother. Many researchers have explored the importance of maternal attachment to the future development of the child. Research evidence shows that a child's attachment relationship affects his cognitive development by influencing the child's exploratory behaviour. Most children use their mothers as base for exploration when in an unfamiliar situation (Cox and Campbell, 1968; Rheingold, 1969; Ainsworth and Bell, 1970; Maccoby and Feldman, 1972). The mother has also been used by the infant as a source base for the exploration of people.

The presence of the mother (Brownson, 1972, Morgan and Riccuiti, 1969) or to a lesser extent, of a familiar care-taker (Ricouiti, 1974) reduces a child's wariness in the presence of a stranger.

Recent studies measuring heart-beat responses of infants have confirmed the change in wariness with the presence of the mother (Campos et al., 1975). It has also been found that children aged two years to two-and-a-half look more towards, and interact to a great extent with, the stranger in the presence of the mother than in her absence (Maccoby and Feldman, op. cit.).

Maternal attachment therefore, is very basic to the child's development of social and cognitive behaviours. It starts to manifest in the child as early as the second half of the first year of life and so is considered pertinent in the future life of the child.

In Nigeria today, for many reasons, infants have been deprived in most homes of this important aspect of emotional development. The increasing rate of divorce has forced some children into long term deprivation of maternal attachment. Economic depression has forced many mothers into such exhortic businesses that take them away from home for long periods, causing long separations between mother and infants. Education too, takes mothers away from home leaving the infants in the

hands of incompetent care takers like old nannies, underage young girls and overpetting grandmothers.

Ike (1983) found that the women doing post graduate studies in the Ahmadu Bello University Department of Education were mostly married women with family sizes between four and seven. Ninety-one (91) per cent of the samples had infants from birth to one year of age. Old nannies took care of 60 per cent of the children. Baby nurses took care of 29 per cent. Grandmothers took care of 7 per cent and 2 per cent of the babies had no particular care giver; and their mothers were in for summer school. It was also found that the married women with these babies went in for post graduate studies in order to gain promotion to higher posts, earn more money, and eventually cater well for their families and children in particular. This reasoning sounded awkward from the point of view of child development, for, of what benefit is it to ruin a child's life in the first few years of life on which depends the rest of the seventy to eighty years of the child's life, only to furnish him with good things that money can buy.

The theme of this year's World Health Day was, 'Children's Health, Tomorrow's World'. The Nigerian Minister of Health on the above occasion said that any nation that neglects the health of her children is doing so at her own peril. He emphasized that "we should therefore make effort to enhance the physical, mental and emotional health of our children", adding that child health is the responsibility of the family, especially the parents. But from the day to day happening in Nigeria, it is clear that most parents have neglected the above responsibility. At best the physical care is taken care of by sending sick children to the hospital because the consequences of sickness are clearly seen. But the mental and emotional aspects of health are given little attention, probably because the results of their neglect are not immediately obvious.

This research has set out to examine the effect of one of the emotional aspects of child's health - maternal attachment, on another important aspect of child development - his academic achievement. It is hoped that the findings of this research will offer some suggestions or sound a note of warning to the Nigerian public.

1.2 STATEMENT OF PROBLEM

The main problem of this research is to determine the relationship between the quality of maternal attachment and academic performance of the child. Some children are highly attached to their mothers while some are attached to a lesser degree. The quality of maternal attachment of the child has been found out in many researches to be pertinent to the development of the child as it affects both social and cognitive development. It is therefore believed that it may influence his academic performance which is considered the aggregate of cognitive development.

As auxiliary to the above problem this research will also investigate the home environmental variables which influence maternal attachment and academic performance as well.

1.3 OBJECTIVES

The following are the objectives of this research:

1. To determine the degree of maternal attachment of the subjects.
2. To find out the relationship between the level of maternal attachment and academic performance.
3. To find out the relationship between number of children in the family and maternal attachment and also academic performance.

4. To find out the relationship between mother's age and the level of attachment.
5. To find out the relationship between the level of maternal attachment and the number of children in the family.
6. To find out the relationship of the level of maternal attachment and education of mothers.

1.4 HYPOTHESES

With the above objectives in view, the following null hypotheses have been formulated.

1. There is no significant relationship between academic performance and number of children in the family.
2. There is no significant relationship between the level of maternal attachment and academic performance.
3. There is no significant relationship between the level of maternal attachment and the number of children in the family.
4. There is no significant relationship between maternal attachment and the age of mother.
5. There is no significant relationship between the level of maternal attachment and education of mother.

1.5 SIGNIFICANCE OF STUDY

This study is significant for two important reasons. One reason is related to the level of previous researches while the other reason is related specifically to the Nigerian situation.

According to Pilling and Pringle (1978) "practically no attempt has been made to investigate the developmental outcomes" of the quality of maternal attachment. The present research is a way of investigating one of such outcomes.

Ike (op. cit.) mentioned that there was ample evidence that mother's absence from home removed them far from their infants and the mothers themselves felt it and felt guilty about what their children missed from their absence. They confessed that they were unable to give their children as much attention as they knew the children needed. This was intermittent absence of the mothers from home and intermittent denial of maternal closeness to the children. Yet in Nigeria today there are more serious separations than the ones found in that research. Mothers have been known to leave their infants few weeks or even days after delivery, and pre-school children to go in for higher education

at various levels - be it teacher training which lasts one to five years, advanced teacher training which lasts three years, first degree course which lasts two to six years and even post-graduate studies. Mothers have been separated from their young when they shift their children to the father or the grand mother in order to go overseas for further studies. Another cause of major separation in the Nigerian society is divorce and separation of parents which is increasing at an alarming rate. Business ventures also cause major separation between mother and young children.

These maternal separations are the opposite of secure maternal attachment. Infants whose mothers are insensitive appear to develop attachment behaviours differing in various ways from the normative behaviour of children of similar age (Clark-Stewart, 1973). The purpose of this research is to determine the influence of the quality of maternal attachment on the child's academic performance. Academic performance is regarded as the sum product of cognitive, emotional and social development of the child. The children who are often separated from their mothers do have some

sort of attachment to them but it is not certain how secure such attachment is.

If this research finds a correlation between secure maternal attachment and high academic achievement, it would be possible to offer some suggestions to Nigerian mothers, who owing to economic pressures, water down the quality of their attachment to their children through both short-term and long-term separations. The research findings will serve as a warning to Nigerian parents too because according to Mussen (1978) how the child later develops confidence in and views the world depends on these early relationships with its mother. Moreover the findings of this research will help Nigerian families to review their values and re-order their priorities.

1.6 BASIC ASSUMPTIONS

1. It is assumed that patterns of attachment are not mutually exclusive in a child. A child who shows much of securely attached behaviour will show some insecure and ambivallent attached behaviour from time to time.
2. The attachment behaviours shown by Nigerian children include those given by Ainsworth (1978) as well as those peculiar to Nigerian culture.

Uka (1966) shows that the Nigerian child rearing practices differ to some extent from the child rearing practices of the Western world where Ainsworth did much of her work.

3. The attachment formed by the infant in the second half of the first year of life persists through life (Bowlley, 1969). It is therefore assumed that mothers can use their relationship with their children at early school age to recall the child's behaviour towards them in the earlier years of life.
4. Since the level of maternal attachment does affect social and emotional development, it may as well affect academic performance. If it influences academic performance at all, the effect would be seen most at the beginning of the formal education when peer influence and environmental awareness are minimal.
5. Even though the children studied may enjoy similar environmental conditions some basic home situations such as mother's education, her occupation and number of siblings may affect both the quality of maternal attachment and academic performance.

1.7 LIMITATION OF STUDY

This research is limited to the six and seven year old children who are just beginning formal education. It considers only the Ahmadu Bello University staff children. Cognizance is not taken of what the situation might be outside the university encironment.

1.8 DEFINITION OF TERMS

In this research the following terms are defined below.

Ambivallent children: Children who sometimes seek closeness to the mother but do not maintain the closeness. They sometimes respond to the mother's return by seeking attention and bodily contact but sometimes they tend to avoid her. (Segal and Yahraes, 1978).

Anxiously attached children: This is the same as insecurely attached children. Children who, most of the time tend to avoid the company of the mother because it gives them no joy. They respond to the mother's return by ignoring her (ibid.).

Object permanence: The development of the concept of inanimate objects as permanent entities (Ainsworth, 1978).

Person Permanence: The development of the concept of individuals as permanent entities (ibid.).

Proximity-avoidance children: Children who avoid proximity to and close bodily contact with the mother (Ainsworth, op. cit.).

Reception course: A ten week to nine month formal schooling offered by A.B.U. Staff School to five year old children before they start the primary education. This course gives the children an orientation into formal school live.

Reunion with the mother: In Ainsworth's strange situation studies the mother of the subject is expected to leave the child for a while. The time they come back to the experiment room to join the children is referred to as reunion episode. The child's behaviour in the reunion episode is the indicator of his/her relationship with the mother. (Ainsworth, op. cit.).

Securely attached children: Children who are very close to their mothers throughout childhood (Segal & Yahraes, 1978).

Strange situation: A laboratory situation to which mother and baby are introduced when the child is about one year old. The purpose of the laboratory setting is for the investigators to see how the child would react to brief separation from the mother and behave when she returns (Ainsworth op.cit.).

CHAPTER TWO

2.0 REVIEW OF RELATED LITERATURE

The review of literature has been divided into two major sections, theoretical background and recent researches. The theoretical background is sub-divided into origins of attachment, development of attachment, attachment behaviours, patterns of attachment and antecidents of attachment. These sub-sections are relevant to this research as they give a guide to what terms and methods have been borrowed from other researches and applied in this study. Some of the sub-sections give hints on how attachment originated, and how long it may last in an individual. This information justifies the choice of the age group chosen as subjects in the present study. The antecident of attachment gives the mother's contribution to the success of attachment. Related researches show how much has already been done on the relationship between maternal attachment and different cognitive processes.

2.1 EARLY CONCEPTS ABOUT MATERNAL ATTACHMENT

Maternal attachment has been a controversial issue in child development for some time. In the past, the mother has been a special target for

explaining schizophrenia in children and the adult they became. The literature in child psychology in particular has frequent reference to the schizophrenic mother - a mother who gives rise to introversion in her children. Such a mother has been tagged as cold and castrating in her relationship with her young. She has also been tagged as ambiguous in her giving of signals to the growing children. (Segal and Yahraes, 1978).

Uka (1966) had confirmed this allegation about mother-child relationship by showing that the Nigerian fathers believe that when a child misbehaves it is the mother who has transferred such bad habits to him/her. The close ties between mother and child made it possible for fathers to attribute all that the child did to the mother.

These confirm the mother's special role in shaping the child's future. This of course should not be taken to mean that the mother stands alone as a great psychological colossus bestriding the child's behaviour throughout life. Segal and Yahraes (1978) held that the mother is one of a complex web of factors which include father, school, friends and baby's nature, in determining the child's

future. But the above authors emphasize that despite the web of factors, the mother's special relationship with, and influence on the child could not be swept aside.

Thacheray (1686), an ancient philosopher confirmed the importance of the intimate relationship between mother and child in these words: 'Mother is the name for God in the lips and hearts of little children'. Behavioral Scientists e.g. Mussen (1978) had also shown maternal attachment to be a significant element in child's evolution.

The stress laid on mother-child relationship has raised the question as to what is instrumental to attachment, and why the child should be attached specifically to the mother and so have to build so much for the future on those early attachments.

2.2 THEORETICAL BACKGROUND

In the attempt to answer the above question and make a psychological sense out of the process by which an infant attaches himself emotionally to the mother, an array of theories have emerged. Of these, three stand out.

The Psychoanalytical Theory of Attachment: This was developed by Sigmund Freud (1854-1939).

In this theory the baby is said to have come to the world with a degree of psychological energy (libido). The baby focuses the energy on the object which in social sense is nearest to him. The baby's psychic energy can be directed and focused or withdrawn when necessary as if the baby were probing the psychological environment with anatenae to find the right object for attaching the energy. The psychic energy is therefore already in place at birth and the infant simply extends it to the mother because it is she who satisfies its oral need. The baby incorporates the mother through the sucking process and makes her a part of itself.

The Social Learning Theory of Attachment: This is the next noteworthy theory of attachment and the proponents of it are Sears, Miller Dollard and Dood (1939). In this theory the mother responds first consistently and then intermittently to the child's attachment behaviour such as crying, clinging or whatever behaviour elicits the mother's attention. Since intermittent reinforcement strengthens the desired behaviour, the infant's attachment behaviour is strengthened. It therefore desires to be closer and closer to the mother.

The third major theory of attachment was postulated by Bowlby (1958) and more recently by Ainsworth and her associates (1962). The theory argues that attachment behaviour promoted the survival of species through the ages and thus became a genetic characteristic. Ainsworth (ibid.) postulated that from what has been known of the ground-living primates and present day hunting races, mothers, infants, and members of the groups moved about frequently through open country. Predators, she believed, presented ever-possible dangers. The victims of predators were young, the sick and the aged. The infant therefore needed protection by the mother. If it lost proximity with her it had to emit such vocal signal that could attract a possible predator. So it was her duty to look for a missing infant and attend promptly to its cry or vocal signals. Both the mother and the infant would be looking for each other till they were together again.

On the other hand it was just wise that the infant reserved vocal signal till very alarming movements. For this reason it was of advantage for it to be almost always close to the mother. The theorists believed this is how attachment originated.

Thus when a baby is out of contact with the mother or distressed for some other reason it has an inbuilt command to cry and behave as though the condition were a matter of life and death. (Segal and Yahraes, 1975). This behaviour is shown much more in cultures where children are quite close to their mothers.

2.3 DEVELOPMENT OF MATERNAL ATTACHMENT

Bowlby (1969) and Ainsworth (1962, 1972) gave four phases of development of attachment. The first phase, the pre-attachment phase, they agreed, is the stage when the infant can orient towards any one who comes into close enough proximity to it. This period lasts from birth to a few weeks of life.

The second phase is the period of beginning of attachment. The infant can distinguish between the familiar and unfamiliar at this stage and so can direct attachment behaviour towards different figures. This stage lasts through Piaget's (1936) second and third stages of sensory-motor development. At this stage the baby is still unable to form a serious attachment.

The third stage which starts at the sixth month of life in most cases and lasts till the third year of life is believed by Ainsworth (op. cit.) to be the period of clear-cut attachment. The infant seeks proximity on his own and tries to maintain it instead of depending on the moves of the attachment figure. According to the above authors, at this stage the infant has acquired person concept and can therefore represent the attachment figure conceptually. Ainsworth (1978) stated that once the attachment bond has been established at this phase attachment behaviour becomes continually shown despite any major or brief separation.

Bowlby (op. cit.) described the fourth phase as being a goal oriented partnership. The child is now able to see things in the mother's viewpoint and is thus able to influence her behaviour towards it. This is a period of mature attachment.

Bowlby (op. cit.) asserted that attachment once formed to the above level, continues through life. He held that few adults, if any, cease to be influenced by their early attachment, or indeed cease at some level of awareness to be attached to their early attachment figures.

From the above attachment model, attachment starts at about the sixth month of life; it is intensified from the later part of the second year through the pre-school years and it lasts through life. Therefore it is possible to still observe attachment behaviour in the pre-school and early school child.

2.4 ATTACHMENT AND ATTACHMENT BEHAVIOURS

After many researches using the strange situation procedure, Ainsworth (1976) differentiated 'attachment' from 'attachment behaviour'. She defined attachment behaviours as the class of behaviours that have predictable outcome on gaining or maintaining proximity to the attachment figure, while viewing attachment as the affectional bond that a child forms between itself and the attachment figure. The above author conceived the attachment behaviour as playing an important role in the development of attachment once it has been formed. The behaviours were found in the strange situation studies to be strongly in favour to the mother in comparison to the stranger, and thus were identified as serving the attachment system rather than any other behavioral system.

The behaviours included in the attachment behaviours were approaching the mother, touching, clinging, resisting release, and all the behaviours that are comprehended in the measures of proximity, contact seeking and contact maintaining. It also included following and in some cases greeting behaviours. Vocalising was found not to be always directed particularly to the mother, but it was found to increase when the infant was alone with the mother than it was with the stranger. The infant smiled more to the stranger in the presence of the mother.

This section of the literature review has shown some of the behaviours regarded as portraying attachment. In this research some of the attachment behaviours found to be peculiar to the Nigerian culture and those which were found to portray attachment patterns in Ainsworth (1976-78) will be used. Vocalising and smiling are not considered to be very peculiar to the mother, so they are not included among attachment behaviours in the research. Besides in the case of this research vocalising and smiling behaviours of a six months old may not be regarded as being quite pertinent to the discovery of level of attachment of an early school child.

2.5 PATTERNS OF ATTACHMENT

Ainsworth and her associates (1978) having studied the behaviour of children on reunion with their mothers concluded that the patterns of attachment can be grouped into two major sets. Children who showed little or no tendency to seek proximity to or interaction with the mother at reunion episodes were regarded as 'avoidant'. Those babies tended to treat the stranger, though with perhaps less avoidance, like their mothers.

Another group of children displayed conscious contact - and interaction - resisting behaviour. They as well showed moderate to strong seeking of proximity and contact. They sought to maintain proximity once gained so that they gave the impression of being ambivallent to their mothers.

Both the children that showed 'ambivallent' behaviour and those that showed avoidant behaviour were classed as "anxiously attached" or insecurely attached.

The next pattern of attachment was shown by children who either wanted proximity and contact with their mother or interaction with her. If they achieved contact, they tended to maintain it

and either resisted release or at least protested if they were put down. They responded to their mother's return in reunion with more than a casual greeting; and showed such behaviours as smiling at her, crying or tendency to approach her. They displayed no tendency to resist contact or to avoid the mother. They might or might not be friendly with the visitor but they showed clearly that they were more interested in being with their mother than with a stranger. In separation, they showed clear distress that they missed the mother, and they could not be comforted by a substitute. Children who showed this type of behaviours were termed 'securely attached'.

In the present research the subjects will be grouped according to Ainsworth's (op. cit.) major patterns of attachment. Thus for the purpose of data analysis securely attached subjects were compared with insecurely attached ones.

2.6 ANTECEDENTS OF ATTACHMENT RELATIONSHIPS

Evidence from Ainsworth's (1978-78) studies indicated that infants' attachment behaviour towards their mother is related to the mother's behaviour towards the infants. Sensitivity of the mother

in perceiving and responding promptly and appropriately to the child's signal appeared to be the key determinant of secure attachment. Initiation of interaction with the child, expression of affection to him, acceptance, accessibility and non-interference also appeared to be associated with a secure attachment.

Mothers who were sensitive to their children's needs had infants who were classified as securely attached in strange situation (Ainsworth and Bell, 1969; Ainsworth et. al.1971; Stewart, 1973). At home these infants also showed security in their attachment behaviour to the mother. They displayed little separation protest (Stayton and Ainsworth, 1973). Insensitive mothers had infants who showed their insecurity either by being particularly upset by the strange situation or who used proximity - avoiding behaviour as a defence against disharmonious relationship with their mother (Ainsworth et. al. ibid.; Stewart ibid.). At home, their behaviour also suggested insecurity. They were crying frequently in general as well as on separation and being put down. (Stayton and Ainsworth ibid.).

Ainsworth and her colleagues found a complex relationship between characteristics of the mother and the child's attachment behaviour. Though complex it is possible to see that the infant does not just form secure or insecure attachment, but he is encouraged by the mother to do either. In this research therefore an effort was made to find out the mother's contribution to the attachment behaviour noticed in each of the subjects. This will confirm whether the subject is truly securely or anxiously attached.

2.7 SUMMARY OF RECENT RESEARCHES

This section deals with recent researches relating quality of maternal attachment to the child's cognitive development. There have been evidence that some links exist between the level of maternal attachment and certain cognitive processes. Previous researches have considered such cognitive process as object performance person permanence, language development. But no research has been done on the relationship between the quality of attachment and general academic performance.

Children who showed more 'secure' attachment in the Ainsworth "strange situation" were also found in another study (Bell, 1970) to have reached a more advanced stage in the concept of person and also of object permanence than those who were malattached or who showed proximity avoidance behaviour. In a replication of this study Bell (1978) showed that the relationship between quality of attachment and the development of object concept that had been found for the middle class whites in 1970 held also for the black disadvantage sample. Maternal attachment was also found to have some relationship to later cognitive behaviour.

Pentz (1975) considered qualitative difference in the mother-child relationship as an indicator of long term nature of mother-child interaction and examined its relationship to language acquisition. Pentz's (ibid.) hypotheses were that mothers can facilitate the development of language in their children by providing a simplified model of language to the child, the simplicity of which is turned to the child's level of linguistic skill; and that since the mother is sensitive to the child's language this sensitivity may be a

continuation of sensitivity to the child's signals and communication. His hypothesis that simplified model of language would facilitate language acquisition was confirmed. Also it was confirmed that various teaching devices such as expansions and recast sentences were significantly related to language acquisition. Nevertheless, different teaching strategies seemed effective at different points in a child's language development. The hypothesis relating quality of attachment to language development was not confirmed, however, this could be argued for by the fact that language development may be buffered against the emotional context within which it precedes, following Chomsky's (1965) and Lenneberg's (1967) postulate of inbuilt language acquisition device.

Infants classified as 'secure attached' on the basis of strange situation behaviour were seen to be the most advanced in mental development in another study (Clark and Stewart, 1973). The explanation here appeared to be that the same kinds of maternal behaviour which promote the formation of secure attachment - sensitivity and and appropriate responsiveness to the child's signals and provision of a high amount of social

stimulation also promotes mental development (Stewart, 1973; Lewis and Goldberg, 1967; Yarrow, 1963).

Institutionalized children whose relationship with staff were such that they were unable to form attachment to any one were found to be extremely retarded in the stage of object permanence compared with home-reared children who had established attachment with their mothers (Lamb, 1973). But in Schaffer's (1963) study there was evidence that the amount of social stimulation received by the child in the early months, whatever the source, is the determinant of the infant's readiness to form specific attachment. Also a study of Escalona and Corman (1971) showed that the nature of the child's relationship to his mother may be affected by influence outside that relationship itself. Once the child has formed specific attachment it seemed likely that the quality of these will influence other aspects of the development, including cognitive development, while cognitive development certainly appeared to influence some aspects of attachment behaviour (Lester et. al., 1974; Spelke et. al., 1973).

Other research findings showed that young children living in residential nurseries which provide good physical care and a high level of staff-child interaction were not retarded in intellectual or linguistic development even though close ties with particular staff members were discouraged (Tizard et. al., 1972). This was interpreted by Rutter (1972) that a sufficient level of stimulation, including verbal stimulation is what mattered for cognitive growth and that the formation of attachment is unimportant in relation to it. But two studies quickly threw doubt on Rutter's conclusions. The first is the study of Saltz (1973) in which it was found that young institutionalized children who were given the opportunity to form attachment to foster grand parents made better intellectual progress than children not given this opportunity even though both groups were provided with excellent physical care and much social stimulation.

Another evidence came from home-based intervention programmes for young disadvantaged children. Bronfenbrenner (1974) found that these programmes were effective when the mother, rather than the tutor was the agent of interventions.

He suggested that this was partly because the interaction between mother and child necessary to carry out the programme strengthened the child's attachment and increased the motivation to attend to the mother. Also the interaction shaped the mother's behaviour, encouraging appropriate responsiveness to the child's act. It should also be noted that in Tizard's study mentioned above, the resident nursery children were not without attachments to the staff although these attachments appeared to be shallow and insecure.

The studies discussed above have emphasized the importance of attachment in some cognitive processes. Maternal attachment was found to promote and strengthen certain cognitive processes. The present study intends to find out whether maternal attachment also promotes and strengthens the level of general academic performance of a primary school beginner.

2.8 SUMMARY

In the above review of literature the mother was shown to have a great influence on the development of the child. The researches cited showed

that the mother's influence on the child's development grew due to the attachment bonds existing between mother and child; the mother encourages the child to form secure or insecure attachment to her and whatever pattern of attachment the child forms in the first year of life is likely to persist through life.

The quality of attachment was also shown to influence the quality of emotional, social and cognitive development of the child. But no attempt was made to find out the influence of maternal attachment on the academic performance of children. It is the aim of this research to find out the relationship between the quality of maternal attachment on academic performance.

CHAPTER THREE

METHODS AND PROCEDURE

This chapter is divided into three major sections namely, subjects, instrument, and procedure. Procedure is divided further into sampling procedure, pilot study and plan for data analysis.

3.1 SAMPLING PROCEDURE

The subjects for this study were selected from the Class I pupils of the Ahmadu Bello University Staff School. They were 90 boys and 90 girls who had completed ten weeks of reception course before being admitted into Class I.

The class was made up of 10 arms of 30 children each, making a total of 300 pupils. Of this number 180 were randomly selected in nine classes of 270 pupils as the subjects for the study, 20 pupils from each arm. All the subjects were between six and seven years of age. Their mean age was 6.55. All the subjects had been living with their parents from birth till time of research. They had in addition been in attendance at school throughout the 1983/84 academic year and had the record of their academic performance.

3.2 METHOD OF DATA COLLECTION

The instruments used for the study were questionnaire designed by the researcher and recorded data.

Recorded Data

These were scores made by the subjects in teacher-made tests. The researcher collected the recorded mean scores in Mathematics, English, Primary Science and Social Studies, which were made by the subjects during their monthly tests. These included the mean scores for October and November, 1983, January, February, March and May, 1984. The selection of months was done in order to omit the holiday months - December and April.

Questionnaire

The questionnaire was developed by the researcher, basing the items mainly on Ainsworth's (1978) maternal attachment studies (Appendix II). It was divided into three sections to find out:

(a) The family background of the subjects;

(b) the degree to which the subjects showed insecurely attached behaviours;

(c) the degree to which they showed securely attached behaviours.

The items indicating insecurely attached behaviours were placed before those indicating securely attached behaviours to reduce bias from the respondents in giving information. Bias was also reduced by telling the respondents the purpose of the questionnaire and telling them to ask for the results of the research if they wished.

Part one of the questionnaire was constructed in nominal scale and it consisted of six items. In this section respondents were requested to give information about the subjects' family background.

Sections two and three of the questionnaire were constructed based on Likert scale and they contained 33 items each. The 33 items in section two indicated children's behaviours that are normally interpreted to mean insecure or anxious attachment to the mother. Section three consisted of behaviours interpreted to mean secure maternal attachment. Each item in each of these two sections was coded with five numerical scores ranging from zero to four. Zero was counted as a score which indicated that the subject who scored it did not exhibit the behaviour in which he scored zero. If a subject exhibited a behaviour occasionally he/she scored one, if often he/she scored two, if most of the time he/she scored three and if

always the subject scored four. A respondent would make only one of the five scores for each item, and all items were to be scored. The maximum score a subject could make was 132 i.e. 33 x 4 insecurely attached behaviours. He/she would also make a maximum of 132 for securely attached set of behaviours.

3.3 PILOT STUDY

A pilot study was conducted to find out:

(i) how the respondents would react to the questionnaire;

(ii) whether the method of the analysis of date would be adequate using the items in the questionnaire;

(iii) the probable patterns of attachment that the children may exhibit.

The pilot study was done with 25 pupils from Class IA of the Ahmadu Bello University Staff School. This class was later exempted from the main research sample so that it was not included in the nine classes mentioned above.

The pupils were given questionnaires to their mothers and when they were returned and analysed it was found that children actually exhibit more than one type of attachment behaviour. They would show behaviours that indicate secure attachment, ambivallent

attachment as well as insecure or anxious attachment to their mothers. But each of the 25 children showed one particular set of attachment behaviours more consistently than other sets of behaviour. This finding made it possible to obtain the index of maternal attachment for each child. From the index it was also possible to know the particular pattern of attachment into which a subject fell.

The pilot study also showed that the respondents needed a note of clarification of the purpose of the questionnaire, since according to one of them, the responses required from them were personal. One respondent indicated that she could not remember all the responses required on behalf of her child. But the remaining 24 respondents were able to give responses to all the items. The one respondent out of 25 was regarded as negligible. So the questionnaires were sent out with a clear letter of introduction from the researcher and the declaration of the purpose of the questionnaire (Appendix I). The pilot study, however, was not included in the final research analysis.

3.4 ANALYSIS OF DATA

Determination of the level of maternal attachment of subjects

Since each subject showed both insecure and secure attachment behaviours, each of them had a score for

each item under the two attachment patterns. All the scores a subject had under each set of behaviours were added up. The total scores for insecurely attached pattern of behaviours were regarded as negative maternal attachment score and the one for securely attached pattern of behaviours were regarded as positive maternal attachment scores. Both the positive and the negative maternal attachment scores were added up to give the index of maternal attachment. The maternal attachment index was regarded as the level of maternal attachment.

Analysis of Relationships

The relationships that were analysed were:
The relationship between maternal attachment and academic performance.
The relationship between academic performance and number of children in the family.
The relationship between maternal attachment and number of children in the family.
The relationship between maternal attachment and age of mother.
The relationship between maternal attachment and education of mother.

The first four pairs of variables were analysed in the following ways: Scattergrams were used for

The last pair of variables was analysed with the use of frequency table, percentages and proportions. The hypothesis was tested using the chi square technique with the model,

$$X^2 = \sum \frac{(O-E)^2}{E}$$

where O = observed values

E = expected value.

giving rough ideas of the type of relationships existing between the pairs of variables.

Product-moment correlation coefficient was used for determining the level of relationship that existed between the pair of variables. In this case the model used for finding the correlation coefficient (r) was

$$r = \frac{n \sum XY - (\sum X)(\sum Y)}{\left[n \sum X^2 - (\sum X)^2\right]\left[n \sum Y^2 - (\sum Y)^2\right]}$$

Where r = dependent variable

X = Independent variable

r = Correlation coefficient.

Simple as well as partial regression analyses were used for prediction of one value of a variable from the other. Regression also helped in the determination of the amount and nature of relationship existing between the variables. The model used was $Y = b_o + b_1 x$

where Y = the independent variable

b_o = intercept

b_1 = slope

x = independent variable.

The first four hypotheses which were associated with the raw data were tested using analysis of variance technique.

CHAPTER FOUR

ANALYSIS OF DATA, FINDINGS AND DISCUSSION

This research set out to determine the relationship between the level of maternal attachment and academic performance. It is believed that maternal attachment and academic performance are two complex variables which cannot stand out singly to influence each other. While the two variables may relate, inbetween them there may be other variables which also cast some influence on the degree or type of relationship existing between them. Thus while analysing the relationship between the two variables attempt will be made at finding some other influences which may interplay with them. This chapter will therefore be discussed under the following headlines:

(a) Determination of the level of maternal attachment.

(b) The academic performance score.

(c) The relationship between maternal attachment and academic performance.

(d) The relationship between academic performance and number of children.

(e) The relationship between maternal attachment and number of siblings.

(f) The relationship between maternal attachment and age of mother.

(g) The relationship between maternal attachment and education of mother.

4.1 DETERMINATION OF THE LEVEL OF MATERNAL ATTACHMENT OF THE SUBJECTS

The size of the sample studied was 125. Each subject in the sample would have scored a total of 132 points for insecure attachment behaviours and no point for secure attachment behaviours or vice versa. If this happened a subject who scored 132 points for insecure attachment behaviours would have been regarded as 100% insecurely attached to the mother. If a subject scored 132 points for securely attached behaviours, he/she would on the other hand be regarded as being 100% securely attached to the mother. However no subject scored a total of 132 points (Appendix III).

The maximum scored by some subjects on their insecure attachment section was 110, the minimum scored was 10 and the range was 100. On the secure attachment behaviours the maximum score was 117, minimum score was 25 and range was 92 (Table I).

Table I

Raw scores for insecure and secure attachment behaviours of 6-7 year old children

Attachment behaviour	Insecure	Secure
Total score expected per subject	132	132
Maximum score obtained	**110**	**117**
Minimum score obtained	10	25
Range	100	92

Both ranges were high and it seemed from the raw data that almost all the subjects scored high on the side of securely attached behaviours. In order to see the true position all the scores were brought under the same denominator. Each subject's total score was multiplied by 100 and calculated in percentage. A percentage score in insecurely attached behaviours was regarded as a percentage score in negative maternal attachment and a percentage score in securely attached behaviours was regarded as a percentage score in positive maternal attachment.

No subject scored 100% in the negative attachment and no subject scored 100% in positive attachment. Each subject had a negative score as well as positive score. It was difficult to place a child

as being insecurely or securely attached. To find a single attachment score for each subject the negative and positive attachment scores were added up. The sum was regarded as the maternal attachment index (MAI) of the subject. This index was the indicator of the child's level of maternal attachment. The data obtained from the calculated attachment indices of the subjects are shown in Table II while the calculated raw scores are given in Appendix III. Maximum score was 73%, minimum score was -14% and the mean score was 37.4%.

Table II

Maternal Attachment Indices of 6-7 Year Old Children

Scores	Percentages
Maximum	73
Minimum	-14
Range	87
Mean	37.4

4.2 ACADEMIC PERFORMANCE

The scores for the subjects' academic performance were got from their scores in monthly tests. The average percentage scores of each subject in

four major school subjects were collected for a period of six months. The mean of the six percentage scores were used as the index of academic performance. This was the academic performance score (APS). The highest score was 98%, lowest score was 31% and the mean was 77.5% while the range was 67%. The raw academic performance scores are shown in Appendix IV while the range and mean scores are in Table III.

Table III

Range and mean scores of academic performance of 6-7 year old children

Scores	Percentages
Maximum	98
Minimum	31
Range	67
Mean	77.5

4.3 THE RELATIONSHIP BETWEEN MATERNAL ATTACHMENT AND ACADEMIC PERFORMANCE

The computation of the raw data of maternal attachment and academic performance resulted in the data given in Tables II and III and the variance of maternal attachment indices as 307.9 while that of

academic performance scores was 234.6. Standard deviation of maternal attachment indices was 17.5 and that of academic performance score was 16.3. The complete tabulated data are shown in Table IV.

Table IV

Computation of maternal attachment indices and academic performance scores of 6-7 year old children

Scores	Variables	
	M.A.I.	A.P.S.
Maximum	73%	98%
Minimum	-14%	31%
Range	87%	67%
Mean	37.1%	77.5%
Variance	307.0%	234.6%
Standard deviation	17.5%	16.3%

Key: M.A.I. = Maternal attachment index.
A.P.S. = Academic performance score.

The Scattergram

A scattergram was plotted to give an idea of the type of relations which may exist between maternal attachment and academic performance. The plots were actually scattered but there was a slight positive

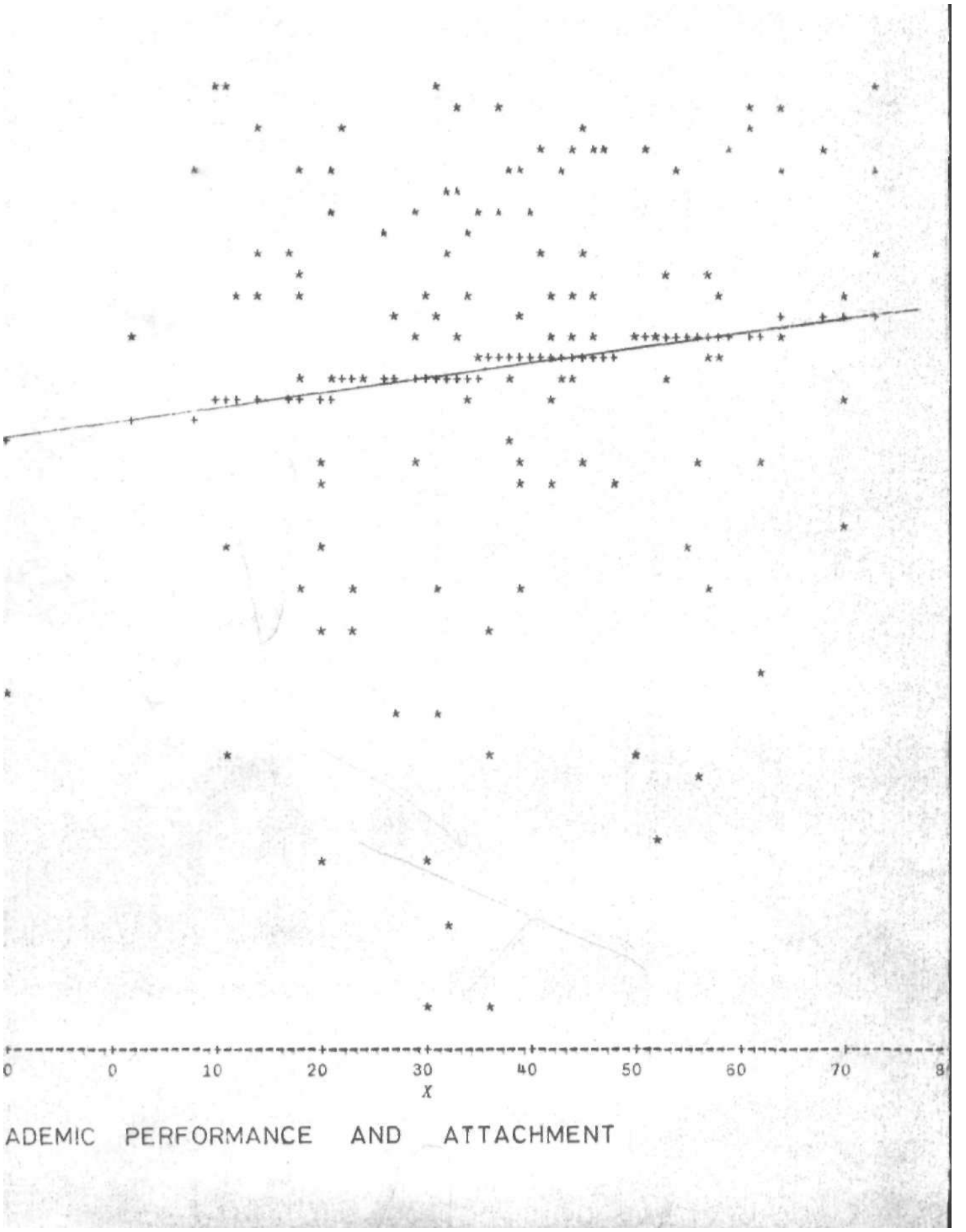
orientation. A regression line drawn on it indicated that there was some aspect of positive linear relationship between maternal attachment and academic performance. Plate I shows the scatter plots and the regression line.

Product moment correlation coefficient of maternal attachment indices and academic performance

This method of analysis of relationship was adopted to determine the degree of relationship indicated in the scattergram. Correlation coefficient r was 0.127 .13. r^2 was 0.0162 .02 = 2%. The correlation coefficient showed that only 2% of academic performance was accounted for by maternal attachment. The remaining 98% of the variance could not be explained by the available data.

Regression analysis of maternal attachment and academic performance

Regression analysis was used for determining to what degree academic performance was affected by the values of maternal attachment. It was also used for prediction of academic performance from a known level of maternal attachment.



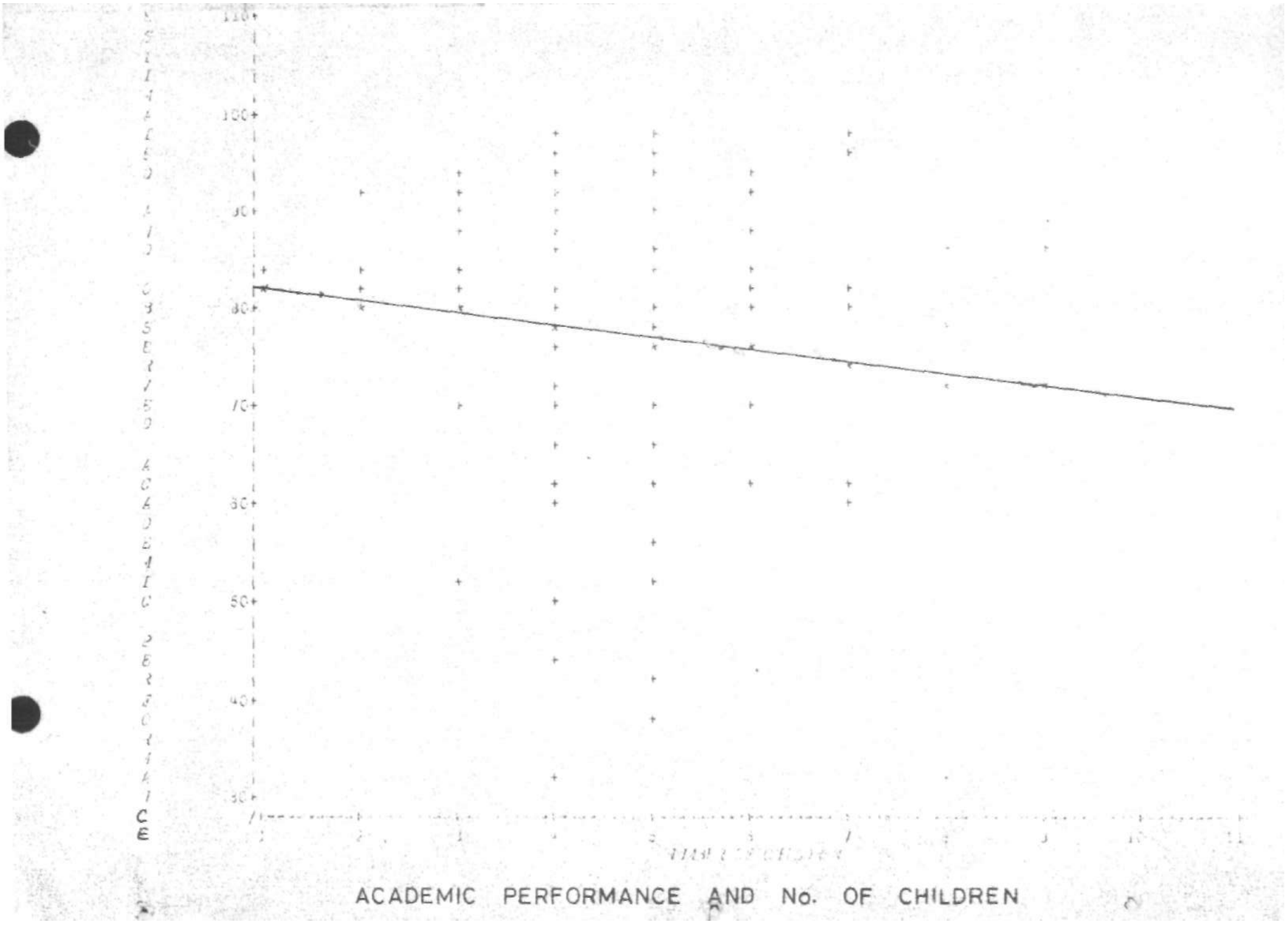
ADEMIC PERFORMANCE AND ATTACHMENT

The regression analysis showed that a unit reduction in maternal attachment would cause a reduction of 0.11% in academic performance. The regression also showed the absence of outer correlation as indicated by the value of Durbin Watson test statistics of 1.57 which is approximately 2. Thus the data were free from bias and were suitable for use in predicting academic performance scores from maternal attachment indices. Table V represents the predicted values of academic performance using the regression equation: A.P.S. = 73.35 + (0.11) M.A.I.

Table V

Predicted values of academic performance from maternal attachment indices

Suggested maternal attachment indices	Predicted values of academic performance
72%	81.27%
62%	80.17%
52%	79.07%
42%	77.97%
32%	76.87%
22%	75.77%
12%	74.67%
-12%	73.57%
-12%	61.25%



ACADEMIC PERFORMANCE AND No. OF CHILDREN

Table VI

Analysis of variance of maternal attachment and academic performance of 6-7 year old children

	SS	MS	Df	F ratio
Between groups	471.8	471.8	1	2.02
Within groups	28615.4	232.6	123	
Totals	29087.2		124	

Discussion

The relationship found between the two variables was little and insignificant. This finding does not agree with Bell's (1970) study and Lamb (1973) study which found significant relationships between some aspects of cognitive development and maternal attachment. There may be different reasons for the smallness of the relationship between the two variables in this study. It may be due to the fact that the academic performance of the children is influenced by other factors such as the academic environment in which they live or effective teaching by the school. In that case maternal attachment would exert less influence on the academic performance. Moreover, if it were possible to have

indices of academic performance at about one to two and a half years of age when the maternal attachment is very strong, the result might be different. But academic performance could not be studied earlier than the first year in school. Also the result might be different in a less academic environment than a university primary school.

Although maternal attachment had a little influence on academic performance it was found that academic performance had a greater influence on maternal attachment. Regression maternal attachment on academic performance the result was that a unit ~~increase~~ in academic performance would increase maternal attachment by .15%. Therefore a child who scored yearly mean of 93% in school tests had his/her maternal attachment level raised by about 14%. In the same way using the regression equation M.A.I. = 26.07 + 15 A.P.S. the predictions in Table VII were made.

Given a child's mean academic performance his/her level of maternal attachment may be predicted from this table.

Table VII

Predicted values of maternal attachment from academic performance

Suggested A.P.S.	Predicted M.A.T.
93%	40.02
83%	38.52
73%	37.02
63%	35.52
53%	34.02
43%	32.52
33%	31.02
23%	29.52
13%	28.02

The result got from the regression of maternal attachment on the academic performance was only obvious. It suggested that a child whose academic performance is perpetually low would lose some of the love from the mother due to the poor academic performance while a child who performs continually well at school would gain extra love from the mother due to the good performance. It also suggested that if a child who performed poorly academically improves, his/her level of maternal attachment would improve as well.

4.4 THE RELATIONSHIP BETWEEN ACADEMIC PERFORMANCE AND NUMBER OF CHILDREN IN THE FAMILY

The relationship between academic performance and maternal attachment was so small that it was concluded that there must be other variables affecting academic performance. Apart from external influences such as the teaching methods and outside environment the number of children demanding the attention of a mother may affect the amount of help she gives to each child in academic work. Therefore the relationship between academic performance and number of children was found.

In this sample the highest number of children a family had was nine and one was the lowest and the mean was 4. Table VIII shows the computed number of children and academic performance.

Table VIII

Computed number of children and academic performance

Scores	Variables	
	A.P.S.	NC
Maximum	98%	9
Minimum	31%	1
Range	67%	8
Mean	77.02%	4.4
Variance	227.02%	2.27
Standard deviation	15.06%	1.51

NC = Number of Children.

The Scattergram

A scattergram drawn to give a rough idea of the relationship between academic performance and number of children in the family indicated a negative relationship between the two variables. The regression line showed some linear relationship but in the negative direction. The scattergram is shown in Plate II.

Product-moment correlation coefficient

The correlation coefficient obtained from this set of variables was greater than what was obtained from maternal attachment and academic performance. This suggested that the number of children a family has influences academic performance more than maternal attachment does. r was 0.33. r^2 was 0.11 i.e. 11%. Thus number of children in the family contributed 11% of the influences exerted on academic performance. Eighty-nine per cent of the influences on academic performance could not be explained by the available data.

Partial regression of number of children on academic performance

The magnitude of the influence of number of children on academic performance was shown by the regression of number of children on academic performance.

The full regression line was A.P.S. = 54.21 + 11 M.A.I. + (-1.96NC). A partial regression of two variables was therefore A.P.S. = 54.21 - 1.96 NC. The partial regression showed that a unit increase in the number of children in the family would lessen academic performance of the existing children by about 2%. In a family of nine children therefore the last child would perform 18% worse than the first child. Table IX shows values of academic performance that might be expected from a lone child and multi children families.

Table IX

Predicted values of academic performance from the number of children in the family

Suggested number of children	Predicted academic performance
9	36.57%
7	40.49%
6	42.25%
3	48.33%
2	50.29%
1	52.25%

Analysis of Variance (Table X)

Analysis of variance technique was used for testing the null hypothesis: "There will be no significant relationship between academic performance and number of children in the family." With three and infinity degrees of freedom at 0.01 level of significance the $F_{critical}$ was 3.76. But the $F_{calculated}$ was 4.27. As the $F_{calculated}$ was greater than the $F_{critical}$, the null hypothesis was rejected at 0.01 level of significance. It was found that there is a significant relationship between academic performance of a child and the number of children in the family.

Table X

Analysis of variance of performance and number of children in the family

	SS	MS	Df	F ratio
Between groups	267.5	892.5	3	4.27
Within groups	22252.4	208.6	108	
Totals	25199			

Discussion

The finding of this section of the research was that the number of children in the family affect each child's academic performance significantly. This agrees with the finding of Clarke-Steward (1973), Lewis and Goldberg (1969), Rubenstien (1967) and Yarrow (1963). These researchers found that cognitive development of a child is related to the amount of stimulation provided by the mother. But if the mother's attention is demanded by many children a single child cannot have enough stimulation to make him/her realise his full cognitive potentials. Since academic performance is the manifestation of cognitive processes it is no doubt that it is influenced adversely by increase in the number of children in the family.

4.5 THE RELATIONSHIP BETWEEN NUMBER OF CHILDREN AND MATERNAL ATTACHMENT

In the previous section it was found that academic performance was influenced adversely by number of children. And it was suggested that the influence might be due to the fact that the mother who has many children does not have enough

time to attend adequately to them all. If that is the case it is likely that increased number of children in the family will affect maternal attachment adversely too.

The sample size used for the computation of maternal attachment and number of children was 122 because three respondents failed to give the number of children they had. Table XI shows the computed values of the two variables.

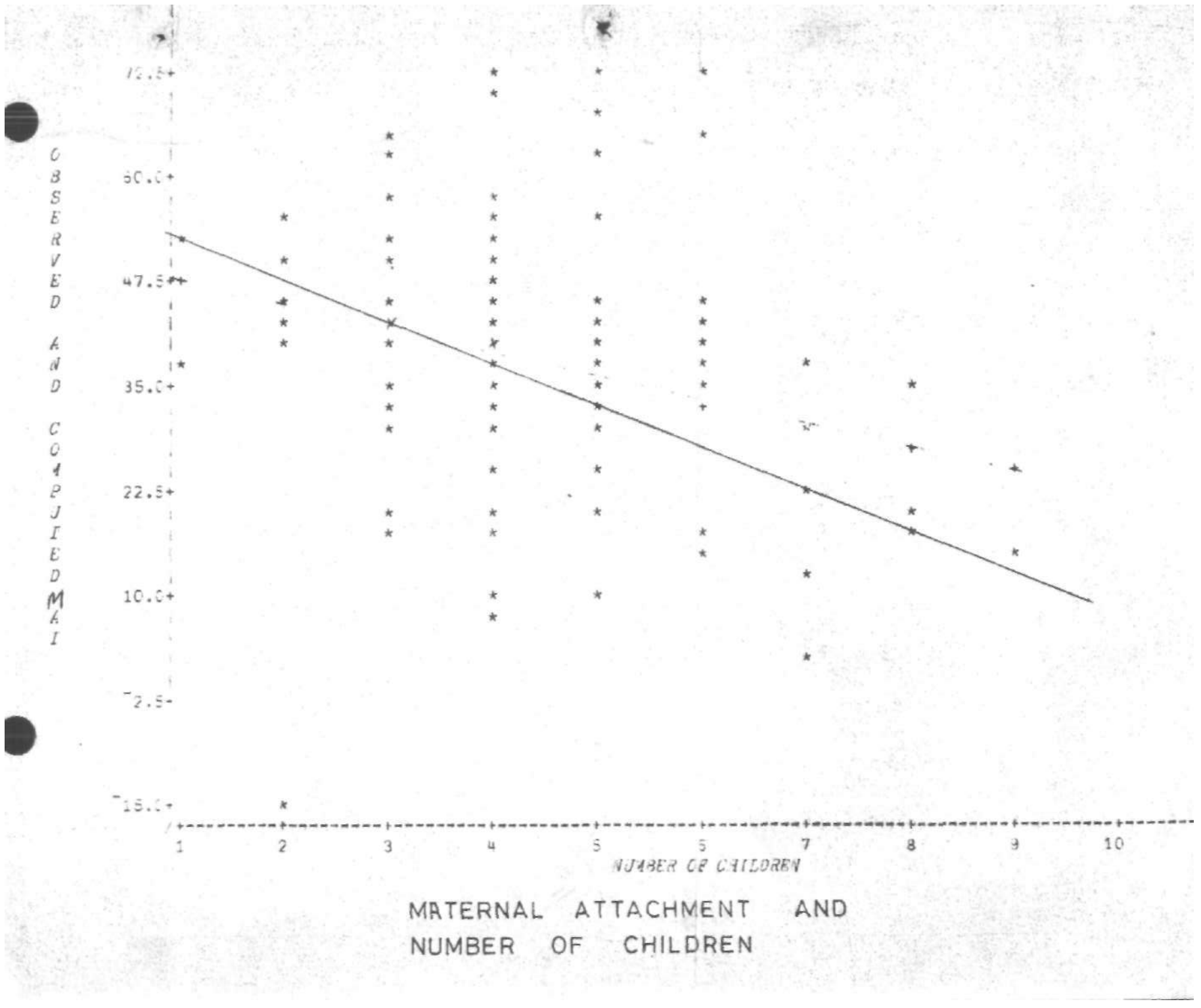
Table XI

Computed values of maternal attachment and number of children in the family

Scores	M.A.I.	N.C.
Maximum	73%	9
Minimum	-14%	1
Range	87%	8
Variance	286.9%	2.27
Mean	37.4%	4.4
Standard deviation	16.93%	1.51

The Scattergram

The scattergram plotted to give a rough idea of the relationship between maternal



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attachment and number of children showed a negative linear relationship between the two variables. Plate III illustrates both the plots and the regression line.

Product-moment correlation coefficient

In order to find the amount of relationship between maternal attachment and number of children a correlation coefficient was used.

r was .2997 3

r^2 was 9 = 90%

Thus 90% of maternal attachment was accounted for by the number of children in the family. The remaining 10% of the influence could not be explained using the available data.

Research analysis

For the purpose of partial regression of maternal attachment on number of children, academic performance was held constant in the regression line.

MAI = 43.84 + (-2.61NC) + (0.65APS)

The resulting regression line was MAI = 43.84 - 2.61NC.

The regression equation indicated that a unit increase in the number of children in a family would reduce maternal attachment on previous children by about 3%. Therefore in a family of nine children the fifth would have lost 13.05% of maternal attachment while the nineth child would lose about 24% of maternal attachment. Maternal attachment was found to decrease with increasing number of children in a family. The predictions in Table XII were designed to show the level of maternal attachment to be expected as the number of children increases in the family.

Table XII

Predicted levels of maternal attachment from number of children in the family

Suggested N.C.	Predicted M.A.I.
1	41.23
2	38.62
3	36.01
4	33.44
5	30.79
6	28.18
7	25.57
8	22.96
9	20.39

Analysis of Variance (Table XIII)

This technique was used for testing the null hypothesis "There will be no significant relationship between maternal attachment and number of children in the family." The analysis indicated that there was significant relationship between the two variables. With the degrees of freedom two and 120 at 0.05 level of significance, the $F_{critical}$ was 3.07. The $F_{calculated}$ was 3.53. The $F_{calculated}$ was greater than $F_{critical}$.

Table XIII

Analysis of variance of maternal attachment and number of children in the family and academic performance

	SS	MS	Df	F ratio
Between Groups	1939.49	969.75	2	3.53
Within groups	32552.57	273.95	119	
Total	34492.07		121	

Therefore the null hypothesis was rejected, the alternative hypothesis was accepted. Maternal attachment was found to be influenced significantly by the number of children a family has. But the

influence was a negative one. The more the children in a family, the less the maternal attachment per child. This finding agrees with Pringle's (1967) findings, that maternal attachment was reduced on each child as the number of children increased. The reason for the reduced attachment may be due to the fact that the mother has to share her love to more children each time another baby arrives.

4.6 RELATIONSHIP BETWEEN AGE OF MOTHER AND MATERNAL ATTACHMENT

Thirteen (13) respondents omitted age in their responses but gave all the other necessary information. The data relating to the age of mother was thus computed with a sample size of 112. The raw scores for this section are given in Appendix IV and the computed data are in Table XIV. Maximum age was 53, minimum age was 24 and mean age 29.

Table XIV

Computed data of age of mother and maternal attachment

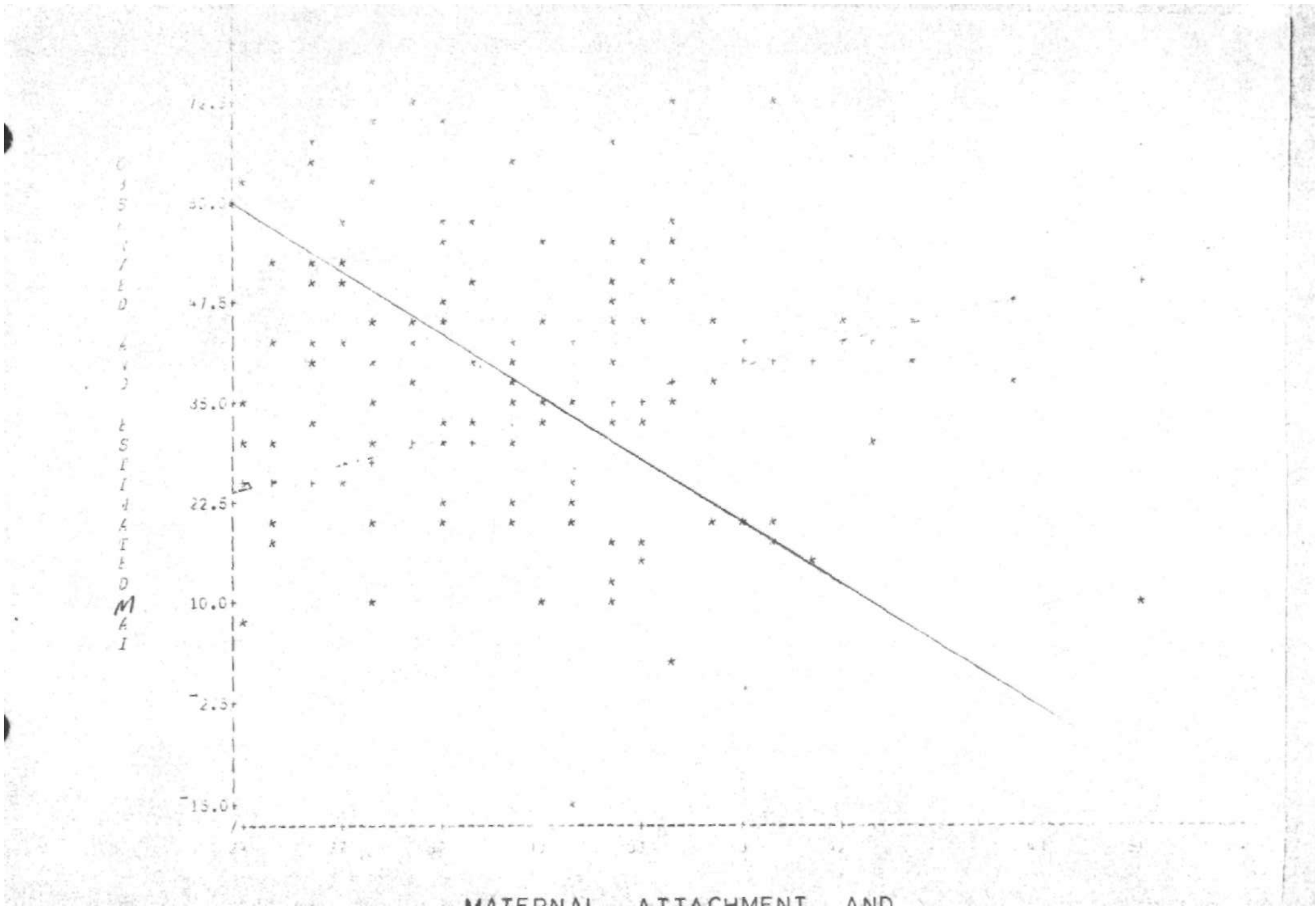
Scores	Age	M.A.I.
Maximum	5[illegible]	73%
Minimum	2[illegible]	-14%
Range	[illegible]9	87%
Mean	3[illegible].17	37.45%
Variance	25.88	286.88%
Standard deviation	5.18	16.74%

The Scattergram

The scattergram plotted to give an index of the trend of relationship between age of mother and maternal attachment indicated a negative linear relationship between the two variables. The scattergram is shown in late IV.

Product-moment correlatin coefficient

This method of analysing relationships was used for measuring the percentage of relationship that existed between maternal attachment and age of mother.



MATERNAL ATTACHMENT AND

Correlation coefficient (r) was 0.170 r^2 was 0.0289 which is approximately .29. This is 29%. Thus 29% of the variance of the two variables are accountable from each other. The remaining 71% of the variation was unexplained by the present data.

Regression Analysis

A simple regression of maternal attachment and age of mother resulted in the regression M.A.I. = 53.31 - 0.555 AGE. This indicated that a unit increase in the age of mother would reduce maternal attachment by .56%. Thus a child born when the mother is 24 years of age would enjoy maternal attachment of about 42% depending on the number of children that are already in the family. A child got at the age of 45 would enjoy 30.11% of maternal attachment all other factors remaining constant.

Using the regression equation some predictions were made to show some predicted levels of maternal attachment given mother's age.

Table XV

Predicted values of maternal attachment from mother's age

Suggested Age	Predicted M.A.I.
25	41.31
30	38.51
35	35.71
40	32.91
45	30.11
50	27.31
55	24.51
60	21.71

Analysis of Variance (Table XVI)

The analysis of variance was used to test the null hypothesis: "There will be no significant relationship between age of mother and maternal attachment." Table XVI which gives the analysis of variance showed that with the degree of freedom 1 and111 the $F_{critical}$ at 0.05 level of significance was 3.84 while $F_{calculated}$ was 3.27. $F_{critical}$ was grater than $F_{calculated}$. Therefore the null hypothesis was not rejected. Although some

negative relationship existed between maternal attachment and age of mother, the relationship was not significant.

Table XVI

Analysis of variance of age of mother and maternal attachment

	SS	MS	Df	F rati
Between groups	921.73	921.73	1	3.27
Within groups	3090	281.11	110	
Total	31843.42		111	

Discussion

The slight negative relationship existing between the two variables may be due to age disparity which exists between mother and child as the mother grows older.

Brunner (1975) and Collins and Schaffer (1975) found that maternal attachment is started, stimulated and encouraged by the mother through exclusive attention which she gives the child at his/her own cognitive level. If the mother is too old to bring herself to the cognitive level of the child it may be difficult for her to develop secure

attachment with the child. From the present study it was found that by the time the mother is 60 years of age maternal attachment would have come down to 21% which shows insecure attachment. Even though the result of this research shows that the relationship is not significant yet at a higher age of the mother the reduction in maternal attachment is noticeable.

4.7 THE RELATIONSHIP BETWEEN MATERNAL ATTACHMENT AND EDUCATION OF MOTHER

One hundred and twenty-five (125) respondents gave their level of education and attachment behaviours of their children. The educational qualifications included non attendance of formal education, primary school certificates, teacher training, polytechnic and nursing certificates, and university degrees. Attachment of the children were grouped into insecurely or anxiously attached, ambivallent and securely attached.

Grouping of the respondents

Group I: *These were women who either did not* attend formal school or stopped their schooling in the primary school. They formed 28% of the total respondents. This group spent zero to six

years in formal education. The abbreviation used for this group was N.P.

Group 2: This group of respondents spent 11 years schooling. They had finished primary school and went further to do either grade two teacher course or attend secondary grammar school. They formed 20.8% of the respondents and this group is abbreviated T.C.S.

Group 3: The respondents in this group had spent 14 years in formal education. They had gone through either advanced teacher training course or polytechnic. They formed 14.4% of the respondents and the group was abbreviated A.T.P.

Group 4: These respondents were those who went through nursing school or university. They spent more than 16 years schooling. This group was abbreviated N.U.

Grouping of the subjects under attachment patterns

Securely attached: Children grouped under securely attached scored 51 to 73% in their maternal attachment indices. They formed 23.2% of the sample.

Ambivallent: These were children whose maternal attachment indices showed neither secure nor insecure attachment. They scored between 40 and 50% in their attachment indices.

Insecurely attached: These children's maternal attachment indices were clearly low, indicating that they were anxiously or insecurely attached to their mothers. Fifty-six point eight per cent (56.8%) of the children studied fell in this group.

More than 50% of the sample were insecurely attached to their mothers. Thus most of the children were insecurely attached and less than 25% were securely attached. Ambivallent children had less than both securely and insecurely attached children which is 4% of the securely attached.

Mothers' education and children's attachment patterns

Group 1 (N.P.): This group of respondents had 35 children. Eleven point four per cent (11.4%) of the group were securely attached, 11.4% were ambivallent and 77.2% were insecurely attached.

Group 2 (T.C.S.): There were 26 children in this group. Nineteen point two per cent (19.2%) were securely attached, 26.9% were ambivallent and 53.9% were insecurely attached.

Group 3 (A.T.P.): There were 18 children in this group. Twenty-two point two per cent (22.2%) were securely attached, 38.9% were ambivallent and 38.9% were securely attached.

Group 4 (N.U.): There were 46 children. Thirty-seven per cent were insecurely attached, 25% were ambivallent and 56.8% were securely attached.

From the analysis of maternal attachment patterns of the children group 1 women had the highest proportion of insecurely attached children (2.75%). They had the third highest proportion (.04%) of ambivallent children and the lowest proportion of securely attached children (.04%) The women in group 2 had third lowest proportion (.92%) of securely attached children, second highest proportion (1.29%) ambivallent and second highest proportion (2.59%) of securely attached children. Group 3 women had the highest proportion (22.2%) of securely attached children, highest proportion (2.0%) of ambivallent and third highest proportion (2.0%) of insecurely attached children. Group 4 mothers who spent the longest years schooling and had the highest qualifications in this sample had the lowest proportion of insecurely

attached children (1.28%), lowest proportion (0.3%) of ambivallent children and highest proportion of securely attached children.

The summary of the relationship between maternal attachment and mothers' education was as follows: As mothers' education increased, secure maternal attachment increased and insecure maternal and ambivallent attachment decreased. The higher the mothers' education the higher the level of maternal attachment. The frequency distribution of mothers' education and children's patterns of attachment is given in Table XVIII.

Test of Hypothesis

The null hypothesis was: "There will be no significant relationship between the level of maternal attachment and education of mother". Chi square technique was used for testing the hypothesis because the data were arranged in frequency form. $X^2_{calculated}$ 15.75 while $X^2_{critical}$ at 0.05 level of significance and six degrees of freedom was 12.59. $X^2_{calculated}$ was greater than $X^2_{critical}$. Therefore the null hypothesis was rejected. Instead the alternative hypothesis was accepted.

Table XVII

Education of Mother and Maternal Attachment

Educational Qualification	Years spent in school	No. of Respondents	%	Patterns of Attachment					
				Securely Attached		Ambivallent		Insecurely Attached	
				%	Proportopm	%	Proportion	%	Proportion
Group 1 (N.P.)	6	35	28	11.4	.04	11.4	0.4	72.2	2.75
Group 2 (T.C.S.)	11	26	20.8	19.2	.92	26.9	1.29	53.9	2.59
Group 3 (A.T.P.)	14	18	14.4	22.2	2.23	38.9	2.00	38.9	2.00
Group 4 (N.U.)	16+	46	36.8	37	1.01	15.8	.03	47.2	1.28
Totals		125	100	23.2		20		56.8	

Key: N.P. = Mothers who either did not attend school or stopped at primary school level.
T.C.S. = Mothers who attended teachers' training college and secondary school.
A.T.P. = Mothers who attended advanced teachers' training colleges and polytechnics.
N.U. = Nursing school and university graduates.

Formal education of the mother was found to have influence on the level of maternal attachment of the child. The higher the educational qualification of the mother the higher the level of maternal attachment, and the more secure her attachment to the child.

Discussion

This finding differed from Ike's (1983) finding which suggested that maternal attachment will decrease with the increasing academic qualification of the mother because if she is highly qualified she will spend most of her time in highly specialized job, researches and conferences. However the finding of the present research can be explained by the findings of Howel (1973) that "highly educated mothers do not necessarily spend less time in attentive interaction with their children." Jones et. al. (1967) and Yarrow et. al. (1962) found that "where the mother has higher education she may set aside time for planned activities with the child." Moreover, Hurlock (1978) held that highly educated mothers use clearer, more detailed and more directed signals as well as speech to communicate with their

children. Clear communication is one of the major ways in which secure attachment can be developed.

4.8 SUMMARY OF FINDINGS

A sample of 125 six-to-seven-year-old children of Ahmadu Bello University Staff School was studied with the objective of finding the relationship between their level of maternal attachment and academic performance. The following findings were made:

1. Most of the children studied were insecurely attached. In academic performance about 50% scored above average.
2. There was a slight and insignificant relationship between the level of maternal attachment and academic performance, probably because of the many other variables that influence academic performance.
3. There was a significant negative relationship between academic performance and number of children in the family. This was probably because the more the children the less the mother is able to give individualised attention to each child.

4. There was a significant negative relationship between the number of children in the family and maternal attachment, probably because the greater the number of children the more the need to share the maternal love. Some children have to get less love.
5. There was slight and insignificant relationship between mother's age and maternal attachment.
6. There was a positive and significant relationship between the education of mother and maternal attachment. Highly educated mothers had more securely attached children than those who were not highly educated.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This study set out to find the relationship between the level of maternal attachment and academic performance of the child. The study was considered important because maternal attachment has been found in many researches to be very pertinent to the development of the child. It was considered that since the quality of maternal attachment is related to social as well as cognitive development of the child it might also have some influence on academic performance which is the aggregate of cognitive development. Moreover it was thought that the findings of the study might be useful to the Nigerian society where studies in maternal attachment are few.

Both maternal attachment and academic performance are complex subjects. Although the two variables were to be studied, it was necessary to develop auxilliary hypotheses which would give more enlightenment on the relationship of the variables if any relationship existed. The hypotheses suggested that there would be some

relationship between maternal attachment and academic performance; that the number of children in the family may affect both the academic and performance and maternal attachment; that the age and educational level of the mother may also affect maternal attachment. If these variables affected maternal attachment while maternal attachment influenced academic performance, then these variables would be regarded as being some of the home environmental conditions that contribute to the academic development of the child.

The sample studied consisted of 125 pupils of Ahmadu Bello University Staff School. The children were six and seven years old and they were in Class I. They were randomly selected from 270 children. The study was done with the use of questionnaire and recorded mean scores of academic performance of the children. From the questionnaires all information about the family background and attachment behaviours of the child were got, while their academic performance scores were got from the recorded scores of the children's monthly test. Percentages, proportions and frequency distribution were used for all information regarding the subjects' patterns of attachment and the educational level of the mothers.

Chi square technique was used for testing the hypothesis which was associated with these frequency data. The data which were associated with the raw scores and which were required for testing relationships were analysed using scattergrams, correlation coefficient and regression analysis. Analysis of variance technique was used for testing these hypotheses.

The following findings were made. Fifty-six point eight per cent (56.8%) of the children studied were insecurely attached and most of them belonged to the mothers with the lowest level of education. Twenty per cent (20%) were ambivallent. Twenty-three point two per cent (23.2%) were securely attached and most of them belonged to the most highly educated women in the sample. On testing the hypothesis a significant positive relationship was found between the education of mother and the level of maternal attachment. It was found that the higher the education of mother, the more securely attached the children were. This was probably due to the fact that highly educated mothers may take time to organize stimulating activities for the children and because

they give clearer signals and instructions to the children.

Fifty point four per cent (50.4%) of the children studied had academic score that was above the mean, 46.4% scored below the mean and 3.2% scored just the mean. It was argued that this quality of academic performance may be due to the superior quality of the school or the quality of maternal attachment, or some other unknown variables which may influence it.

There was a slight positive but insignificant relationship between maternal attachment and academic performance. This was probably due to many other variables that influence academic performance. It was however found that improved academic performance would cause a greater improvement in the level of maternal attachment than maternal attachment would cause in academic performance.

Number of children in the family was found to be one of the variables which exerted a negative influence on the academic performance of the child. All other factors such as intelligence quotient, quality of teaching and others remaining constant,

a child who has a large number of siblings would perform worse than a child from a small family. Even when the potentials for high academic achievement are low, consistent individualized help from the mother would raise the child's academic performance if there are few children in the family.

Large number of children in the family also influenced maternal attachment adversely. A significant but negative relationship existed between maternal attachment and number of children. Obviously, if children are many, love, time and energy of mother have to be shared among them. In that case the shares are bound to be smaller than they would be if these resources were not shared among two or three children. If maternal attachment is low for the child because of the presence of many children the child may be emotionally disturbed. This would in turn affect his/her academic performance.

Maternal attachment was also influenced adversely by the increasing age of the mother. It was suggested that disparity in age might be a cause of inadequate communication between mother and child. Pilling and Springle (1978) held that

the mother is the principal attachment object of the child, and that communication between mother and child forms the basis of cognitive as well as intellectual development. If, due to age of mother, her level of communication with the child is inadequate, the basis of cognitive as well as intellectual development is inadequate. This situation would in turn affect academic performance adversely.

5.1 CONCLUSIONS

Maternal attachment on its own has only a slight positive influence on the academic performance of the child. High and improved academic performance, rather, has a higher positive influence on maternal attachment. Other family variables affect academic performance indirectly. Increase in age of mother influences maternal attachment adversely. The adverse influence tends to be transferred into academic performance. Large number of children in a family has an adverse effect on maternal attachment. It, no doubt, also has adverse effect on the academic performance of the child. But mothers who are highly qualified tend to have children who are securely attached. It is likely

also that highly qualified mothers would make time to give their children organized help in school subjects. Their own example would also stimulate the children. Thus while high qualification of the mother has a positive effect on maternal attachment, it would also have a positive effect on academic performance of the child.

A high level of maternal attachment has little positive influence on academic performance. In combination with other social variables in the family, maternal attachment has a tremendous influence on academic performance. The lower the number of children in a family the higher the attachment level and the higher the academic performance. The higher the education of mother the more secure the maternal attachment and the higher the academic performance of the child. The younger the mother, the higher the attachment level and the higher the cognitive and intellectual development, which leads to higher academic performance.

5.2 RECOMMENDATIONS

1. Considering the effect of number of children on academic achievement it is recommended

that women find safe ways of reducing the number of children their family should have. This study has shown that high number of children in a family reduces both the maternal attachment and academic performance of each child. Moreover, according to Douglas (1964) and Davie et. al. (1972) "small families are associated with higher academic achievement."

2. It is recommended that a lot more Nigerian women develop interest in higher education and professional training instead of spending a life time seeking for money and wealth. This study has shown that the higher the mother's education, the higher her attachment to the children and the higher the children's academic achievement. Frankel (1964), too, found that "children whose mothers were highly educated and held professional positions had higher academic achievement than those from the same socio-economic level whose mothers had no professional qualifications." It is an englightened mother and not necessarily a wealthy mother who rears enlightened children. Enlightened children make an enlightened society, which is what Nigeria needs.

3. It is recommended that teenagers, both boys and girls be given modified lessons on the family. They should be told right at that age what it means to run a home, what it means to have babies, how many babies are adequate to have and more importantly, how to plan one's life so that it is possible to have the right time for delivery of children. Young adults who had had such training should be able to plan their lives in such a way that from a certain age to another they finish their first degree, then leave a gap for child bearing and as the children grow and leave hom they go back to school to pursue specialized professions.

This process would have several advantages. The couple would have a sense of direction in their family building. They would have time to fulfil their full potentials professionally. They would have their later life to themselves, they would not be burged with the troubles of too many children. Above all, they would rear their children at the right time, when they can give enough attachment and stimulation to the child.

Further Research

This study did not consider the relationship between maternal attachment and academic performance in a completely common Nigerian environment. A study conducted in a common and less academic environment than a university staff school may have different results.

The study devoted attention to only maternal achievement, but in the family a child has other attachment objects. For an instance some children are more attached to their fathers than mothers. Where maternal attachment is lacking paternal attachment may take its place. But this research did not consider that. A study on paternal attachment would clarify more the social situation in the family of the sample studied. Such attachment could be one of the influences on academic performance of the sample. A further research on paternal and other attachments is therefore suggested for this sample.

It is also suggested that further research considers the effect of attachments on the academic performance of children of lower age than six and seven years. At a lower age maternal attachment

would be stronger and may constitute a greater single influence on academic performance.

The further researches suggested would add to the findings of the present study.

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APPENDIX I

DEPARTMENT OF VOCATIONAL AND
TECHNICAL EDUCATION, A.B.U. ZARIA

Dear Respondent,

I am reading for a Masters Degree in the above department. My area of specialization is Family and Child Development and I am interested in finding out the influence of mother-child relationship on the academic performance of the child. Please recall your child's behaviour towards you from infancy till now. His/her relationship with you at the present age may be a great help in recalling his behaviour when he was younger. Please respond to the items as honestly as possible. If you are interested in the result of the research I will not hesitate to make it available to you.

All the information obtained will be used solely for research purposes and will be treated as confidential.

Thank you.

Yours faithfully,

STUDENT.

APPENDIX II

PART I

PERSONAL INFORMATION

Please fill this section.

1. Name of Child .....
2. Age of child .....
3. Age of mother .....
4. Occupation of Mother .....
5. Number of children .....

Tick the one applicable to you.

6. Mother's educational level at present:
   (a) Did not attend formal school.
   (b) Primary Six graduate.
   (c) Secondary School graduate.
   (d) Advanced Teachers' College graduate.
   (e) Grade Two Teachers' Training College graduate.
   (f) A graduate of Polytechnic/Technical College.
   (g) Nursing School graduate.
   (h) University graduate.

PART II

The following sentences illustrate your child's behaviour towards you. Please read and recall to what extent your child showed each behaviour. If he showed it always, tick against 'always' and so on. If he did not show such behaviour tick against 'never'.

Section 1

	THE DEGREE OF BEHAVIOUR					
	Always	Most of the time	Often	Occasion-ally	Never	
1. Whenever I was at home my child would not allow other people but me to carry her						
2. My child would not start on his own to play with me when he could play.						
3. My child was so used to the nanny that he could continue happily for many days without me only if the nanny was there.						
4. He was very happy when the nanny was with him but when I was at home he would cry at small things.						
5. When I was leaving the house he would show no interest in my going out.						

	THE DEGREE OF BEHAVIOUR					
	Always	Most of the time	Often	Occasion-ally	Never	
6. He would cry very much and cling to me when I was about to leave the house.						
7. He would look at me but continue what he was doing whenever I came back.						
8. On my coming back to him he would not greet me or move towards me.						
9. He tended to avoid me.						
10. On my coming back from work or shopping he would not want to be carried even if I wanted to.						
11. In the presence of a stranger he would run to anybody around for shelter.						
12. When he had been able to crawl or walk he would run away from strangers even when I was with him.						
13. In the presence of strangers he would go to the father even when I was present.						
14. When he slept with me he would want to maintain continuous contact with me.						
15. When he was a baby he would cry a lot before sleeping.						

	THE DEGREE OF BEHAVIOUR					
	Always	Most of the time	Often	Occasio-nally	Never	
16. If I carried him he would quickly go down on his own and move away.						
17. When he was hungry he would cling to me sucking finger, tongue or lips.						
18. When annoyed he would fight it out alone.						
19. When offended he would cry out and refuse any comfort by me.						
20. If I was responsible for the annoyance he will beat me as much as he could.						
21. If he was afraid, when he could move about he would run to the father or any other familiar member of the family even when I was present.						
22. When frightened he would run away shouting "Daddy! Daddy! Daddy!"						
23. He would bear sickness without bothering me.						
24. When he was sick he would rely more on the help and comfort of the father than on mine.						
25. When sick he would call bigger brothers and sisters for help and comfort instead of me.						
26. When sick my child would accept the help of a nurse or doctor rather than turn						

	THE DEGREE OF BEHAVIOUR					
	Always	Most of the time	Often	Occasion-ally	Never	
27. If he cried before sleeping I would allow him to cry until he slept.						
28. He liked to play and work with the father more than he did with me.						
29. He referred most of his questions to the father.						
30. He cried a lot even when I was at home.						
31. I do not like children hanging around me.						
32. Carrying children for long periods bores me. If ever I play with them I simply talk to them or smile at them.						
33. When my baby cried I allowed him to cry until he sorted himself out because I wanted him to learn independence.						
34. My child would play with me, he would smile and vocalize (seem to talk) to me when he was a baby.						
35. Once I was around he would play about without problems but would be moody when I was away.						

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	THE DEGREE OF BEHAVIOUR					
	Always	Most of the time	Often	Occassion-ally	Never	
36. He would have me carry him whenever I was around and if I put him down he would cry and want to be re-carried.						
37. He preferred to stay with me in the kitchen even if I was working and could give him no attention.						
38. If I disappeared into a room without him seeing me he would go into every room looking for me.						
39. When I was going out, my child would come to the door and wait till I disappeared.						
40. He would gladly bid me a farewell as I left the house for work.						
41. When I came back from market or work he would run to me and shout, "Mumy oyoyo!"						
42. If I carried him he would like to remain carried for a long time and would refuse to be put down.						
43. If I went out and came back my child would follow me about narrating what happened at home when I was away, as he grew bigger.						

	THE DEGREE OF BEHAVIOUR					
	Always	Most of the time	Often	Occasionally	Never	
44. When hungry the child could cry and when he could move he would follow me about. When he could talk he would come to me asking for food.						
45. When he was annoyed she would come to me for comfort and when he began to talk he would report the cause of annoyance.						
46. If I were the cause of annoyance he would cry and move away from me for a whort while and come back after.						
47. When he was afraid he would run to me for protection despite the father's presence.						
48. When he could run, he would run away from the site of fright shouting Mumy! Mumy! Mumy! even if I was not there.						
49. If he was sick, he would want me to stay around and would accept whatever help I gave.						
50. In the presence of strangers he would cling to me and refuse to be carried by them.						
51. In the presence of strangers, he would run to take shelter with me even if the father was there.						
52. At mealtime he wanted to eat with me even if he had eaten when I was absent.						

	THE DEGREE OF BEHAVIOUR					
	Always	Most of the time	Often	Occassion-ally	Never	
53. When he was a baby he enjoyed being fed by me and would eat when I fed him than when others fed him.						
54. At the table he would want to stay nearer to me than other children.						
55. At bed time he wanted to sleep with me.						
56. Before going to bed he would want me to go to the bedroom with him and tell him stories, read him books or watch him as he slept.						
57. When he slept with me I would put him in his bed but when he woke up he would find his way back to my bed.						
58. He would be left in bed to sleep calmly. He was not the crying type when he was a baby.						
59. He seems to like me and my company more than the father's.						
60. He would like to help me in any work I was doing e.g. if I was washing clothes he would like to wash with me.						
61. He would direct his questions to me even if the father is there.						

	THE DEGREE OF BEHAVIOUR					
	Always	Most of the time	Often	Occassio-nally	Never	
62. If we were going out he would prefer walking by my side to walking with any other person.						
63. I think my child likes me more than he likes any other member of the family. He preferred my company to that of the nanny who took care of him.						
64. I enjoy carrying and playing with children.						
65. When my baby cried I would go immediately to comfort him.						
66. I comforted my baby by carrying and rocking.						

APPENDIX III

COMPUTATION OF MATERNAL ATTACHMENT INDICES

No.	Raw scores - Insecure attachment behaviours	Percentages	Rawscores - securely attached behaviours	Percentages	Attachment Index %
1	27	20.45	85	64.39	44
2	43	32.57	94	71.21	39
3	57	43.18	87	65.90	23
4	25	18.92	77	58.33	39
5	32	24.24	81	61.36	37
6	20	15.15	75	56.81	42
7	25	18.92	68	51.51	33
8	23	17 42	47	35.60	18
9	43	32.57	85	64.37	32
10	15	11.36	92	69.69	50
11	27	20.45	43	32.57	12
12	46	34.84	97	73.48	89
13	30	22.72	70	53.03	30
14	13	9.84	80	60.60	51
15	35	26.51	73	53.30	27
16	23	17.42	47	35.60	18
17	36	27.72	55	41.66	14
18	30	22.72	98	74.24	52
19	67	50.75	103	78.03	27
20	47	35.60	81	61.36	26
21	35	26.57	59	44.69	18
22	14	10.60	56	42.42	31
23	31	23.48	91	63.93	40
24	27	20.45	72	54.54	34

No.	Raw scores - Insecure attachmentt behaviours	Percen-tages	Raw Scores - Securely attached beh viours	Percen-tages	Attachment Index %
25	21	15.90	93	70.45	55
26	55	41.66	105	79.54	38
27	46	34.34	96	72.72	38
28	71	53.78	98	74.24	20
29	55	41.66	102	77.27	36
30	24	18.18	51	38.63	20
31	11	28.33	82	62.12	54
32	36	27.27	57	43.63	11
33	14	10.60	98	74.24	64
34	20	15.15	117	88.63	73
35	22	16.66	102	77.27	61
36	42	31.81	84	63.63	32
37	6	4.54	25	18.92	14
38	67	50.75	99	75.00	24
39	41	31.06	107	81.06	50
40	22	16.66	48	36.36	20
41	25	18.93	81	61.36	42
42	14	10.60	102	77.27	67
43	26	19.69	80	60.60	41
44	26	19.69	49	37.12	17
45	19	14.39	109	82.57	68
46	26	19.69	68	57.57	32
47	30	22.72	87	65.90	43
48	20	15.15	116	87.68	73
49	33	25.00	57	43.18	18
50	31	23.48	55	41.66	18
51	13	9.48	93	70.45	61
52	24	18.18	63	47.72	29

No.	Raw scores - Insecure attachment behaviours	Percentages	Raw Scores - Securely attached behaviours	Percentages	Attachment Index %
53	50	37.87	81	61.36	23
54	24	18.18	52	39.39	21
55	33	25.00	94	71.21	46
56	7	5.30	100	75.75	70
57	21	15.90	72	54.54	39
58	52	39.39	113	85.60	46
59	22	16.66	90	68.18	52
60	24	18.18	99	75.00	57
61	30	22.72	92	69.69	47
62	21	15.90	97	73.48	58
63	22	16.66	78	59.09	42
64	14	10.60	95	71.96	61
65	18	13.63	62	46.96	33
66	33	25.00	87	73.48	48
67	29	21.96	74	56.06	34
68	30	22.72	74	56.06	33
69	61	46.21	88	66.66	20
70	12	9.09	71	53.78	45
71	49	37.12	95	71.96	35
72	41	31.06	69	52.27	21
73	17	12.87	94	71.21	58
74	37	28.03	63	47.72	20
75	25	18.93	64	48.48	30
76	42	31.81	102	77.27	45
77	28	21.21	99	75.00	54
78	10	7.57	70	53.03	45
79	23	17.42	93	70.45	53
80	46	38.84	102	77.27	38

No.	Raw scores - Insecure attachment behaviours	Percentages	Raw Scores - Securely attached behaviours	Percentages	Attachment Indx %
81	80	60.60	108	81.81	21
82	29	21.96	96	72.72	51
83	71	53.78	95	56.81	30
84	76	57.57	63	47.72	-10
85	22	16.66	49	37.12	20
86	46	34.84	97	73.48	39
87	27	20.45	43	32.57	12
88	25	18.93	71	53.78	35
89	50	37.78	32	24.24	-14
90	32	24.2	62	46.94	22
91	17	12.87	101	76.51	64
92	32	24.24	77	58.33	34
93	24	18.18	106	80.30	62
94	34	25.75	72	54.54	29
95	28	21.21	69	52.27	31
96	35	26.51	96	72.72	46
97	47	35.60	62	46.94	11
98	24	18.18	34	25.75	8
99	46	38.84	110	83.33	44
100	69	52.27	82	62.12	10
101	5	3.78	79	59.84	56
102	54	40.90	111	84.09	43
103	110	83.33	125	94.69	11
104	45	34.09	115	87.12	53
105	55	41.66	93	70.45	29
106	18	13.63	110	83.33	70
107	31	23.48	106	80.30	57
108	41	31.06	83	62.87	32

No.	Raw Scores - Insecure attachment behaviours	Percen-tages	Raw Scores - Securely attached behaviours	Percen-tages	Attachment Rndex %
109	45	34.09	114	86.36	62
110	17	12.87	84	63.63	51
111	32	24.24	88	66.66	42
112	29	21.96	79	59.84	31
113	38	28.78	96	72.72	44
114	58	43.93	105	79.54	36
115	19	14.39	111	84.09	70
116	58	43.93	105	79.54	36
117	44	33.33	99	75.00	42
118	23	17.42	64	48.48	37
119	21	15.90	79	59.48	42
120	23	17.42	119	90.15	73
121	33	25.00	52	39.39	14
122	39	29.54	91	68.93	39
123	39	29.54	113	85.60	56
124	20	15.15	78	59.09	44
125	23	17.42	47	35.60	18

APPENDIX IV

ATTACHMENT INDICES AND ACADEMIC PERFORMANCE - RAW SCORE

No.	APS	MAI	No.	APS	MAI	No.	APS	MAI	No.	APS	MAI	No.	APS	MAI
1	93	44	28	45	20	55	82	70	82	42	30	109	69	42
2	79	35	29	31	36	56	92	39	83	65	20	110	77	31
3	62	23	30	69	20	57	93	46	84	92	39	111	76	44
4	62	39	31	92	54	58	44	52	85	82	12	112	59	36
5	88	37	32	98	11	59	61	57	86	89	35	113	49	36
6	75	42	33	79	64	60	93	47	87	84	-14	114	66	70
7	90	33	34	92	73	61	82	58	88	95	22	115	94	42
8	61	18	35	85	32	62	82	42	89	92	64	116	96	37
9	37	32	36	85	14	63	94	61	90	83	34	117	97	73
10	50	50	37	76	24	64	69	48	91	70	62	118	95	14
11	79	12	38	80	50	65	87	34	92	80	29	119	69	39
12	81	39	39	70	20	66	80	33	93	52	31	120	70	56
13	83	30	40	82	42	67	70	20	94	79	46	121	79	44
14	93	51	41	96	67	68	96	33	95	50	11	122	80	42
15	81	27	42	66	41	69	70	45	96	92	8	123	95	41
16	63	18	43	85	17	70	78	35	97	82	44	124	56	78
17	63	14	44	93	68	71	92	21	98	98	10	125	40	79
18	80	52	45	88	32	72	78	58	99	48	56			
19	52	27	46	92	43	73	59	20	100	77	43			
20	87	26	47	85	73	74	31	30	101	65	11			
21	77	18	48	91	18	75	94	45	102	76	53			
22	81	31	49	84	18	76	91	54	103	71	70			
23	89	40	50	90	32	77	86	45	104	75	29			
24	74	34	51	87	29	78	84	53	105	93	57			
25	65	55	52	59	32	79	76	38	106	61	32			
26	92	38	53	96	21	80	77	21	107	56	62			
27	73	38	54	83	46	81	84	51	108	73	51			

APPENDIX V

ACADEMIC PERFORMANCE, AGE AND NUMBER OF CHILDREN (RAW SCORES)

Serial No.	APS	NC	MAI	Serial No.	APS	NC	MAI
1	93	5	44	28	45	5	20
2	70	5	39	29	31	8	36
3	62	7	23	30	69	5	20
4	62	5	39	31	92	2	54
5	88	6	37	32	98	5	11
6	75	4	42	33	79	6	64
7	90	3	33	34	92	5	73
8	61	5	18	35	85	4	32
9	37	5	32	36	85	9	14
10	51	4	50	37	76	5	24
11	79	7	2	38	81	4	50
12	81	2	39	39	70	3	20
13	83	5	30	40	82	2	42
14	93	3	51	41	96	5	67
15	81	1	27	42	86	4	41
16	63	6	18	43	85	8	17
17	63	6	14	44	93	5	68
18	80	3	52	45	85	5	32
19	52	5	27	46	92	4	43
20	87	4	26	47	85	3	73
21	77	5	18	48	91	4	18
22	81	4	31	49	84	3	18
23	89	3	40	50	90	5	32
24	75	5	34	51	88	3	29
25	65	4	55	52	59	7	32
26	92	4	38	53	86	5	21
27	73	7	38	54	83	2	46

Serial No.	APS	NC	MAI	Serial No.	APS	NC	MAI
55	82	4	70	84	92	2	39
56	92	2	39	85	82	7	12
57	93	6	46	86	89	3	35
58	44	4	52	87	84	2	14
59	61	4	57	88	95	7	22
60	93	4	47	89	92	3	64
61	82	3	58	90	83	4	24
62	83	5	42	91	83	3	62
63	94	4	61	92	80	5	29
64	96	3	33	93	52	3	31
65	69	4	48	94	79	4	46
66	87	5	34	95	50	4	11
67	80	3	33	96	92	4	8
68	70	5	20	97	82	6	44
69	70	4	46	98	98	5	10
70	78	5	35	99	48	3	56
71	92	4	21	100	77	5	43
72	78	4	50	101	65	5	11
73	59	4	20	102	76	4	55
74	31	4	30	103	71	5	70
75	94	5	45	104	75	4	29
76	91	4	54	105	93	4	57
77	86	4	45	106	61	4	32
78	84	1	53	107	56	5	62
79	76	5	38	108	73	4	51
80	77	8	21	109	69	5	42
81	84	2	51	110	77	7	31
82	42	5	30	111	76	3	44
83	65	4	20	112	59	4	36

Serial No.	APS	NC	MAI	Serial No.	APS	NC	MAI
113	49	4	36	118	95	3	14
114	66	4	70	119	69	3	39
115	94	4	42	120	70	5	56
116	96	4	37	121	79	3	44
117	97	4	73	122	80	4	42

APPENDIX VI

AGE OF MOTHER, NUMBER OF CHILDREN, ATTACHMENT AND ACADEMIC PERFORMANCE

No.	AGE	NC	MAI	APS	No.	AGE	NC	MAI	APS
1	33	6	44	93	28	33	8	36	31
2	26	6	39	70	29	34	5	20	69
3	30	7	23	62	30	30	2	54	92
4	26	5	39	62	31	33	5	11	96
5	38	6	37	88	32	32	6	64	79
6	34	4	42	75	33	40	6	73	92
7	33	3	33	90	34	30	4	30	31
8	35	6	18	61	35	31	4	32	85
9	38	5	32	37	36	38	5	45	94
10	35	6	18	61	37	35	4	54	91
11	37	4	50	50	38	42	4	45	86
12	37	7	2	79	39	25	1	53	84
13	35	2	39	81	40	32	5	38	76
14	30	55	30	83	41	38	8	21	77
15	31	3	51	93	42	26	2	51	84
16	29	1	37	81	43	24	5	30	42
17	35	6	18	83	44	40	4	20	65
18	36	6	14	83	45	28	2	39	92
19	36	3	52	80	46	35	7	12	82
20	28	5	21	52	47	32	3	35	89
21	34	4	26	87	48	34	2	14	84
22	28	4	31	81	49	32	7	22	95
23	32	3	40	89	50	25	3	64	92
24	34	5	34	75	51	28	3	62	70
25	37	4	55	65	52	32	5	29	80
26	32	7	38	73	53	30	3	31	52
27	25	5	20	42	54	28	4	46	79

No.	AGE	NC	MAI	APS	No.	AGE	NC	MAI	APS
55	28	4	11	50	84	25	3	18	84
56	24	4	8	92	85	35	5	32	90
57	35	6	44	82	86	32	3	29	88
58	35	5	10	98	87	34	7	23	59
59	25	5	43	77	88	80	5	21	86
60	51	5	11	65	89	30	2	46	83
61	27	4	53	76	90	31	4	70	82
62	25	4	29	71	91	29	2	39	92
63	37	4	57	93	92	26	6	46	93
64	26	4	32	61	93	30	4	52	44
65	24	5	62	56	94	35	4	57	61
66	27	4	57	78	95	31	4	47	93
67	39	6	42	69	96	26	3	58	82
68	43	7	31	97	97	30	5	42	83
69	24	4	36	59	98	37	4	48	69
70	28	4	70	66	99	30	6	34	87
71	41	9	14	85	100	35	3	33	80
72	27	5	24	76	101	28	4	45	70
73	35	4	50	80	102	29	5	35	78
74	32	3	20	72	103	27	4	21	92
75	27	2	42	82	104	28	4	20	59
76	35	5	67	96	105	32	4	42	94
77	32	4	41	86	106	47	4	37	96
78	40	8	17	85	107	29	4	42	80
79	26	5	68	93	108	37	4	73	97
80	26	5	32	85	109	44	5	39	69
81	34	4	43	92	110	33	5	56	70
82	29	5	73	85	111	36	3	44	79
83	36	4	18	91	112	35	4	47	81

APPENDIX VII

FREQUENCY DISTRIBUTION OF MATERNAL ATTACHMENT AND EDUCATIONA OF MOTHERS

EDUCATION OF MOTHERS			MATERNAL ATTACHMENT PATTERNS OF CHILDREN					
Groups	Educational level	Size of group	Securely attached	M.A.I.	Ambivallent	M.A.I.	Insecurely attached	M.A.I.
1 NP	0-6 years of schooling	35	4	51-73	4	40-50	27	-14-39
2 TCS	11 years of schooling	26	5	51-73	7	40-50	14	--14-39
3 ATP	14 years of schooling	18	4	51-73	7	40-50	7	-14-39
4 NU	16+ years of schooling	42	17	51-73	7	40-50	21	-14-39
TOTALS		125	30		25		69	

APPENDIX VIII

CHI SQUARE ANALYSIS FOR THE DETERMINATION OF DEPENDENCE OF MATERNAL ATTACHMENT ON MOTHER'S EDUCATION

EDUCATIONAL QUALIFICATION		MATERNAL ATTACHMENT INDICES (LEVEL OF MATERNAL ATTACHMENT)		
Groups	No. in Sample	Securely attached Score: 51 - 73	Ambivallent Score: 40-50	Insecurely attached Score: -14 - 39
1. NP 0-6 years of schooling	35	4 (8.4)	4 (7)	27 (19.3)
2.TCS 11 years of schooling	26	5 (6.2)	7 (5.2)	14 (14.3)
3. ATP 14 years of schooling	18	4 (4.3)	7 (3.8)	7 (9.9)
4. N.U. 16+ years of schooling	42	17 (11.0)	7 (9.2)	21 (25.4)
	N = 125	n = 30	n = 25	n = 69

$X^2 = \sum \frac{(O-E)^2}{E}$ $\quad$ Df = (R-1)(c-1) $\quad$ $E = \frac{n\ row \times n\ col}{N}$