

Effect of Home Environment on Adaptive Behavior in Early Childhood



A Thesis Submitted to
THE UNIVERSITY OF DHAKA
For the degree of Masters of Philosophy
(PSYCHOLOGY)

448912

Dhaka University Library



448912

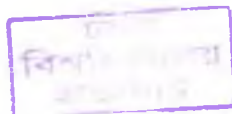
By



Sakila Yesmin

**DEPARTMENT OF PSYCHOLOGY
FACULTY OF BIOLOGICAL SCIENCES
UNIVERSITY OF DHAKA
BANGLADESH**

DECEMBER 2009



02.

Q M.P. L

RB

155-1
YEE

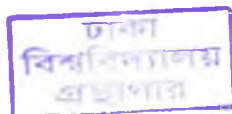
Effect of Home Environment on Adaptive Behavior in Early Childhood

A Thesis Submitted to
THE UNIVERSITY OF DHAKA
For the degree of Masters of Philosophy
(PSYCHOLOGY)

By 448912

Sakila Yesmin

Reg. No. 263
Session : 1999-2000
Department of Psychology
Faculty of Biological Sciences
University of Dhaka
Bangladesh



DECEMBER 2009

Effect of Home Environment on Adaptive Behavior in Early Childhood.

448912

ABSTRACT

The present study was undertaken to find out the association between home environment and children adaptive behavior in urban and rural areas in Bangladesh. The specific objectives were to see: (a) the effect of age on adaptive behavior, (b) the effect of sex on adaptive behavior, (c) the effect of area of residence on adaptive behavior and (d) the effect of SES on adaptive behavior and also to investigate the effects of age, sex and residence and socio-economic status (SES) on sub-scales of Independent Behavior Assessment Scale (IBAS) such as motor skills, communication skills, socialization skills and daily living skills. In the study, 200 pairs of mother- child of age between 2-5 years selected from urban and rural areas were recruited. The instruments used to measure the variables were: (a) Independent Behavior Assessment Scale (IBAS), and (b) Home observation for measurement of environment (HOME inventory). Demographic information of the children was also collected. The data were analyzed by correlation of coefficient, *t*-test and four-way analysis of variance. The correlation of coefficients between adaptive behavior and home environment of children showed the following significant relationship: (a) Children's adaptive behavior (IBAS) was strongly correlated with their home environment and some sub-scales of HOME inventory, such as Language Stimulation, Responsibility, Variety, Acceptance. (b) No significant relationship was found with other two sub-scales-Learning materials and Modeling. The *t*-test showed that there was significant difference in the quality of psychosocial stimulation at home (HOME) between urban and rural areas. The Four-Way Analysis of variance for IBAS and sub-scales of IBAS by age, sex, area of residence and SES have produced the following results:

(a) the main effects of age and area of residence on adaptive behavior of the children were found to be significant, but no significant main effects of sex and SES were found, (b) the main effects of area of residence on motor skills were found to be significant, but the main effects of age, sex and SES were found to be non significant, (c) the area of residence has significant effects on socialization skills, (d) age and the area of residence have significant effects on communication skills of children, (e) age of children and area of residence has significant effects on daily living skills. None of interactions was found to be significant. The study has great contribution in understanding the association of home environment and adaptive behavior of young children and probably it is the unique step in the perspective of Bangladeshi culture to gather knowledge about the effects of home environment on children's development in early childhood.

ACKNOWLEDGEMENT

The research conducted for this thesis was achieved through the efforts and commitment of many people to whom I owe a debt of thanks.

It is my great pleasure to express my heartiest gratitude to my supervisor, Dr. Dilruba Afrose, Professor of Department of Psychology, University of Dhaka, for her sincere and continuous guidance, support, assistance and cooperation. Without her valuable advice and inputs, it was impossible for me to finish this work.

I am also grateful to the experts who gave their valuable input in validation of measurement tools. I would like to express my gratitude to the teachers and colleagues for their inspiration, reference materials and many other ways of assistance to me to complete the study.

I am earnestly thankful to the children and their mother who have participated in the study for giving their time and sincere cooperation in collecting relevant data and information for the study. I also extend my gratitude to the field research assistants for their efforts and hard work in data collection phase.

My sincere thanks goes to my parents, my sister and brothers who have patiently allowed me to take my time off for the study and were very understanding and truthful towards the successful completion of the thesis. My heartiest thank goes to my husband for his continuous support, inspiration and advice about the thesis.

Last, not least, I am most grateful to almighty Allah to give me the opportunity to do the dissertation and complete it in time.

Certificate

This is to certify that the thesis entitled the “Effect of Home Environment on Adaptive Behavior in Early Childhood” has been completed by Sakila Yesmin of the Department of Psychology, University of Dhaka for the award of M.Phil Degree. This work has been done under my supervision. This is original piece of work. I recommended the thesis for examination.

Ahmed 27.12.2009

(Dr.Dilruba Afrose)

Professor
Department of Psychology,
University of Dhaka

Certificate

This is to certify that the thesis entitled the “Effect of Home Environment on Adaptive Behavior in Early Childhood” has been completed by me. This is original piece of work of mine. I have never published this work partially or fully in any journal or submitted to any institution for obtaining any degree.

Sakila Yesmin

(Sakila Yesmin)
Masters of Philosophy
Department of Psychology,
University of Dhaka

CONTENTS

	Abstract	i
	Acknowledgements	iii
	Certificate	iv
	Certificate	v
	Contents	vi
	List of tables	x
	List of figures	xii
Chapter 1	Introduction	1
1.1.	Theories of child development	2
1.1.1.	Learning theories	2
1.1.2.	Theories of personality development	4
1.1.3.	Temperament theory	9
1.1.4.	Theories of cognitive development	10
1.1.5.	Information Processing Theories	12
1.1.6.	Sociocultural Theories	13
1.2.	Different aspects of development	15
1. 2.1.	Physical development	15
1. 2.2.	Motor Development	16
1.2.3.	Language Development	18
1.2.4.	Cognitive Development	20
1.2.5.	Social Development	24
1.2.6.	Moral Development	26
1.2.7.	Personality Development	27
1.2.8.	Adaptive Behavior Development	28

1.3.	Factors affecting child development	30
1.4.	Review of Literature	33
1.5.	Rationale of the study	39
1.6.	Objectives of the study	41
Chapter 2	Method	42
2.1.	Participants	42
2.1.1	Criteria	42
2.1.2	Selection of participants	43
2.2.	Materials used	43
2.2.1.	Independent Behavior Assessment Scale (IBAS)	43
2.2.3.	Socio-economic characteristics	47
2.2.4.	Home observation for measurement of environment	47
2.3.	Investigators	49
2.4.	Procedure	49
2.4.1.	First Phase of Reliability of the HOME inventory	49
2.4.2.	Second Phase of final Study	50
Chapter 3	Result	52
3.1.	Correlation between Adaptive behavior (IBAS) and Home environment (HOME inventory)	52
3.2.	Difference in Home Environment between Urban and Rural Areas	60
3.3.	Four-way analysis of variance of Adaptive behavior by age, sex, area of residence and SES	60
3.3.1.1.	Adaptive Behavior and Age	61

3.3.1.2.	Adaptive Behavior and Area of residence	62
3.4.	Four-way analysis of variance of Motor Skills by age, sex, area of residence and SES	63
3.4.1.	Motor Skills and Area of residence	64
3.5.	Four-way analysis of variance of Socialization Skills by age, sex, area of residence and SES	64
3.5.1.	Socialization skills and Area of residence	65
3.6.	Four-way analysis of variance of Communication Skills by age, sex, area of residence and SES	66
3.6.1.	Communication Skills and Age	67
3.6.2.	Communication skills and Area of residence	67
3.7.	Four-way analysis of variance of Daily Living Skills by age, sex, area of residence and SES	68
3.7.1.	Daily Living Skills and Age	69
3.7.2.	Daily living skills and Area of residence	70
Chapter 4	Discussion and Conclusion	71
4.1.	Adaptive behavior of the children and their home environment	71
4.2.	Home Environment in urban and rural areas	72
4.3.	Effects of Age and Residence on Adaptive Behavior of children	73
4.3.1.	Effects of Residence on Motor Skills of children	74
4.3.2.	Effects of Residence on Socialization skills of children	74
4.3.3.	Effects of Age and Residence on Communication Skills of children	74

4.3.4.	Effects of Age and Residence on Daily living Skills of children	75
	Conclusion	75
	Need for further research	76
 Chapter 5		
	Summary	78
	References	81
	Appendices	89
	i. Questionnaires	90

LIST OF TABLES

Table 2.2.1	Test-Reliability coefficients of the four main scales of IBAS by age	46
Table 2.2.2	Inter -Reliability coefficients of the four main scales of IBAS by age	46
Table 2.2.3	Comparison of mean total IBAS scores children with and without disabilities	46
Table 3.1	Correlations of the adaptive behavioral variables (IBAS) with HOME subscales	57
Table 3.2	Comparison of Means of the subscales scores and total scale score of the HOME of urban and rural children.	60
Table 3.3:	Four way Analysis of Variance of Adaptive Behavior by Age, Sex, Area of residence and SES	61
Table 3.3.1	Mean and Standard Deviation of Adaptive behavior (IBAS) scores of different age group	62
Table 3.3.2	Mean and Standard Deviation of adaptive behavior of different area of residence	62
Table 3.4.	Four way Analysis of Variance of Motor Skills by Age, Sex, Area of residence and SES	63
Table 3.4.1	Mean and Standard Deviation of Motor skills of different area of residence	64
Table 3.5	Four way Analysis of Variance of Socialization Skills by Age, Sex, Area of residence and SES	65
Table 3.5.1	Mean and Standard Deviation of Socialization skills of different area of residence	65
Table 3.6	Four way Analysis of Variance of Communication Skills by Age, Sex, Area of residence and SES	66

Table 3.6.1	Mean and Standard Deviation of Communication skills scores of different age group	67
Table 3.6.2	Mean and Standard Deviation of communication skills of different area of residence	68
Table 3.7.:	Four way Analysis of Variance of Daily Living Skills by Age, Sex, Area of residence and SES	68
Table 3.7.1	Mean and Standard Deviation of daily living skills scores of different age group	69
Table 3.7.2	Mean and Standard Deviation of daily living skills of different area of residence	70

LIST OF FIGURES

Figure 1	A schematic diagram of the five levels in Bronfenbrenner manner's ecological model	14
Figure 2	Distribution of sample by area in the study	43
Figure 3.1	Mean value of Independent Behavior Assessment Scale (IBAS) of different age groups	62
Figure 3.2	Mean score of communication sub scale of IBAS	67
Figure 3.3	Mean score of daily living sub-scale of IBAS	69

CHAPTER ONE

INTRODUCTION

Effect of Home Environment on Adaptive Behavior in Early Childhood.

The development of children involves a fascinating combination of processes and events. At birth, children become part of a complex social world. Their parents are usually the central figures in this new world, but even young infants are greatly affected by the larger culture that they enter at birth.

In formal use, 'Child development' refers to changes in children's height, weight, behavior or other characteristics as they grow older. However, not all changes with age are developmental. If a boy receives bicycles for his sixth birthday and begins riding the bicycle for hours every day, this will not be an example of development, because it is due to a change in the boy's access to a bicycle, not a systematic change in the boy's own characteristics. According to Lerner (1986), Child Development refers to age changes in children's characteristics that are systematic rather than haphazard and successive rather than independent of earlier conditions. For example, an infant's shift from sucking milk from the mother's breast to eat solid foods is an developmental change. This change is part of a systematic shift toward a mature eating pattern and it depends on earlier condition, such as the infant's physical growth and the gradual maturation of digestive system.

Some theorists do not consider purely quantitative changes as developmental. Heinz Werner (1957) argued that changes are developmental only when they are from a global form of organization to a more differentiated and complex form. If children simply grew taller as they grew older, Warner would not consider that changes as developmental. Other theorists adapt a broader definition of development because they assume that many important age changes in children's characteristics are quantitative rather than qualitative. For example, these theorists would argue that gradual improvements in communication occur throughout infancy and childhood. Before infants use their first words, they develop the ability to communicate through facial expressions and gestures. After infants say the first word, still they need to develop many abilities before they can communicate successfully in various settings. Thus, as we will see shortly whether development involves mostly qualitative or mostly quantitative changes is an issue on which developmental theories are divided.

Another definition of child development is the scientific discipline that focus on the changes that occur as human begins to grow to maturity. To understand these changes we need to start at the beginning of life, the moment of conception. From a long time researchers have been trying to describe and explain the age changes in physical features, cognitive processes and social relationships and in doing so some of them have formulated theories.

1.1. Theories of Child Development

During the past century, many scholars and researchers have presented formal theories of child development. Theories of child development consist of systematically organized knowledge that is intended to explain and predict the phenomena. These theories offer tentative explanation of age related changes in behaviour and thinking. But a single theory may not be an ideal theory of child development. One reason is that no one tries to answer all questions about children's development. Some theories focus on question about personality development whereas others focus on cognitive or social development. The theories are presented under the following five broad categories:

1.1.1. Learning theories:

Learning theories put emphasis on the role of maturational factors in the development of behaviour. Learning theories developed from a school of thought called behaviorism. A basic assumption of behaviorism is that virtually all behaviour is a product of experience, and they concentrate on behaviour they can observe and measure. Learning theorists are simply occupied with issues about the nature of learning and the conditions under which it occur. Here we will briefly discuss some popular learning theorists' work and their contribution on development.

1.1.1.. John B. Watson:

Watson (1930) is generally called the "father of behaviorism". He took a radical position regarding the contribution of the environment to behaviour. According to him behaviour is completely determined by experience. He was influenced by Pavlov's model of conditioning in 1911; he conducted research with children and published a book in 1930's. In

discovering principles relating behavioral and environmental events and he produced his pioneering work on the consequences of behaviour, such as reinforcement, extinction and punishment as well as he extended the principles of operant conditioning to everyday human behaviour.

Two of his followers, Sidney Bijou and Donald Baer describe the behaviorist view of child development. They see the psychological make up of a child as a "cluster" of inter-related conditioned behaviours that are associated with stimuli. These stimuli consist not only of external events in the child's environment, but also of internal stimuli that result from biological functioning. As children develop, the cluster of inter-related responses progress by either (1) increasing the number of conditioned behaviours or (2) refining or strengthening existing responses. For example, a child who has never skied may learn unique skill behaviours and refine these responses through practice and feedback. Thus, for the strict behaviorist, intellectual development consists of progressive changes in the cluster of operant and respondent behaviours that he learns through experience. More complex tasks such as concept learning and problem solving or thinking simply require more advanced cluster.

1.1.1.3. Albert Bandura:

The origin of social learning theories is one in behaviorism and they put emphasis on environmental factors, minimize biological influences. Albert Bandura (1991) has done important research and emerged as the leading proponent of social learning theory and his theory is known as 'social cognitive theory'. Although his theory proposes that basic learning processes have a major impact on the development of social behaviour and personality, he consistently stresses the role of observational learning. Bandura pointed out that people do not initiate all the behaviours that they observe. People only initiate a model behaviour if they think they will be rewarded or at least not punished for doing so. For example, the child is likely to take on behaviour and values similar to those of important individuals, especially his or her parents. Many important social behaviours may be acquired through observations. Children learn to talk like models in their environment, using similar words and accents. They learn how to be both loving and aggressive. Through modeling the child develops a sexual role and identity. For that matter children probably learn more about parenting from observing parents than any other way.

Some models are more likely to be initiated than others and Bandura has noted several characteristics of the model that promote imitation. For example, models who

seem as nurturant (warm, rewarding, affectionate) and similar to the observer (same sex, age, race) are more likely to be imitated. Another important characteristic is social power, that is, the ability to obtain and dispense desirable resources and exercise influence over others. A child is more likely to imitate a powerful individual than a powerless one. Depending on child's culture, age, and sex certain types of power that the model possesses, such as prestige expertness or physical power of the model may be in determine whether social learning will occur. Bandura described several cognitive processes - attention, memory and information processing that must be integrated to ensure observational learning and later imitation. Recently Bandura's social learning theory has been known as social cognitive theory. Although Bandura has discussed the role of cognition in observational learning, but he did not study age changes in cognition directly.

1.1.2. Theories of personality development:

From the moment of birth, the infant communicates and interacts with a social world. The initial interactions may be primarily at the level of physical contact and the satisfaction of basic needs, but this soon expands into reciprocal smiling, playing games like "peek-a-boo" and eventually language. We have noticed that adults begin to characterize the baby right from the birth. For example - "he is a cranky baby. he is a good nature baby" They are describing characteristics or traits that are inferred from the child's behaviour. The process that integrates broad behavioral characteristics is called personality. Each individuals personality is unique and very complex. The construction of a single theory to explain personality development is a monumental task. Psychoanalytic theorist tried to explain personality development. Here we will briefly discuss some theories on personality development.

1.1.2.1. Frued's Psychoanalytic theory of Personality:

Psychoanalysts view personality development as progressing through a series of stage that build on one another. They emphasize the role of early experience on adult personality characteristics. The childhood years are considered to be a crucial formative period that determines the foundation of the maturing personality.

Sigmund Fraud (1856-1939) developed the first psychoanalytic theory of personality. According to Freud, the personality is composed of three parts: the id, the ego, and the super ego. The id is the unconscious core of one's personality which focuses on attaining immediate gratification of our impulses. It operates in terms of maximizing

pleasure, and is driven by the energy of the libido, which is a store of basic drives and urges. The id is a kind of station where our biological instincts are translated into wishes or impulses. It does not organize or even restrain these impulses; it just stores them as a confused mass. The ego is the logical and orderly part of the personality, which restrains impulses of the id by comparing emergent wishes against the real world. The ego tries to meet the demands of the id, while recognizing the limits set by society and the environment.

The super ego is the personality component that is something like one's moral conscience. It develops gradually as the child unconsciously acquires the moral values of his or her parents and culture. The chief goal of the super ego is to attain parental and societal approval by distinguishing right from wrong and transmitting this information to the ego which tries to keep the id in check. If the id has its way, as when a child lashes out and hits a playmate in a fit of anger, the superego may cause this child to feel guilty and gets the child to apologies.

Considering the three components of the personality the child is born with an unchecked id which is unable to survive in the real world. Consequently, it allows the ego to evolve so that the child's behaviour will correspond with reality. But the child eventually finds that part of dealing with reality involves internalizing values and ideals. Therefore, the superego develops to provide a framework of how things ought to be. In Freud's view the newborn enters the world with only the most basic drives, many of which are "animalistic". The role of society, through parents, teachers and others, is to restrain the free expression of these impulses and to channel them into acceptable activities. According to Freud, an orderly civilization is maintained in this way. Freud proposed that all children are born with a maturational plan that calls for them to pass through a sequence of five psychosexual stages. These stages are called psychosexual because the location of the primary erogenous zone changes with development. The stages are briefly discussed:

I) Oral stage: From birth to about two years of age the primary erogenous zone is in the mouth; hence it is called the oral stage. During this stage, pleasurable stimulation is achieved through sucking, feeding and so on.

II) Anal stage: Between two and four years of age, the child is in the oral stage. Solid food constitutes the usual diet, and the child is preoccupied with toilet training and the pleasure experienced by elimination processes.

III) Phallic stage: The phallic stage begins at four years of age and continues until the child is six. This stage is marked by pleasure derived from genital stimulation and by interest in the sex organs of others, "where babies come from", and so forth. Freud used the term "Phallic", because in the course of children's sexual exploration, they notice that the difference between male and female genitalia. Furthermore, he believed that because of the lack of a visible organ, girls presumably felt inferior and suffer penis envy. According to Freud, the personality is largely shaped by the end of the phallic stage at six years of age.

IV) Latency stage: The time between the age of six and puberty is called the latency stage, because the libido is dormant or latent. Since children are not preoccupied in this stage with erotic feelings, they are free to acquire many cultural skills, and have a relatively carefree life.

V) Genital stage: As they begin to mature physically at puberty, children enter the last stage, the genital stage, in which there is a reawakening of sexual interest and it continues till adulthood. An important assumption of Freudian theory is that children encounter a significant conflict during the phallic stage when they compete with the same-sex parent for the affection and attention of the opposite-sex parent. In boys this conflict is called the Oedipus complex, in girls it is the Electra Complex. According to Freud, the child's resolution of the Oedipus or Electra complex is necessary to promote heterosexual interests and societal approved masculine and feminine identification later in life.

1.1.2.2. . Erickson's Psychosocial theory of personality development:

Erickson (1963) has proposed a theory of personality that stresses the social context in which development occur. From the Freudian framework, his theory assumes that there is an inborn blueprint or master plan, which charts stages in the development of the personality. Erickson's theory also includes a three-part structure (e.g. id, ego and superego) of personality a crucial role of unconscious motivation and the notion of a libidinal force, existing at birth, which operates at the core of human functioning. Erickson, however, has introduced several distinct departures from Freudian theory. There are four principal areas in which difference are apparent . First, Erickson ascribes a more important role to social and cultural factors than Freud did. Consequently his theory is characterized as a psychosocial theory of personality development rather than psychosexual. Erickson's theory is a psychosocial explanation of the growth and

development of the ego. The second difference is that Erickson believes that the personality is strongly influenced by many social forces where Freud considered the parents as almost the exclusive social determiners of personality; Erickson places the child in the larger social setting of the family and its cultural heritage. Third, whereas Freud was preoccupied with what he viewed as relatively irreversible outcomes of pathological parent-child relationships, Erickson optimistically concentrates on conditions which promote successful personality growth. He stresses prevention of pathological outcomes through growth-producing social experiences, but he does not see failures at any stage as irreversible. And fourth, Erickson's eight stages of personality development cover the entire life span. He sees unique goals and milestones at every stage throughout childhood, adulthood and old age.

Each of the eight stages in ego development involves two opposing ego qualities, one of which is relatively "positive" while the other is relatively "negative" and during each stage, the individual faces a crisis or challenge of solving the crisis in favour of the positive quality. Healthy ego development requires a favorable ratio of the positive quality prevailing over the negative quality. Erickson's eight stages form a continuous process in which all the opposing ego qualities are present to some degree throughout life. Following is the brief description of eight stage of personality development in brief.

a) *Basic trust versus basic mistrust*: The first crisis in personality development is basic trust versus basic mistrust. The resolution of this crisis forms the foundation of ego development. During first year of life, a child's bodily needs are of vital concern. His most influential social experiences in the first month are related to the satisfaction of those needs by his parents. At this time the parents play the major role in forming his sense of trust. But a deep-rooted and enduring trust is not simply the result of the frequency of feeding and diaper (wet cloth) changing. The quality of the nurturant relationship is more important than the quantity and requires affection and warmth. In addition, there is another dimension of trust is overlooked. Children need to learn to have trust in them. A child may begin to acquire self-trust as he learn to satisfy his own needs. This helps him to develop expectancies about the environment and his own actions. If these expectancies are consistently borne out, the foundation for trust exists.

b) *Autonomy versus shame*: Between the ages of one and three, children encounter the second crisis which involves the ego qualities of autonomy versus shame or doubt. At this stage this child may be given the opportunity to build upon the sense of self-trust that

should have developed in the first stage. The child may develop a prevailing sense of autonomy that he is capable of mastering task and doing things himself-trust toward the conviction that he is capable - capable of controlling his behaviour and his environment. Impatient parents who take over, in the name of efficiency or to "protect" the child, may impede the child's ego development and the prevailing ego quality may be doubt. When the parent is intensely belittling, especially of the task is "private" like toileting, children not only doubt themselves, but may feel a sense of shame.

c) *Initiative versus guilt*: At ages four and five the ego qualities of initiatives versus guilt provide the crisis, children believe that they are capable and reasonable autonomous are likely to initiate activities. A child feeds himself, climbs up and down stairs and rides a tricycle. He also initiates play activities and asks his parents many questions, such as "where do babies come from?" or "Does the man have a penis too?" These questions can be answered warmly and at a level that he can understand. But initiative that leads to severe interpersonal conflict, rejection or harm may lead to a prevailing sense of guilt. For example, if a child takes the initiatives to help in putting groceries away and breaks a jar of jam all over the floor, a severe reprimand may reduce his initiative.

d) *Industry versus inferiority*: Spanning the years from six to eleven, the major ego qualities to be resolved are industry versus inferiority. At this stage the initiative carried forth from the preceding stage allows the child to engage in productive tasks and to bring these task to completion. Through successful production of things a sense of industry is attained. If a child is encouraged to make, build or do practical things, whether these task involve assembling model cars, baking cookies or tending a garden, he will feel industrious by way of the outcome of his efforts and the praise and recognition he receives. This is also the time when he enters the competitive world in the elementary school years. He now has peers with whom to compare himself and determine his "strengths" and "weaknesses". If the child learns that he cannot compete in important areas and his efforts meet with failure and derision, a sense of inferiority will prevail.

e) *Ego identity versus role confusion*: The fifth stage spans the time from twelve years of age to eighteen. During this time the adolescent has the challenge of using the autonomy, initiative and industry that he formed to resolve a crisis involving the alternate ego qualities of ego identity versus role confusion. This is a time for bringing things together and establishing a sense of "who am I"? and "Where am I going? Adolescents

increased cognitive capacities allow him to consider how to integrate and balance complexly related issues such as sexual orientation, desire for a family.

f) Intimacy versus isolation: The opposing ego qualities during young adulthood are intimacy versus isolation. This stage comes at a time when most individuals have begun to counting and are attempting to establishing a relatively permanent interpersonal bond. By intimacy, Erickson is returning to more than sexual relation; he means the ability to care about and share with, other people without having to abandon one's own identity.

g) Generativity versus self-absorption: In later adulthood and middle age, the crisis of generativity versus self-absorption and adult's concerns for others may expand beyond his immediate family and other loved ones to include society as a whole as well as future generations. The interest in "guiding the next generation" is the basis for the term generativity. Those who do not establish a prevailing sense of generativity will tend to become self absorbed and preoccupied with their own physical and material well being.

h) Integrity versus despair: Finally, the eighth stage, which occurs in old age, involves the resolution of the alternate ego qualities of integrity versus despair. When a person finally reaches this stage in personality development, if he has successfully resolved each crisis with the positive ego qualities predominating, he will be able to look back upon his life with a sense of dignity and satisfaction in his accomplishments. This is what Erickson means by ego integrity. On the other hand, those who reflect upon their lives as a misdirected series of sterile efforts and missed opportunities feel a sense of despair.

Erickson has proposed a personality development theory including eight stages which cover the entire life span. The continuity of ego qualities and the important role of social experience make his description very interesting.

1.1.3. Temperament theory:

Recently formulated theory of Buss and Plomin (1975) offers a new and potentially useful approach to the explanation of personality development. Their position is that certain levels of basic personality characteristics, or dispositions, are inherited and then modified by environmental interaction. These fundamental characteristics are called temperament. Buss and Plomin argue that a personality disposition must meet five criteria in order to qualify as a temperament. The disposition must:

- have a demonstrated genetic component in humans

- be reasonably stable during development
- be present in adults
- serve an adaptive function for the species and
- exist in other animals that are close, in an evolutionary sense, to human beings.

Using these criteria, they have proposed four temperaments: emotionality, activity, sociability and impulsivity. Impulsive individuals react suddenly and without careful thought; sociable people are friendly and agreeable with others; active people are lively and busy; and emotional individuals may show, "a strong temper, a tendency toward fearfulness, violent mood swings, or all of these together".

The importance of this formulation is not in the specific temperaments that Buss and Plomin have proposed. In fact, they state, "there is nothing magical about the number four"; there may be more or fewer. "But the approach they using seems promising. They argue that personality development results from an interaction of the child's temperament and environment, that is, each influence the other. For instance, sociable children are likely to have positive social experiences that, in turn enhance their interest and skills in social relationships. Buss and Plomin propose that learning processor have an important role in modifying the child's dispositions, but note that the influence of the environment is limited by heredity.

1.1.4. Theories of cognitive development:

Cognitive stage theories have contributed greatly to understanding and examination of intellectual behaviour and development. Here we will focus on some popular cognitive theories in developmental psychology.

1.1.4.1. Piaget's cognitive-stage theory:

Jean Piaget (1896-1980) was the most provocative developmental psychologist. He proposed the theory of intellectual development in 1930 which was published in 1963. For developmental psychology, the unique and the most important feature of Piagetian theory is its organization of intellectual development into a sequence of stages. That is why his theory is known as cognitive-stage theory. It proposes that as children develop, they adapt to and organize environmental experiences in ways, which progressively changes. A fundamental Piagetian concept called the schema is defined as the basic unit of knowledge - a mental structure that represents both internal and external aspects of the individual world. Some schemas may be inborn (sucking schema), but most are acquired through

interaction with the environment. Piaget proposed that the child's experiences influence cognitive development by three inborn processes called organization, adaptation and equilibration.

Piaget has proposed that cognitive development processes through a sequence of qualitatively different stages. Now we turn to a description of the four developmental stages as proposed by Piaget: sensorimotor, preoperational concrete operational and formal operational.

i. Sensorimotor stage: From birth to approximately two years of age, infants are preoccupied with discovering aspects of the world by learning to coordinate sensory experience with motor activity, thus the name sensorimotor. Children's knowledge about their sense and objects in their environment comes from their actions on these objects. An infant coordinates sensory and motor information when shaking a rattle, and thereby learns that a rattle makes a noise. In the sensorimotor stage the infant progresses from primarily reflexive behaviour to repetitive self-initiated behaviour, to manipulation of objects, to goal directed behaviour. One of the most important achievements of the sensorimotor stage is the development of object permanence, that is, the infant's knowledge that an object outside his or her current sensory field continues to exist. For example, most nine months old infant can find a set of keys hidden at location.

ii. Pre-operational stage: Between two and six years of age, symbolic system, notably language develop rapidly. By the end of this stage, children can sorts things according to items, shapes, size, or color and they have a basic understanding of relational concepts like a more than or "smaller than". But they cannot use these important capacities in a logical manner to solve problems yet. In this stage their thinking is termed preoperational thinking which becomes restricted by three preoperational characterization- egocentrism, centration and irreversibility. Preoperational thought constitutes a sense of significant cognitive advances from the sensory-motor stage.

iii. Concrete operational stage: Between the age of approximately seven and twelve years, the child's thought process gain in the ability to perform mental operations (transformations). Thinking now is becoming less restricted by egocentrism, centration and irreversibility. But the sequential and logical problems that can be solved tend to involve concrete objects in here and there. Hypothetical futuristic and abstract problems continue to present difficulty. Preoperational children base their judgments about a situation in the current state of affairs, what they see at the moment. And concrete operational children

focus on the transformation that change one states into another. Preoperational children tend to think of an object's attributes as absolutes and concrete operational children tend to think of the attributes of one objects relative to those of other objects.

iv. Formal operational stage: The last stage of cognitive development is reached when, after about eleven or twelve years of age, the child is capable of dealing with abstract concepts outside the immediate environment. Highly abstract algebraic rules and calculations, for example, may be understood.. In formal operational thinking the person can consider many aspects or properties of a problem at the same time. This capacity contrasts with concrete operational thinking, where the child is usually limited to considering one aspect of a task at a time in sequence. Furthermore, the child in the concrete operational stage may see only one solution, whereas formal operational thought often produces several solutions. There are obvious improvements in the flexibility with which problems may be approached and in the solutions that may be generated. Piaget assured that cognitive development could be accelerated only if children had prerequisite cognitive structures and provoking cognitive conflict activated the process of equilibrium.

1.1.5. Information Processing Theory :

One approach is to focus on a single component of the information processing that is memory development. It means how and why memory improves with age. Another approach taken by many researchers is to study the operation of the entire information processing system when children are engaged in problem solving. In a third approach, researchers take the analogy between humans and computers even more literally. They assume that full understanding of children's problem solving is shown by the ability to write a computer program that behaves the same way (Klahr, 1992).

The information processing theorists argue that children's performance and cognitive tasks improves with age because of improvements in specific components of information processing. These components responsible for these improvements vary across tasks. They assume that children's performance on some tasks changes qualitatively with age. (Miller, 1993).

Information-processing theorists draw an analogy between human reasoning and the operation of computer. They reject Piaget's hypothesis of general stages of development. Instead, they focused on single component of the information-processing

system, an analysis of specific cognitive tasks or in the construction of computer stimulation of children's reasoning.

1.1.6. Sociocultural Theories:

More or less every theory discussed so far takes a position in favor of developmental universals rather than cultural. In recent decades, two theories emphasize cultural specificity have received increasing attention. They emphasize the importance of children's social and cultural context.

1.1.6.1. Vygotsky's Sociocultural theory:

Lev Vygotsky (1896-1934) proposed that cognitive development depends heavily on children's social and cultural experiences. One of Vygotsky's (1978) principal hypothesis was that cognitive development partly results from the transformation of social speech into inner speech or thought.

Vygotsky (1978) defined the zone of proximal development as the distance between children's apparent level of cognitive development when working independently and their level when solving problems under adult guidance or working with more capable peer. He suggested that children's performance when working with adult or peer is a better index of their cognitive level than is their performance working alone.

Vygotsky proposed that educators should try to work among their students. When students are working on cognitive problems, a more experienced person should direct their attention to important details about the problems, remind them of significant facts and otherwise support their efforts at problem solving. Another of Vygotsky's principal hypothesis is that the social context of children's development gives them access to tools for thought.

The other hypothesis of Vygotsky was that the social context of children's development give them access to tools for thought. The most powerful tool is language. Language is a cognitive tool that children acquire through participation in a culture. Children's language gives them a set of symbol that can be used to represent things in the world that allow the children not only to talk with other but also to think more precisely about objects, emotions actions and ideas.

Other tools for thought include educational skills and physical objects. For examples, writing services to structure and direct thinking. Writing can be integrated with other tools like a word processor to change the ways people think communicate and work together.

Vygotsky argued that all thinking is social in origin, because it is the internalization of speech. In addition thinking is shaped by the social context because children use tools for thought that exist in their culture. Children in different cultures learn to use different cognitive tools, so the nature of cognitive development depends on children's cultural context.

1.1.6.2. Bronfenbrenner's Ecological System theory:

A second conceptualist theory is, most concerned not with children's development itself but with environments in which children develop.

Bronfenbrenner's (1979) ecological system theory deals with the ecology of child development or the environmental system that affect how children develop. Bronfenbrenner distinguished five levels of children's environment (the Figure 1). The lowest level, the microsystem refers partly to the activities, participants and role in that setting. The next level is the mesosystem. The mesosystem reflects the relations among the various setting in which children spends their time. The third level of environment, the ecosystem includes setting that children do not enter but that affect them indirectly for example, children visit the places where their parents work. The most global level of environment is the macro system. The macro system refers to the consistencies in the system at lower levels across an entire society or culture. The final level is the chronosystem which refers to the patterns of stability and change in children's environment over time.

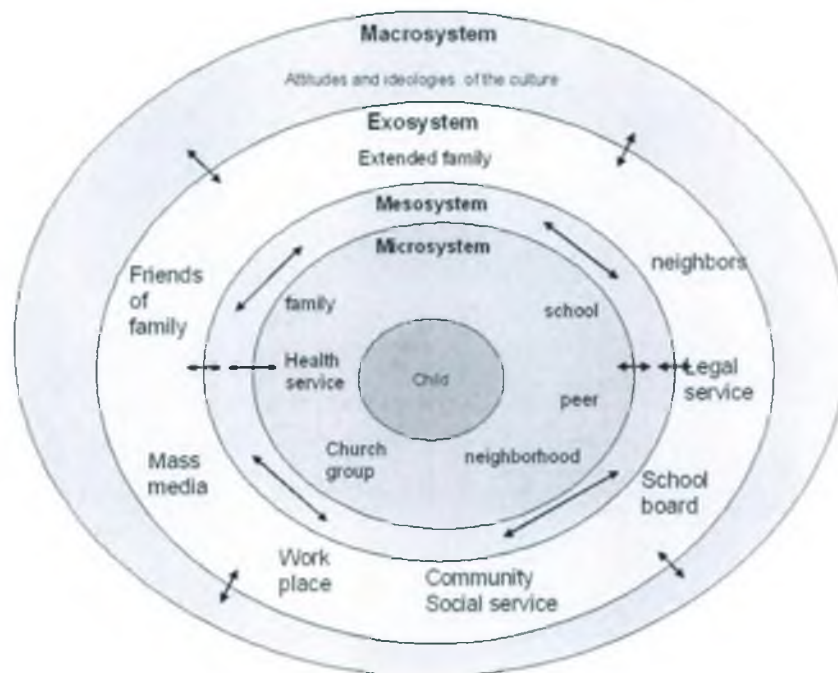


FIGURE 1: A schematic diagram of the five levels in Bronfenbrenner's ecological model. The arrows in the mesosystem level indicate the connections between microsystems such as home and school.

From the discussion of different theories of child development it is clear that single theory cannot describe all the aspects of development. Some theories emphasize on personality, some on cognition and some on social aspects.

1.2. Different aspects of development:

A developing child has to grow up in different aspect, some of which may be categorized as physical and some psychological and there is close interrelationship between these two categories. A brief description of different aspects of a child may help to understand the concept.

1. 2.1. Physical development:

Anatomical growth and physical development represent two interdependent and overlapping phases of the maturational process. Significant areas of anatomical growth include the skeleton, height and weight, body proportions and teeth. During the fetal and neonatal periods, the skeletal structure of the new organism is mostly cartilaginous. The infant's 270 bones are small, pliable and spongy and are closely connected. The fontanel (spot of the skull) close sometime between the ages of about one and a half and two years. As the child matures beyond puberty, some of small bones fuse during ossification. There is a significant relationship between ossification and nutrition. Healthful diet promotes skeletal growth.

The beginning of the nervous systems is found in the embryonic stage. At birth, the child's nervous system that has grown as a composite unit is composed by three types of networks of neurons-autonomic, sensory and association neurons that are concerned with different function operating as a unit for the welfare of the individual. For example the association of neurons deals more directly with perception and association of ideas, memory language and ideation. As the infant grows older, these connections increased. The connection among neurons depends on child's experiences. The weight of the brain at birth is greater in proportion to total body weight than it will be at any later time. Brain development is especially rapid between birth and age two and maximum brain weight usually is attained at about the twentieth years.

The new born child's head represents about one fourth of his total body's length. By the time the individual reaches adulthood, the head constitutes approximately one-tenth of the total body length. The most rapid growth of the head takes place during the first two years after birth. The rate of growth then begins to decrease gradually. At the age of five,

the head is about 90 percent of its adult size; by the age of ten, the head is about 95 percent of its adult size and by fifteen or sixteen years of age, the head can be expected to have attained its full growth.

Growth in height and weight is continuous but it differs in rate for different cycles, infancy and adolescence represent the period of rapid growth. Growth is relatively slower during the in-between years of childhood.

The average length of new born boy is about 20.5 inches and of the girl is about 20.3 inch. Boys are slightly taller than girls at birth and maintain a height advantage until about the age of ten. During the next three or four years girls take the lead over the boy. The children may gain no more than two to three inches during two to six years. Then the rate of height growth may take a sudden spurt and continue more or less rapidly until full growth is attained.

At birth the average boy weights about 7 pounds 8 ounces and girl's is about 7 pound. By the end of the first year, the weight probably triple. During the second year, the gain is only about one-half pound per month. In the fifth year the average child's weight ranges between 38 and 43 pounds and between 80 and 95 pounds by the twelfth year. Cultural variation in the size of preschool children have been found to exist. For example, Asian preschoolers tend to be shorter than African and American children. It may depend on food habit, nutrition and socio-economic status.

1. 2.2. Motor Development:

All round development is dependent in great part upon the mastery by the children of motor skills that will facilitate the fulfillment of his physical and psychological needs and assist him to avoid harmful experience. Some psychologists divide motor activities into two major categories. Gross motor that necessitate the movements of entire body, e.g. walking, running and fine motor skills that require the coordination of smaller muscles, e.g., grasping drawing writing, using tools.

At birth infants can voluntarily turn their heads from side to side and lift their chins while lying supine on their backs. At two months, they succeed in lifting their shoulder and chest too and at three months, the head will balance slightly forward but remain erect. At four months infant can sit up for one or two minutes with support and can roll to their sides from their stomachs and at five months all the way over to their backs. At six months, they can touch their hands together in front of them and they can move their hands up and

down and from side to side at will. At six to seven month, infants can sits for a short paid without support. At seven months infants can easily roll from back to stomachs and they can stand holding on to furniture and at nine months they pull themselves to a standing position. At seven to eight months they begin to go forward and they can grasps toys. Between seven to nine months infants begin to crawl and later they start creeping.

At ten months, infants can sit alone and they can walk when led by their hands or holding onto furniture. At twelve months, they take their first step and quickly tumble to the floor. After one month, babies can walk alone and with practice of walking and balance they became more refined and by the end of the year they can run. At eighteen months they can steps up and down stair alone. Between eighteen to twenty months they can jump in place and at two years, children can ride a tricycle with balance, swim and balance on one feet for five seconds. At fourth years, they can consistently catch bounced ball and at four to fifth year they can skip with skipping rope. By the fifth year children have mastered all or most of the fundamental forms of locomotion, some of them to a high degree of skill.

Around two years of age most children can climb a flight of stairs in an upright position, and by the age of four, they can use it by alternative feet on each step. Between three to four children can jump from a height of one to two feet and by age five, they can perform a standing broad jump of about three feet.

During early infancy, there is no coordination between eye and the hand. At one month, infants follow moving objects with the eyes through an area of about 90° . At three month they extend the arc to 180° and swipe at dangling object but rarely grasp them. At four to six months, infants became able to reach for and grasp toy and hold it for sometime. During this period they may use both hands at once to trap the objects if all else fails. By seven months they oppose the thumb to several finger and the eighth month, they are able to transfer object one hand to another. By the end of one year, babies can grip the cub between the finger and thumb (called the pincer movement) and they also able to hold a cup. At fourteen months they can scribble and imitate adult. At eighteen months, they can build tower with cubes and at twenty two moths they can draw vertical line and imitate adult with holding pencil at middle. At twenty-two months, they can hold pencil at nearest end and laces beads with string. At three years, they can copy drawing of a circle, plus sign and square. By three to four years, they can trace design.

Remarkable advances in the development of fine motor skills occur during the preschool years. At this stage children begin to use the smaller muscles to perform a variety of self help skills like buttoning, zipping or eating with spoon. They are able to tie their shoes, remove elaborate clothing independently.

The motor behaviors are more or less developed within four or five years of life. There are many factors which influence the degree to which one or another motor ability is perfected or delayed in its utilization. These factors includes environmental influences and opportunities to practice the skill, physical size, health condition, nutrition, cognition and the extent to which fear has been produced by earlier unsuccessful attempts to perform. Adult attitude may also affect children's ability to perfect a motor skill. Some cultural variations do exist in motor development. Research has found gender difference in motor development during preschool years (2-5 years). Boys tend to be larger and stronger throughout the early years whereas girls are more competent in fine motor activities. Preschoolers of different culture use motor abilities in different ways as they play. Some may use kicking skills to play a game with a ball, while others may use these to kick rock into the cooking fire.

1.2.3. Language Development:

Communication and language development is an important domain of child development. Even before infants say their first word, they develop some skills needed for communication. In a conversation, people take turns speaking and listening, while one person speaks, the other person listens. The rhythm of turn taking is established very early in life. At birth, infants starts communication with mother by crying to fulfill his need and a few months after birth, infants exchange vocalization with their parents.

Communication is a process by which a person expresses needs, feelings, ideas, receives and gives information to control environment and build a relationship in a family, and community. It has two characteristics such- expression and understanding. An infant can express his need, feeling through verbal and non-verbal language or signs.

If a child is normal at birth he possess all the potentialities needed for gradual development of various form of communication. Theorists and developmental psychologists divided the progressive stages of communication as well as language development according to the following general categories : (a) reflex sounds and feeble gesture, (b) babbling (c) use of simple words (d) more or less meaningful one word

sentences (e) the combination of words into thought units in oral and written format and (f) mastery of the language arts. The progress of the development of language ability generally is continuous. There is no sharp difference between the end of one period and the beginning of the next. There is some overlapping of sequential patterns. Birth cry constitutes the first attempt at communication or should be regarded merely as a reflex. It is generally agreed that the infant's gesture and first vocalization may be indications of his needs and wants. Crying, accompanied by body movement becomes differentiated by the end of third week, in terms of hunger, cold, pain, wetness and other physiological states. As the infant grows, his crying becomes more specific to the situation by which he is conditioned.

During the first few months, the child also gives expressions to many different kind of explosive vocalization in which the beginnings of basic speech sound is found. These commonly referred to as cooing. The babbling stage usually extends from the third to the eighth month. In this period, the child apparently selects those sounds which give him pleasure and continues to repeat them for his own satisfaction and probably for the delight of his parents who encourage him in this practice. As a substitute for intelligible speech the young child soon becomes proficient in the use of gestures and whole body movement. A baby who does not want any more food, may push the nipple away from the mouth, turn his head away from the nipple, pucker his face or close his lips.

Toward the end of the first year, infant babbling shows intonation, that is, the pitch of the sounds the baby utters rises and falls. During the course of first year, children in all cultures make essentially all of sounds found in the various languages of the world. The speech sounds of children growing up in different language environment are very much the same until they are almost one year of age.

Toward the end of the first year, most babies utter their first word. During the first half of the second year, babies do not acquire new words very rapidly. Smith (1941) found the following average vocabularies at 12 months children have 3 words, at 18 month 22 words and 24 month they have 272 words.

Through most of 2nd year, children communicate verbally with one word sentence. But children have a lack in their ability to combine words into grammatical sentence. Suppose, one year girl says - doggy, which is not clear. They use context to convey their meaning through body language such as gesture, facial expression and intonation. Generally, when the babies say first word - these are nouns or proper noun that identifies

familiar object, animal or parents. One and a half and two years of age, children begin to put two words together as rudimentary sentence and they can use and understand verbs also.

At 2 to 3 years of age, the one and two words sentence can still be heard, the children begins to use longer sentence and to use grammatical rules such as adding plural and past tense. They also develop the use of pronouns. By the age of four, the sentence structure improves. The children become more talkative not only with others but to himself. By four to five years of age, children can use grammatical rules properly such as sentence structure (subject+verb+object), preposition, adjectives etc. They also can understand and express relatively lengthy and complicated ideas. At this period, the children ask many question, sometimes not waiting for an answer to one before asking another. During this period the children not only increase their vocabularies but also learn conversation skills and they improve in their ability to "carry on a conversation". As children grow older, their response to their parents or adult become more contingent. The development of reading is closely related to other development, especially language development. At the age of eighteen month a child can point to picture in a book. At the age of two year, the child can be able to name picture of objects, animals or people which he has had experiences. By three years of age, the child can read certain letters and at four year, he has acquired the ability to recognize several capital letter. At five years, the child usually can recognize his name and identify word signs such as hot and cold or stop and go. Towards the end of this period he likes to listen to a story that is being read to him while he looks at both the picture and the text. At age of six to seven, the child starts to read on his own and at ninth year, he shows interest in reading stories.

1.2.4. Cognitive Development:

Cognitive development is closely related to motor and language development. Cognition is mental activity including feeling, perceiving, remembering, thinking, problem solving and dreaming It is the processes of thinking and reasoning. From the definition, we see that cognitive development means the development of thinking, memory, perception, problem solving capacity etc and a brief description of these concepts is presented below.

Perception: Cognitive development depends on the continued maturation of the child's perceptual systems for some years after infancy. Hearing and vision are the

important parts of perception as well as cognitive development. Young children are likely to be farsighted but most normally sighted children will reach 20/20 vision between six to ten years of age and hearing sensitivity also increase until about 12 year. Hearing and vision play a crucial role in the cognitive development.

Attention is closely related to perception. Infant seems to have a wide eyed curiosity about his world, paying attention to everything that happens around him. In this way he begins to learn, to know and understand his world and himself. Very young infant can attend to the environment for only short period. Most of their time is spent for drawing, sleeping or feeding. As they mature their period of attentiveness lengthen. Toddler have shorter attention spans than older children and they are easily distracted whether they are watching TV or playing. But the preschooler who moves quickly from one activity to another eventually becomes the school age child who can sit for long periods working or listening to others. The older children are far better at shifting their attention.

Exploration is an important part of the attention process. From the birth, infants begin to explore actively with eyes and ears, touch, smell and taste. At about one year of age, they begin to explore more with hands, banging and squeezing. By exploring children acquire new information. Exploring and play is very close. By exploration and play they increase their understanding and knowledge of their world. When children get new toy, they explore and manipulate it in many ways. They push buttons, turn knobs and most importantly they ask questions when children explore and play, they try out all sorts of actions, and thoughts determining what they can and cannot do. Children's attention is also influenced by selectivity. Some children attend to color more than size, others attend to shape more than color. A child attends first to color, then to shape, then to size and so on. As they grow older, they get increasingly skilled at knowing which stimuli should be attended to.

Child's perception is different to adult. In early childhood, development of perception of the properties (such as - flexibility, rigidity, shape, texture, color, temperature, secret size et.) follows the following principles, (Gibson and Spelke 1983). First, very young infants have rudimentary abilities to perceive the properties of objects. Second, as they get older and develop strategies of exploration and manipulation, children's perception of object becomes increasingly differentiated. Third, objects are first perceived and best perceived when they participate in events - when they move, fulfill a

function or mean something. At one month, infant can differentiate between rigid and flexible substance in their mouth, like teething ring and nipples. As early as three and half months, infants can see difference between rigid and flexible motion - a ball being rolled and squeezed, for instance. At six months, they can differentiate between rough and smooth textures and ten months old children can recognize visually or by touch simple shapes, they have manipulated. One year olds distinguish between rigid and elastic substance by handling them. Perception continues to develop throughout the childhood. Maturation and experience affects our perception. As child grows old, he perceives that some objects move, some can be eaten, others make sounds and others give off light. When a child becomes relatively mature, he is able to change his interpretation of sensed material from his personal interest or activities. For example social maturity is the ability of developing child to combine personal and social factors in his interpretation of his life experience. In the age of 3-4 years, children can recognize sex difference. It means that they are able to perceive themselves as a girl or boy or seems to be mom or dad.

Memory: Memory is an important part of cognitive development. Memory, the ability to store, retain and recall experiences is critical thinking, reasoning and action. Memory is functioning in infancy but improves and becomes more planful during childhood. Infant aged two months can recognize a stimulus, they saw the day before. Infants between seven and eleven months old can recall games like Peek-a-boo and patty-cake, bath and meal routines and find familiar household objects and toy. By the age of three or four, children recall on the basis of conceptual categories. The average two year old can repeat two or three digits and the average five years old can repeat four or five digits accurately and nine months old can repeat about six digits. In short, memory span increases with age.

Thinking and Reasoning: Thinking and reasoning are the important parts of cognition. Young children have some understanding of simple situation long before they are able to express their understanding verbally. Even young children appear to know that throwing his ball or rattle or other toy on floor may bring a disapproving reaction from his mother. Between the age of 2 and 5 years, children become quite sophisticated in their thinking. They think problems through before acting. They think in a way that is qualitatively different from adult thinking. Preschoolers' thinking is more internal and sophisticated than in early years but still very much tied to concrete objects in the real, observable world. They engage in a new form of reasoning that is both impressive and

fascinating. During the preschool years, the child gives evidence in his behaviour that he is able to make simple generalization in relation to objects and people about him. As he makes his generalization, he is more or less following the adult's pattern of reasoning. He is capable of applying both inductive and deductive reasoning to his experiences. The reasoning process of the child at the age of six is the same as it is at the age of twelve or later. As he grows older, he is able to vary his behaviour in terms of expected adult reactions to it.

Mental Activity: Mental activities do not develop in isolation which are categorized as perception, sensation memory and reasoning. Mental activity means the beginning of awareness of himself and of elements in his environment. Mental development is continuous. There is greater development in one area of mental activity than in others at different ages. The young child is highly imaginative. From early he begins to show curiosity about his immediate surrounding and the people with whom he comes into contact. At the early age, he shows make-believe play. The young child tries to respond in the same way to experience with his mother or father or with a toy. At the age of three, the child is becoming an individualist and becoming aware of the difference between you and I. He engages much in attention getting behavior. Typical of this behavior is the negativistic attitude expressed in an emphatic "No" to many or most questions ask of him or requests made of him. He sometimes responds in action in affirmative as he vocalizes aloud the negative response. During three to six years, the child's mental abilities develop rapidly. This is shown by his use of articulate speech. He not only learns to use words as such but also understands their meaning. As his perceptual powers increase he seeks more and more sensory stimulation. He shows interest in that which is new, and different from his accustomed surroundings. He continues the life of make-believe. In association with other children, he reproduces in great detail many family or social settings. To play house or to play school is an important means of developing mental qualities.

During the preschool years, a child's intellectual pursuits, including his interests, plans and thoughts tend to concern those persons hear him in time and age. The child comes to admire persons who have become public figures. This is one of the aspects of intellectual growth. Preschool age children are highly imaginative. They tell elaborate stories, interpret and reinvent their lives in their drawing and writing and create fanciful words through make-believe.

Attitude: Like mental ability, a child's attitudes toward his immediate and more permanent interests and the factors within and outside himself that are likely to influence his behaviour exercise a significant effect upon his life pattern at any stage of his development.

Attitudes and interests determine the degree of success in learning that an individual child may expect to achieve at any time in his development. Child is not born with attitudes or interests. Attitudes are acquired through experiences. A child learns to like toys, foods and similarly he learns to dislike dirty cloth, rude persons. In his day-by-day activities, a child constantly is influenced by the behavior or expressed opinions of other people. The home, the neighborhood, the school, the social group with which he is associated and the various media of communication (TV, book, radio, motion picture) exert a tremendous impact upon the individual's thoughts, feeling, interest and of course attitude.

The child is sensitive to the expressed attitude of his parents, siblings, peer and teachers. Sometimes, unconsciously he reflects the likes and dislikes of his associates. He does not know the reason for his attitude. During the first year of life, the well-cared for baby usually exhibits what might be termed affectionate responses to those adults who form the human factors of his environment but is shy with strangers. During the next two or three years, the child begins to develop more definite attitude of possessiveness and desire for approval. He may resent attention given to other children and develop an attitude of resistance to the suggestions or wishes of others. During the preschool, child acquires more or less definite attitude towards himself and his peer and older associates and he becomes more independent. A child's social status is determined largely by his attitudes toward others, concern for the welfare of his associates.

1.2.5. Social Development:

Social stimuli influence a child from the time his life begins. The child at birth is neither a social nor an unsocial being. He is capable of exerting a social influence and of being greatly affected by social stimuli from those around him. As an infant and later, an older child depends upon other for the satisfaction of his needs, the ways in which these others, meet his needs and his response to their behavior become fundamental factors of social development. It is closely related to motor, mental and emotion aspects of development.

The child's social progress is dependent upon the rate and kind of maturation that he experiences. Many differences can be found in the social patterns of children. Crying, smiling and eye movement in response to others are forms of early social behaviour. Before age of three months, a child probably shows sign of social awareness such as fixing his eyes on his mother or caregiver, smiling in response to her smile, or responding in other ways to her voice. At about fifth or sixth month, fear of stranger may be exhibited by the baby and he may kick, coo or laugh in order to attract attention to himself. During the latter part of first year, he explores the features of another person, grab a nose or try to touch an object such as a chair or watch. At ten months he can imitate movement such as clapping hands or shaking hand or head. He learns to participate in social expression in such activities as peek-a-boo and waving bye bye. Cooperative play between children under one year of age seldom takes place. The beginning of social behaviors in one year old child are displayed in many activities. He creeps, he attempts to walk, he picks up and throws objects and pushes them away, he plays with more facility and in general, he seems to have an interest in getting into things and the ability to do so. The one year old children can understand the names of certain objects and can understand and obey certain definite commands. At this time, children have been almost completely self centered in his social relationship.

Laughter is a form of social behavior that comes into full swing at about the age of eighteen months to two years. Before age of two, he tends to laugh more when he is alone, be later, he laugh more in the presence of other children. By the fifteen or eighteen months, child begins to play with another child but is likely to hit or bite the other or try to obtain the toy that another child may want to talking away from him. A social attitude towards peer does not develop until later and sex differences do not play an important role in the social activities of the child.

In preschool, child wants to be considered as an individual. He looks upon things as his own and sometimes tries to take things from another for himself. His self esteem is strengthened as he gradually learns to engage in activities with others of his own age level. Preschool and kindergarten children in the home is relatively self centered when they go to school they encounter situation that in their social aspects are very different from those to which they have been accustomed. The child gradually shifts from his interest in his former imaginary playmates to willingness to enter into social activities with real children of his own age.

During the preschool years, many children become quite self assured, independent and social. They acquire the desire and the ability to interact with adults and other children.

Early childhood is a crucial period for the formation of positive feelings toward oneself, others and the larger world. Children who are nurtured, encouraged and accepted by adults and peer will be emotionally well adjusted. Children who are abused, neglected or rejected can suffer social and mental health difficulties. Emotional states in early childhood have a powerful impact on social relationships. Children who are emotionally healthy are better able to enter into positive relationship with both peers and adults.

Culture and gender influences children's social interaction, communication patterns and play interests. Boys and girls can be very different in their social interactions and play. Most parents eventually learn this through experiences. Children of all culture show gender difference in play. By 18 months, most children prefer to play sex-stereotyped toys; boys play with trucks and girls play with dolls. Boys are usually more active and rough in their play and girls are quieter and more elaborate. Girls tend to be more wary and timid in their play and more emotionally expressive than boys. Boys are less compliant and more demanding when interacting with adults.

1.2.6. Moral Development:

We know that a child is born into a culture in which certain moral standard or ethical principles have been developed. Each culture demands that the people follow accepted patterns of behavior. The child's early attempts to behave in an acceptable manner have no basis in moral discrimination. He cannot understand broad ethical concept. As he grows older, such term as 'goodness' and 'badness', 'obedience' and disobedience, honesty and dishonesty may be included in his developing verbal vocabulary. These ethical or moral concepts have little or no meaning for him, except as he experiences them in specific situation.

During the earliest year, the egocentric child regards his experience in terms of his own satisfaction. His responses are impulse. By the end of first year, he enjoys engaging in behaviour that will earn for him expressions of adult approval. During the second and third year, he may run away and drop an object that he should not have fallen. He blames animate objects or other people for unpleasant happening to himself and becomes angry if his wishes are thwarted.

At about two years, he learns to repeat phrases such as 'good boy' and 'bad boy' as describing his way of eating, toilet routines and the like. Between two to three year, his behavior appears to be motivated by an urge to do what he wants to do, at his own time and in his own way. His favorite response to adult is a definite 'No'. That's why, this stage is called 'negativistic' stage. Toward the end of 3rd year, the child begins to show some recognition of the rights of others. He shares his toys and he realizes that money is something with which he can buy things, but he has no conception of relative money value. He shows the greater understand of bad and good behavior. Between the age of three and six years, the child makes considerable progress in his appreciation of himself as a social entity. He is still moral, but he does not understand adult make-rules. He may resent restrictions of desired activity. In this period, he progresses in his behavior responses in his relation to his environment. He is proud of his parents, of his home and of his special possessions. He also likes to share or exchange toys with his special friends. At 6th year, he becomes more destructive of his toys and others objects because his curiosity about them causes him to take them step to discover what is inside. Although they indulge in imaginative stories and the telling of falsehood, they show some recognition of their deviation from reality and truth.

1.2.7. Personality Development:

As the child passes progressively through the various aspects of his growth and development from the prenatal period through adolescence to adulthood, constant and more or less consistent integration or process of interrelationship is taking place among all his characters. Personality is the term generally used to describe the over-all behavior pattern at any stage of development.

Personality can be thought of as including all the areas of development - physical, motor language, emotional, social, mental and moral. It grows out of a multitude of dynamic responses to many and different dynamic environmental influences. It is revealed through activity as a child's or older person's inner wants, urges, and impulses interact with persons or forces in his environment. Studies of new born infants indicate that even during the earliest period there are differences in children's behavior. One child is placid and quiet and another is restless and cries. During the first two years, behavior habits may be formed that have a significant effect upon the child's developing personality. He may give evidence of a relatively definite behaviour pattern by his 3rd birth day. The preschool child develops some definite understanding of personal social relationship. In the average home,

child is closely attached to his mother. He may or may not accept his father. He may allow his father to care for some of his needs, specially if the mother is ill or absent.

The child's attitudes toward his siblings differ in terms of their age in comparisons to his. He teases or quarrels with older siblings but he is kind and thoughtful with younger. Outside the home, child exhibits no better manner than he does in the intimacy of family life. He may form close attachment with adults and play well with other children. In all these relationships, characteristic personality patterns are exhibited. The girl exhibits more emotional behavior than boys of the same age. The elementary school child usually is a happy child. His developing personality traits can be moulded within the limits of innate potentialities. He becomes more independent and self-reliant. He teases or quarrels with siblings but at the same time he takes to be self-inhibited, courteous, generally friendly. It is the period of 'best friend relationship'. He likes his peers and teachers.

1.2.8. Adaptive Behavior Development:

Adaptive behavior is another domain of development. Adaptive behavior is the capacity of human being to react and make adjustment to experiences in order to create new activities. It reflects the social maturity of a child. Adaptive behaviour includes motor skills, socialization skills, communication skills and daily living skills which reflect all kinds of development for survival. With proper development of these skills, a child can adapt himself with new environment. Because in every moment of life, a child learns new things, achieve new skills and face new experiences. So it is essential for a child's survival that he or she should learn and achieve adaptive behavior.

At very early, child learns adaptive skills to satisfy his need and for survival. When the child is hungry, he/she begins to cry and caretaker satisfies him/her. At six to nine months of age, infants can transfer things and hold something in each hand and grasp little finger. During twelve to eighteen months, they can find hidden object, can show their clothing and shoes and can get up and down the stairs with help. At about two years, they can run with good coordination, kicks objects without falling, plays cooperatively with children of same age or adult, names all body parts, indicates and preference for favourite food and indicates when needs to go to toilet. At two to three years, a child gets off when finished toileting, controls bladder during day, takes off simple dresses and undress completely, brushes teeth, washes hand and face with soap and can express needs, emotions, and problems in simple sentences. At three to five years, he can skip

alternatively, stitches on a straight line with big running stitch, can open lock with key, greet when being introduced to others, describe event of past experiences, close bathroom door to maintain privacy and flushes toilet after use and dresses properly and take care himself and younger siblings.

Advances in motor development allow preschoolers to take better care of them and to take on simple household responsibility. In the middle class homes in many cultures, young children perform such self help tasks as dressing themselves, picking up their toys, bathing, brushing their teeth and eating with utensils. As early as age 3, many children can accomplish self help skills, though some require help from adults. For example, assistance is need in tying shoes, buttoning small button, or coordinating a fork and table knife to cut food. Children master most of these self-help skills by age 5. In many families in the USA, preschoolers chores (household tasks) to family life, such as straightening their rooms or helping to wash dishes

Family chores assignments are more extensive in some culture than in others. Young children from non-industrialized countries are often more involve in household work than those in European and American families. Preschoolers in India, the Philippines, Mexico, and Kenya were observed to perform a range of jobs that most American children would never be assigned (Whiting & Whiting, 1975) . Such chores included colleting firewood, fetching water, herding and tending livestock, grinding grain, and harvesting vegetables. Children were also found to perform universal household tasks, such as preparing food, at an early age than would be expected in American families. A 2-years-old in India, for example, was observed cutting vegetables with a knife alongside an older siblings (Whiting & Edwards, 1988).

Child care is a family chore that is commonly assigned early life in some culture. Very young children have been observed carrying, feeding, or in other ways tending to the need of their infant siblings (Whiting & Edwards, 1988). In almost all culture, young girls are more often assigned child care duties (Whiting & Edwards, 1988)

Children of low socioeconomic status are more likely to be assigned household tasks at an earlier age than middle-class children (Whiting & Edwards, 1988). Obviously, family chores will limit the amount of play time in children lives. Children cleverly integrate work and play during the day.

1.3. Factors affecting child development

Child development is a multi-dimensional and includes cognitive, motor, social and emotional domain, all of which are independent with changes in one domain affecting changes in the others.

Child development is also multi determined being influence by a multitude of factors including genetics, child characteristics (e.g. temperament), the biological states of the child (e.g. health and nutritional status), the proximal environment (e.g. the level of home stimulation; quality of maternal child interaction) and the distal environment (e.g. culture, urban-rural residence, type of neighborhood) (Wachs, 2000). Some factors are more protective, where as others make the child more vulnerable and their effects may be additive or interactive.

There are many factors which influence the degree to which one or another motor ability is perfected or delayed in its utilization. These factors include environmental influences and opportunity to practices a skill, physical size, health condition, nutrition, mental status and the extent to which fear has been produced by earlier unsuccessful attempt to perform. Adult's attitudes may also affect a child's ability to perfect a motor skill.

Language development is closely related with motor development and cognitive development and it depends on both motor and cognitive ability. The common influences on language development are general growth rate of a child, intelligence, sex, socioeconomic status, mother-child interaction, opportunity and stimulation in the home and of course bilingualism. Studies have shown that in the cases of children whose general growth sequence was "ahead" of itself, the speech mechanisms were so far advanced in their development that the early stages of vocalization appeared to be telescoped. The intelligent child may begin to speak early and he may begin a talk as much as four months earlier than the so-called average child.

It is generally agreed that children reared in the home reflecting a favorable socioeconomic status are superior in all domain of development, especially language ability to children who come from homes of lower status. Some psychologists claim that there may be as much as eight month's difference in the rate of development. It also has been observed that school entrants who come from "better" homes seems to have developed by that time a better speech pattern, a large vocabulary, and greater loquacity than have children who are the products of "poorer" homes or of institution.

A factor that is not related to socio-economic status (SES) but is associated with home, is the effect of multiple births, twins, triples or other multiple-birth children appear to be slower in their early speech development. Individual differences in the degree of cognitive ability as well as intelligence can be explained to some extent in terms of certain inherent characteristics which are influenced by environmental condition. It is difficult to isolate any one factor as the sole cause of mental development. Among the more generally accepted bases of differences can be included: child health and physical development, sex, and SES.

Physical and mental health status may be related to child's ability to gain desirable achievement into mental activity. Physical defects such as incomplete maturation or damage of brain cell, blindness, deafness and other physical handicaps and nutritional deficiencies may interfere mental development. Child's emotional block such as fear, lack of self confidence may cause for delay in mental development. Since the home plays a significant role in the early developmental years of a child, it can be expected that home condition will exercise considerable influence upon the child's background of experience and his consequent behavior and attitude.

Apparently low SES may result from low intelligence in a child. Besides these, there are some other factors e.g. parenting, maternal depression, sibling relationship, neighborhood, school etc. which influence the mental development, Child's emotional development is influenced by home environment such as parents attitude, others family member's attitude, child's own feeling etc. A child's emotional habits are also affected by his association with people outside the home such as friends, neighbors, etc. Other factor's like child's health status is closely related to his emotional reactions. Good health predisposes toward healthful and desirable emotional expression. Emotional disturbance is likely to be displayed by a child who suffers from malnutrition, digestive disturbances, diseased tonsils, defective eyes, poor teeth or other ailment. Extreme fatigue also predisposes toward emotional disturbances and it is most serious during the early years of a child.

Social growth and development of a child are closely linked with the physical mental and emotional aspects of development. The child's degree of mental acuity either helps or hinders him in his recognition of other's people attitude towards him and his physical needs. Emotional and social expansion go together. By observing others, the child is motivated to imitate them in what he does and in the way he expresses himself. Social

values are achieved in great part from the examples of others. Through play, the child gives expression to his impulses and to behaviour that is social in nature and a child also reveals the kind of young person, he is. As he plays with other children, a child displays his kind and degree of imagination, his ability to cooperate and adjustment with other and his sense of peer play. Adult manners, standard and ways of thinking are reflected in the play of children. The play attitude is valuable in all aspects of development and is pertinent especially to desirable social development and cognitive development. Many studies have been done on this area. Researchers wanted to know the effect of stimulation (which is given by play and parenting knowledge) on child development.

Play affects every age group and it differs within the age group. During early childhood, boys and girls tend to participate together in their play activities. Later, their interests differ. The choice of play associates depends on many factors. This includes economic status, type of neighborhood and intellectual level. The bright children tend to select an older child as a play mate and the dull children may need to play with younger children. It probably is impossible to categorize and treat separately the many variables that influence a child's personality. The various aspects of his general constitution influence a child's personality pattern at any stage of development. His physical structures, physiological status, mental, motor and emotional potentialities affect his attitudes and behaviour. The bright child is able earlier than other to recognize the relationship of himself to persons and things in his environment. But the mentally superior child and the mentally retarded child experiences adjustment difficulties. Among the most significant of the environmental factors is the home, the school, and peer associates.

The child's behaviors and personality are influenced not only by the family attitude toward and treatment of himself, but also by the attitudes displayed by the various member of the family toward one another, their behavior in the home, and their relationships to persons and things outside the home. The home environment includes parents attitude, home condition, SES, opportunity to play (which we have already discussed before) and stimulation.

Parent's attitude has a great influence on child's behavior and personality development. Parent's positive attitudes help the child to become a good person as society wants. But in our society, many parents treat the child so badly, thus the child become delinquent. Conditions favorable to desirable adjustment are experienced by the child who is reared in a home in which kindness, sincerity, honesty, cooperation, stimulation and

having opportunity to play, learn many things and getting freedom to express his opinion are practiced daily by the other members of the family. This kind of home condition helps the child to show his potentialities, talent or ability to do better and it helps child's development as well as his adaptive behavior.

Home condition is also associated with economic status. Low economic status tends to have an unfavorable effect. But a "poor" home is not necessarily a bad home. Unhealthy living conditions, lack of cleanness, undesirable ways of living and a family attitude of bitterness and discontent arising out of meager living affect the child. Like home environment, the school and peer associates have an influence on child's behavior and social and personality development.

As a child's social environment is enlarged to include interrelationship with teachers and school mates, the behaviour habits and attitude he has acquired to this point are either intensified or modified. The very young child is not affected significantly by children of the same age even though they are in his immediate environment. But in nursery school, peer associates are likely to have an influence upon child's behaviour. The media-radio, TV, motion picture computer, and reading material also have influence upon child's behaviour, mental, social and personality development.

Some cultural variation exists in motor skills and level of activity. For example African children acquires larger motor abilities earlier than Euro-American peers. Garcia Coll, Surrey and Weingarten (1998) speculate that the way children are held and played with by the parents and other family members contributes to difference in motor development. Diet and nutrition can also produce variation.

Early childhood is such an important area of life span that most of the researches conducted in Developmental Psychology. So an attempt has been made to present the most relevant research findings in respect of home environment and adaptive behaviour in early childhood. The findings are presented below.

1.4. Review of Literature

The Lancet Series launched three papers on Early Child Development in Developing Countries in 2007. Over 200 million children under five years of age worldwide are not developing due to poverty, poor health and nutrition and lack of stimulation (Grantham M S, Cheung, Cueto, Glewwe, Richter, Strupp, 2007). In South Asia, almost 89 million children are not developing their potential and the ten countries

account for 66% children (145 million out of 213 million) disadvantage children in India, Nigeria, China, Bangladesh, Ethiopia, Indonesia, Pakistan, Democratic Republic of Congo, Uganda and Tanzania. the loss of productivity is estimated to be more than 20% of yearly adult income for 213 million children when they grow adults (Engle P, 2007). It is documented that the most immediate risk factors are stunting, iron and iodine deficiency, and lack of stimulating and nurturing environment. (Walker SD, Wachs TD, Gardener JM, Lozoff B, Wasserman GA Pollitt E, et al., 2007).

As more children survive, attention is increasingly beginning to focus on their quality of life. Large number of children are still living in poverty deprive of health and nutrition. These factors, along with the poor quality of stimulation in the home have a detrimental effect on children's development. Consequently, an enormous number of children fail to benefit fully from schooling, fail to achieve adequate level of education and fail to adjust with new environments. Where large number of children have poor development, resources invested in their education are under realized and national development is likely to be seriously affected. There is therefore an increasing interest in research and programmes of early childhood development aimed to identify the factors which are affecting and at promoting better development of surviving children.

Environment and development have become nearly interchangeable concepts in 21st century. Environment plays an important role in shaping development from newborn period to adolescent. Many individual environmental risk factors may impinge on development (poverty, low birth weight, parental education, parental occupation, parental mental illness, marital status, being born from a problematic pregnancy, child's gender, parental involvement, quality of home environment, quality of child care and stimulation, social structure, and may others), but the most detriment effects are caused when multiple risk factors act on a single child. (Kohn, Levav, Alterwain, Ruocco, Conterea and Grotta 2001; Sameroof 1998; Gunther, Slavenberg, Fernon, and Von 2003; Dubowitz, Papas, Black, Starr. 2002; Culbertson, Newma, Willis, 2003; Halpern and Figueiras 2004, Fall and Seek 2003; Baxter, Cardy, Helma, Phillips, Smith. 1999; Evans & Shah 1993; Black, Dubowitz, Starr 1999; Wenzel 1997).

A large number of cross sectional studies have shown an association between low weight for age (or stunting) and poor motor and mental development in early childhood (Lasky, Klein, Yarbrough, Engle, Lechtig, Martorell. 1981; Monckenberg 1972; Powell & Grantham-McGregor 1985; Sigman, Neumann, Baksh, Bwibo. McDonald, 1989) and poor

cognition and school achievement in later childhood (Clark, Grantham-McGregor & Powell 1991; Sigman, Neumann, Baksh, Bwibo, McDonald, 1989b). Associations between wasting (or height for age) and development are less often found than association between stunting and development (Grantham-McGregor, 1995).

In the Philippines early stunting (nutrition deficiency) was associated with low IQ and school drop out (Mendez and Adair 1999). In Kenya, early stunting and wasting were associated with vocabulary and reasoning (Raven's matrices) at 5 years (Sigman, Neumann, Baksh, Bwibo, 1991).

Child development is multi-determined being influenced by a multitude of factors. In Brazil, the development of children was affected by low levels of stimulation in the home, maternal literacy. (Grantham – McGregor, Lira, Ashworth, Morris, Assuncao, 1998). In addition, good neonatal health was found to be a protective factor in predicting IQ for poor low birth weight children but not for low birth weight children from high SES families (Bradley, 1999) SES, directly or indirectly influenced the development of children, where nutrition, home stimulation and child rearing practice depend more or less on SES, as well as poverty.

Children living in poverty have been shown to have average or above average development in the 1st year of life but a marked decline is evident in the 2nd year especially in the cognitive domain (Golden and Burns, 1976). Motor development is generally unaffected by poverty and in fact motor development of poor boys has been found to be more advanced than that of their more affluent peers (Peterson and Albus, 2001) which indicates the boy's adaptation with environment.

Living in poverty has been shown to have a deleterious effect on other child developmental outcomes including physical health and nutritional status, school achievement and emotional and behavioral problems (Schoon, Byner, Joshi, Parsons, Wiggins, Sacker, 2002; Jackson, Brooks-Gunn, Huang, Glassman 2000; Brody, McBride-Murray, Kim & Brown, 2002)

A number of studies that controlled for maternal IQ, maternal education and a host of other maternal characteristics and behaviours (e.g. age and behaviour during pregnancy) have reported significant effects of poverty on children cognitive development and verbal skills (Korenman, Miller, & Sjaastad, 1995; Liaw & Brooks Gunn 1994). Researchers reviewed the evidence of effecting of the duration, timing and severity of poverty on

cognitive development of children, specially in pre-school (Duncan, Brooks-Gunn, Klebanov, 1994, Korenman, Miller, & Sjaastad, 1995,)

The poverty or socioeconomic disadvantage leads to poor maternal mental health and poor parent-child interaction which have negative effects on child cognitive development (Galler Harrison , Biggs , Ramsey & Forde, 1999; Sharp, Hay , Pawlby , Schmucker , Allen & Kumar 1995; Lovejoy Graczyk & Neuman. 2000; Sommerfelt, Andersson , Sonnander , Ahlsten, Ellertsen, Markestad, Jacobsen, & Bakketeig, 2001; Martin and Gaffan 2000). For example, maternal depression was found to be associated with both behaviour problems and poor school readiness and the effect was mediated by the quality of the home environment as measured by the Home Observation for measurement of the Environment (HOME) Scale (Jackson et al, 2000). Provision of cognitively stimulating experience in the home has repeatedly been linked to children's IQ (Bradley, Whiteside , Mundfrom , Casey , Kelleher , & Pope 1994,). In another study of same authors examined the relation between children's home environment and their adaptive behaviour (Bradley, Whiteside , Mundfrom ,Blevins-Knabe, Casey , Caldwell, Kelleher , Pope & Barrett, 1995,). Result showed low to moderate association between on the HOME inventory at 1 and 3 years and the scores of two measures of the adaptive social behaviour at 30 to 36 months.

Some studies have shown that as the quality of children's home environment decreases, the IQ scores of the children declines (Dubow & Ippolito, 1994; Garrett, Ng'andu N, & Ferron 1994). So, it is clear that home environment of a child is a good predictor for child development (e.g. language development, social development, IQ, adaptive behaviour). There are more others studies have done on this predictor. Hoff (2003) found that supportive environment that parents provided influences children's early language development. In this study, two groups of 2 years old children were compared. One group of 33 children came from home in which both parents were college educated and other group of 30 children came from home in which parents were high school educated. College educated parents used more complex language and a rich vocabulary in talking to their children than school educated parents. The children of college educated parents increased the size of the vocabularies at a faster rate.

In one study, the relationship between the home environments of 66 children and their language and literacy development was examined. After accounting for child age, parents education and child ability, shared book reading at home made no contribution to

the prediction of the literacy skill of letters name and better sound knowledge in Kindergarten. In contrast, home activities was better to predict modest and significant amount of variance. (Evans, et. al. 2000). Abbott and Bartlett (2001) found statistically significant correlations between total materials used at home and infant motor development ($r=-0.50$, $p=0.001$), and individual materials ($r=-0.32$, $p=0.03$).

Many researchers argued that the home environment works as a mediator for children's development. In one study, it has been found that family income was associated with child outcomes at three to five years of age and the provision of stimulating experience in the home environment mediated the relation between family income and children's outcomes. The result also showed that maternal emotional distress and parenting practices mediated the relation between income and children's behavior problems. (Linver, Brooks-Gun, & Kohen 2002).

Social support is closely related with home environment and child development. In a study with 62 low income African American mothers and their children, the result showed that women with large social support tended to be more responsiveness and to provide more stimulating home environment than the mothers with smaller social support. (Burchinal, Follmer, & Bryant, 1996).

It is known that a child's home environment include house physical condition, parents-child interaction psychosocial stimulation at home, sibling relationship parental mental health etc. Home environments reflect the family's social status as well as neighborhood. In a study, Gunning, Conroy, Valoriani, Figueiredo, Kammerer, Muzik, Glatingny-Dallay, Murray and the TCS-PND Groups (2004) found that maternal sensitivity to infants behaviour was associated with better infant's communication. They also found that poor emotional support of mothers was related to poor HOME scores. The finding of another study suggested that mother child interaction might be useful for identifying children at risk for developmental delay and more effective for preschool intervention program (Holditch-Davis et al. 2000).

Black, Dulsourtz and Starr (1999) examined the parental relationship and well being of 3 years old children from low income families. They found significant relationship between parental roles and children's well being, suggesting that father's contribution were unique. Fathers who were satisfied with parenting, contributed financially to the family, and were nurturing during play had children with better cognitive

development, language competence, fewer behaviour problem and when fathers were living with the child, the home was more child-centered.

In India, Agarwal, et. al. (1991) found that maternal involvement and stimulation was strongly associated with better behaviour development (adaptive behaviour) and intelligence. The result also showed that the effect of home environment on development (motor, language adaptive behaviour etc) and intelligence was of a higher magnitude as compared to SES and family variables and nutritional status during 1-3 years of age. In a similar study, the researcher, found that children's social, speech and motor development were influenced by family environment (Gunther, et al. 2003).

Bradley (1989) examined the relation between children's home environments and their adaptive social behavior. They found responsive nurturing care at both 1 and 3 years are related to child adaptive social behavior as are cognitively stimulating experiences and materials.

In the study of Hauser, Warfield, , Shonkoff, Krauss Upshur, and Sayer (1999) the result indicated that growth in adaptive behaviors skills such as communication, socialization and daily living skill domain were predicted by the measure of the family environment. The study also showed that an active participation of the family in socially life was beneficial for regular adaptation of a child.

In the study in developing countries reported that improving cognitive stimulation or learning opportunities resulted in improvements in children's cognitive development between 0.5 to 1 standard deviation which strongly supports the importance of early stimulation for young children's cognitive ability (Walker SD, Wachs TD, Gardener JM, Lozoff B, Wasserman GA Pollitt E, et Al., 2007).

In Bangladesh, the only study was conducted by Khan, Sulatana, Pareveen and Ali (1994) on malnourished children. Most children irrespective of nutritional status were average function on the IBAS (Independent Behavior Assessment Scale - a scale for assessment of adaptive behavior). The sample size of the study was only 10, which was not sufficient to predict anything and all sample were malnourished children.

There is an individual difference in children activity levels. Some preschooler are quiet and some are extremely active. Children's need for movements varies by culture. It is also affected by differences in home and family environment. A study of Puerto Rican and Euro-American others, for example, has shown how values can influence children's activity level. (Harwood, Miller and Irizarry, 1995). Puerto Rico mothers were more

likely than Euro-American mother to rate activity play as undesirable. Because of differences in parental beliefs and interactions, children of these cultural groups are likely to develop very distinct movement patterns.

Gender different also exists in motor development during preschool years. Boys have found to lose body fat and acquire muscle tone more quickly than girls. They tend to be larger and stronger throughout the early years. Girls are more competent at fine motor activities. This may be because some areas of the brain – those responsible for perceptual-motor abilities- are more fully developed in female during this period. (Tanner, 1990). Boys are generally found to be more active, they engage in more rough and tumble play than girls . boys tend to take more risks to be more adventuresome in play.

1.5. Rationale of the Study:

The present study is designed to examine the effect of home environment on adaptive behaviour in early childhood.

More than 200 million children under 5 years of age in developing countries do not reach their developmental, educational and economic potential. It is identified development is influenced by biological factors (malnutrition, micronutrient deficiency, breastfeeding,), psychosocial factors (poverty, maternal mental health, quality of home environment, parenting, stimulation violence), and environmental exposure (toxin led, Arsenic.)

Developing countries should take immediate initiative to prevent the loss of developmental potential. Early childhood is the most cost effective period in the child's life to invest by family and /or Government. Events in the early years of life influence their productivity and learning ability throughout their life course and are effective strategies for reducing poverty in developing countries like Bangladesh. To address the developmental level of young children, we designed the present study where we selected 2-5 years children as the study sample.

It is well-documented the importance of socio-cultural factor especially home environment for the healthy development of a child. Home environment reflects mother-child interaction, cognitive and language stimulation, parental characteristics, family environment and physical condition of home. Several studies have shown home environment as a major factor behind the difference in language structure and cognition. Parents help their children to learn language by talking, reading and playing with them. In many families, meal time is used for family conversation. Parents want their children to be

healthy and to develop well physically. They also want their children to gain skills so that at maturity he or she becomes economically self sufficient and to think and behave acceptably within the framework of the culture. The social behaviour of children is developed at home by interaction with parents, siblings and other family members which help to adjust with the outside of home environment at large. Parents and home environment help a child to learn and achieve adaptive behavior which is essential for his or her survival.

Some researchers argue that development in motor, communication; daily living skill and socialization domain of adaptive behavior are predicted by the measure of home environment. Some studies have shown that parental attitude toward child, parent child interaction and stimulation at home are strongly related to child's adaptation to an environment and child's intelligence. There is no study found on this issue in Bangladesh. That is why, we tried to find out the relationship between home environment and children development in different areas. If we get positive result, it will help to do advocate the importance of health home environment including stimulation and learning opportunity for better development of Bangladeshi children. It will also help to design intervention program for children in Bangladesh.

It is well documented that there is an impact of poverty and socioeconomic condition on cognitive function and behaviour of children in their early life. Research revealed children living in poverty and low socioeconomic have low level of health and nutritional status and in consequences of low school performance and behavior problem. Home environments, parent-child relationship, learning opportunities at home are closely related to early childhood development as well as school readiness. Although, people live in a common culture in Bangladesh, geographically there is some difference in socioeconomic condition, life style and child rearing practice. For example in rural areas, most children under 5 years perform self help tasks like dressing and bathing themselves and taking care of their younger siblings. Parents prefer children to work with them at home as well as in the field. On the other hand, in urban and high SES, parents never allow their children to do such thing themselves. The children are pampered. Parents send them to preschool or kindergarten earlier which is totally absent in rural areas. Rural children are well developed in motor skills due to survive and family need because of low SES.

Over the past decades, the difference between male and female has been discussed lot. The male brain is approximately 10% larger than the brain of female, however after

adjustment of body size, the body-weight ratio for the female brain is actually greater. Research showed gender differences exists in some developmental domain like motor activity, play, socialization and adaptive behaviour. . For example – boys are tend to be larger and stronger and be more active and like to play with truck whereas girls are more competent at fine motor . girls like to play with dolls and they becomes master of self help skills earlier than boys.

Considering the above issues, the present study tried to find out any differences regarding gender and SES exists in adaptive behavior as a whole development of children in Bangladesh. Because no study has done on these issues in Bangladesh which is necessary to understand the affecting factors of children development in Bangladeshi context. .

Finally, it is expected that the finding of the present study would indicate whether their is any effect of home environment on adaptive behavior among children and any difference in home environment between urban and rural children and accordingly intervention programme could be adapted, so that children receive appropriate environment for their optimal development. That's why the present study topic has been selected for research.

1.6. Objectives of the study

The main objective of the present study is to find out the association between home environment and children's adaptive behavior in urban and rural areas in Bangladesh.

At the same time, the study is to see the difference of home environment between urban and rural areas. The study also investigates the effect of certain socio-demographic variables such as age, sex, area of residence and SES on adaptive behavior. So the other objectives are to see:

- a) The effect of age on adaptive behavior
- b) The effect of sex on adaptive behavior
- c) The effect of area of residence on adaptive behavior
- d) The effect of SES on adaptive behavior

CHAPTER TWO

METHOD

METHOD

The present study was undertaken to find out the association between home environment and children's adaptive behavior in urban and rural areas in Bangladesh and to compare home environment of urban area with rural area and in addition the study investigated the effects of certain socio-demographic variables such as age, sex, area of residence and SES on adaptive behavior.

2.1. Participants

The study comprised 200 pairs of mother-child selected from urban and rural areas. Mirpur and Mohakhali in the Dhaka city were selected as urban areas, and Matlab, a thana of Chandpur District was selected as rural area that was close to Dhaka. Rural participants were selected from different villages e.g. Koladi, Nabakalash, Dhakergaon and Doshpara at Matlab.

2.1.1. Criteria: Specific criteria were maintained to select participants from both urban and rural areas.

Exclusion criteria:

On the basis of following exclusion criteria, children were selected

- a) The children who were not less than 2 years and more than 5 years of age
- b) Those who had started schooling
- c) Those who were disable (physical and mental)
- d) Those who were twins
- e) Those who didn't have parents (mother or father or both) and who did not stay about 6 months in same place.

Inclusion criteria:

- a) The children who were 2 to 5 years of age.
- b) Those did not start schooling.
- c) Those who were physical and mentally fit or healthy.
- d) Those who stayed with their parents .
- e) Those whose parents gave informal consent.

2.1.2. Selection of participants: The study was a cross-sectional study . Participants were selected from Matlab and Dhaka city following purposive sampling according to inclusion and exclusion criteria. There were 200 pairs of mother-child where as 100 pairs were from Matlab and 100 pairs from Dhaka city. In total, participants were 200 mothers and 200 children. On the basis of asset score (Gatwkin, Rustein, Johnson,Pande, Wagstaff, 2000), the sample has been divided into three groups in each area. A diagram of distribution of Children as participants has given below.

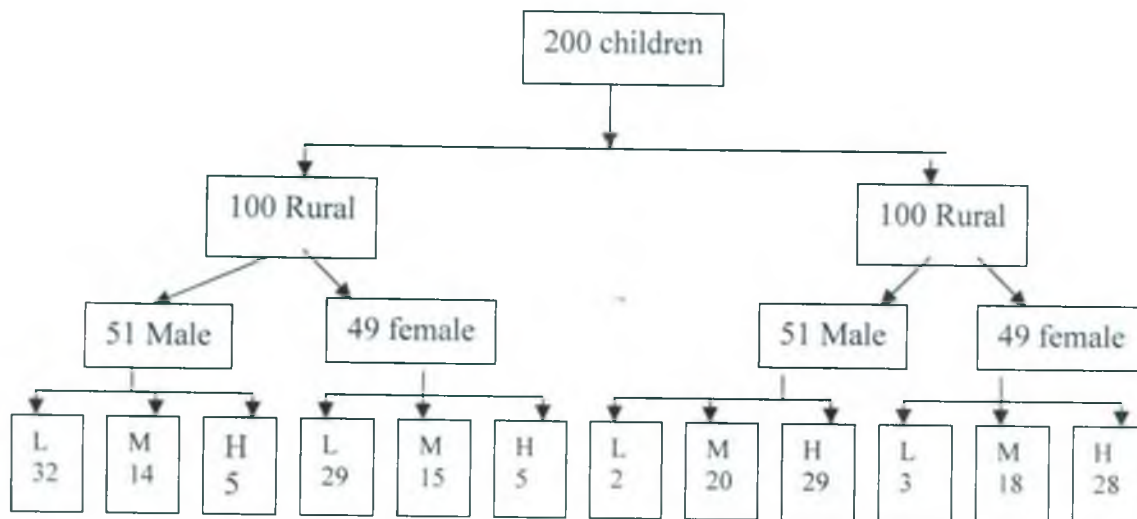


Figure 2: Distribution of sample by area in the study

2.2. Materials used: The following materials were used on children and their mothers:

2.2.1. Independent Behavior Assessment Scale (IBAS): The adaptive behavior of the children was assessed with the Independent Behavior Assessment Scale (IBAS) (Shirin, 1999). The scale consists four subscales , e.g. motor skill, socialization skill, communication skill and daily living skill.(Appendix) and description of each subscale is given below:

- **Motor Scale:** Under motor scale there are two subscales the Gross Motor and the Fine Motor skills.

- Communication scale: Under this scale, there are two subscales – communication comprehension and Language expression.
- Daily Living scale: The Daily Living scale includes five subscales, such as Eating and Meal Preparation, Toileting, Dressing, Self-care and Domestic Skills,
- Socialization Scale : it mainly measure social interaction.

The IBAS was first developed for use in the Rapid Epidemiological Assessment (REA) study conducted in Bangladesh, Pakistan and Jamaica, for the identification of children with disabilities (Zaman et al, 1990). Now a day the IBAS has become useful in clinical, educational and research settings. It has been used as a diagnostic tool to identify developmentally delayed children, to record a child's progress after an intervention programme, to educate parents about their children development and as a research tool to document differences between children. This test covers a wide age range of 2-9 years (Shirin, 1999).

Items included in the IBAS were drawn from two sources. First, observing the activities of a huge number of children aged from birth to 12 years while they were at work, playing or while doing daily chores. In addition children were interviewed, as were parents of different socio-economic backgrounds. Account was taken of the range of religions, homes, communities and environments in which families of both rural and urban children live in Bangladesh. Second, a thorough study was made of assessments of adaptive behavior skills developed in the West, including an analysis of the rationale behind the structure of the assessment. The procedures inspected included the Progress Assessment Chart (Gunzburg, 1977), the Portage Guide to Early Education Checklist (Bluma et al, 1975), the Objective Behavioral Assessment of the Severely and Moderately Handicapped (Hardy et al 1981) and the Vineland Adaptive Behavior Scales (Sparrow et al 1984) and Scale of Independent Behavior (Bruinink, *et al* 1985).

From these scales source, items were chosen which are universal. Most of the items were assessed by direct observation, with interview used to clarify the child's level of functioning when direct testing was ambiguous, or the item was not open to direct inspection (For example toileting). The scoring system was adapted from the format of the Objective Behavioral Assessment Scale of Independent Behavior based on the degree and types of assistance given to a child in order to complete a task. Each item is rated at the end

of finishing task and the score range is from 0 to 3. The principles underlying the scoring are as follows.

- A score of 3 is assigned when the child performs the task independently without help or supervision.
- A score of 2 is assigned when the child performs the task with little help or supervision.
- A score of 1 is assigned when the child attempts to do the task but needs constant support (physical and verbal)
- A score of 0 is assigned if the child can not do the task and also if the child is not allowed to do the task out of concern for safety or estimated lack of maturity.

The IBAS was constructed in two stages: item selection and reduction and construction of norms. Three hundred and four items were chosen, comprising task in the ten skill areas. After scrutiny 82 items were eliminated. The face validity of the remaining 222 items was determined by five experienced Judges and 188 items were retained. The sequence of items was arranged according to level of difficulty and some alternate materials were included for urban or rural, male or female children without changing the focus of the item. A total of 1404 children were included in the construction of norms for the IBAS. They were of mixed socio economic status from all over Bangladesh. The norms are presented in the tester manual as means and SD and as percentile ranks for each of the ten subscales, separately for each year group from two to nine years. The reliability of the total and sub scales is high.

The test-retest reliability study was conducted with a randomly selected sample of 68 children, reassessed after a gap of 14 days to one month. In order to estimate inter-reliability, during the second assessment two raters separately rated the performance of 46 of the children at the same time.

Product moment correlation coefficients were computed between first and second occasions of testing in order to evaluate test-retest reliability. As shown in Table 2.1a and b, all coefficient were acceptably high across the four major domains ($p < 0.001$).

Table 2.2.1: Test-Reliability coefficients of the four main scales of IBAS by age

Age range (yrs)	N	Motor	Socialization	Communication	Daily Living.	Total
Test-retest reliability coefficients						
2-5	37	0.94	0.88	0.96	0.95	0.95
6-9	31	0.86	0.89	0.91	0.92	0.96

Table 2.2.2 Inter -Reliability coefficients of the four main scales of IBAS by age

Age range (yrs)	N	Motor	Socialization	Communication	Daily Living.	Total
2-5	23	0.95	0.88	0.98	0.98	0.98
6-9	23	0.83	0.71	0.87	0.96	0.95

Content, construct and discriminate validity were established. The correlations (corrected item to total) were found significant for all the items within the ten subscales ($P < 0.05$ or greater). The scale variances of the ten subscales on the total sample were found to be high, ranging from 181.89 to 387.81. For the total sample of 1404 children, the universality of the scale items was determined by computing t-test between scores obtained by children according to place of residence and gender at each age level. No significant difference was obtained, indicating the applicability of the scale across Bangladesh. An alpha coefficient obtained ranged from 0.92 to 0.97 indicating excellent internal consistency for each sub scale.

In the case of discriminant validity, a significant difference in adaptive skill performance between the normative sample and children with impairments was demonstrated, except for children with seizure disorder. (Table 2.2.3)

Table 2.2.3: Comparison of mean total IBAS scores children with and without disabilities

	n	Mean $\pm$ SD	t
Normative sample	1404	407.97 $\pm$ 102.86	---
Any cognitive disability	92	265.66 $\pm$ 138.61	12.55 ^a
Any motor disability	55	214.91 $\pm$ 155.92	13.34 ^a
Hearing disability	75	441.91 $\pm$ 109.62	2.77 ^b
Visual disability	41	367.71 $\pm$ 134.83	2.45 ^b
Seizure disorder	19	369.95 $\pm$ 106.67	1.60

^a $p < 0.01$, ^b $p < 0.05$

The norms with means, standard deviation and percentile rank are available for each of the ten sub-scales, separately for each year group from two to nine years.

2.2.3. Socio-economic characteristics: The general characteristics of these village and the urban areas are almost representative of rural and urban population of the country respectively. During home visit a baseline questionnaire have been administered to collect information on the families wealth (furniture, valuables things and other assets owned by the family), standard of housing (structure of the roof , floor and walls of the houses, presence or absence of sanitary latrine, water and electricity in the house), family structure (number of family members, number of children in the family) and parental education and occupation. The questionnaire has been included in the Appendix.

2.2.4. Home observation for measurement of Environment: The stimulation in the home was assessed using a modified version of the Betty Caldwell's (1967) Home Observation for Measurement of Environment (HOME).. The inventory was developed in 1965 for use in Head Start Programme and was intended to describe the environment of the children and to be sensitive to change, Caldwell describes the instrument as follows:

"The inventory was compiled after discussions with various Head Start planners about 'the need for some type of instrument that would provide an indication of how much a disadvantaged child, prior to his introduction to Head Start, had achieved in areas regarded as necessary foundation for subsequent success in school'(Caldwell 1967).

The HOME inventory was revised with families of children ages 3 to 6 in 1973. Factor and item analysis were used as a basis for reducing the number of items from 80 to 55. The items were clustered into eight subscales. Kuder-Richardson 20 coefficient for the scale ranged from 0.53c to 0.93. Concurrent and predictive validity studies indicated that the HOME Scales significantly correlated with IQ (as high as $r=.58$). Low to moderate correlation were obtained between HOME scores and SES measures with significant correlation ranging from 0.30 to 0.65 (Bradley and Caldwell 1979) Again it was revised in 1993, to identify the consistencies in the relationship between the home environment and children's development. (Bradley 1993). This revised version designed to assess the quality and quantity of support and stimulation provided to the child in a home environment. It assess the physical, organizational and social aspects of such environment. It is as administered using a combination of observation and interviewing techniques. It must be administered while the child is present and both awake and alert. There are 55 items clustered in eight sub scales:

Learning materials, Language stimulation, Physical environment, Responsively, Academic stimulation, Modeling, Variety, Acceptance. There is brief description of all sub-scales below.

- Learning materials: This sub-scale deals with toys, books, and games which facilitate learning.
- Language stimulation: This sub scales deals primarily with the parental attempts to encourage language development through conversation, modeling and direct teaching.
- Physical environment: It deals with the items which describe the physical environment in regard to safety, spatial arrangement and appeal.
- Responsivity: This deals with mother's emotion and verbal response to the child and describes the warmth of the relationship.
- Academic stimulation: this sub scales deals with the parental involvement with the child's learning and mother's encouragement of the child to acquire skills and knowledge.
- Modeling: this deals with mother's role modeling and encouragement directed toward the child's development and socially acceptable behavior.
- Variety deals with a family lifestyle that provides a variety of experience enriching to the child and encouraging of the child's social development.
- Acceptance: this subscales deals with the mother's ability to accept and understand a young child's' negative and explanatory behavior and her ability to deal with it in a an appropriate manner.

Scoring for the HOME inventory is done using binary system- "yes" or "no". The situation either happened or did not happen, thus making scoring an easy task. The are cut-points for "yes" and "no" scores.

Although the inventory was designed for the USA it has been used in many other countries. A recent meta-analysis of 12 psychosocial intervention studies showed that the HOME inventory improved along with children's development. (Kendrick et al 2000). The HOME inventory has reflected parental characteristics, the quality of stimulation and support available to a child in a home. HOME subscales have shown theoretically meaningful links to children's health, growth, language, intelligence, social competence and temperament. (Bradley 1993). The correlation between the HOME total scores and the McCarthy (General Cognitive index) scores was $r=0.06$ ($P<0.001$). It has been suggested

that the HOME inventory may be more valuable as a predictor of a child's future development (Eu B and O'Neill 1983, Bradley et al 1994). It is suggested that nurses and teachers can use the HOME inventory as a assessment of the home environment (Eu B and O'Neill 1983) as well as pediatricians can (Casey and Bradley, 1982).

2.3. Investigators:

In the present study, the psychological assessments were done by a trained female tester who had post graduation degree in Psychology and well trained in psychological assessment. And another two female worker selected the sample and interviewed mothers with the HOME inventory .Both had 12 to 14 years of education background and 1 year working experience.

2.4. Procedure:

The present study has been conducted into two phases- reliability phase and final phase. It took 10 months for both phases. The questioners and test were administered individually and in one day these could be administered on 2-3 mothers and children that depended on availability of participants.

Upon reaching the selected area, the interviewer/ investigators approached the nearest house and asked the mothers having 2 to 5 years aged children. If they found suitable participants/ sample, they explained the purpose of coming into them and research and took oral consent from the mothers. After getting their consent, questioner and psychological test were administered. If there was no suitable participants found at that house or they refused to participate, then the interviewers/ investigators approached the next house.

2.4.1. First Phase of Reliability of the HOME inventory:

The first phase is reliability phase. In this phase, before administering the HOME inventory at field level, the questionnaire was translated from English to Bangla by the researcher and five judges (who were working as teachers in the Department of Psychology, University of Dhaka and as an Associate Scientist at ICDDR, B) assessed correction of translation. Then the test-retest reliability study of HOME inventory was conducted with purposively selected participants of 30 mothers who had 2 to 5 years of aged children. Among the sample, half of them were in rural area and half of them were in urban area.

The investigators spent time to build rapport with the mothers. They explained the purpose and briefly the task of the study the mother would require doing. After establishing the rapport, the investigator started administering the HOME inventory to the mother. In both urban and rural areas, each mother was re-interviewed after a gap of 7 to 15 days. In this phase 30 mothers were interviewed. After collecting data, the data were entered into computer and analysed with SPSS-10. Pearson Correlation of test-retest of the scale was 0.859 and $\alpha = .92$ and It took 3 months to complete test-retest and analyze the result.

2.4.2. Second Phase of final Study:

On the bases of first phase, the final data collection was started. It took almost 8 months to complete data collection from Matlab and Dhaka city. Administration of questionnaires and the test was done in the following way:

a) **Rapport building with the mothers and children:** The investigators went to the selected

house and spent few moments talking to the mother. They explained the purpose of the study and briefly describe the task to the mother so that the mother might get prepare herself and her child.

b) **Colleting demographic information:** After building rapport, the investigators collected

informal consent from mothers and then administered questionnaire to collect the demographic information, such as sex, age, assets information, crowding information, family structure, educational background of both parents, family income etc. It took 10-15 minutes.

c) **Administering of HOME Inventory:** Every mother were interviewed the HOME inventory. They were asked different aspects of child rearing practice, like play materials, stimulation, physical environment etc. If the mother did not understand any item, the investigator explained that item to get right answer. It takes 40-50 minutes. After finishing HOME inventory, each mother was asked to get permission to do IBAS with their children.

d) **Administering the IBAS:** The child was taken in a quite place at home in the presence

of the mother and then adaptive behaviors were assessed with IBAS (Independent Behavior Assessment Scale). During the test session, some items (such as motor items) were administered and some items (such as toileting, self care items) were asked the mother. On

the basis of the child's performance and mother's report, the investigators rated the child for each items on the four-point scale.

e) Data cleaning and recoding: Corrected data were entered into a personal computer using Statistical Package for Social Sciences, version 10 (SPSS, Chicago, USA) and was checked independently. Examining the frequency distribution of each variable and identifying any outlines or inappropriate coding and any missing data cleaned data.

Individual items in the Home questionnaires and IBAS were summed to form subscales. All variables were checked for normality. In order to reduce the data, the socio-economic variables were recoded or scored and added to make indices according to theoretical considerations. Housing Index was calculated on the basis of the condition of the roof and wall of the house and presence or absence of electricity in the house. Sanitation index included type of the latrine and availability of water inside or outside of the house. Valuable possessions were added up together and produced an Asset index. Crowding index was calculated by dividing the number of people in the house by the number of rooms. HOME score was calculated by adding all subscales, like-learning materials, language stimulation, physical environment, responsivity. academic stimulation, modeling, variety, and acceptance. Similarly scores of all subscales of IBAS were added up together and produced an IBAS as adaptive behaviors.

CHAPTER THREE

RESULT

RESULT

The main objective of the study was to find out the association between home environment and children adaptive behavior in urban and rural areas in Bangladesh.. The specific objectives were to see: (a) the effect of age on adaptive behavior, (b) the effect of sex on adaptive behavior, (c) the effect of area of residence on adaptive behavior and (d) the effect of SES on adaptive behavior and also to investigate the effects of age , sex and residence and SES on sub-scales of IBAS such as motor skills, communication skills, socialization skill and daily living skills.

The instruments like HOME inventory, IBAS and a questionnaire containing some demographic information were used to measure the variables which were explained in detail in the previous chapter.

The statistical techniques used for analyzing the data mainly comprised of t-test, four way analysis of variance and coefficient of correlation. The findings are presented in this chapter in the following manner.

- Correlation was used to see the association between adaptive behavior and home environment (Table3.1)
- *t*-test was computed to find out the mean difference between home environment of urban and rural areas (Table 3.2).
- Four way analysis of variance for age, sex, area of residence and SES as independent variables and percentile rank of total adaptive behavior (Table 3.3) and different area of adaptive behavior like motor, socialization, communication and daily living skills as dependent variables (Tables 3.4; 3.5; 3.6; 3.7).

3.1. Correlation between Adaptive behavior (IBAS) and Home environment (HOME inventory)

Bivariate correlation was applied to investigate the relationship between adaptive behavior and home environment. The criterion measures for adaptive behavior and home environment was the total score obtained by the participants in the IBAS test and HOME inventory questionnaire.

The findings presented in the table 3.1 shows that the adaptive behavior (IBAS) was significantly correlated ($r= 0.44$, $p<.01$) with total HOME inventory and some subscales of HOME inventory except for Learning materials and Modeling.

The study also investigated the correlation between the individual subscales of both IBAS and HOME inventory. Table 3.1 reveals that some individual subscales of IBAS are significantly correlated with some of the subscales of HOME inventory. Motor subscale of IBAS is significantly correlated with Language Stimulation ($p<.01$), Responsibility ($p<.01$), Variety ($p<.01$), Acceptance ($p<.01$) subscales, and total HOME scale ($p<.01$),

Socialization subscale of IBAS is also significantly correlated with Language Stimulation ($p<.01$), Physical environment ($p<.05$), Responsibility ($p<.01$), Academic Stimulation ($p<.01$) Variety ($p<.01$), Acceptance ($p<.01$) subscales, and total HOME scale ($p<.01$),

There are significant correlation between Communication sub-scale and some of the subscales of HOME inventory such as Language materials ($p<.01$), Language Stimulation ($p<.01$), Academic Stimulation ($p<.01$) Variety ($p<.01$), Acceptance ($p<.05$) subscales, and total HOME scale ($p<.01$) (see Table 3.1) .

Table 3.1 also shows that Daily Living Skills subscale is significantly associated with Language Stimulation ($p<.01$), Responsibility ($p<.01$) Variety ($p<.01$), Acceptance ($p<.01$) subscales, and total HOME scale ($p<.01$) (table 3.1) .

Table 3.1: Correlations of the adaptive behavioral variables (IBAS) with HOME subscales.

Variables	Learning materials.	Language Stimulation	Physical Environment	Responsibility	Academic Stimulation	Modeling	Verity	Acceptance	HOME total
Motor PR	0.09	0.30**	0.13	0.40**	0.11	-0.06	0.29**	0.33**	0.35**
Socialization PR	0.13	0.27**	0.18*	0.46**	0.29**	-0.07	0.36**	0.44**	0.45**
Communication PR	0.19**	0.33**	0.12	0.12	0.26**	0.02	0.22**	0.16*	0.29**
Daily Living Skills Score PR	-0.04	0.26**	0.08	0.38**	-0.02	-0.08	0.28**	0.34**	0.26**
Total IBAS PR	0.12	0.39**	0.15*	0.47**	.19**	-0.10	0.39**	0.41**	0.44**

PR= Percentile Rank

* $p < .05$,** $p < .01$

3.2. Difference in Home Environment between Urban and Rural Areas:

To investigate the difference of quality of home environment between urban and rural areas, t-test was computed.

The Table 3.2 shows that there is significant difference ($t=13.84$) in the quality of psychosocial stimulation at home (HOME) between urban ($X=41.33$) and rural areas ($X=31.33$) at $p<.001$.

There are significant difference of subscales – Languages Stimulation (mean 6.67, 5.40, $p<.001$), Physical Environment (mean 4.56, 3.38, $p<.001$), Responsivity (mean 6.68, 3.17, $p<.001$), Academic stimulation (mean 4.37, 3.81, $p<.05$), Variety (mean 6.32, 4.17, $p<.001$) and Acceptance (mean 3.46, 2.33, $p<.001$) between urban and rural areas.

Table 3.2: Comparison of Means of the subscales scores and total scale score of the HOME of urban and rural children.

Residence HOME inventory	Urban Mean (SD) n=100	Rural Mean (SD) n=100	t value	P value
Learning Materials	6.80 (2.06)	6.24 (2.09)	1.91	NS
Language Stimulation	6.67 (0.65)	5.40 (0.92)	11.52	.001
Physical Environment	4.56 (1.74)	3.38 (1.33)	5.39	.001
Responsivity	6.68 (0.53)	3.17 (1.43)	23.04	.001
Academic Stimulation	4.37 (0.75)	3.81 (1.45)	3.44	.01
Modeling	2.47 (1.03)	2.83 (1.17)	-2.31	.05
Variety	6.32 (1.09)	4.17 (1.69)	10.70	.001
Acceptance	3.46 (0.83)	2.33 (1.12)	8.09	.001
Home Total	41.33 (4.82)	31.33 (5.38)	13.84	.001

3.3. Four-way analysis of variance of Adaptive behavior by age, sex, area of residence and SES:

Four way analysis of variance was applied to analyze the obtained data from the participants. Adaptive behavior of children was computed as the total score of all subscales of Independent Behavior Assessment Scale (IBAS) and there were four different age group (age at 2, 3, 4 and 5 years), two level of sex (male and female), two level of area of residence (urban and rural) and three levels of SES (low, middle and high). The findings are presented in the following tables:

Table 3.3: Four way Analysis of Variance of Adaptive Behavior by Age, Sex, Area of residence and SES

Source of Variance		Sum of Squares	df	Mean Square	F
Main Effect	Age	2108.060	3	702.687	3.310*
	Sex	520.981	1	520.981	2.454
	Residence	12294.141	1	12294.141	57.917**
	SES	616.786	2	308.393	1.453
2-way interaction	Age by Sex	634.324	3	211.441	.996
	Age by Residence	374.176	3	124.725	.588
	Sex by Residence	63.922	1	63.922	.301
	Residence by SES	320.036	2	160.018	.754
	Age by SES	825.750	6	137.625	.648
	Sex by SES	126.269	2	63.134	.297
3-way interaction	Age by Sex by Residence	494.802	3	164.934	.777
	Age by Sex by SES	1446.910	6	241.152	1.136
	Age by Residence by SES	599.184	4	149.796	.706
	Sex by Residence by SES	97.119	2	48.559	.229
4-way interaction	Age by Sex by Residence by SES	51.049	1	51.049	.240
Residual		33751.328	159	212.273	
Total		1030500.000	200		

* $p < .05$ ** $p < .001$

The analysis of variance showed significant main effects of age ($F=3.310$; $df=3, 159$; $p<.05$) and area of residence ($F=57.917$; $df=1, 159$; $p<.001$) on adaptive behaviour of the participants. But the main effect of sex and SES were found to be not significant.

None of the two -way and three-way and four-way interactions was found to be significant

3.3.1.1. Adaptive Behavior and Age:

The result (Table 3.3.1) showed significant effects of age and residence on adaptive behavior.

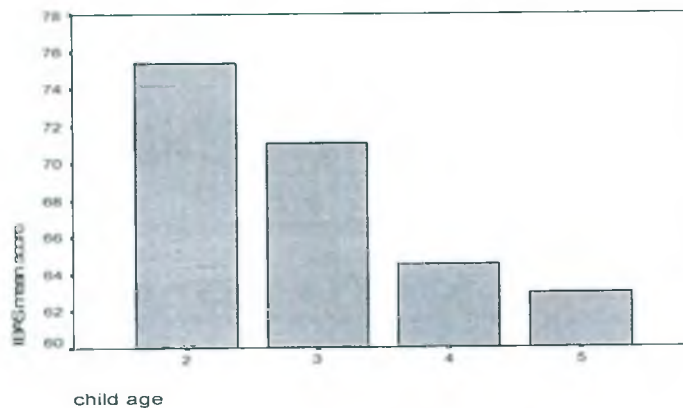
The table 3.3.1.1 indicates that the adaptive behavior of youngest participants i.e. at age two is better ($X=75.36$) than older children i.e. 3 years ($X=71.08$), 4 years ($X=64.50$) & 5 years ($X=63.00$).

Table 3.3.1: Mean and Standard Deviation of Adaptive behavior (IBAS) scores of different Age group

Age (Year)	N	Mean	SD
2	55	75.36	15.3
3	60	71.08	19.68
4	50	64.50	18.96
5	35	63.00	20.87

The mean scores of Independent Behavior Assessment Scale (IBAS) for different age is graphically presented in Figure 3.1.

Figure 3.1: Mean value of Independent Behavior Assessment Scale (IBAS) of different age groups



3.3.1.2. Adaptive Behavior and Area of residence:

The result (Table 3.3.1) showed significant effect of residence on adaptive behaviour. The mean scores and standard deviation of adaptive behaviour of different residential areas is presented in Table 3.3.2.

Table 3.3.2: Mean and Standard Deviation of adaptive behavior of different area of residence

Area of Residence	N	Mean	SD
Urban	100	80.00	11.61
Rural	100	58.40	19.09

The results showed that adaptive behaviour of urban participants has better (mean=80.00) than their counter parts (X=58.40).

3.4. Four-way analysis of variance of Motor Skills by age, sex, area of residence and SES:

The analysis of variance showed significant main effects of area of residence ($F=11407.814$; $df=1, 159$; $p<.001$) on motor skills of the participants. But the main effect of age, sex and SES was found to be not significant.

Table 3.4.: Four way Analysis of Variance of Motor Skills by Age, Sex, Area of residence and SES

Source of Variance		Sum of Squares	df	Mean Square	F
Main Effect	Age	121.864	3	40.621	.097
	Sex	12.981	1	12.981	.031
	Residence	11407.814	1	11407.814	27.139*
	SES	579.216	2	289.608	.689
2-way interaction	Age by Sex	2512.018	3	837.339	1.992
	Age by Residence	1375.368	3	458.456	1.091
	Sex by Residence	3.960E-03	1	3.960E-03	.001*
	Residence by SES	217.501	2	108.751	.259
	Age by SES	654.928	6	109.155	.260
	Sex by SES	134.073	2	67.036	.159
3-way interaction	Age by Sex by Residence	486.840	3	162.280	.386
	Age by Sex by SES	1132.415	6	188.736	.449
	Age by Residence by SES	644.148	4	161.037	.383
	Sex by Residence by SES	83.945	2	41.973	.100
4-way interaction	Age by Sex by Residence by SES	42.267	1	42.267	.101
Residual		66834.659	159	420.344	
Total		609559.000	200		

* $p < .001$

Table 3.4. reveals a significant two-way interaction effects of Sex and Residence on motor skills ($F=3.960E-03$; $df=1, 159$; $p<.001$). But no other two-way interactions were found to be significant.

No three-way and four way interaction were found to be significant.

3.4.1. Motor Skills and Area of residence:

The result (Table 3.4.) showed significant effects of residence on motor skills. The mean scores and standard deviation of adaptive behaviour of urban and rural areas are presented in Table 3.4.1.

Table 3.4.1: Mean and Standard Deviation of Motor skills of different area of residence

Area of Residence	N	Mean	SD
Urban	100	61.68	20.2
Rural	100	38.33	20.2

The results showed that motor skills of urban participants has better (mean= 61.68) than their counter part (58.40) and the difference is statistically significant ($t=8.1$ & $p<0.001$).

3.5. Four-way analysis of variance of Socialization Skills by age, sex, area of residence and SES:

The analysis shows that area of residence has significant effects on socialization skills ($F=32.100$; $df=1,158$; $p<.001$) (Table 3.5).

No two -way interaction was found to be significant. There were also no three-way and four-way interactions found to be significant.

Table 3.5: Four way Analysis of Variance of Socialization Skills by Age, Sex, Area of residence and SES

Source of Variance		Sum of Squares	df	Mean Square	F
Main Effect	Age	2540.436	3	846.812	2.748
	Sex	585.364	1	585.364	1.900
	Residence	9890.479	1	9890.479	32.100*
	SES	274.132	2	137.066	.445
2-way interaction	Age by Sex	252.490	3	84.163	.273
	Age by Residence	1552.751	3	517.584	1.680
	Sex by Residence	16.135	1	16.135	.052
	Residence by SES	37.288	2	18.644	.061
	Age by SES	2755.315	6	459.219	1.490
	Sex by SES	150.334	2	75.167	.244
3-way interaction	Age by Sex by Residence	3424.512	6	570.752	1.852
	Age by Sex by SES	770.994	3	256.998	.834
	Age by Residence by SES	1390.840	4	347.710	1.129
	Sex by Residence by SES	624.985	2	312.492	1.014
	Age by Sex by Residence by SES				
4-way interaction	Age by Sex by Residence by SES	7.125E-03	1	7.125E-03	.000
Residual		48681.531	158	308.111	
Total		1122121.000	199		

* $P < .001$ **3.5.1. Socialization skills and Area of residence:**

The result (Table 3.5.) showed significant effect of residence on socialization skills. The mean scores and standard deviation of socialization skills of different residential areas is presented in Table 3.5.1.

Table 3.5.1: Mean and Standard Deviation of Socialization skills of different area of residence

Area of Residence	N	Mean	SD
Urban	100	83.59	12.0
Rural	100	60.56	22.3

The results showed that socialization of urban participants has better (mean= 83.59) than their counter part (60.56) which is statistically significant ($t = 9.1$ & $p < 0.001$).

3.6. Four-way analysis of variance of Communication Skills by age, sex, area of residence and SES:

The analysis shows that age ($F = 61.22$; $df = 3, 159$; $p < .001$) and area of residence ($F = 4.385$; $df = 1, 159$; $p < .05$) have significant effects on communication skills of children (Table 3.6). The result also reveals that two-way interaction between Residence by SES was found to be significant interaction effects on communication skills of children ($F = 3.18$; $df = 2, 159$; $p < .05$). No three-way and four-way interactions were found to be significant.

Table 3.6: Four way Analysis of Variance of Communication Skills by Age, Sex, Area of Residence and SES

Source of Variance		Sum of Squares	df	Mean Square	F
Main Effect	Age	48113.720	3	16037.907	61.224**
	Sex	9.411	1	9.411	.036
	Residence	1148.686	1	1148.686	4.385*
	SES	522.402	2	261.201	.997
2-way interaction	Age by Sex	1053.960	3	351.320	1.341
	Age by Residence	760.671	3	253.557	.968
	Sex by Residence	137.005	1	137.005	.523
	Residence by SES	1664.228	2	832.114	3.177*
	Age by SES	1556.264	6	259.377	.990
	Sex by SES	271.491	2	135.746	.518
3-way interaction	Age by Sex by SES	1127.513	6	187.919	.717
	Age by Sex by Residence	1848.052	3	616.017	2.352
	Age by Residence by SES	779.147	4	194.787	.744
	Sex by Residence by SES	234.268	2	117.134	.447
4-way interaction	Age by Sex by Residence by SES	505.922	1	505.922	1.931
Residual		41651.094	159	261.957	
Total		896204.000	200		

* $p < .05$

** $p < .001$

3.6.1. Communication Skills and Age:

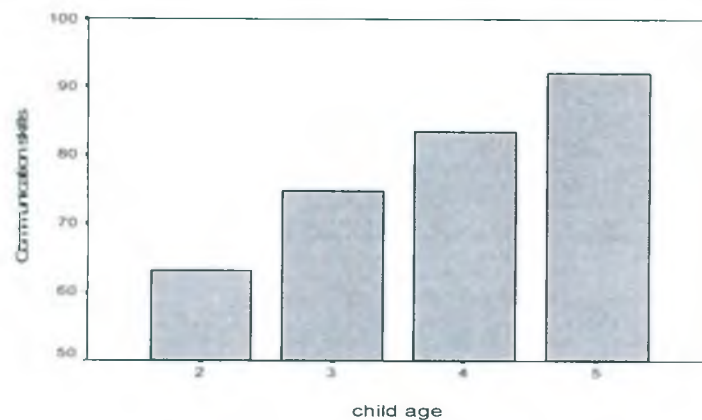
The result (Table 3.6.1) showed significant effects of age and residence on communication skills.

Table 3.6.1: Mean and Standard Deviation of Communication skills scores of different Age group

Age (Year)	N	Mean	SD
2	55	63.25	9.86
3	60	74.80	10.63
4	50	83.52	8.67
5	35	92.11	7.66

The findings (Table 3.6.1.1) indicate that the communication skills of older age participants is better (at 5 years mean =92.11) than younger age participants (at 2 mean=63.25; at 3 mean=74.80 & at 4 mean= 83.58). The mean scores of communication skills scores for different age is presented in Figure 3.6.1.

Figure 3.2: Mean score of communication sub scale of IBAS



3.6.2. Communication skills and Area of residence:

The result (Table 3.6.2) showed significant effect of residence on communication skills ($t= 2.7$ & $p< .01$). The mean scores and standard deviation of communication skills of different residential areas are presented in Table 3.6.2

Table 3.6.2: Mean and Standard Deviation of communication skills of different area of Residence

Area of Residence	N	Mean	SD
Urban	100	66.30	23.9
Rural	100	56.12	29.3

The results shows that communication skills of urban children has better ($X = 66.30$) than their counter part ($X = 56.12$).

3.7. Four-way analysis of variance of Daily Living Skills by age, sex, area of residence and SES:

The four- analysis shows that age of children ($F = 14.122$; $df = 3, 159$; $p < .001$) and area of residence ($F = 48.455$; $df = 1, 159$; $p < .001$) has significant on daily living skills (Table 3.7).

Table 3.7.: Four way Analysis of Variance of Daily Living Skills by Age, Sex, Area of residence and SES

Source of Variance		Sum of Squares	df	Mean Square	F
Main Effect	Age	6048.309	3	2016.103	14.122*
	Sex	390.150	1	390.150	2.733
	Residence	6917.519	1	6917.519	48.455*
	SES	487.657	2	243.829	1.708
2-way interaction	Age by Sex	818.836	3	272.945	1.912
	Age by Residence	587.287	3	195.762	1.371
	Sex by Residence	108.728	1	108.728	.762
	Residence by SES	97.889	2	48.945	.343
	Age by SES	416.944	6	69.491	.487
	Sex by SES	417.636	2	208.818	1.463
3-way interaction	Age by Sex by SES	1692.054	6	282.009	1.975
	Age by Sex by Residence	956.808	3	318.936	2.234
	Age by Residence by SES	530.514	4	132.628	.929
	Sex by Residence by SES	300.558	2	150.279	1.053
4-way interaction	Age by Sex by Residence by SES	84.298	1	84.298	.590
Residual		22699.104	159	142.762	
Total		1190575.000	200		

* $P < .001$

None of two-way, three-way and four-way interactions were found to be significant.

3.7.1. Daily Living Skills and Age:

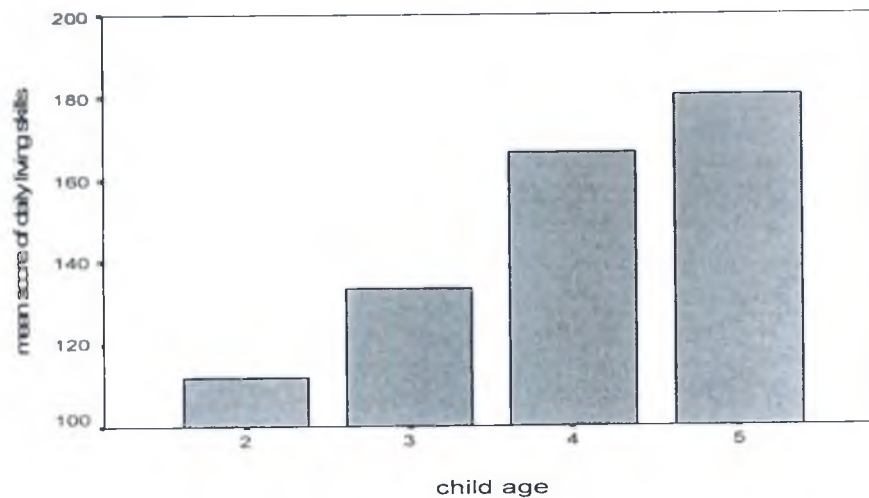
The result (Table 3.7.1) showed significant effects of age and residence on daily living skills.

Table 3.7.1: Mean and Standard Deviation of daily living skills scores of different

Age group			
Age (Year)	N	Mean	SD
2	55	112.02	16.98
3	60	133.47	21.41
4	50	166.70	24.26
5	35	180.57	29.16

The findings (Table 3.7.1.1) indicate that the daily living skills of older age participants is better (at 5 years mean =180.57) than younger age participants (at 2 mean= 112.02). The mean scores of daily living skills scores for different age is presented in Figure 3.7.1

Figure 3.3: Mean score of daily living sub-scale of IBAS



3.7.2. Daily living skills and Area of residence:

The result (Table 3.7.2) showed significant effect of residence on daily living skills ($t= 7.6$ & $p<.001$). The mean scores and standard deviation of daily living skills of different residential areas is presented in Table 3.7.2.

Table 3.7.2: Mean and Standard Deviation of daily living skills of different area of Residence

Area of Residence	N	Mean	SD
Urban	100	83.4	11.1
Rural	100	68.05	18.4

The results showed that daily living skills of urban participants has better ($X= 83.4$) than their counter part ($X=68.05$).

CHAPTER FOUR

DISCUSSION AND CONCLUSION

DISCUSSION AND CONCLUSION

The present study was undertaken to find out the association between home environment and children's adaptive behavior in urban and rural areas in Bangladesh. In addition, the study compared home environment of urban area with rural area. An effort was also made to investigate the effects of certain socio-demographic variables such as age, sex, area of residence and SES on adaptive behavior. So the other objectives were to see (a) the effect of age on adaptive behavior, (b) the effect of sex on adaptive behavior, (c) the effect of area of residence on adaptive behavior and (d) the effect of SES on adaptive behavior. The results of these comparison and effects are presented in the previous chapter. This chapter discusses the findings of the study. For the convenience of discussion the findings are organized in the following sections:

1. Correlation between adaptive behavior of the children and their home environment.
2. Comparison home environment between urban and rural areas.
3. Effects of age and residence on adaptive behavior of children.

4.1. Adaptive behavior of the children and their home environment:

In the present study, the findings showed that adaptive behavior (IBAS) was significantly correlated with total HOME scores and some subscales of HOME scores except for Learning materials and Modeling.

Further analysis revealed that there were strong relationships between some individual subscales of IBAS with some subscales of HOME inventory. Motor subscale of IBAS was significantly correlated with Language Stimulation, Responsibility, Variety, and Acceptance subscales.

Further more, Socialization subscale of IBAS was also significantly correlated with Language Stimulation, Physical environment, Responsibility, Academic Stimulation, Variety, Acceptance subscales.

The analysis also showed the strong correlation between Communication scales and subscales of Language materials, Language Stimulation, Academic Stimulation, Variety, Acceptance subscales.

Again, the result showed that Daily Living Skills subscale was significantly associated with Language Stimulation, Responsibility, Variety, and Acceptance subscales. So it may be concluded that children's' adaptive behavior is strongly correlated with their home environment. That means children learn and develop different skills at home through observation, modeling, and scaffolding in direct and indirect ways. If the children get stimulation at home through parenting, opportunity to get enough play materials or toys and play time, opportunity to play with parents, siblings and other family members, communication with parents and others, there is high chance to develop their full potential.

Studies in both home and school suggested that greater variety and responsiveness is associated with gains in cognitive development and more adaptive behavior. Both longitudinal and cross- sectional studies revealed the correlation between home environment and children's cognitive development (Bradley & Caldwell, 1987).

The present result is very much consistent with the findings of Bradley & Caldwell (1989, 1995), Bradley, et.al. (1994, 1995), Schroeder HE (1991), Agarwal et.al. (1991) and Gunther et.al. (2003) studies. These studies found children's home settings; home stimulation, toy availability and variability, and maternal involvement were strongly related to their adaptive behavior, motor development and intelligence.

4.2. Home Environment in urban and rural areas:

The findings revealed that the quality of psychosocial stimulation at home (HOME) was significantly different between urban and rural areas. Further, there were significant differences in subscales – Languages Stimulation, Physical Environment, Responsivity, Academic stimulation, Variety and Acceptance between urban and rural areas.

The findings indicated that the quality of language and academic stimulation, opportunity of play space and the acceptance by family are better in urban home compared to rural home.

One of the reason may be poverty and less or no parental education background. It is proved that children development is strongly related to maternal education and intelligence and family income and socioeconomic status (Gottfried & Gottfried, 1984; Gottfried, 1985; 1986).

Analyses have been shown that the relation of home environment and cognitive development remained significant when SES was controlled (Gottfried & Gottfried, 1984).

Children from rural families receive less or no intellectually advantage home environment compared to urban children because of poverty, lack of parental knowledge on child development, and lower SES. Urban parents are more knowledgeable and educated and try to ensure quality environment for their children. They spend more time with their children, provide enough play materials and play with them. There is significant difference in academic stimulation between urban and rural areas. Urban parents provide enough reading materials like story books, puzzles and games, which help children to develop cognitive development and intelligence. Urban children get more attention and involvement from their parents which are not seen often in rural areas. Because rural parents are over burdened with their daily work. There is less parental involvement in rural areas and in most cases rural parents are unable to provide proper stimulation, learning materials and even time which is reality in Bangladesh. It is proved that poverty and poor parental education are related to poor home environment (Evan, 2004).

4.3. Effects of Age and Residence on Adaptive Behavior of children:

In the present, the results revealed that age of children and areas of residence have significant effect on adaptive behavior of the participants. The results also indicated that the adaptive behavior of younger group is better than older group. Similarly urban group is better in adaptive behavior than rural group. But the effect of sex and SES was not found to be significant.

In comparison to urban families, the families of rural area are likely belonging to low socio-economic class. Mothers of rural family offered less learning and play materials, involved in their children learning activities to their young children. Rural children experienced substantially less cognitive stimulation and enrichment in comparison to urban children. Rural parents speak less often and in less sophisticated ways to their children and as they grow older, parents are less likely to engage jointly with their children in literary activities (Evan, 2004). Quality of accommodation is linked with income and residence. Parents of rural areas offer less facilities where children face more physical hazardous that may influence their children's development. Another probable factor may be nutrition. There

is no study found to support the result in Bangladesh. But the findings may be explained in the way that younger group get more attention and stimulation at home compared to older group.

4.3.1. Effects of Residence on Motor Skills of children:

The findings of the present study revealed that residence of children has significant effect on their motor skills. Though it is thought that rural children are advanced in motor development, the present study showed opposite results. One of the reasons may be that children from rural areas get relatively less opportunity to play. Most of them were busy with household work. Another reason is that during IBAS administration, the children were very shy. They never exposed to this kind of test before. In IBAS, some responses were obtained by interviewing mothers where they might not have observed about their children's development minutely.

4.3.2. Effects of Residence on Socialization Skills of children:

The results indicated that residence of children has significant effect on socialization skills. Urban children were better in social development than rural children. Mother with relatively higher educated provided a more enriched environment for their social and cognitive development (Gottfried & Gottfried, 1984). Socialization is related to play opportunity in the early years of life. Through play, children can practice socialization skills, such as sharing, and social norms. Mothers also teach social values from early years that help children to become social being. Urban families are relatively belong to higher SES, so the mother from higher SES are more intelligent and provide enough play materials, time and opportunity for the development of their children.

4.3.3 Effects of Age and Residence on Communication Skills of children:

The analysis showed that age of children and area of residence has significant effect on communication skills. The results indicates that the older age children have high communication skills compared to younger group. The analysis also indicates that the urban group is better in communication skills compared to their rural counterpart.

The two-way interaction among residence and socioeconomic status was found to be significant. This indicates that the middle SES group is in the best position than the low and high SES groups. In Bangladesh, the middle SES group is most stable position in different

respects compared to other two groups. Most of the families have regular income, family life is well organized and other areas e.g. health status, educational background, home environment, interpersonal communication are also fine. The middle class families are more aware of their children's development and learning.

4.3.4. Effects of Age and Residence on Daily living Skills of children:

The analysis showed that age of children and area of residence has significant effect on daily living skills. The results indicate that the older age children have higher daily living skills in comparison to younger group. In Bangladeshi culture, after a certain age, children have to do their own work like toileting, brushing their teeth, bathing, and dressing. They usually become involved in household work, entertain guest, prepare simple food and look after their younger siblings.

CONCLUSION:

Many children in developing countries are not developing to their full potentials due to poverty, poor health and nutrition, and lack of stimulation. It is best –documented that lack of stimulation and nurturing environment is the one of the immediate risk factors for not to reach developmental potential level.. According to the UN Convention on the rights of the Child (1971), article 6 stated “*All children have the right to life. Government should ensure that children survive and develop healthy.*” A child has rights to get healthy environment for his better development. In that case home is the first place where parents as well as state can ensure stimulated and safe environment for child's healthy growth and development. It is clearly stated from the research that home stimulation in early years is important for children's growth and development. The importance of care and stimulation of children aged less than 5 years, has become especially critical as more children survive and their quality of life becomes a concern.

The finding of the study has shown that there was a strong relationship between home environment and adaptive behavior of the young children. It was also revealed that children's motor skill was associated with their home stimulation like language stimulation, responsiveness and variety of toys.

The findings has also shown that socialization skills, communication skills and daily living skills of young children were strongly correlated with their home environment-learning stimulation, physical environment and academic stimulation at home. The study findings were consistent with other studies done in different culture.

In addition, the finding has revealed that the quality of home environment of urban areas was significantly better than that of the rural areas. In Bangladesh, it is quite true that the children from urban families get better opportunity at home than rural children. They usually get better learning stimulation, physical settings, language stimulation, toys, and academic stimulation. In the study, no gender difference has been found in adaptive behavior in both urban and rural areas. But the result showed that older children have been development better adaptive behavior than the younger children.

The findings of the study have important implications for early childhood development. Home environment is strong factor for children's holistic development. Present government of Bangladesh is giving emphasis on early childhood development (ECD) and is working on policy of comprehensive early childhood program and operational framework for pre-primary curriculum. Under comprehensive ECD program, home stimulation should get importance to enhance parenting quality and style and children's development. The home environment is very important especially for under 5 year old children who not get any academic or center based stimulation. Home is the best and only place where younger children will get proper stimulation and care and it seems the first learning institution of children. Government of Bangladesh should keep their focus on home stimulation and children's early development.

Need for further research:

A number of limitation s of the present study has been provided the basis for further study in the areas of home environment and children adaptive behavior and development. The study was a cross-sectional study and the sampling technique was purposive and the sample was not country representative. In that case it is difficult to generalize the finding of the study. It would be better to do randomize trial in future.

Another finding of the study was that the daily living skills of rural children were better than urban children . In Bangladesh it is considered that the rural children are typically more

developed and advanced in daily living skills due to low socioeconomic condition and survive.

So further study may be under taken to find out the factors that may influence better daily living skills of urban children.

In short, the study is probably the unique step in the perspective of Bangladeshi culture to gather knowledge about the effects of home environment on children's adaptive behavior as well as their different developmental domains in early childhood. It is not possible to include all variables in a single research because of time and fund constrain. Therefore, still further research is needed to be with sound study design to get better understanding of the effect of home environment on adaptive behavior and holistic development of children in early years of life.

Despite all these limitations, the study has great contribution in understanding the association of home environment and adaptive behavior of young children. The findings of the study give a general picture as well as give rise to many research questions where the importance of the present research lies.

CHAPTER FIVE

SUMMARY

SUMMARY

The present study was undertaken to find out the association between home environment and children adaptive behavior in urban and rural areas in Bangladesh. The specific objectives were to see: (a) the effect of age on adaptive behavior, (b) the effect of sex on adaptive behavior, (c) the effect of area of residence on adaptive behavior and (d) the effect of SES on adaptive behavior and also to investigate the effects of age, sex and residence and socio-economic status (SES) on sub-scales of Independent Behavior Assessment Scale (IBAS) such as motor skills, communication skills, socialization skill and daily living skills.

The study comprised 200 pairs mother- child of age between 2-5 years selected from urban and rural areas, whereas 100 pairs from rural area and 100 pairs from urban area.

The instruments used to measure the variables were: (a) Independent Behavior Assessment Scale (IBAS), and (b) Home observation for measurement of Environment (HOME). IBAS was used to assess children adaptive behavior and children's home environment was assessed using HOME inventory. Demographic information of the children was also collected.

HOME inventory was culturally validated. The scale was translated from English to Bangla and back translated with reviewed by five experts. The test-retest reliability study of the scale was conducted with 30 mothers who had 2 to 5 years of aged children reassessed after a gap of 7 to 15 days whereas half of mothers were from rural area and half of them were from urban area. The Pearson correlation coefficient of test-retest of the scale was 0.86 and $\alpha = .92$.

The obtained data were analyzed by correlation of coefficient, *t*-test and four-way analysis of variance.

The correlation of coefficients between adaptive behavior and home environment of children showed the following significant relationship:

(i) Children's adaptive behavior (IBAS) was strongly correlated ($r = 0.44$, $p < .01$) with their home environment (HOME Inventory) and some sub-scales of HOME inventory, such

as Language Stimulation, Responsibility, Variety, Acceptance, and no relationship with two sub-scales-Learning materials and Modeling,

(ii) Four sub-scales of IBAS were also significantly correlated with Language Stimulation, Responsibility, Variety, Acceptance subscales and total HOME scale.

The t-test showed that there significant difference ($t=13.84$) in the quality of psychosocial stimulation at home (HOME) between urban ($X=41.33$) and rural areas ($X= 31.33$) at $p<.001$.

There are significant difference of subscales – Languages Stimulation (mean 6.67, 5.40, $p<.001$), Physical Environment (mean 4.56, 3.38, $p<.001$), Responsivity (mean 6.68, 3.17, $p<.001$), Academic stimulation (mean 4.37, 3.81, $p<.05$), Variety (mean 6.32, 4.17, $p<.001$) and Acceptance (mean 3.46, 2.33, $p<.001$) between urban and rural areas.

The Four-Way Analysis of variance for IBAS and sub-scales of IBAS by age, sex, area of residence and SES have produced the following results:

(i) the main effects of age ($F=3.310$; $df=3, 159$; $p<.05$) and area of residence ($F=57.917$; $df=1, 159$; $p<.001$) on adaptive behavior of the children was found to be significant, but the main effect of sex and SES were found to be not significant,

(ii) the main effects of area of residence ($F=11407.814$; $df=1, 159$; $p<.001$) on motor skills was found to be significant, but the main effect of age, sex and SES was found to be not significant, (c) the area of residence has significant effects on socialization skills,

(iii) area of residence has significant effects on socialization skills ($F=32.100$; $df=1,158$; $p<.001$)

(iv) age ($F = 61.22$; $df=3, 159$; $p<.001$) and the area of residence ($F=4.385$; $df=1,159$; $p<.05$) have significant effects on communication skills of children,

(v) age of children ($F = 14.122$; $df=3, 159$; $p<.001$) and area of residence ($F=48.455$; $df=1,159$; $p<.001$) has significant on daily living skills.

None of the interactions was found to be significant.

The findings of the study have important implications for early childhood development. Home environment is strong factor for children's holistic development. The study has great contribution in understanding the association of home environment and adaptive behavior of young children. This is the unique step in the perspective of

Bangladeshi culture to gather knowledge about the effects of home environment on children's development in early childhood.

REFERENCES

- Abbott A.L and Bartlett D.J (2001). Infant motor development and equipment use in the home. *Child Care Health Dev.* 2001 May;27(3):295-306.
- Agarwal DK, Awasthy A, Upadhayay SK, Sing P, Kumar J and Agarwal KN (1992): Growth, Behaviour , Development and Intelligence in Rural Children between 1-3 years of life. *Indian Pediatrics*, 29;p-467-80
- Bandura, A(1991).Social cognitive theory of moral thought and action. In W.M . Kurtines & J.L. Gewirtz (Eds), *Handbook of moral behavior and development*. Hilladale, N: Erlbaum.45-103
- Baxter-Jones AD, Cardy AH, Helma PJ, Phillips DO, Smith W.C. (1999): Influences of socioeconomic conditions on growth in infancy: the 1921 Aberdeen birth cohort. *Arch Dis Child*, Jul; 81(1): 5-9
- Black MM, Dubowitz H, Starr RH Jr.(1999) African American father in low incomes, urban families: development, behavior and home environment if their three year-old children. *Child Development*, July-Aug; 70(4):967-78.
- Bluma, S., Shearer, A., Forman, A., and Hilliard, . (1975): Portage Guide to early Education. Portage:CESA 12; Windor: NEER-Nelson.
- Bornstein & M.E. Lamb eds. *Developmental Psychology*, 29,893-906.
- Bradley, R. H. (1999). The home environment. In S. L. Friedman & T. D. Wachs (Eds.), *Measuring environment across the lifespan* (pp. 31–58). Washington, DC: *American Psychological Association*.
- Bradley, R. H., & Caldwell, B. M. (1979). Home observation for measurement of the environment: arevision of the preschool scale. *Am J Ment Defic.* 84,3; 235-44
- Bradley, R. H., & Caldwell, B. M. (1995). Caregiving and the regulation of child growth and development: Describing proximal aspects of caregiving systems. *Developmental Review*, 15, 38–85.
- Bradley, R.H, Whiteside L, Mundfrom D, Blevin-Knabe, B., Casey P.H, Caldwell, K.H.,

- Kelleher K, Pope S and Barrett, K (1995) Home environment and adaptive behaviour among premature, low birth weight children: alternative models of environmental action. *J. Pediatr. Psychol.*20:347-62.
- Bradley, R.H, Whiteside, L., Mundfrom, D, Casey, P.H., Kelleher K, Pope S (1994) Home environment and adaptive behaviour among premature, low birth weight children: alternative models of environmental action. *J. Pediatr. Psychol.*25:545-56.
- Bradley, R.H.(1989) Home Environment and Cognitive Development in the First Three Years of Life: A Collaborative Study Involving Six Sites and Three Ethnic Groups in North .*Developmental Psychology*, v25 n2 p217-35
- Bradley, R.H.(1993). Children's home environments, health, behaviour and intervention efforts: a review using the HOME inventory as a marker measure. *Genet Soc Gen Psychol Monogr.* 119, 4; 437-90
- Brody, G., McBride-Murry, V., Kim, S., Brown, A. (2002): Longitudinal pathways to competence and psychological adjustment among African American children living in rural single-parent households. *Child Development* 73(5): 1505-1516.
- Bronfenbrenner, U (1989) Ecological systems theory. In Vasta R (Ed.) *Annals of child development*: Volume 6. Jason Aronson Press, Greenwich, CT; pp: 187-249.
- Bruininks, R.H., Woodcock,R.W., and Weatherman, R.F., and Hill, B.K, (1985): Development and Standardization of the Scale of Independent Bbehavior. Alleen, Texas: *DMC Teaching Resources*.
- Burchinal, M, Follmer, A., Bryant, D. (1996): The relations of maternal social support and family structure with maternal responsiveness and child outcomes among African American families. *Developmental Psychology* 32(6): 1073-1083.
- Buss, A.H., and Plomin, R.(1975): A temperamental theory of personality developmeny. New York; Wiley.
- Caldwall, B.M. (1967): Descriptive evaluation of child development and developmental settings. *Paediatrics*; 40;46-50
- Casey P.H., Bradley , R.H.(1982). The impact of the home environment on children's development: clinical relevance for the paediatrician. *Dev Behav Pediatr.* 3,3; 146-52
- Clarke N, Grantham-McGregor S, & Powell C (1991) Nutrition and health predictors of

- school failure in Jamaican children. *Ecology of Food and Nutrition* 26: 1-11.
- Culbertson JL, Newma JE, Willis DJ. (2003) Childhood and adolescent psychologic devcelopment. *Pediat Clin North Am.* Aug;50(4): 741-64,vii
- Dubow E, & Ippolito MF(1994) Effects of poverty and quality of the home environment on changes in the academic behavioral adjustment of elementary school-age children. *J Cli. Child Psy*, 23: 401-12.
- Dubowitz H, Papas MA, Black MM, Starr RH Jr. (2002). Child neglect: outcomes in high-risk urban preschoolers. *Pediat, Jun*;109(6):1100-7
- Duncan G, Brooks-Gunn J, Klebanov P (1994) Economic deprivation and early childhood development. *Child Development*; 65(2): 296-318.
- Engle, P. (2007). Our Global Responsibility: meeting the developmental potential of over 200 million young children. Summary for *Consultative Group Coordinator's Notebook. June*; 1-12
- Erickson, E.H. (1963) : *Childhood and society*, 2nd ed. New York; Norton.
- Evan GW (2004): The Environment of Childhood Poverty. *American psychological Association.* 59, 2, p-77-92
- Evans J, Shah PM (1993) Child-care programmes for health and family support. *World Health Stat Q.* 46(4):214-21
- Evans, G. W., Wells, N. M., Chan, E., & Saltzman, H. (2000). Housing and mental health. *Journal of Consulting and Clinical Psychology*, 68, 526–530.
- Eu,B. and O'Neill, M.J.,(1983): Development of the preschool chills: the validation of a psychomotor screen, and the influence of the home environment on psychomotor development. *Ausr Paediatr J* .19; 78-85
- Fall L, and Seek B (2003): Development of African Children: Influence of the home environment. *Med Trop (Mars)*, 63(4-5):413-21
- Galler J, Harrison R, Biggs M, Ramsey F, Forde V (1999) Maternal moods predict breastfeeding in Barbados. *Journal of Developmental and Behavioural Pediatrics* 20: 6-13.

- Garcia Coll, C.T., Surrey, J.L., Weingarten, K. (1998). *Mothering against the odds*. New York, Guilford Press.
- Garrett P, Ng'andu N, Ferron J (1994) Poverty experiences of young children and the quality of their home environments. *Child Development*, 65: 331-45
- Golden M, Burns B (1976) Social class and infant intelligence. In: Lewis M (Ed.) *Origins of intelligence*. Plenum, New York, pp: 299-351.
- Gottfried A.W (1984). Home Environment and early cognitive development: Longitudinal research. Academic press, New York, 57-116
- Gottfried AW, and Gottfried AE (1985). Home environment and cognitive development in young children of middle –socioeconomic-status families. In the A.w Gottfried (1984). Home Environment and early cognitive development: Longitudinal research. Academic press, New York, 57-116
- Gottfried AW, and Gottfried AE (1986) Home Environment and Children Development from the infancy through the school entry years: Results of Contemporary Longitudinal Investigation in North America. *Children's Environment Quarterly*, 3,1,1-9
- Grantham-McGregor, S (1995) A Review of studies of the effect of severe malnutrition on mental development. *Journal of Nutrition* 125: 2233S-2238S.
- Grantham-McGregor, S., Lira P, Ashworth A, Morris S, Assuncao A (1998) The development of LBW term infants and the effects of the environment in northeast Brazil. *Journal of Pediatrics* 132(4): 661-666.
- Grantham-McGregor, S., Cheung, Y.B., Cueto S., Glewwe, P., Richter, L., Strupp, B., B., and the International Child Development Steering Group (2007). Developmental potential in the first 5 years for children in developing countries. *Lancet* ;369, 60-70
- Gunning M, Conroy S, Valoriani V, Figueiredo B, Kammerer M.H, Muzik M, Glatingny-Dallay E, Murray L and the TCS-PND Groups (2004): Measurement of mother-infant interaction and the home environment in European settings: preliminary result from a cross-cultural study. *British Journal of Psychiatry*, 184 (s-46), s38-44
- Gunther N, Slavenburg B, Fernon F, Von OsJ. (2003). Childhood social and early

- development factors associated with mental health service use. *Soc Psychiatry Psychiatr Epidemiol.* Mar;38(3): 101-8
- Gunzburg, H.C. (1977): *Progress Assessment Charts*. London: Royal Society for Mentally Handicapped Children and Adults.
- Gwatkin, D.R, Rustein, S., Johnson, K.,Pande, R.P., Wagstaff, A (2000). Socio-Economic Differences in Health, Nutrition and Population in Bangladesh. HNP/Poverty Thematic Group of The World Bank
- Halpern R. G Figueiras AC(2004) Environmental influences on child mental health. *J Pediatr*, Apr; 80(2 suppl):S104-10.
- Harwood,R.L., Miller,J.G., Irizary N.L.,(1995). Culture and attachment: Perception of the child in context. New York. Guilford Press.
- Hauser-Cram P, Warfield M.E, Shonkoff J.P, Krauss M.W, Upshur C.C and Sayer A (1999): Family Influences on Adaptive Development in Young Children with Down Syndrome, Society for Research in Child Development. *Child Development*, Vol. 70, No. 4 , pp. 979-989
- Hoff, E. (2003): The Specificity of Environmental Influence: Socioeconomic Status Affects Early Vocabulary Development via Maternal Speech. *Child Development*. Vol 74;5; p-1368-1378.
- Holditch-Davis, D. Bartlett, T.R. Belyea, M (2000). Developmental problems and interactions between mothers prematurely born children. *J Pediatr Nurs.* 15,3; 157-67.
- Jackson A, Brooks-Gunn J, Huang C, Glassman M (2000) Single mothers in low wage jobs: Financial strain, parenting and preschoolers outcome. *Child Development* 71(5):1409-1423.
- Khan, N., Sultana,N., Parveen, M., Ali, S.M.K (1994): Comparison Between Intellectual Performance and Adaptive Behaviour of Malnourished Children. *D.S (Child) H J.* 10;9-13.
- Klahr,D. (1992):Information processing approaches to cognitive development. In M.H. Kohn R, Levav I, Alterwain P, Ruocco G, Conterea M, Grotta SD(2001) Risk factors

- for behavioral and emotional problems in childhood: a community study in Uruguay. *Rev Panam Salud Publica*, Apr; 9(4): 211-8.
- Korenman S, Miller J, Sjaastad J (1995) Long-term poverty and child development in the United States: Results from the National Longitudinal Survey of Youth. *Children and Youth Services Review* 17(1): 127-151.
- Lasky R, Klein R, Yarbrough C, Engle P, Lechtig A, Martorell R (1981). The relationship between physical growth and infant behavioral development in rural Guatemala. *Child Development*; 52(1): 219-226.
- Lerner, R(1986). Concepts and theories of human development. New York; Random House. 2nd ed
- Liaw F, Brooks-Gunn J (1994) Cumulative familial risks and low birth weight children's cognitive and behavioural development. *Journal of Clinical Child Psychology* 23: 360-372.
- Linver M.R, Brooks-Gunn J, Kohen D. E. (2002): Family processes as pathways from income to young children's development. *Developmental psychology*; vol. 38, 5, pp. 719-734.
- Lovejoy M, Graczyk P, Neuman G (2000) Maternal depression and parenting behaviour: a meta-analytic review. *Clinical Psychological Review* 20(5): 561-592.
- Martins C, Gaffan E (2000) Effects of early maternal depression on patterns of infant-mother attachment: a meta-analytic investigation. *Journal of Child Psychology and Psychiatry* 41(6): 737-746.
- Mendez M, Adair L (1999) Severity and timing of stunting in the first two years of life affect performance on cognitive tests in late childhood. *Journal of Nutrition* 129: 1555-1562.
- Miller, P.H (1993): Theories of developmental Psychology. 3rd ed. New York; Freeman.
- Monckeberg F (1972) Malnutrition and mental capacity. In: Pan American Health

- Organization (Ed) Nutrition, the nervous system and behaviour, Scientific Publication No 25, PAHO, Washington D.C., pp: 48-54.
- Munir, S.Z., Zaman, S, McConachie, H.(1999): Developemt of an Independent Behaviour Assessment Scale of Bangladesh. *J App Research in Intellectual Disabilities*. 12; 3; 241-252.
- Petterson S, Burke-Albers A (2001) Effects of poverty and maternal depression on early child development. *Child Development* 72(6): 1794-1813.
- Powell C, Grantham-McGregor S (1985) The ecology of nutritional status and development in young children in Kingston, Jamaica. *American Journal of Clinical Nutrition* 41(6): 1322-1331.
- Schoon I, Byner J, Joshi H, Parsons S, Wiggins R, Sacker A (2002) The influence of context, timing and duration of risk experiences for the passage from childhood to mid adulthood. *Child Development* 73(5): 1486-1504.
- Schroeder, HE (1991).New directions in health psychology assessment Hemisphere Publishing Corporation. Kent State University. Applied Psychology Center p-138-139
- Sharp D, Hay D, Pawlby S, Schmucker G, Allen H, Kumar R (1995) The impact of postnatal depression on boys' intellectual development. *Journal of Child Psychology and Psychiatry* 36(8): 1315-1336.
- Sigman M, McDonald M, Neumann C, Bwibo N (1991) Prediction of cognitive competence in Kenyan children from toddler nutrition, family characteristics and abilities. *Journal of Child Psychology and Psychiatry* 32(2): 307-320.
- Sigman M, Neumann C, Jansen A, Bwibo N (1989b) Cognitive abilities of Kenyan children in relation to nutrition, family characteristics, and education. *Child Development* 60(6): 1463-1474.
- Sommerfelt K, Andersson H, Sonnander K, Ahlsten G, Ellertsen B, Markestad T, Jacobsen G, Bakketeig L (2001) Behaviour in term, small for gestational age preschoolers. *Early Human Development*; 65: 107-121.
- Sparrow, S.S., Balla, D.A and Cicchetti, D.V (1984): Vineland Adaptive Behavior Scale. Cercle Pines, MN: American Guidance Services.
- Tanner, J.M (1990). Fetus into man: Physical growth from conception to maturity (3rd ed.).

- Cambridge, MA: Harvard University Press.
- Vygotsky, L.S. (1978). *Mind and Society: The development of higher mental process*. Cambridge, MA: Harvard University Press
- Wachs T (2000) Necessary but not sufficient. The respective roles of single and multiple influences on individual development. *American Psychological Association*, Washington, DC.
- Walker, S.P., Wachs, T.D., Gardner, J.M., Lozoff, B., Wasserman, G.A. Pollitt, E. and Carter, J.A. (2007) 'Child development: risk factors for adverse outcomes in developing countries', *Lancet*, vol. 369, no. 9556, pp. 145–57.
- Watson. J.B (1930): *Behaviorism*. New York; Norton.
- Wenzel E (1997) Environment, development and health ideological metaphors of post traditional societies? *Health Educ Res*, Dec; 12(4): 403-18
- Werner, H.(1957). The concept of development from a comparative and organismic point of view. In D.B. Harris (ed). *The concept of development*, Minneapolis: University of Minnesota Press; 125-148
- Whitting,B.B and Edwards,C.P(1998). *Children of different worlds*. Cambridge, MA: Harvard University Press.
- Whitting,B.B and Whitting,J.W. (1975). *Children of Six Cultures: A psycho-cultural analysis* . Cambridge, MA: Harvard University Press.
- Zaman, S.S., Khan, N.Z, Islam, S. , Banu, S., Disit,S., Shrout, P., and Durkin, M(1090). Validity of the Ten Questions' for screening serious childhood Disability: Result from urban Bangladesh. *International Journal of Epidemiology*. 19, 613-20.

APPENDICES

DEMOGRAPHIC INFORMATION

Date of Interview	Name of the interviewer:
Starting time	Ending time
1. Study ID #	2. Child's Name
3. Sex : 1=Male 2=Female	4. Child's DOB
5. Child's Age	
6. Mother's Name	7. Mother's Education
8. Mother's Age	9. Mother's Occupation
10. Father's Name	11. Father's Age
12. Father's Education	13. Father's Occupation
14. Number of bed rooms/living rooms	
15. Roof condition 1= Tin, 2=Straw, 3=Cement, 77=Others	
16. Wall of the house 1=Straw/Jute/Bamboo, 2=Cement, 3=Wood, 4=Tin, 5=Earthen, 77=Others	
17. Source of drinking water 1=Supply/tap water 2=Tubewell, 3=River/Canal/Pond, 4=Well	
18. Location of drinking water 1=Outside, 2=Within house compound	
19. Electricity 1=No, 2=Yes	
20. Latrine 1=No fixed place, 2=Katcha-open,	
21. 3=Some form of sanitary, 4=Sanitary	
22. Number of beds	
23. Number of tables	
24. Number of chair	
25. Do you have sofa-sets ? 1=No, 2=Yes	
26. Number of show-case/Steel Almirah	
27. Number of radios	
28. Number of cassette players(twin-one)	
29. Number of TV's ?	
30. Number of Fans?	
31. Number of electric goods	
32. Number of wall clock/watch	
33. Number of van/rickshaw/ Bicycles	

34. Do you have any gold jewelry? 1=nose-ring, 2=ear-ring, 3=necklace, ☐☐
 i. 4=bangles, 5=ring, 6=1+2, 10=2+3, 11=2+4, 12=3+4,
 ii. 13=1+2+3, 14=1+2+3+4, 15=1+2+3+5, 16=13+5

35. Do you have any other valuables? 1=No, 2=Yes ☐

36. (e.g. pump/sewing machine,)

37. Residence/house 1=Rented, 2= Own, 77= Others ☐☐☐

38. If rented, house rent (in Taka) ☐☐☐☐☐☐

39. Dwelling (Katha)/decimals ☐☐☐☐

40. ভাই বোনের সংখ্যা (জীবিত) (live birth excluding the child) ☐☐

41. বাচ্চার জন্ম ক্রম (জীবিত) (live birth) ☐☐

42. কতমাস বয়সে অন্যান্য খাবার দিয়েছেন ? (Fill-out from X-file) ☐☐☐

43. একই ভিটায় বা একই বাড়ীতে কতজন খায় (সপ্তাহে কমপক্ষে ৩দিন থাকে/বা খায়) ☐☐☐

44. বাচ্চার বাবা একসাথে থাকে কিনা ? না=১, হ্যাঁ=২ ☐

45. যদি 'না' তাহলে কেন? 1=dead, 2=separated/divorced, 3=living abroad, 77=others ☐☐

Home Observation for Measurement of Environment (HOME inventory)

Date of Interview Name of the interviewer:

Child's Name Sex : 1=Male 2=Female

Child's DOB Child's Age

Mother's Name Address

১. রং, আকার ও আকৃতি শিখতে পারে এমন কোন খেলনা শিশুর আছে?
না বা ২টার কম= ০, ২ বা তার বেশি= ১
২. বাড়ীতে শিশুর এমন খেলনা আছে, অনেক চিন্তাভাবনা করে যার বিভিন্ন অংশ জোড়া লাগিয়ে কোন জিনিস তৈরী করা যায়? না = ০, হ্যাঁ বা ১টা/তার বেশি= ১
৩. বাড়ীতে রেডিও বা ক্যাসেট প্রেয়ার এবং শিশুদের ক্যাসেট আছে এবং তা শুনেন?
না= ০, হ্যাঁ = ১
৪. শিশুর এমন কয়টি খেলনা আছে (বা খেলা খেলে), যা দিয়ে বা যাতে সে ইচ্ছামত খেলতে পারে? (যেমনঃ মাটি, ক্লটির কাই দিয়ে জিনিস তৈরী, কাগজে রং করা, ছবি কেটে কাগজে লাগানো)।
না বা ২টার কম= ০, ২ বা তার বেশি= ১
৫. শিশুর এমন কয়টি খেলনা আছে, যা দিয়ে খেলার সময় আঙ্গুলের বা হাতের নাড়াচাড়া করতে হয়। যেমনঃ কাঠের টুকরা বা লেগো দিয়ে ঘর/ট্রেন বানানো। পুতুলকে কাপড় পড়ানো, পুঁতি দিয়ে মালা গাঁথা)।
না বা ২টার কম= ০, ২ বা তার বেশি= ১
৬. শিশুর এমন কয়টি খেলনা আছে যা দিয়ে সংখ্যা গণনা শিখতে পারে। (যেমনঃ কার্ড, তালি, পুঁতি, বই, ইত্যাদির মাধ্যমে সংখ্যা গণনা শিখে)।
না বা ২টার কম= ০, ২ বা তার বেশি= ১
৭. বাড়ীতে কয়টি শিশুদের বই আছে?
না বা ৫টার কম= ০, ৫ বা তার বেশি= ১
৮. বাড়ীতে কয়টি বড়দের বই আছে? (ডিকশনারী, গল্পের বই, রান্নার বই, ম্যাগাজিন)
না বা ৫টার কম= ০, ৫ বা তার বেশি= ১
৯. মা প্রতিদিন খবরের কাগজ পড়েন। (শিশু অবশ্যই মাকে পড়তে দেখে) না= ০ হ্যাঁ = ১
১০. মা নিয়মিত ম্যাগাজিন কিনেন বা কোন খান থেকে পান কিনা। (প্রতি সপ্তাহে বা মাসে একই ম্যাগাজিন কিনেন /পেয়ে থাকেন কি না)? না= ০ হ্যাঁ = ১
১১. মা বা বাড়ীর কেউ শিশুকে কোন কিছুর আকৃতি শিখান বা শিখতে উৎসাহ দেন কিনা। (যেমনঃ এটা গোল, এটা চারকোনা ইত্যাদি)। না= ০ হ্যাঁ = ১

১২. পশু পাখীর নাম শিখা যায় এমন কয়টি খেলনা শিশুর কাছে আছে এবং মা বা বাড়ীর বড় কেউ তার সাথে খেলেন এবং তাকে শিখান। না বা ২টার কম= ০, ২ বা তার বেশি= ১ ☐
১৩. মা বা বাড়ীর বড় কেউ শিশুকে অক্ষর শিখান বা শিখতে উৎসাহ দেন? (যেমনঃ অ, আ, ... A, B, ...)
না= ০ হ্যা = ১ ☐
১৪. মা বা বাড়ীর বড় কেউ শিশুকে সাধারণ মৌখিক ভ্রুততা বা আচার আচরন শিখান। যেমনঃ ধন্যবাদ বলা, সালাম দেওয়া, দুঃখিত বলা। না= ০ হ্যা = ১ ☐
১৫. কথা বলার সময় মা শুধু উচ্চারণ করেছেন ও সুন্দর ভাবে কথাবি বলেছেন। (লক্ষ করতে হবে যে মা কথা বলার সময় সম্পূর্ণবাক্য বলেছেন কিনা বা উচ্চারণে কথা বলেছেন কিনা বা অপ্রভাবে কথা বলেছেন কিনা?)
না= ০ হ্যা = ১ ☐
১৬. বাবা, মা বা বাড়ীর বড় কেউ (১৩ বছরের উপর) শিশুর সাথে কথা বলেন, তাকে কথা বলতে দেন এবং সময় নিয়ে তার কথা শুনেন। না= ০ হ্যা = ১ ☐
১৭. মা যখন শিশুর সাথে কথা বলেছেন তখন তার বলার ভিতর শিশুর প্রতি আদর ও উচ্চতা ভাব প্রকাশ পেয়েছিল কিনা।
না= ০ হ্যা = ১ ☐
১৮. খাবার খাওয়ার সময় শিশুকে তার পছন্দের খাবারটি খেতে বা নিতে দেন। (সকাল ও বিকেলে নাস্তার সময়, দিন ও রাতের খাবারের সময় কয় বেলায় এরকম করেন)। না= ০ হ্যা = ১ ☐
১৯. ঘর / বাসা (ভিতর) নিরাপদ ও বিপদায়ুক্ত। (দা-বাটি পড়ে আছে কি না, চুলা জ্বালানো আছে কি না, দেয়ালের চুন খসে পড়েছে কি না) না= ০ হ্যা = ১ ☐
২০. ঘরের / বাসার বাইরে খেলার জায়গা নিরাপদ ও ঝামেলা মুক্ত কিনা? (আশে পাশে ভাঙ্গা ইট, চুলা জ্বালানো আছে কি না)
না= ০ হ্যা = ১ ☐
২১. ঘরের ভিতরটা অন্ধকার বা শ্রীহীন/কম আকর্ষণীয় (পর্দা বা পোষ্টার বা অন্য কিছু দিয়ে সাজানো এবং পর্যাপ্ত আলো আছে)। না=১ হ্যা = ০ ☐
২২. ঘরের / বাসার আশেপাশের পরিবেশ পরিষ্কার-পরিচ্ছন্ন ও মনোরম (শান্ত ও সুন্দর)। না=০ হ্যা = ১ ☐
২৩. কয়টি বেশী আসবাবপত্র দিয়ে সাজানো নয় এবং শিশুর খেলার জন্য পর্যাপ্ত জায়গা আছে। না=০ হ্যা = ১ ☐
২৪. ঘর/ বাসা টি তুলনামূলক ভাবে পরিষ্কার-পরিচ্ছন্ন এবং মোটামুটি ভাবে সাজানো গোছানো? না=০ হ্যা = ১ ☐
২৫. শিশুকে বাবা, মা বা বাড়ীর বড় কেউ সারাদিনে কোলে নেন বা পাশে বসান বা জড়িয়ে ধরেন বা সাথে নিয়ে ঘুমান /শুয়ে থাকেন। (কমপক্ষে ১০-১৫ মিনিট) না=০ হ্যা = ১ ☐
২৬. সাক্ষাৎকারের সময় মা শিশুর সাথে কমপক্ষে ২ বার কথা বলেছেন? (শিশুর প্রশ্নের জবাব দিয়েছেন/ মা কোন বিষয়ে তাকে বুঝিয়ে বলেছেন/ কোন কিছু করার জন্য আদেশ দিয়েছেন) না=০ হ্যা = ১ ☐
২৭. সাক্ষাৎকারের সময় শিশুর কোন প্রশ্ন বা আবদারের জবাব মা কথায় / মৌখিক ভাবে দিয়েছেন (যদি শিশু কোন প্রশ্ন/আবদার না করে বা কোন প্রশ্নের জবাবে বিরক্ত বোধ করে নেতিবাচক উত্তর করে, যেমনঃ এখন না, বিরক্ত করো না, এখন ব্যস্ত, পরে এসো ইত্যাদির কোর তন্য হবে।) না=০ হ্যা = ১ ☐
২৮. মা সাধারণত শিশুর কথার জবাব কথায় দিয়েছেন। না=০ হ্যা = ১ ☐

২৯. সাক্ষাৎকারের সময় মা কমপক্ষে ২ বার শিশুর আচরন বা গুণের প্রশংসা করেছেন? না=০ হ্যা = ১ ☐
৩০. সাক্ষাৎকারের সময় মা শিশুকে আদর করেছেন বা চুমু দিয়েছেন বা বুকে জড়িয়ে ধরেছেন। না=০ হ্যা = ১ ☐
৩১. সাক্ষাৎকার সময়ে শিশু যা পারে মা তাকে তা করে দেখাতে বলেছেন বা দেখাতে সাহায্য করেছেন। না=০ হ্যা = ১ ☐
৩২. মা বা বাড়ীর বড় কেউ (১৩ বছরের উপর) শিশুকে রং শিখতে উৎসাহ দিয়েছেন। না=০ হ্যা = ১ ☐
৩৩. মা বা বাড়ীর বড় কেউ (১৩ বছরের উপর) শিশুকে গান (ছড়া গান, বিজ্ঞাপনের গান), দোয়া দরুদ, বা কথা বলা শিখতে উৎসাহ দিয়েছেন কিনা। না=০ হ্যা = ১ ☐
৩৪. মা বা বাড়ীর বড় কেউ (১৩ বছরের উপর) শিশুকে অবস্থান বিষয়ক শব্দ (যেমনঃ উপর, নীচ, সামনে, পিছনে, পাশে, বড়, ছোট, ভিতর, বাহির, ডানে, বামে) শিখতে উৎসাহ দিয়েছেন। না=০ হ্যা = ১ ☐
৩৫. মা বা বাড়ীর বড় কেউ শিশুকে সংখ্যা গণনা শিখতে উৎসাহ দিয়েছেন কি না?
(যেমনঃ খেলার মাধ্যমে গণনা শিখা, আঙ্গুল গণনা করে, খেলনা গণনা করে)। না=০ হ্যা = ১ ☐
৩৬. মা বা বাড়ীর বড় কেউ শিশুকে কয়েকটি শব্দতে পড়তে উৎসাহ দিয়েছেন বা পড়তে শিখিয়েছেন (যেমনঃ দোকানে গেলে বিভিন্ন জিনিসের নাম পড়া, সাইন বোর্ড ব গল্প বই পড়ার সময় শব্দ উচ্চারণ করে পড়া)। না=০ হ্যা = ১ ☐
৩৭. নির্দিষ্ট খাবারের সময় ছাড়া শিশু যখন তখন খেতে চাইলে মা তাকে খেতে দেন না। না=০ হ্যা = ১ ☐
৩৮. নির্দিষ্ট সময় ছাড়া শিশুকে যখন তখন টিভি দেখতে দেন না এবং নির্দিষ্ট অনুষ্ঠান ছাড়া সব অনুষ্ঠান দেখতে দেন না।
না=০ হ্যা = ১ ☐
৩৯. মা সাক্ষাৎকারীর সাথে শিশুকে পরিচয় করিয়ে দিয়েছেন? না=০ হ্যা = ১ ☐
৪০. যখন শিশু খারাপ কিছু করে (যেমন-খারাপ আচরন) তখন মা কি এমন শাস্তি দেন যা শিশুর জন্য ক্ষতিকর বা শিশুর প্রতি নির্দয় আচরন করেন? (শিশু যদি বিরক্ত করে তখন মা কি করেন? মারে/দীর্ঘ সময়ের জন্য শিশুকে মার কাছ থেকে দূরে সরিয়ে রাখে/জোরে বকা দেওয়া) না=০ হ্যা = ১ ☐
৪১. যদি শিশু মাকে আঘাত করে তখন মা তার প্রতি নির্দয় আচরন করেন বা শাস্তি দেন। না=০ হ্যা = ১ ☐
৪২. বাড়ীতে কমপক্ষে ১ টা বাদ্যযন্ত্র (হারমোনিয়াম, বাশি, তবলা, রেডিও, গিটার) আছে যা শিশু বাজায়।
না=০ হ্যা = ১ ☐
৪৩. মা বা বাড়ীর বড় কেউ শিশুকে বেড়াতে নিয়ে যান, যেখান থেকে শিক্ষণীয় কিছু শিখতে পারে। (যেমনঃ চিড়িয়াখানা, বড় দোকান, যাদুঘর, মেলা, প্রদর্শনী, পার্ক, সিনেমা, আইসক্রিমের দোকান) না=০ হ্যা = ১ ☐
৪৪. শিশুকে গত একবছরে ৫০ মাইল বা তার বেশী দূরে বেড়াতে নিয়ে গেছেন। না=০ হ্যা = ১ ☐
৪৫. শিশুকে গত এক বছরে যাদুঘর / মেলা / বড় দোকান / প্রদর্শনী তে নিয়ে গেছেন। না=০ হ্যা = ১ ☐
৪৬. মা বা বাড়ীর বড় কেউ অন্যকারো সাহায্য ছাড়া শিশুকে খেলনা নির্দিষ্ট স্থানে তুলে রাখতে বলেন এবং শিশু তুলে রাখে।
না=০ হ্যা = ১ ☐
৪৭. শিশুর সাথে কথা বলার সময় মা কোন জটিল বাক্য (কথা) বা শব্দ বলেছেন। না=০ হ্যা = ১ ☐
৪৮. শিশুর তৈরী কোন শিল্পকর্ম চোখে পড়ে ঘরের এমন জায়গায় সাজানো আছে। না=০ হ্যা = ১ ☐
৪৯. শিশু বাবা-মা / বাড়ীর বড় কারো সাথে দিনে কমপক্ষে এক বেলা খেতে বসে? না=০ হ্যা = ১ ☐
৫০. দোকানে গেলে বাবা-মা শিশুকে তার পছন্দের খাবার কিনে দেন। না=০ হ্যা = ১ ☐

৫১. সাক্ষাৎকার সময় মা শিশুকে একবারের বেশী বকা দেন নি বা হয়/ অবহেলা করেন নি। না=০ হ্যা = ১ ☐
৫২. সাক্ষাৎকারের সময় মা শিশুকে শারিরীকভাবে বাধা দেননি বা জোর করে বসিয়ে রাখেন নি। না=০ হ্যা = ১ ☐
৫৩. সাক্ষাৎকারের সময় মা শিশুকে চড়-থাপ্পড় মারেন নি। না=০ হ্যা = ১ ☐
৫৪. গত এক সপ্তাহে মা শিশুকে একবারের বেশী মারধর করেন নি। না=০ হ্যা = ১ ☐

INDEPENDENT BEHAVIOR ASSESSMENT SCALE (IBAS)

C. Name _____

Mo. Name

Sex

Age

Date _____

Is

[illegible]

	R _s		R _s		R _s		R _s		R _s
--	----------------	--	----------------	--	----------------	--	----------------	--	----------------

MOTOR SK	R5
SOCIALIZ SK	R5
COMM SK	R3
DAILY LSK	R5
Total	