Physical, cognitive and psychosocial development in early childhood (From 3-6 years)

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LEARNING OBJECTIVES
After mastering the contents of this lecture, the student should be able to:

1. Define the terminologies.
2. Describe the bodily growth and change in early childhood.
3. Explain the nutrition and oral health in early childhood.
4. List the sleep patterns and problems in early childhood.
5. Describe the motor skills in early childhood.
6. Describe the cognitive and psychosocial development in early childhood.

TERMINOLOGIES
Centration
Cognitive
Conservation
Egocentrism
Vocabulary
CONTENTS

Introduction 2

1. Physical development 2
   – Bodily growth and change 2
   – Nutrition and oral health 3
   – Sleep patterns and problems 3
   – Motor skills 4

2. Cognitive development 5
   – Advances of preoperational thought 5
   – Immature aspect of preoperational thought 7
   – Language development 7

3. Psychosocial development 10
   – Understanding emotion 10
   – Self-esteem 11

References 12
Introduction

In early childhood, children slim down and shoot up. They need less sleep than before and are more likely to develop sleep problems. They improve in running, hopping, skipping, jumping, and throwing balls. They also become better at tying shoelaces, drawing with crayons, and pouring cereal; and they begin to show a preference for either the right or left hand.

1. Physical development

**Bodily growth and change**

Children grow rapidly between ages 3 and 6, but less quickly than before. At about 3,
1. Children begin to lose their babyish roundness and take on the slender, athletic appearance of childhood.
2. As abdominal muscles develop, the toddler potbelly tightens.
3. The trunk, arms, and legs grow longer.
4. The head is still relatively large.
5. Both boys and girls typically grow 2 to 3 inches a year during early childhood and gain 4 to 6 pounds annually. Boys' slight edge in height and weight continues until the growth spurt of puberty.
7. Cartilage turns to bone at a faster rate than before, and bones become harder and stronger, giving the child a firmer shape and protecting the internal organs.
8. The increased capacities of the respiratory and circulatory systems.
9. Developing immune system.

These changes, coordinated by the maturing brain and nervous system.

**Nutrition and oral health**

1. Preschoolers eat less in proportion to their size than infants.
2. As growth slows, they need fewer calories per pound of body weight.
3. Children vary in their ability to recognize their internal cues of hunger and fullness, and parents’ eating habits have an influence.
4. As children move through the preschool period, their eating patterns become more environmentally influenced.
5. Whereas most 3-year-olds will only until they are full, 5-year-olds tend to eat more when a larger portion is put front of them.

Thus a key to preventing overweight may be to make sure older preschoolers are served appropriate portions and not to admonish them to clean their plates.

**To avoid overweight and prevent cardiac problems,**

1. Young children should get on-about 30 % of their total calories from fat, and less than 10 % of the total from saturated fat.
2. Lean meat and dairy foods should remain in the diet to provide protein, iron, and calcium.

**Sleep patterns and problems**

1. Sleep patterns change throughout the growing-up years. Young children usually sleep more deeply at night than they will later in life.
2. Children in different cultures may get the same amount of sleep each day, but its timing may vary.
3. Young children may develop elaborate routines to put off going to bed, and it may take them longer than before to fall asleep.
4. Bedtime may bring on a form of separation anxiety, and the child may do all she or he can to avoid it.
5. Regular, consistent sleep routines can help minimize this common problem.
6. About 20 to 30% of children in their first four years engage in bedtime struggles lasting more than an hour and wake their parents frequently at night.
7. Walking and talking during sleep are fairly common in early childhood. Other sleep disturbances as nightmares and sleep terrors are caused by accidental activation of the brain's motor control system.
8. Bed-Wetting most children stay dry, day and night, by 3 to 5 years of age; but enuresis, repeated urination in clothing or in bed, is common, especially at night. About 7% of 5-year-old boys and 3% of girls that age wet the bed regularly.

Motor skills

1. Preschool children make great advances in gross motor skills, such as running and jumping, which involve the large muscles.
2. Development of the sensory and motor areas of the cortex permits better coordination between what children want to do and what they can do.
3. Their bones and muscles are stronger, and their lung capacity is greater, making it possible to run, jump, and climb farther,
faster, and better.

4. Children vary in adeptness, depending on their genetic endowment and their opportunities to learn and practice motor skills.

5. Fine motor skills, such as buttoning shirts and drawing pictures, involve eye-hand and small-muscle coordination, skills in which Wang Yani clearly excelled.

6. Artistic Development Changes in young children's drawings seem to reflect maturation of the brain as well as of the muscles.

7. Handedness, the preference for using one hand over the other, is usually evident by age 3.

Since the left hemisphere of the brain, which controls the right side of the body, is usually dominant, most people favor their right side. In people whose brains are more symmetrical, the right hemisphere tends to dominate, making them left-handed.

2. Cognitive development

Advances of preoperational thought

Advances in symbolic thought are accompanied by a growing understanding of space. Causality, identities, categorization, and number. Some of these understandings have roots in infancy and toddlerhood; others begin to develop in early childhood but are not fully achieved until middle childhood (see table 1 and 2).
Table (1): cognitive advances during early childhood

<table>
<thead>
<tr>
<th>Advance</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of symbols</td>
<td>Children do not need to be in sensorimotor contact with an object, person, or event in order to think about it. Children can imagine that objects or people have properties other than those they actually have.</td>
</tr>
<tr>
<td>Understanding of identities</td>
<td>Children are aware that superficial alterations do not change the nature of things.</td>
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<tr>
<td>Understanding of cause and effect</td>
<td>Children realize that events have causes.</td>
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<tr>
<td>Ability to classify</td>
<td>Children organize objects, people, and events into meaningful categories.</td>
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<tr>
<td>Understanding of number</td>
<td>Children can count and deal with quantities.</td>
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<tr>
<td>Empathy</td>
<td>Children become more able to imagine how others might feel.</td>
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<tr>
<td>Theory of mind</td>
<td>Children become more aware of mental activity and the functioning of the mind.</td>
</tr>
</tbody>
</table>

Table (2): limitations of preoperational thought

<table>
<thead>
<tr>
<th>Limitation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Centration; inability to decenter</td>
<td>Children focus on one aspect of a situation and neglect others.</td>
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<tr>
<td>Irreversibility</td>
<td>Children fail to understand that some operations or actions can be reversed, restoring the original situation.</td>
</tr>
<tr>
<td>Focus on states rather than transformations</td>
<td>Children fail to understand the significance of the transformation between states.</td>
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<tr>
<td>Transductive reasoning</td>
<td>Children do not use deductive or inductive reasoning; instead they jump from one particular to another and see cause where none exists.</td>
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<tr>
<td>Egocentrism</td>
<td>Children assume everyone else thinks, perceives, and feels as they do.</td>
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<tr>
<td>Animism</td>
<td>Children attribute life to objects not alive.</td>
</tr>
<tr>
<td>Inability to distinguish appearance from reality</td>
<td>Children confuse what is real with outward appearance.</td>
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</tbody>
</table>
Immature aspect of preoperational thought

One of the main characteristics of preoperational thought is **centration**: the tendency to focus on one aspect of a situation and neglect others. Preschoolers come to illogical conclusions because they cannot decenter think about several aspects of a situation at one time. Centration can limit young children's thinking about both physical and social relationships.

**Conservation**: A classic example is the failure to understand conservation, the fact that two things that are equal remain so if their appearance is altered, so long as nothing is added or taken away.

In one type of conservation task, conservation of liquid, the ability to conserve is also limited by irreversibility: failure to understand that an operation or action can go two or more ways.

**Egocentrism** is a form of centration. Young children center so much on their own point of view that they cannot take in another's. Three-year-olds are not as egocentric as newborn babies. Egocentrism may help explain why young children (as we will see) sometimes have trouble separating reality from what goes on inside their own heads and why they may show confusion about what causes what.

Language development

Preschoolers make rapid advances in vocabulary, grammar, and syntax. The child who, at 3, describes how Daddy "hatches" wood (chops with a hatchet), or asks Mommy to "piece" her food (cut it into little pieces) may, by the age of 5, tell her mother, "Don't be ridiculous!" or proudly point to her toys and say, "See
how I organized everything?” And, as we’ll see, language may play a part in the development of memory and the predictability of intelligence.

6 Months
- Responds to his or her name
- Responds to human voices by turning his or her head and eyes
- Responds appropriately to friendly and angry tones

12 Months
- Uses one or more words with meaning intentionally
- Understands simple instructions, especially if vocal or physical cues are given

18 Months
- Has vocabulary of approximately 5-20 words
- Uses nouns most of time
- Repeats a word or phrase over and over again
- Follows simple commands

2 Years
- Has vocabulary of approximately 150-300 words
- Can name a number of objects common to his or her surroundings
- Can use at least two prepositions, such as in, on, under
- Combines words into a short sentence, largely noun-verb combinations
- Can use two pronouns correctly such as I, me, and you
- Responds to some commands, for example “where are your eyes?”

3 Years
- Has vocabulary of approximately 900-1000 words
- Use pronouns I, me, you correctly
- Use verbs often
- Use some plurals and past tenses
- Knows at least three prepositions, usually in, on, under
- Knows and name main parts of body
- Uses three word sentences easily
- About 90% of what child says should be intelligible
Physical, cognitive and psychosocial development in early childhood (from 3-6 years)

Understands most simple questions dealing with his environment and activities
Relates his or her experiences and can be followed with reason
Can answer such questions as “what must you do when you are hungry, sleepy, thirsty, cool, or hot?”
Be able to give his or her name, age, sex

4 Years
Knows names of familiar animals
Can use at least four prepositions
Names common objects in picture books or magazines
Knows one or more colors
Can usually repeat words of four syllables
Use verbalization as he or she carries out activities
Understands such concepts as bigger, larger, when a contrast is presented
Follows simple commands even thought the stimulus objects are not in sight
Makes much repetition of words, phrases, syllables, and even sounds

5 Years
Can use many descriptive words both adjectives and adverbs
Knows common opposites such as big, little; heave, light; long, short; etc
Repeats sentences as long as nine words
Follows three commands given without interruptions
Has simple time concepts, such as morning, afternoon, night, day, later, after, today, tomorrow, yesterday
Uses fairly long sentences and should use some compound and some complex sentences
Most of time uses correct grammar
3. Psychosocial development

Understanding emotion

1. Understanding their own emotions helps children to guide their behavior in social situations and to talk about feelings.
2. It enables them to control the way they show their feelings and to be sensitive to how others feel.
3. Preschoolers can talk about their feelings and often can discern the feelings of others, and they understand that emotions are connected with experiences and desires.
4. By age 3, children know that if someone gets what he wants he will be happy, and if not, he will be sad.

Emotions Directed toward the Self

1. As we have mentioned, emotions directed toward the self, such as guilt, shame, and pride, typically develop by the end of the third year.
2. Violating accepted standards can bring shame or guilt, or both; living up to, or surpassing, standards can bring pride.

Simultaneous Emotions:

Part of the confusion in younger children’s understanding of their feelings is difficulty in recognizing that they can experience different emotional reactions at the same time.

Individual differences in understanding conflicting emotions are evident by age 3.

Three-year-olds who could identify whether a face looked happy or sad and could tell how a puppet felt when enacting a situation involving happiness, sadness, anger, or fear were better
able at the end of kindergarten to explain a story character's conflicting emotions.

**Self-esteem**

Self-esteem is the self-evaluative part of the self-concept, the judgment children make about their overall worth. Self-esteem is based on children's growing cognitive ability to describe and define themselves.

**Developmental Changes in Self-Esteem:**

1. Children do not generally articulate a concept of self-worth until about age 8, but younger children show by their behavior that they have one.
2. Recent attempts to measure young children's self-esteem often incorporate teacher and parent reports or puppets and doll play in addition to self-reports.
3. Self-esteem in early childhood tends to be all-or-none: "I am good" or "I am bad".

**Contingent Self-Esteem: The "Helpless" Pattern:**

1. When self-esteem is nigh, a child is motivated to achieve.
2. If self-esteem is contingent on success, children may view failure or criticism as an indictment of their worth and may feel helpless to do better.
3. About one-third to one-half of preschoolers, kindergartners, and first-graders show elements of this "helpless" pattern: self-denigration or self-blame, negative emotion, lack of persistence, and lowered expectations for themselves.
References
