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The Growth and Development in Healthy Child

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1. Introduction

Child – our assurance for the future…

A healthy society consists of healthy families and healthy children. Therefore, healthy growth of children is important for society and for families. A healthy child is defined as the one who does not show any illness syndromes, but a steady body growth, physiological maturity and cognitive development (Çetinkaya & Conk, 2009; Kavaklı, 1992; Neyzi & Koc, 1983).

The term "growth" is used for defining a quantitative increase in the body or in some of its parts, whereas the "development" is used for functional changes including those which arouse from emotional and social interactions (Behrman & Kliegman, 1996; Beyazova, 1996).

Growth is product of various factors, thus, a complex situation. In this complex, the answers to genetic factors, nutrition, metabolism, endocrine system, and peripheral tissue are of great significance, and required for such a sensitive coordination (Arcasoy et al, 1994; Kandemir & Yordam, 1995). Starvation and inadequate nutrition cause resistance against the growth hormone (Kandemir & Yordam, 1995). In small children, malnutrition has a dampening effect for motivation and curiosity, limiting their desire to play games and make observations. Due to the decreased level of interactions with surroundings, mental and cognitive development of children are adversely affected (Bellamy, 1998).

The growth of head and brain tissues is closely associated with nutrition. This growth is accelerated particularly at the intrauterine period and within the 4 -5 years after delivery. At the age of 5, the brain tissiues are grown up to the 90–95% of an adult person's brain tissue. This period is important for the development of brain, intelligence, and mental state. The remaining 5 – 10% of development is achieved by the ages of 18 – 20 (Bertan & Guler, 1995).

For healthy and desired growth energy is required (Kandemir & Yordam, 1995). Hypothyroidism and hypopituitarism are of the most notable examples. Monitoring child's growth is essential for bringing up healthy generations.

To this end, regular checkups of infants and their measure analysis should be made carefully, while problematic situations that might arise from environmental factors should be resolved (Arcasoy et al, 1994).

A child requires emotional support and cognitive stimulation for an ideal growth. Parents and / or other caretakers have a profound significance in terms of responding to infant behavior and needs (Bégin et al, 1997). Today, it is commonly recognized that the distinction between growth and developments of the children who are lacking or away from parental love, and their peers who are having is notable, thus, significant (Arcasoy et al, 1994).

Monitoring of growth and development is not only meant for determining sick children, but it is a period in which the health officers are put into face-to-face situations with the infants and their families. During these interactions, a unique opportunity for parents is gained to resolve other health issues following a guidance in nutrition, vaccination, and topics alike. Maintaining continuity is important during healthy growth and development (Darendeliler, 2001).

Besides, parents need to be well-educated and well-aware to provide efficient support to their children, in the first place. Nurses, inevitably, play vital role in delivering a thorough, practical, and continuous training program for maintaining the infant development and health (Çetinkaya & Conk, 2009).

Pediatric nursing has holistic approach in nursing-care as it involves studying development and growth characteristics from delivery to adolescence, as well as observing deviation from health-norms according to systems (Cavusoglu, 2000).

2. Assessment of growth and development

The technique which is used for measuring body sizes is called anthropometric measurement. These anthropometric measurements are used to determine whether a child is underdeveloped or not compared to his peers.

a. Measurements used for assessing growth (gaining size)
1. Body scale
2. Stature
3. Head circumference, sutures, fontanels
4. Ratio of the body parts
5. Chest circumference
6. Stomach circumference
7. Pelvis circumference
8. The height of sitting
9. Sub-dermal thickness
10. Arm circumference
11. Calf circumference

b. Measurements used for assessing development (maturation)
1. The maturation degree of the bones
2. The age of tooth eruption and alteration
3. The degree of neuromotor development
4. Psychological development

a. Mental
b. Emotional
c. Social development

5. Sexual development

In the absence of precise definition of normal, the efficiency of child growth is determined by the comparison with others at the similar age and sex and whether there are harmony between growth parameters and the consistency of the growth parameters over time (Overby, 2003).

Body parts, head and chest circumference are more importantly clinical measurements (Bertan & Özcebe, 1995; Beyazova, 1996). These anthropometric measurements can be used in monitoring growth of children. However, it is usually a measurement of weight for the target age. It is a preferred method of assessment, because it is the first affected parameter of discontinuation of weight growing especially in the first two years of growth (Bertan &Özcebe, 1995).

We also need norms to interpret the values determined by measurements (Arcasoy et al, 1994). Weight, height, and head circumference parameters should be drawn on the National Center for Health Statistics (NCHS) growth chart and should be monitored according to standard growth rate (Keane&Fiegelman, 2007; Overby, 2003). Standard growth curve, primarily white, is formed by measuring different groups of middle-class children of all ages. When it is applied to children of different ethnic or racial origin these data can incorrectly identify their growth as abnormal (Overby, 2003). On this subject there are growth percentile curves developed by Olcay Neyzi and his friends for the children of our country (Neyzi et al, 1985; Neyzi et al, 1978). Measurements are compared to the norms taken from the general population to determine whether the infant is within the normal limit or not (Kavaklı, 1992). The research Çetinkaya and Conk did to determine the relation between mothers and growth-development knowledge on development statuses of the infants of 12 months in Malatya city center Turkey has shown that: With respect to weight, 3 % of the girls were under the 3 % percentile while 0.7 % of the boys were under the 3 % percentile. Length measurements indicated that 1.5 % of the girls were under the 3 percentile and 1.6 % of them were under the 3 % percentile. Mothers who were informed about infant growth and development were compared to mothers who were not. Results showed that 58% of mothers who were informed about infant care and 40% of non-informed ones took their infants to routine health checks ($p<0.05$). Due to the fact that mothers' level of information on growth and development of infants has a direct link with their taking infants to health checks, mothers must be informed on the subject (Cetinkaya & Conk, 2009).

2.1 Childhood periods

a. Prenatal Period

Embryonic Period (0 – 10 weeks)

Fetal Period (10 weeks-Until the birth=

b. Postnatal Period

Infanthood period (0 – 1 year)

Pre-play period (1 – 3 years)

Preschool period (3 – 6 years)

School period (6 – 12 years)

Preadolescence

10-12 years
12-14 years

Adolescence

12-18 years
14-20 years (Kavaklı, 1992).

2.1.1 0 – 1 year old child's physical motor and emotional

2.1.1.1 Intrauterine life to extra-uterine life transition

Massiveness and weight of the infant changes according to mother's body structure, the size of the uterus, birth order (2 or 3 children's birth weight is more than the first one. The body weight of a infant filled his gestation age and born mature changes according to racial and regional differences. In our country at Marmora region it is noted as 3,3 kg. Within 3-4 days of birth %5-6 of body weight of the child is lost. 10 days after birth, child replaces this loss and continues to gain weight on a regular basis (Kavaklı, 1992). Newborns gain 20-30 grams for the first 3 months and there will be ½-2/3 times more increase in weight for the next 3 months and ½-2/3 times more increase in weight for the next 6 months. The infant doubles its birth weight in 4-6 months and triples it before 12 months (Keane&Feigelman, 2007). It is proposed that a child's height is affected by two groups of independent genes each coming from mother and father. The first group determines the potential of child's growth. If the other factors are adequate after the child is 2 years old, there is an important degree of correlation between the child's height and the potential adult height. The second group determines the maturation speed of the organism, in other words the start of puberty and the termination age of growth (Kandemir & Yordam, 1995).

The height of the child is adjusted by the interaction between skeletal system and endocrine glands. The height of the mature-born infants is generally 50-52 cm. At birth a male child is longer than a female child because in the first 6 months of intrauterine life male children grow faster. Head growth reflects brain growth and development. The head is the fastest growing part of the body towards the end of fetal life and after birth. At birth the head and the chest circumference of a newborn are almost equal. At birth, chest circumference is 30.5-33 usually 33 cm (Kavaklı, 1992).

The birth of the first infant starts a transition to a new life for the family. This transition period is expected to be a joy by the parent. However they are not prepared for the stress that comes with the infant. They immediately recognize that they are sensitive and fragile in this period. The main task of the child and the family is the integration of a new healthy one to an existing family. In this process; the family has to accept the existence of the child, should provide the child's needs, should keep up the morale and should adopt the available resources. In a union each one of these values are usually a stress creator. The new pediatric nurse working with the family should keep in mind the causes of stress and should counsel to the family to solve their own problems. Nurse's relaxing the mother, helping her to overcome the causes of stress will help the mother to build up confidence and solve her problems. A healthy mother-child relationship does not occur spontaneously at birth, but

mother and child from birth with the help of the nurse responded to each other by learning to develop over time.

A healthy mother-child relationship does not occur spontaneously at birth, but it is developed over time, with the help of the nurse, from the birth by mother and child responding each other. The early bound between the father and the child is also important. Father's and the other family members' positive contribution to the process will affect the mother and the infant in a positive way. Nurses can do a lot to create the atmosphere in which the family members and the child mutually affect one another (Foster&Anderson, 1989).

2.1.1.2 Infant (birth through 12 months)

2.1.1.2.1 Neonate (birth to 1 month)

Physical tasks

- Weight: 6-8 Ib (2750-3629 g) ; gains 5-7 oz (142-198 g) weekly for first 6 months.
- Height: 20 inches (50 cm); grows 1 inch (2.5 cm) monthly for first 6 months.
- Head growth
  - head circumference 33-35.5 cm (13-14 inch)
  - head circumference equal to or slightly larger than chest
  - increases by ½ inch (1.25 cm) monthly for first 6 months
  - brain growth related to myelination of nerve fibers; increases in size of brain reflects this process, reaches 2/3 adult size at 1 year; 90% adult size at 2 years
  - no control of muscles of the head
- Vital signs
  - pulse: 110-160 and irregular; count for a full minute apically
  - respirations: 32-60 and irregular; neonates are abdominal
  - blood pressure: 75/49 mmHg
  - poor development of sweating and shivering mechanisms; impaired temperature control
- Motor development
  - behavior is reflex controlled
  - flexed extremities
  - can lift head slightly off bed when prone
- Sensory development
  - hearing and touch well developed at birth
  - sight not fully developed until 6 years
  - differentiates light and dark at birth
  - rapidly develops clarity of vision within 1 foot
  - fixates on moving objects strabismus due to lack of binocular vision (Stein & Miller, 1997).

Utterance and Language Development: Newborn cries when it is restless and hungry. He responds to the strong sounds like doorbell, phone ring by stopping his own movement (Fenwick, 1993; Kavaklı, 1992; Mott et al, 1990).

Emotional Development: Each infant has a unique development. There are strong and weak sides of hereditary features. These features affect the child's relationships and his adaptability to environment. Parents' own childhood experiences, life challenges, intense pace of work, adaptation to the social and cultural changes and economic difficulties affect mother-father and child relationships. The parents taken care of the infant carefully, showing adequate interest and affection to the infant is due to parents' loving each other and being healthy and happy. The interaction of all these factors affects the infant's psychological development and forms individualism (T.C. Ministry of Health et al, 1996).

Psychosocial Development: At first, the infant's relationship with the environment is seldom. External stimuli are not much of a concern. He looks into the human face speaking to him especially the mother's face. He likes to be fed, taken on the lap, to be shaken on a crib. Following breastfeeding and the satisfaction of basic needs the infant feels satisfied.

Game: Position diversity. The mother should talk to the infant and should hold big and bright objects.

2.1.1.2.2 0-2 Months

The infant gains 20-30 grams in a day, 150- 250 in a week, 200 grams on average.

Nutrition: Breast-feeding or formula reinforcement.

Emotional- Social Ability: After breastfeeding and satisfaction of basic needs, the infant laughs.

Mental Ability: Reflex is active and the infant can produce the sounds of the vowels.

Psychosocial Development: Crying has a purpose. He responds to different stimuli by laugh of body movements. He starts to recognize the environment. Human faces, especially the mother’s face, attract the infant and the infant starts to recognize the mother’s face.

Producing Sound and Language Development: He makes sounds, listens to the sounds and produces his own sounds. His sounds are different from weeping. The infant responds to familiar sounds by producing sounds.

Security: Car carrier should be proper for the infant's use and sit.

Mother and Father-Related Activities: He recognizes the parents. He starts to produce sounds and Laughs spontaneously (Fenwick, 1993; Kavaklı, 1992; Mott et al, 1990).

2.1.1.2.3 2-4 Months

The infant continues to gain 20-30 grams in a day, 150-250 grams a week. The infant lengthens 8 cm in the first 3 months. The head circumference being 35 cm approximately at birth becomes approximately 40,5 cm in a three months infant.

Nutrition: Breastfeeding or formula reinforcement.

Physical Ability: Rolls back and wide, head and chest rises out of bed 45-90 degrees and the weight is supported in the arms, extends for the objects, follows the objects in mid-line, says meaningless words, and starts to localize sounds. Distinguishes the people.

Mental Ability: The imitation of the behaviors acquired by the ordinary activities. Localizing the sounds making sounds by shouting. Does not follow the moving away objects.

Cognitive Development: Provides an optical attention to somewhat complex stimuli.

Producing Sound and Language Development: Turns toward the sound of adults talking and reacts. When enjoyes it, makes sounds (like agu agu). Starts to differentiate the sounds. Cries less when he's awake.

Emotional-Social Skills: Laughs at familiar people, recognizes the non-primer caretakers.

Psychosocial Development: Very interested in environment. Quits crying when the mother comes in if he was crying. Identifies the familiar faces and items (mother's face, feeding bottle) Refuses the food he dislikes. Make sounds when rejoices (babbling). Likes breastfeeding, puts everything in his mouth. Likes music. Does not like being alone.

Game: Holding and speaking. Musical toys, polyphonic mobile. Color differences of the objects, the size and the structure; mirror, children's cot toys, the diversity of the environment.

Security: Not to be left alone in places such as bed, sofa. All small toys accessible should be removed (Fenwick, 1993; Kavaklı, 1992; Mott et al, 1990).

2.1.1.2.4 4-6 Months

Infant continues to gain 20- 30 grams per day. Gets 8 cm taller. His 50 cm height at birth becomes 66 cm at the end of 6 months gaining 8 cm for each 3 months. Head circumference is 43 cm.

Nutrition: Presentation of solid foods, first iron stock is used up.

Physical Ability: Birth weight is doubled, the teeth begin to appear slowly, with constant head and neck control the infant can sit, can roll back from belly, and can hold objects with a movement of grasp.

Mental Ability: Some conscious movements, some sensations, searching for the missing objects that are within sight, recognizing the objects that half parts are hidden, more systematical mimics, producing incomprehensible sounds.

Producing Sound and Language Development: Turns his head towards the sound to the ringing, or the familiar sounds. Reacts to sounds by producing sounds. Laughs out loud. The sounds vary according to whether the infant is happy or not. Listens to the conversation. Makes exciting sounds when sees the mother.

Emotional-Social Ability: Prefers primary care takers. The need for the breastfeeding is reduced. Laughs when it is appropriate. Takes pleasure in laughter.

Psychosocial Development: Doesn't like to be alone, like to be accompanied by people, wants constant affection. When sees the foot or hears the spoon rattle the infant rejoices. Shows excitement with his whole by curling, taking deep breaths or holding his breath

Game: Holding and speaking, game place should be provided for grasping and holding objects.

Security: Protected from safety hazards and environment; Toys should be checked for fragile parts.

2.1.1.2.5 6-8 Months

After the first 6 months the infant's putting on weight reduces a bit, 15- 20 grams per day, 100-200 grams per week it reduces approximately 150 grams. After the 3rd month the average weight increase appropriate for the age can be evaluated by this formula: Age (*months)* +9*:* 2 = kg. *E.g.* body weight of an 8 month infant:

(8 +9) / 2 = 8.5 kg.

Nutrition: Additional foods begin. A diet containing 4 basic nutrients are applied. After starting the additional foods, unseasoned meatballs can be served.

Physical Ability: Can sit solo, crawl, passes objects from hand to hand, and returns to the sounds coming from his back.

Mental Ability: Developments between 4-6 months continue.

Cognitive Development: The perception of consecutive relationships. Editing the right, accidental goals by using hand-eye.

Emotional-Social Ability: Distinguishes the non-primary responds. Stranger situation or breaking up anxiety.

Psychosocial Development: Look to his reflection in the mirror. Can feed himself by holding the infant bottle with both hands. Enjoys games. Makes unhappy sounds when his toys are taken from him. Likes to play with toy and the body parts like arms and legs of the people especially his mother's. Can distinguish foreigners from family members. Laughs out laud. Can sleep all night without any food. Emotional status is very variable. Can identify family members especially mother even if she is dressed differently. Begins to fear from strangers. Extends his arms to be cuddled. Can imitate sticking out the tongue and coughing. Footsteps of an upcoming person excites him. when his head is covered, he understands it is a joke and he laughs. Looks for a missing or thrown away toy for a while.

Producing Sound and Language Development: Likes to make sounds. Makes incomprehensible sounds. Chirps, chuckles. Responds to sounds and music by producing sounds. starts to imitate the sounds. Turns his head to the sounds coming from a horizontal position within 60 cm. Starts to imitate the rhythm of the sounds. Pretends to be talking while someone else is talking.

Game: Provides space for research . Hoards the toys.

Security: Infant's expanding environment needs to be controlled for dangers (Fenwick, 1993; Kavaklı, 1992; Mott et al, 1990).

2.1.1.2.6 8-10 Months

Nutrition: Liver or brain paste, spleen, pasta, stuffed with minced meat inside, rice can be started. 8-9 months of age, fish, and poultry can be started.

Physical Ability: Crawls, positions, makes forceps movement with his hands.

Mental Ability: Movements are intended for a goal, starts to solve basic problems with previously learned answers, searches for the actively lost object.

Cognitive Development: Target orders, the imitation of facial movements.

Producing Sound and Language Development: Listens carefully to the familiar words. Can produce syllables like "father", "ma-ma" and can associate them. Starts to produce consonants. Repeats sounds. Pretends to be talking with the toys.

Shouts to draw attention. Responds to simple commands. Understands the meaning of the word "No". Can recognize voice sources from 1 meter away even if it is diagonal. Makes incomprehensible sounds but understands a lot of words. Imitates the sounds. Starts to say "Father".

Emotional-Social Ability: Commitment completes the process of love.

Psychosocial Development: There is an increase in the fear of strangers. Shows signs of restlessness when his mother is out of sight. Imitates basic sounds and movements. Can repeat the movements that he likes. Starts to get attention by making sounds. Reacts to food that he dislike by closing his lips. Reacts when he is shown affection or he is rebuked. Knows the meaning of the word "No". Does not like his clothes to be changed. Can find the hidden toys. Likes to eat by his own hands. Can perform a simple verbal request. Starts to cry when his request is not fulfilled. For him the family especially the mother is very important. The desire to satisfy the mother is increased. Shows signs of fear when he is left alone or put into bed. Turns his arms into his face to not to shower.

Game: Storage and search, secretly looking, yelling like Boo, looking at pictures in a book.

Mother and Father-Related Activities: Can roll facedown while he is lying on his back. The word no inhibits him. Can walk aided by holding the furniture's. Carries out single-digit verbal orders like "come here", "give it to me".

Security: Needs to be protected. Electrical outlets, cords should be kept out of reach, stairs needs to be blocked, and tables should be arranged considering their potential dangers.

2.1.1.2.7 10-12 Months

In the first 6 months the infant gains 16 cm, in the second 6 months infant gains (4+4) 8 cm so a 12 months old infant, with the addition of the height at birth (50 cm), will be 16+8 = 24 cm. 50+24 = 74 cm (approximately)

After 3-6 months, children usually fit into their own growing pace and they grow by following their curve percentile of proper age.

At the end of the first year, the infant triples the birth weight and is 1.5 times taller than the birth height. Head circumference is approximately 46 cm when the infant is 12 months old.

Nutrition: Liquids more than solid foods, the use of cup increases, breast-feeding may start to wean.

Physical Ability: Weight birth triples. Stands on his own. Can use a spoon. Can walk around.

Mental Ability: Copycat behavior starts, but these behaviors are never seen before. Understands the words, can say 1 to 4 words, there is willingness and intent.

Cognitive Development: Problem-solving and experience for new information and searching for the mistake.

Producing Sound and Language Development: Responds on his behalf. Knows his parents by their names. Tries to produce familiar sounds by imitation. Understanding of the spoken words are developed. Establishes a link between the words he know and his actions. E.g. can perform the commands like stand, sit, walk. Knows the meaning of 3 words. Forms a sentence without using any real word.

Emotional-Social Ability: Starts to research, differentiates his family from the others.

Psychosocial Development:

10 Months: Understands the word don't and his own name. Imitates facial mimics. Understands games like "see ya" and performs it. Stands over his toy but does not give it away. Looks for a toy under the pillow or in another corner of the house. Repeats the movements that draw attention or make people laugh. Pulls someone's dress to draw attention. Play games such as hand flapping. Cries when he is rebuked by a grown up. Starts to show independent behaviors when it comes to dressing, feeding and motor skills. Can look at the pictures in a book carefully by turning over a few pages together.

11 Months: Shows signs of joy when a behavior is confirmed. Can roll the ball to someone else when it is asked. When hears a familiar music, tries to join it by body movements. Nods his head for no.

12 Months: Shows emotional behaviors like Jealousy, love, anger, fear. Can perform behaviors such as hugging, kissing when it is asked. Fears from foreign environment and immediately hugs her mother. An addiction to any toy or blanket may start (something reassure him) Knows a few words. Likes to say words or to pretend like talking even if it is not true. Learning and developing his abilities cover most of the day.

Game: Speech is increased; a book should be read for the infant. Name and body parts should be pointed out. Likes water, sand and ball games.

Mother and Father-Related Activities: Points out the objects he wants. Says one or two different words.

Security: Should not be left alone in bath tub. The use of the safety seat in the car is important. Should be kept locked and away from the doors.

2.1.2 1-3 Years old (toddlers) child's physical emotional and motor development

Toddler (just stated to walk) phase is approximately between 1 and 3 years. Toddler phase is identified as an independence gained by physical variability and increasing cognitive developments. Child rejoices by his success over his new motor abilities. Repeating movements can helps him master the new abilities. Unsuccessful behaviors can cause negative behaviors and moodiness. If these behaviors are blocked by parents', child's opposition is very common. Parents speak of this kind of restive behaviors during toddler

years and at the same time when they develop independence in their child's behaviors; the child test his parents' nerves (Potter & Perry, 1993).

2.1.2.1 12-18 Months

Physical Development: In the early toddler years, child walks his belly up front; arms are spread for balance, in a vertical position. Walking up and down the stairs, kicking a ball and standing on one foot for a few seconds is evidence and gross motor skills continue to develop (Potter & Perry, 1993).

[Height (cm):2 + 9.5] ± 2.5 = cm

Height of a 12 months old infant is approximately 74 - 75 cm. According to that:

[(74/2 + 2) + 9.5] = 46.5 cm ± 2.5

Chest circumference, equal to hear circumference at birth, increases after the infant is 1 year old and gets bigger than the head circumference. Chest circumference is 47 cm at the first year. The belly is big in infancy because the liver is big and the pelvis is small. Abdominal circumference is larger until 2 years and bigger than both head and chest circumference. The bladder is an Intra-abdominal organ in infancy. With the expansion of the pelvis, abdominal organs get down and child's tummy starts to disappear. In infancy lower extremity development is very slow. It gets faster after the 1 year (Kavaklı, 1992).

The development of the skeletal system and healthy bone growth is not only important for the evaluation of development but also important to determine the child's health. Because bone maturation reflects the maturation of somatic tissue; the assessment of bone maturation degree is one of the best criteria to determine child's growth. It is also important to diagnose and to treat the diseases and deficiencies of child development and growth (Hathaway et al, 1993; Kavaklı, 1992).

Number of the infant teeth in the first two years is estimated by this formula:

The child's age (month) - 6 = Number of teeth

In 12-18 months sub-top-1st premolars, it is the time of the eruption of upper and lower canine teeth. Even if no bounds between the child's diet and tooth eruption are found, adequate and balanced nutrition for healthy teeth is important. Fattening of protein, calcium, phosphorus, vitamins C and E are also reported to be important for health teeth. Dental care for children less than 2 years old is done by parents with a toothbrush or gauze. Cardiopulmonary system is stable during toddler years. Hearth and respiratory rates are 24 respiration and 110 beats per minute. Both weight and height development speed is slow. Child's weight is 4 times more than his birth weight. Increase in height continues like a result of the length of the main leg during toddler years (Potter & Perry, 1993).

Language Development: Says 2-3 words knowing their meanings. Imitates the animal sounds. Infant calls items with their names. Points out them if he wants - can link up with 2 words. Infant knows approximately 50 words. Less than %25 of the speech is wise and makes sense (Kavaklı, 1992).

The family should talk to the child in a simple, understandable way in the process of learning how to speak. Small children sometimes try to explain what they want by crying

instead of talking. This is because of their limited knowledge of vocabulary. Family and environment should be aware of child's inefficiency. Not to understand this situation, forcing the child to speak can create different emotional problems.

Sensory Motor: It is a trial and research phase between 12- 18 months.

Short stage: the indirect reactions of the third degree. Innovations are characterized by interests. He is creative, discovers new meanings by active attempts.

The objective continuity: Follows the translocation of observed objects.

Meaning-Result relationship: Uses trial and error learning method for learning. Discovery of new meaning by trying; uses systematic variations to create a new way to learn.

Plans (Behavioral reflex = scheme): Makes new social plan to show systematic creation with the new plan in special cases.

Game: Meaningful function, repetition of previously learned behavior to satisfy himself; works for amusement (Mott et al, 1990).

Expected Activities in the 12th Month: Walks independently. Says food and dadda meaningfully. Can use forceps to hold an object. Can fill the cubes into a cup after demonstration. Tries to make a tower from 2 cubes (Hathaway et al, 1993).

Mother and Father-Related Activities in the 12th Month: Points out the objects he want. Says one or two different words. Can walk with or without holding the furniture. Can play flapping or wave a hand. Can drink something out of a cup by himself. Can stand with or without support. Can say mum and dad even a few more words. Speaks in his own strange language. Can play ball, rolls the ball back to you. Can understand verbal commands without signs and adapt (Hathaway et al, 1993).

Expected Activities in the 18th Month: Can make towers consist of 3-4 cubes. Can throw the ball. Make spontaneous scribbles. Self-chair and sit. Can empty small objects from the bottle (Hathaway et al, 1993).

Mother and Father-Related Activities in the 18th Month: Can move up and down the stairs by assistance. Can say 4-20 words. Can understand 2 step commands. Hugs and carries the toy (Hathaway et al, 1993).

Child's fear of separation: Understands the difference between presence-absence of mother by remembering the presence. Child feels insecure, excited and scared. These fears begin at the age of 8 months, and reaches to peak at the month 15; the development of new capabilities facilitate the maturation of the central nervous system in an orderly manner toward the end of age 2, when this fear will be lost. Parents can provide objective continuity by putting a picture of the mother so that infant can see easily. This kind of object relaxes him (Hathaway et al, 1993; Kavaklı, 1992; Mott et al, 1990; Ozgur & Ozgur, 1994).

2.1.2.2 18-24 Months

Short stage: Innovations of new meanings. Although the basis of the ideas is mental composition; problem solving is the result of trial and error (Mott et al, 1990).

The objective continuity: Becoming aware of the continuity of objects; mental image of the lost object does not disappear (Mott et al, 1990).

Meaning-result relationship: The discovery of new meanings with being internalized. Agreement on understanding the inside story; foreseeing with the help of mental manipulation (Mott et al, 1990).

Plans: Even if the symbols have mental expressions, makes up new plan, combines them, his capacity for the use of mental symbols increases; names them.

Game: Increases the possibilities of game activities even if there are mental expressions. Game starts (Mott et al, 1990).

Nutrition: The decreased rate of calorie due to the slowing growth rate is accompanied by less food intake which makes parents worry about their child's food intake. Nurse can reassure parents by keeping the records of their child's growing rate on cards (Mott et al, 1990).

Toddler consumes 3-4 glass of milk apart from her mother's milk. Nutrition needs consist of 3 basic food group come together with solid foods. Taking 1 quart milk every day can create a loss of appetite for solid foods so nurses should limit parents for 28 ounce per day. That may reduce parents' anxiety (Mott et al, 1990).

Mealtime is not only important physically but also important psychosocially. If the parents dominate the toddler's food intake, problems may occur. Nurse should encourage parents to serve a mixture of solid foods. Toddler's taking his food between his fingers supports independence and his ability to eat on his own (Mott et al, 1990).

Cognitive Development: Toddler progresses from sensorimotor for pre- conception period of cognitive phase. In this situation child learns the objective continuity, starts to understand the progress and the effects of events in his memory. Thinks egocentric based and does not accept others' thoughts. Toddler often thinks about the dream and magic, and this is certain from the facial gestures (Özgür & Özgür, 1994).

Language Development (2 years): Says the words about his own needs (water, food, etc.). Makes 2-3 words of simple sentence. Vocabulary is increased. Knows about 300 words. Increased attention. Says about 10 words by understanding. Uses the pronouns "I", "You". There is a talk of Telegraph. Starts to learn the concept of time. Says the names of body parts such as eye, ear, and nose. %65 of his speech wise (Kavaklı, 1992).

Psychosocial Development: In toddler phase the child starts to gain identity. In this phase, also known as autonomy, the child gets independence from mother and likes to be with his peers.

Neuromotor development and manipulation ability is highly developed. Child is active and do thing on his own but family trust and intimacy is still important. Family, especially the mother does not support the child in a stressful environment, the resistance of child to stress and his curiosity to explore the environment decreases.

Children assisted to develop trust and autonomy are known to be socialized better. If the child's autonomy is not respected, we do not understand his emotional needs and cannot help him. The child develops emotions like "dependency, shame, doubt". In this situation

child never trusts himself and becomes a problematic adult. Games and toys are literally his world and his most important development tool. He best likes the toys that he can do anything with it (bite, hit) (Mott et al, 1990).

Expected Activities in 24th Month: Forms small sentences, 2 or more words. Kick the ball when asked. Can make 6-7 small towers. Can tell the names and point out the objects. Can jump on both feet. Stand on one foot. Use pronouns.

Mother and Father-Related Activities: Can wear simple clothes. Turn the pages of a book. Play games by imitation (Hathaway et al, 1993; Kavaklı, 1992; Mott et al, 1990; Özgür & Özgür, 1994).

2.1.2.3 24-36 Months

Towards the end of the second year the growth rate gets stabilized at the rate of mid-childhood. Weight increase 2-3 kg/year, height increase 5-7.5 cm/year. The child reaches the half height of his or her adolescence at the second birthday.

Towards the middle of childhood after two years of age the head perimeter increases by 2 cm/year (Mott et al, 1990).

Most of the toddlers can run well at the end of 3. year and ride tricycle. Provided that their amazing motor abilities are encouraged they can do crossing and draw circles on their own. At third year children draw stick-shaped men and build castles from little blocks. Corrected (progressing) habit, the ability of taking off and the development of sphincter control are provided. Provided the child's required cognitive ability has developed the development sphincter control enables toilet training. Mother and fathers frequently consult with the nurses for evaluating the readiness (willing) of their children for toilet training. And nurses always remind mother and parents that patience, harmonization and a non-judging manner are important factors in toiler training as well as successful education (Mott et al, 1990).

Many healthcare professionals start the blood measurement routine at the age of 3 with baseline values which are only accepted for children. Standardized values for toddlers are still a matter of discussion; however normal measurements are 100/60 mmHG (Potter & Perry, 1993).

Piaget defines the period of 2-6 age as preoperational. This period starts with the easiness of mental image creating by language in symbolic context. Child learns how to manipulate the symbolic world. Child cannot distinguish between fantasy and real in definite terms. Dreams, desires and meaningless fears may make his or her blood run cold. World recognition is egocentric or gets interpreted through desires, needs and effects. Cause and effect relationship may be mistaken for temporal relationships or can be interpreted as egocentric.

Disease and medical care implications are interpreted in a different way in this period as well. Child relates one of his brothers' or sisters' getting sick to a recent discussion or a negative comment or may raise concern within himself or herself that he or she has wanted one of his brothers or sisters to get sick. And child feels guilty unless mother and fathers recognize that kind of interpretations and spend time to tell the truths (Potter & Perry, 1993).

Child bears humanistic feelings against material objects in this period as well. He or she thinks that human beings are also the reason and creators of natural events.

Also in this period, "sexual identity" starts to appear. Family image is gained with mother and father. The presence of both sexes is essential for child. This is the first reason which leads to objection issues between child and mother and father. Jealousness, rivalry and getting favored either by mother or father awaken guilt feelings in child. The concept of sexual feature, namely penis problem (penis desire in female children; the fear of penis loss in male children), appears as internal conflict. There is oedipal conflict in this period. Jealousnesses, aggressive urges, demand for punishment and the fear of castration appear. Overblaming and punishing child or preventing the child from engaging in his penis lead to sexual problems in the future (Mott et al, 1990).

Expected Activities: He can walk backwards. He can bounce on one leg. He can use prepositions in a sentence. He can imitate a rough circle. He can point to the objects which he learned by using. He can define himself as "I". He can hold crayons in his palm (Mott et al, 1990).

Mother and Father-Related Activities: Child helps with repositioning of goods. And he can maintain a mutual conversation (Hathaway et al, 1993).

Language Development: He makes sentences of 4-5 words. He roughly knows 900-1000 words and uses plural forms. He asks such questions as "who", "what" and "where". He still makes mistakes in grammar; but in a less proportion. Around 70-80% of his conversation is wisely made up (Kavakli, 1992).

Toilet training is almost finished towards the end of this period. The sleep duration (10-14 hours) decreases. He can slightly tolerate getting apart from mother. Motion and environment discovery has a critical importance. Any restriction in child's behaviors (disease etc.) for any reason is the worst thing that can possibly happen. Autism may increase the tendency of child for a depressive character. So unless really necessary preserving the child of this period in family environment, home treatment if possible or in case of an inevitable hospitalization accompany of mother in bed are really important in terms of emotional development and social harmonization (Mott et al, 1990).

2.1.3 Physical, motor and emotional development in the children of age 3-6

It is a transitional period between pre-school years, toddler period and school-age years. This period lasts from the age of 3 to 5-6. Many people consider this period as the most comfortable years of parents because child is less negative and shares more of his or her thoughts. While physical development progresses slowly cognitive and psychosocial developments progress fast (Potter & Perry, 1993).

Pre-school period is the one where basis habits are gained.

The value attached to child in this period helps him or her to form a good basis for personality development in further ages. Because even in the most appropriate environment, personality can develop after overcoming many problems and obstacles.

While a child of this age group tries to harmonize better, adapt to, his environment by developing new abilities he or she also confronts with new problems unique to his or her development period. In shirt, that is what we call getting mature (Kavaklı, 1992).

2.1.3.1 Age of 3-4

Physical Development: Some aspects of physical development keep becoming stabilized in pre-school period. Heart and breathing rate slowly decreases and respectively becomes as follows: 90 pulse/min and 24 breath/min. Blood pressure gets stabilized at 90/60 mmHg. Approximately weight increases by 2.7 kg and height increases by 2.5 cm annually.

Muscular coordination improves. A child of pre-school age runs well and can easily run up and down the stairs and learns how to bounce.

Child needs opportunities to learn and apply these skills. Nursing in healthy and diseased children enables includes creating that kind of opportunities and evaluation. In spite of the fact that children with acute disease benefit from resting and getting away from daily routine activities children who have chronicle conditions or stay in hospital are in continuous need of developmental opportunities. Parents and nurses can alter these opportunities in accordance with the talent, energy, requirement level and daily routine of child (Potter & Perry, 1993).

Language Development: He knows 1500-2100 words. He has better command of grammar. He sets up sentences with any kind of grammar. He uses past tense. He asks many questions. He recognizes types of money. Mostly all of his or her conversation is widely made up (Kavaklı, 1992).

The Concept of Place and Location: He can tell the locations of goods and whether or not they are in their place. He commands by orders. He knows the location of goods: above, below, near. He can tell the name of his home street. He knows where to direct upon entering street. He can recognize whether something is cut in halves or not (Özgür & Özgür, 1994).

The Development of Balance and Motion Functions: He walks and climbs up stairs really confident in himself. He can easily walk backwards, stand on one leg, walk along one line and turn upper part of his body while seated or standing. He better commands his body and is skilled at his hands.

He can throw and catch the ball, ride tricycle, add up building woods, unbutton, play with a infant, eat well with spoon without dirtying his clothes and take off his shoes. He can also copy such simple shapes as circle and triangle (Wechselberg & Puyn, 1993).

Psychosocial Development: He wants to be independent. He is inpatient. He is aggressive in the way he speaks and behaves, envies his sisters or brothers, get angry to his mother and father. He has a quite variable emotional condition. He likes getting praised, making people laugh and cheering them up. He likes to tell inter-family issues to outsiders by exaggerating them. Games have a really important place in this period. He plays imaginary games: he indicates sex difference in such games as “Doctorship”, “Nursing” or being “Father”, “Mother”. Sexual interest and showing their genital organs are frequently seen in this period (Kavaklı, 1992).

Game: Game teaches children how to act charitably with no thought of personal gain and get pleasure from it.

A child conscious of it will also learn to put up with many self-devotions with no thought of personal gain.

Child learns to come to the forefront or to get drawn to background from time to time. So the tolerance, self-devotion and friendship with his friends that he shows in this age form the basis of commitment, self-devotion that he will make to his friends or spouse within family in the future.

They are best at role playing games. They adjust the environment at their pleasure. He acts the roles of things that he observes around his environment such as people, animals, goods, mother, doctor, grocery etc.

He operates his observation and recalling skills in these games and his imagination and thought horizon are broadened. He puts the things he visualizes by various roles in an order and forms them. And by this way he gets more experienced and does not only imitate people; but also put himself in their place.

This role playing game assists children with overcoming his problems on his own. He tries to pleasure his desires which are kept under pressure in reality via games.

He also re-experiences some of the events in which he has been involved but not able to figure out in games. Child needs not to be disturbed especially during these times. Because child manages to overcome his sufferings and his troubles during the game (Wechselberg & Puyn, 1993).

Expected Activities: He can climb up the stairs by switching his legs. He starts to button and unbutton. "What would you like to do as something fun?" (He responses to questions with plural verbs and personal pronouns). He responds to such commands as putting a toy into a container, on the table or under the table. He draws a circle when he is asked for drawing a human being (male, female). He knows his own sex ("Are you a boy or a girl?"). He can tell his name properly. And he can copy the ready drawings ("Can you draw one like this?").

Mother and Father-Related Activities: He can eat his meals on his own at meal times. He can take his shoes and jacket off (Hathaway et al, 1993).

2.1.3.2 Age of 4-5

Physical Development: Approximately weight increases by 2.7 kg yearly. And he gets 24.3 kg until the age of 5. His height increases by less than 2.5 cm. Height increase is up to the increase in legs. Their chest girth is 55 cm at the age of 5 (Kavaklı, 1992; Potter & Perry, 1993).

Language Development: Child cannot find the required words when he tries to explain an event which has excited him or a dangerous event or a demand to his father and mother and he starts spelling them over and over. This spelling over and over cannot be considered as stammering. The child's speaking abilities are not as fast as thinking abilities in such conditions.

Stammering is mostly mistaken for lisping or clipped speech. Being unable to pronounce correctly and pronouncing certain syllables incorrectly cannot be accepted as stammering. And besides, most of the children cannot pronounce some words correctly; e.g. "I'm taking a baf" instead of "I'm taking a bath" or "The wion wawed" instead of "The lion roared".

That the child cannot pronounce a single syllable correctly does not necessarily mean that the case will be the same in the future. After a certain time the child will correct this mispronounced letters on his own.

While lisp speech is not something which is frequently seen it can also not be regarded as something very important. It is not an indication of any failure. All malfunctions generally disappear by themselves towards the end of fifth year.

Father and mother should not emphasize on psychological stammering and lisping. In case that the child's attention is attracted to this situation or that if he or she is tried to get corrected by getting criticized the harmless stammering may turn into a real speech disorder, which means that the child may become stammerer (Wechselberg & Puyn, 1993).

The Concept of Place and Location: Age of 4: He or she gets better at defining adverbs of location and quality (deep, below etc.). He plays hide and seek. He runs in front of an adult. If a place is described he can tell its direction from house. He can play construction games in up and side directions.

Age of 5: He gets interested in distant places. He can describe the way and nearby locations. He obeys to such commands as forward and backward. He can distinguish between such things as thin, fat and slightly deep (Özgür & Özgür, 1994).

The Development of Balance and Motion Functions: From now on child can practically imitate any motion in a game and runs confident and with no fear. He also competes with his friends and can keep himself balanced at height. He hides, climbs and can easily ride a tricycle and drive a car. He gradually gets better at gripping, holding, throwing, playing, drawing, putting on and off (Wechselberg & Puyn, 1993).

Psychosocial Development: Discussion and objections starts to decrease. He is too busy with doing his own works and playing game. His fears partially decrease. The independence begins. But he still needs assistance in putting on and cleanup. He starts to act either as a man or a woman and to learn the codes of society. He wants to obey the rules of game; but can also trick when he realizes that he will lose. He may complain in small injuries. And in serious cases he tries to appear brave and mature. He likes watching television. He gets better at understanding television programs. As his eye-hand coordination is not at required level he cannot concentrate on close studies or small pictures. He wants to utilize real things in games. He likes using real plate instead of paper or real flour instead of mud and sand and etc (Kavaklı, 1992).

Game: He generally starts playing games which we can name as social plays which are played as groups and reflect the behaviors of grown-ups. He finds speaking opportunities. These speaking activities assist child with stimulating and training qualities and abilities which lead to social maturity (Wechselberg & Puyn, 1993).

Cognitive Development: A child of pre-school age proceeds in preoperational period (gets mature in that period). The continued egocentrism (self-centeredness) of early thinking makes difficult for child to present acceptable alternatives. With the increased use of maturation, experience and symbolic way of thinking he starts to take others' opinion and gets less egocentric (Potter & Perry, 1993).

Mental and Psychological Development: Stubbornness period gradually loses its pace. And the second phase of question asking starts this time. He asks such questions as "why is this like this?", "how is it done?" and "why do I have to do this?". His intelligence also improves in parallel with the advancement in speaking. He wants to create his own early by

constantly asking question and to organize it. This period can also be called as "fantasy" period and may last until the launch of school. The requests of children are under the effect of some things. In their way of thinking, goods have such a power that it affects people. Children see the events in the way they want to see them and proceed in their own worlds as very confident of themselves. And the world of fables makes a match of these childish beliefs and thought. The child's ability of fantasy reaches its peak in this period. The child learns how to act independently and to adapt with the environment in this period as well.

The strong interest in environment and the education need are the most distinct features of this period. Child learns to recognize the reality better. In spite of that there happens unexpected and surprising changes in child's views. Child may give his mother a piece of wood which he earlier accepted as a ship for burning in oven (Wechselberg & Puyn, 1993).

Expected Activities: He can run and spin without any imbalance. He can stay on one leg for like 10 seconds. He can fasten and tie his shoes (but cannot button). He can count up to 4 by heart. "Give me 2 of them". (He can choose and then give 2 of 4 breads). He can draw a man (it usually consists of a head, two bumps and probably two eyes; yet no body). He knows the days of a week ("Which day is after Tuesday?"). He can give proper answers to the following questions: ("What do you do when you get sleepy, hungry and feel cold?"). He can make + sign by imitating.

Mother and Father-Related Activities: He can meet his toilet need on his own (may need assistance for wiping). He can play for at least 30 minutes outside. He can put on his own except for buttoning process (Hathaway et al, 1993).

Concept of Time: Being not that conscious, he can talk about past, future and present at the age of 4. He knows that sun rises in the morning; and moon at night. He has no concept of season. He relates hot and cold with the concept of season.

He knows to direct himself within time and location in order to live in a reasonably stabilized world at the age of 5. He can tell his age and the days of a week. He cannot recognize the concept of death. Talks about earlier people do not make an impression on him. He wants to finish what he starts and dramatizes natural events. He adds sun, moon, cloud etc. to his stories (Potter & Perry, 1993).

2.1.3.3 Age of 5-6

Physical Development: His birth height usually doubles at the age of 6. The average height is 105 cm. As a result of this slow downed growth nutritional needs get relatively stabilized.

When he reaches 6 he can catch, throw or bounce the ball. His improved subtle motor abilities enable him to accomplish delicate manipulations. Child can make circles, X signs and copy square or triangles. These abilities enable him to write letter and numbers (Potter & Perry, 1993).

Language Development: He roughly knows 3000 words. He can clearly explain his thoughts. He uses such words as: "in case", "because", "why" and "the reason". Such concepts as size, weight and distance improve (Kavaklı, 1992).

In this period the child speaks so fast and urgently that he may speak swallowing some syllables and even some part of sentence apart from syllables. This condition can be overcome provided that required emphasis is addressed (Wechselberg & Puyn, 1993).

The Concept of Place and Location: While home is his focal point he also pays attention to moon, sun and sphere. He recognized right and left in his way. He can tell the names of his favorite and nearby locations. He gets afraid of getting lost when he does not use the regular route. He can draw a small labyrinth with his finger (Özgür & Özgür, 1994).

The Development of Balance and Motion Functions: Child is as command of his motions as grown-ups. He learns such difficult tasks as threading a needle, putting on, bathing, drying, teeth brushing and eating on a table on his own. He also goes to toilet on his own. And it is not difficult for him to learn to ride a bicycle. He can draw simple shapes in detail and paint human being, animal, house, three and automobile.

He can now tie his own shoes. His working abilities do also improve with the muscle strength required for heavy efforts and patience in short time.

Psychosocial Development: He changes his attitudes towards his mother. He really loves her; but he always blames her for anything wrong and hates her in a minute. He envies his sisters or brothers. However he really likes to listen to his infanthood stories. He still needs assistance with bathing. He likes to play in a bathtub; but does not really like his face and neck to get washed. He must be reminded of washing his hands and face before meals. Such accidents as spilling on his clothes or table cloth can frequently be observed. He is more rapacious than he is hungry for foods. Where his playmates or regular friends are from or at which class they are studying does really not concern him. He plays better with counter sex; but slowly starts to choose friends of the same sex (Kavaklı, 1992). The fables that he takes pleasure show variety. While male children like legendary and heroic fables; female ones like fairy and queen fables (Özgür & Özgür, 1994). The biggest problem at this age is that children do not know where to stop while playing games without any physical and emotional damage. A child of 6 can generally be described as a sweet, explorer and investigator kid.

The parents and the people around should give almost real-like answers to the questions that children are asking about their bodies. The processes should be explained in a simple and short form. The effects of parents, teachers, friends and the other people around are really important in creating these concepts on children either in a good or bad way.

That something is cut or removed from their body do really frighten children. So it will be more appropriate to tell a child who is to be circumcised or to have tonsillectomy that these parts will not be removed; but rather be cleaned up and corrected. Children of this age get aggressive against outflow of their blood even in unimportant scratches and injuries and cries “I will run out of all my blood, it flows”. Children of this age group are really afraid of blood-drawing and get panicked in such cases. Particularly nurses should be well aware of their approaches against the children of this age group staying in hospital and sympathize with their fears and know the issues of their development period and contact them considering all these facts (Kavaklı, 1992).

Game: An interest in collection, collecting something special, appears in children during this period (Wechselberg & Puyn, 1993).

Cognitive Development: Intuitive thinking replaces egocentrism until the ages of 5 and 6. Pre-school child can solve the problems at an increasing rate by thinking one sided.

The world knowledge of a pre-school child is closely related to structural experiences. Pre-school period is based on the child's recognition of real world via his or her imaginary rich world. In case that two of them are confused by a child it mostly leads to childhood fears. In fact when a child reflects the truth from his own perspective it is generally interpreted as a lie by grown-ups. Early instant thinking improves in pre-school years. Thinking is transductive process, which means that cause and effect relationships interact within each other. If two events are related with each other in terms of time and place child (in terms of cause) relates one to another. For example a child staying in hospital may come up with such a result: "I cried last night and that's why nurse gave me injection." Children around the age 5 start to learn the rules to understand the causes. And then the child starts to draw a conclusion from the general to the specific. That is what forms the basis of logical thinking. Now the child thinks like that: "I daily get two injections. That is why I got another shot last night."

The moral development of a pre-school child also includes a social understanding of proper and improper behaviors. At the same time the child keeps getting motivated by the desire of avoiding from punishment and the wish of a reward. The basic distinction between this phase of moral development and the children of 1-3 age is that pre-school children are better at recognizing which behavior deserves punishment and which behavior deserver reward and start tagging these behaviors as proper and improper.

When a nurse makes preparation for a treatment of a pre-school aged child he or she should consider the fact that whether the child comprehends what is being told (Potter, & Perry, 1993).

Mental and Psychological Development: He establishes better relationships with his environment. His world gets enlarged and he feels in safety around home. The child interacts with other children and makes new playmates this way.

He learns the concept of discipline and to adapt to environment. Child gets away from egocentrism and starts to compare himself or herself to other children. He learns to praise the works of others.

The emotional connection of child to his father and mother gradually decreases as result of joining to new groups and to the society. The child established his own measurement independent of his or her trainer's measurement for good and bad.

He recognizes the worth of money and starts to lose his belief in wonderland or something like that. He can distinguish sexes easily. They show interest to their sex roles. It is very important that boys act as a father or girls act as a mother in terms of healthy development of personality and especially accepting duties necessitated by their sex in the future.

Expected activities: He can catch a ball. He can jump smoothly. He can copy a drawn + sign. He can say his age. His concept of '10' improves (he can count 10 sticks). He can count large numbers by heart. He knows which one of his hands is at right or left. He can draw a human being with at least eight details of him. He can describe his favorite TV program with some details.

Mother and Father-Related Activities: He can do trivial housework (like dumping, wiping up). He can go to school alone or can get in school bus. He is good at motor abilities; but not good enough to be aware of dangers (Hathaway et al, 1993).

Advices to Parents for the Development of Sense of Personality: Encourage children to be independent. Make things easier for them. Want them to help you. Let them decide themselves. Make your children feel special. Often indicate that you love them. Respect their feelings and supply with their needs. Show interest and praise them for their each success. They should learn scolding as well as appreciating. Listen to them curiously while they're talking to you.

2.1.4 Physical, motor and emotional development of school-age child

It should not be forgotten that growing to school maturity requires not only the development of intelligence but also internal, emotional and social maturation. Merely developing the intelligence and underestimating the psychological, emotional and social development mean preventing development of the child's personality and perhaps, the necessary development for school. The child should not be interfered while playing various games, he/she should be prepared to be together with his/her peers and the child should be assisted to enter a new period of life, in other words the school age, without dreading on his/her own (Wechselberg & Puyn, 1993).

It is unfavorable to school the children who develop slower than their peers and are not able to conduct the study that school requires yet, before developing needfully. Otherwise, the child encounters with the problem of failing the class even in the first years. The failure of this type of child does not only cause him/her to be a nervous wreck but also affects his/her behaviors, and it is observed that the child becomes coward, angry, bad-tempered and aggressive (Wechselberg & Puyn, 1993).

Through starting the school, the child leaves the confident environment where he/she recognizes as home and family, and starts to live in a totally new world , full of friends, learning and adventure, for the first time. The world of school is a world that the child cannot entirely share with his/her parents. It is required to support him/her affectionately and try to understand him/her (Platin, 1991).

2.1.4.1 In general at 6-12 years old

Their pulse and breathing rate decrease generally and the blood pressure increases (Newman, 1995). The respiration rate is 19-21. /min. On the other hand the blood pressure is 120/75 mmHg at 6-9 years old (Yigit, 1992). The pulse is 75-115/min (Newman,1995).

Physical Development: The 6-year-old child is different from the pre-school period. The schoolchild is taller and more slightly built than he/she is in pre-school period (Foster et al, 1989).

The child gains 2.5-3.2 kg/year at 6-12 years old which is the schoolchild period (Kavaklı, 1992).

6-12 year olds= Age (Year) X 7 /2 = kg. A 6-year-old child is 20-21 kg (Kavaklı, 1992).

Along with the body and limbs, he/she gets longer by 5.5 cm per year. While he/she loses his/her milk teeth, he/she grows teeth continuously. The skills of coordinated movement and fine motor keep developing. The continuance of growth raises calorie requirement (Foster et al, 1989).

Mental Development: He/she manages definite tasks. The girl or boy behaves egocentrically although he/she is not always right. He/she learns to express his/her emotions and opinions verbally and in written. His/her vocabulary is 3000 and more, he/she makes complex sentence (Foster et al, 1989).

Emotional and Social Development: The child after 6 years old begins to side against the social groups. He/she opposes firstly his/her home, then the society. He/she defends the opposite opinions of the people around. .from now on "the second age of opposing" has begun. At the same time, this is a dangerous age in which this child who goes to school, is not able to know what to do. Also, the precise settlement of truths within the psychism of the child begins in this period (Ozgur & Ozgur, 1994).

He/she lives some crises such as inferiority complex regarding the things that he/she's done and he/she wants to do. The requirement of sex education continues. He/she likes to be with his/her friends, competition is important. He/she is afraid of that his/her body will become permanently disabled and his/her body image will change; he/she may have a phobia and have nightmare. Neurotic behaviors are common (Foster et al, 1989).

Nutrition: His/her appetite fluctuates because of the variability in the activities and the modification of the growth process. There is a tendency of disregarding breakfast due to the hurry of getting to school. Although lunch is provided in many schools, the children do not eat those foods (Foster et al, 1989).

The preferences of child regarding the foods may change frequently. Moreover, the children's food habits begin in the periods of pre-school and school age. The children in this period are curious about buying foods out and trying new different foods. It is required for the family to be sensitive about teaching positive behaviors (Yigit, 1992).

Game: He/she plays group games with his/her fellows and team activities are dominant. They read books at all ages. They like cycling. They are fond of sports equipment. They play card games, board games and table games. Most of the games are active games that do not require equipment or less equipment (Foster et al, 1989).

Safety: It should be kept using safety belt during the travel on the car. Cycling can be taught to him/her and applied. Handicrafts and hobbies with the mechanical tools are taught by providing safety (Foster et al, 1989).

2.1.4.2 Age of 6-7

Physical Development: The excellent development of motor coordination is better than the motor skills. He/she is better good at balance and rhythm, running, jumping, climbing, leaping and speeding. He/she catches and hurtles the ball. He/she wears clothes without help or a little help by his/her own (Foster et al, 1989).

Mental Development: He/she has a vocabulary of 2500 words. He/she learns reading and writing, and begins to be familiar with certain concepts and numbers. He/she knows right-left, morning-noon-evening and money. His/her intuition power improves. He/she likes simple games with simple rules. He/she is verbally aggressive, hectoring, quarrelsome and self-opinionated (Foster et al, 1989).

Emotional and Social Development: He/she is jovial and sympathetic; he/she avoids conflicting with mother and father due to his/her choices. At the age of 7, he/she is silent and thoughtful, and very sensitive. He/she uses telephone. He/she likes to do something, starts to do many things and finishes only some of them. He/she fulfills some responsibilities that the household gives (Foster et al, 1989).

Nutrition: The pre-school child does not like persistence on foods. His/her nutrition has a tendency of showing the deficiencies of riboflavin, vitamin A and iron. The daily water requirement is 100 ml/kg and the daily protein requirement is 3 g/kg (Foster et al, 1989).

Game: They like infant doll, toy car and toy truck. In the games, they prefer to play with both genders in small groups. At about age of 7, they prefer the same gender. They learn cycling. They prefer to pretend with real costumes and dream. They collect for the quantity by not caring the quality. They play active games such as ice-skating, martial arts and hide-and-seek. They are ready to learn music, dance and gymnastics. Their television hour should be restricted to 1-2 hour/day (Foster et al, 1989).

Safety: Safety in traffic should be taught and supported. There is still a need for adult supervision in the games. Staying away from the strangers and avoiding getting something from them should be taught. Prevention and curing of the diseases and other habits for healthy life should be taught. Cycling at home should be restricted, should not be allowed in traffic and cycling safely should be taught. The harms of drug use, alcohol and cigarette should be taught (Foster et al, 1989).

Expected Activities: He/she can copy a triangle. He/she can define the words according to their uses (What is an orange? "It is for eating"). He/she knows that it is morning or afternoon. He/she can draw a human picture with its 12 details. He/she can read the words containing monosyllable. He/she uses pencil to write his/her name (Hathaway et al, 1993).

2.1.4.3 Age of 7-8

Physical Development: His/her weight increases by 1.4 - 2.7 kg (each year). His/her height increases by 2.5 - 5 cm (each year) (Newman, 1995).

Social Development: The rule of pleasure weakens over against the rule of truth, and the sign of a more realist tendency is observed on the child. The child tries to make classification, multiplication and summation in series (Ozgur & Ozgur, 1994).

Psychosocial Development: The age of 7 is a more serious, self-aware, less negative, less problematic, self-enclosed, gentle, dutiful and emotional age. He/she is fond of speaking, speaking bitingly and discussing. The child is sometimes fond of staying alone and having a his/her own room. In addition to not liking bathing so much, he/she can bath on his/her own. He/she likes to wear his/her old clothes. He/she does not have a preference. He/she wears everything that is purchased for him/her, he/she sheds the clothes that he/she took off on the ground or couch, he/she is messy. He/she should be reminded to go to bed. He/she may take along a toy or object which he/she likes or thinks that it assures him/her. He/she sometimes thinks that everybody opposes him/her. He/she complains about his/her family. He/she thinks that he/she is misbehaved and his/her family adopted him/her. He/she wants to escape from his/her family and house. In essence, he/she desires the intimacy and interest of his/her family very much. He/she is admires his/her elderly

brother/sister. If he/she has a younger sister, he/she looks after and protects her, but he/she frequently quarrels with her and he/she is mostly jealous of her very much. His/her relations with mother are better, compared to the age of 6. However, the child at this age is closer to father. The games with friends and group games are very important. The consent of the friend interests him/her very much. His/her place in the group and his/her popularity is important for him/her. Female-male discrimination has started to differentiate also in the games. In this period, the child may attach to the opposite sex emotionally. He/she likes his/her school, teacher and reading very much. He/she is fond of reading books and magazines, particularly adventure books. The thoughts of his/her teacher interest him very much. The child at this age is shy. He/she is embarrassed of the changes in his/her body and does not like being touched. Since other people's thoughts and behaviors interest him/her very much, he/she is very sensitive to criticism and jeering (Kavaklı, 1992).

Expected Activities: He/she can count in 2's and in 5's. He/she can do up his/her shoelace. He/she can copy rhombus. He/she knows which week day it is (does not know the date and the year). He/she can sum and subtract the one digit. He/she can draw the picture of a man with 16 details (Hathaway et al, 1993).

2.1.4.4 Age of 8-9

Physical Development: He/she may not see the close. The girls begin to show interest to opposite sex. Hand-eye coordination and fine motor skills have developed. He/she is active and easy going. He/she meets his/her all physical needs. He/she is busy with constant movements, games and hard work. It is difficult to poise the balance between resting and motion (Foster et al, 1989).

The changes in the body ratio are clearer through the gradual loss of the body fat and the longer growing of the crotch line (Newman, 1995).

His/her weight increases by 1.4 to 2.7 kg (each year). His/her height increases by 2.5 to 5 cm (each year) (Newman, 1995).

Mental Development: He/she knows the meanings of the words and learns grammar according to its rules. He/she reads the books that he/she likes alone, examines the newspapers and reads funny texts. He/she draws the things that he/she likes in detail. He/she makes numerical, serial, physical and central classifications. He/she uses the language as word games, slogan, joke, riddle etc. He/she sets up the rules in his/her life. Everything including the rules in work life, how and what is weather, seasons etc. are very interesting (Foster et al, 1989).

Emotional and Social Development: He/she has a good communication with fellows, but he/she is negative against the opposite sex. He/she is self-confident and practical at home; he/she questions the opinions and values of his/her mother and father. He/she likes camping, being out with large groups, group activities and climbing. He/she is modest regarding his/her body; he/she is aware of gender. While working, he/she is careful and shows his/her best skill. He/she is happy, collaborative and he/she is active and easy in family relations. He/she uses the manner of adults and he/she is gentle. The team spirit is at upper level; secret rules and rituals have become prominent. It is better to give suggestions rather than dictatorial approach (Foster et al, 1989).

Psychosocial Development: It is an age in which he/she has opinions about everything, advises everybody and defends himself/herself against the critics of his/her teacher, family and siblings. He/she wants to learn the reason of the events happening in the world and in his/her environment. He/she is ready for everything. He/she is curious and always has hurry. He/she is very busy and active. His/her interest for collection is extreme. He/she collects everything. He/she is willing to establish relationship with the other people in his/her environment. He/she likes to observe and watch the conversations and social activities of the adults very much. He/she likes to play with his/her fellows. He/she feels both love and hate for the opposite gender. He/she begins to a game or work in an ambitious and zippy manner. On consequence, he/she may fail, and abandon himself/herself to despair and cry. He/she likes travelling, seeing new places, having new experiences and new friendships. In general, he/she is loyal to his/her engagements. He/she is at that place in time. He/she can totally wear his/her clothes by himself/herself and likes to choose his/her clothes. He/she is careless, untidy and impatient. His/her sleep is qualified. However the time for going bed should be reminded. He/she is social. His/her behaviors are more positive compared to the age of 7. But it is required to develop them more. He/she is curious about helping the people and being approved and praised by them. 8-year-old child writes texts about sex, and whispering, giggling and laughing regarding this subject are very frequently observed at this age. He/she does not like to be alone and always wants to be with his/her friends and other adults. He/she is the first person who has finished the meal, he/she is precipitant. He/she does not chew the food, in fact swallows. He/she gets on with everybody at home. Especially, he/she needs the close interest and understanding of his/her mother. In addition to preferring mother, his/her love for father has increased. He/she gets on with his/her siblings and loves them. He/she is sensitive to the problems of the family. In case of any stress, he/she shows the behaviors from infanthood such as rubbing his/her eyes nail-biting and eating with hands. He/she is fond of working with father like repairing and helping him. This age is an age in which the friend is more important than the family and he/she is willing for learning and contacting with the people around him/her (Kavaklı, 1992).

Nutrition: His/her nutrient requirement is 2100 cal/day. He/she tends to slur over both meals and thiamin, calcium and iron may be deficient. Adiposity problem starts in this period. He/she can help to prepare food (Foster et al, 1989).

Game: He/she likes walking sports. He/she is attracted by cooking, woodworks and handicrafts. He/she likes card and table games. He/she likes listening to radio and cassette. He/she begins to collect qualitatively. The restriction of TV should be kept (Foster et al, 1989).

Safety: Safety in firearms should be taught, they can be allowed to search and see them only under the control of the adults. Mother and father should be aware of who their child's friends are, and the family should eliminate few bad friends. Swimming should be taught safely under the control of the adults (Foster et al, 1989).

Expected Activities: He/she can define the words better than their usage form (What is an orange? "It is a fruit"). He/she can give proper answers for the questions. He/she improves his/her reading. He/she learns operations in summing and subtracting such as "carry…" and "we take 1 from…" (Hathaway et al, 1993).

2.1.4.5 Age of 9-10

Physical Development: .A 9-year-old-child weighs 30-32 kg. Furthermore, his/her height increases 6 cm (Ozgur & Ozgur, 1994).

Social Development: Self-criticism begins indefinitely in a 9-year-old-child. At the age of 10, he/she can criticize his/her mistakes (Ozgur & Ozgur, 1994).

Psychosocial Development: The girls at the age of around 9 are more portly and mature. This makes the child restless. Hereafter the gender difference is clear. She is aware of the changes in her body. They do not want to show their bodies even to their mothers. Most of the girls know menstruation and discuss this issue with their friends. The child wants to recognize its body better and know the functions of his/her sexual organ better. Both genders have begun to keep their rooms and clothes tidier. The child of this age generally finishes the work that he/she started. He/she can give decision more quickly and easily. He/she generally does what he/she wants rather than what he/she should do. He/she is rebellious against the authority. He/she thinks that his/her family is less important than friends. He/she strictly opposes against their behaviors. He/she is not so much interested in the family, but he/she likes being together and travelling with them very much. He/she wants to have role in family's decisions. He/she becomes very happy by helping his/her mother while she is very busy. In general, he/she is on very good terms with his/her siblings. Going to bed should be still reminded to him/her. He/she understands the things, being told very well. He/she understands the subjects like pray, religion well and can apply them. He/she wants to do the work ideally. He/she likes complicated table games and organized games much more. His/her hobbies have started. He/she likes listening to historical events. It is the age of listening story, tale and adventure. He/she is fond of reading these kinds of books. He/she is social. He/she can be disciplined easily. His/her feelings of empathy and sympathy have developed. He/she may have somatic complaints in case of stress (Kavakli, 1992).

Expected Activities: He/she knows the month, day and year. He/she counts the months respectively. He/she learns simple multiplication operations (Hathaway et al, 1993).

2.1.4.6 Age of 10-11

Physical Development: Gaining weight and development-growth are observed in both genders. Especially, the development and gaining weight are more distinctive in girls compared to boys. It is observed that the girls show more progress than boys in terms of both gaining weight and maturation. This situation may lead anxiety in both genders in terms of many things (Kavakli, 1992).

The pulse is between 70 and 110/min at the age of 10. Breathing rate is 19/min. The blood pressure is 112/64 mmHg (Newman, 1995).

Psychosocial Development: The child indicates a slight transition from the age of 9 to the age of 10. The child at this age is cheerful and happy, it is the age in which he/she likes the physical activities like running, jumping. He/she is excited. He/she likes reading exciting adventurous books such as detective stories, and likes watching these types of films. He/she is closer to family compared to the age of 9. He/she gets on with his/her parents. He/she shows respect to his/her family and their roles. His/her relation with his/her siblings

between 6-9 year-old is not so good, but he/she likes his/her younger sibling, if any, younger children and animals very much and protects them. The role in the group games and activities is given according to the gender difference. It is an age in which long lasting, special and intimate friendships are established. He/she cannot know that he/she is tired and when he/she should go to bed. His/her body position while sitting at the table and studying is not good. Continuous reminding may be required. He/she expresses his/her happiness and love explicitly. He/she gets angry and blazes quickly, but this continues very shortly. When he/she gets angry, he/she cries, but he/she never likes being consoled. His/her appetite and health are pretty good. He/she can tolerate stress better. He/she does not want to be alone. He/she argues with the family for everything. His/her relation with his/her father is better. He/she is not on good terms with his/her siblings. However he/she is attentive to choosing friends and getting on with them. He/she is frequently jealous of his/her friend. The sense of shame is considerably high in the child at this age. The boys are annoyed very much and become embarrassed when their mothers kiss them in the presence of their friends or guests. The gender difference is clear. Since the physical growth is not most often parallel with the social and emotional maturation, dumps exist for the children who appear older than their age. Because the child cannot display the behaviors that an adult and the society expect from him/her. His/her interest in money has formed. The desire for being financially independent from the family has begun. In case of stress, he/she turns in on himself/herself, he/she only holds his/her mother. In this period, it is essential to guide the child, establish a clear and understandable relation, help him/her to accept his/her role peculiar to his/her gender, encourage and guide him/her regarding the skill-oriented games and works. Hence the school and the family should be in good relations (Kavakli, 1992).

2.1.4.7 Age of 11-12

Physical Development: Their life symptoms have gotten close to the adults'. For girls, growth has increased; the inequality between the genders, particularly physical power in boys has increased much more (Foster et al, 1989). The girls tend to grow more rapidly than the boys and this comes clearly before two years. The child who feels his/her difference from his/her peers negatively, feels the need to be relieved about that loneliness (singularity) is normal in the growth period (Newman, 1995). Except 3rd molar teeth, all the teeth have been grown. The interest to the opposite gender has begun among boys. The girls may menstruate (Foster et al, 1989).

Mental Development: He/she can have opinions and prejudices about the social problems; this is understood from the others' standpoint. He/she likes strange stories and love tales. He/she begins to be interested in the abstract of opinions. Human health and reproduction are very interesting for him. He/she is more ethical, faithful and responsible in this period (Foster et al, 1989).

Emotional and Social Development: The loyalty to a group is strong; the boys begin to tease the girls and the girls flirt with the boys in order to take attention with their best friends. They want independency. They are rebellious in routine works; their state of mind is fluctuating; they sometimes prefer loneliness in a day. They criticize the works very much. They chat with their friends about the realities of life. Masturbation increases (Foster et al, 1989).

At the age of 11, the limits of criticism broaden and also they begin to criticize the tasks that others gave him. He/she considers about the applications that he/she had and ranks them according to their values. The logical tendency begins to be dominant over thought, judgment and decision. Girls and boys form groups among themselves and they are alienated from common games. While the boys like sport and cycling, the girls like meeting with her friends. The girls at this age enjoy some behaviors such as wearing the same clothes and acting similarly (Ozgur & Ozgur, 1994).

Psychosocial Development: He/she is easy going and relaxed. He/she can control himself/herself, his/her attitude toward the events is more positive. He/she likes himself/herself and the world. He/she is happy. He/she likes making jokes. The child likes difference and variety. Although they do not keen on money so much, they want to earn. They keep their money well. They like talking and try to talk to an adult about any subject. They are good friends for talking. Their interest in the opposite gender has increased. They like to talk about this subject. In particular, the boys are fond of the games and social activities (dance, party etc.) where both genders participate. It may be necessary for the families to control the parties. Their relations with family are pretty good. Their arguments with the family and their requests from them have decreased. They expect their family to show respect to their privacy. He/she less often quarrels with his/her siblings at the age that is close to him/her age. A very young sibling bothers him/her. He/she quietly gets on with his/her siblings at pre-school period and gets along well with them. He/she has a special respect and sympathy for his/her elderly sister/brother. His/her relations with friends are very good. He/she can change his/her friends. For example, while he/she is interested in his/her friend, he/she can have another friend. Although they like groups, they sometimes want to be alone. Their interest in reading has lessened a little. Their interest in outdoor activities and sport has increased. Collecting occupies significantly for the child at this age. If he/she is tired in case of stress, he/she displays extremely nervous behaviors (Kavakli, 1992).

Nutrition: While the daily calorie requirement is 2500 cal/day for boys, this is 2250 cal/day for girls. The daily requirement for water is 75 ml/kg and the daily requirement for protein is 2 g/kg (Foster et al, 1989).

Game: They like the works conducted manually. They like working and running errands in order to learn about money. They want to play sports, dance and call. They like plays and any active things (Foster et al, 1989).

Safety: He/she continues to observe his/her friends; the safe cycling in the streets and traffic should be emphasized (Foster et al, 1989).

3. Conclusion

The challenges today's pediatric nursing faces in providing care for children and their families require skills from a wide spectrum of both technologic and psychosocial arenas. To meet the needs of the child and the family in a variety of settings, the nurse must have a thorough understanding of disease processes, as well as knowledge of emotional, social, cultural, and developmental needs.

To provide this essential knowledge base, this unit begins with a review of growth and development, which is basic to understanding the behavior of children and the influences of illness.

The pediatric nursing includes a holistic approach in terms of nursing criteria by studying the normal growth- development and health problems in a child, from the birth to adolescence (ages of 0-18) according to the systems which are used.

The medical officers who deal with children must know the stages of child growth and development, the theories which are related to the growth and development and to identify and evaluate the factors that affect this process positively or negatively.

It is important to evaluate the growth and development in a healthy child. In order to do that, the medical officers who are responsible for the child health, should at least know the growth and development features according to critical periods in childhood.

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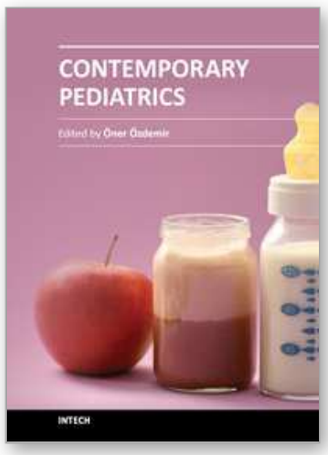

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