

## **Overview of Development**

- Human development = biological and physiological changes that occur over lifetime
  - Physical
  - Cognitive
  - Sexual
  - Intellectual
  - Perceptual
  - Personality
  - Emotional growth
    - Includes growth, also includes maintenance and loss
- Lifespan approach
  - early adulthood not endpoint
  - Growth continues throughout adulthood
  - Multidimensional/multidirectional approaches
- Human development is complex
  - Three domains
    - Biological: biological growth, milestones (crawl, walk, talk), decline in old age
    - Cognitive: intelligence, thinking, perception
    - Socioemotional : forming relationships, personality
  - Multidirectional
    - Gains and losses
      - Losses not necessarily bad (i.e. Neuronal connection pruning for efficiency)
      - Happens at all stages of life
- Development is contextual
  - Not always uniform
  - Other factors impact development
  - Environment is ever changing
  - Cultural, historical, social influences (war, etc)
- Development has plasticity
  - Changes in neural connections
  - Always potential for change (new learning, adaptation)
- Why study development?
  - Nature vs. nurture
  - Stability vs. change
  - Response to stress
    - Not all people respond to illness the same way, largely dependent on developmental trajectory
- How does developmental change occur?
  - Stages?
  - Smooth and continuous process?
  - Crisis points?
    - Development starts at conception
- Periods of development
  - Prenatal
  - Infancy
  - Early childhood
  - Middle/late childhood
  - Adolescence
  - Early adulthood

- Middle adulthood
- Late adulthood
  - Also may see "ages" (first through fourth)
- Biological development
  - Starts at conception
  - Growth, height, weight, milestones, puberty, sexual development, etc
- Cognitive
  - Individual thoughts
  - Intelligence
  - Memory
  - Perception
  - Language
  - Morals
  - Judgement
    - Piaget: cognitive development
    - Vygotsky: emphasized role of social interaction in development
    - Kohlberg: moral development
- Socioemotional
  - Child's experience, expression, management of emotions
  - Ability to establish relationships
  - Understanding ones own and others feelings
  - Empathy
    - Psychoanalytical theories, behavior theories, varying degrees of emphasis to social and cognitive factors
    - Freud: stages of psychosexual development
    - Erickson: psychosocial development theory
- Adulthood and middle years
  - Many challenges
    - Establishing boundaries
    - Coping with career and finance
    - Parenting
    - Sex and romance
    - Onset of illness and disability
- Old age
  - Physical and physiological changes
  - Intellectual changes
  - Losses (coping with loss)

### **Child Development**

- Development is transactional in nature : biology vs environment
- Trauma and stressors have profound impact
- Prenatal: conception-birth
  - Affected by endogenous and exogenous factors
    - Stress hormones cross placenta and act on fetus
      - Maternal anxiety --> low birth weight, hyperactive, irritable, feeding and sleeping problems
    - Malnutrition
    - Genetic anomaly
    - Maternal disease

- Adolescent pregnancy
- Substance abuse
- Teratogens
- Fetal development
  - Movements felt 16-20 weeks
  - Hearing and taste 18 weeks
  - Bright light causes positional change at 20 weeks
  - Eyelids open 7th month
  - Reflexes
    - Grasp (17 weeks)
    - Moro (25 weeks)
    - Sucking (28 weeks)
  - Nervous system
    - Neural plate (16 days)
    - Neural tube --> cerebral vesicles (6 weeks)
    - Cerebral cortex (10 weeks, layers form at 6 months)
    - Visual cortex (neurons increase from birth-3years)
    - Developing white matter before 32 weeks
- Infancy: birth-18 months
  - Average weight 7.5 lbs
    - Premature if born < 34 weeks or birth weight < 5.5 lb
      - Premature infants at increased risk for:
        - Learning disability
        - Emotional/behavioral problems
        - Child abuse
    - Reflexes at birth
      - Rooting
      - Moro
      - Babinski
      - Palmar grasp
      - Survival systems (breathing, sucking, swallowing)
  - Cognitive development pairs with emotional development
    - 1st year task to develop attachment to caregivers
      - Attachment: relationship baby develops with caregivers
        - John Bowlby: early separation from mother has negative effect on emotional/intellectual development
          - Three stages:
            - Protest
            - Despair
            - Detachment
          - Harlow: studies attachment in infant monkeys
          - Rene Spitz: studied institutionalize infants
          - Mary Ainsworth
            - Secure attachment vs. insecure attachment
          - Poor attachment leads to delayed motor development, poor eye contact/ pointing, less social/verbal, deficit in social/language functioning
        - Bonding: intense emotional and psychological relationship mother develops for baby
        - Dyadic relationship: more than getting physical needs met
    - Milestones

- Detect smell of mothers milk (1 day)
- Distinguish mother's voice (3 days)
- Imitate facial movements of caregiver (3 weeks)
- Spends time sleeping (1 month)
- Smile: spontaneous at 2 months, in response to others at 16 weeks
- Temperament is important
  - Continuous aspect of behavior, observable from birth
  - Considered as inherited
  - Thomas and Chess 9 dimensions:
    - Activity level
    - Distractibility
    - Quality of mood
    - Rhythmicity
    - Approach/withdrawal
    - Adaptability
    - Attention span
    - Intensity
      - Difficult - 10% (cry, hyper alert, poor sleep, irregular bowels, difficult to comfort)
      - Easy - 40% (positive mood, adaptable, regular habits)
      - Mix - 50%
    - Goodness of fit: how well parent relates to developing child
      - Harmonious interaction between mother and child
      - Poor fit leads to maladaptive functioning later in life
- Toddler/Early childhood: 2-5 years
  - Increase in normal fears
  - Gender role established by age 3
  - Sexuality identity not typically established, sexual activity with self is common
  - Imaginary companions are normal
  - Independence assertion: "no"
  - Autonomy by age 3
  - Stages of play
    - Solitary play (2 years)
    - Parallel play (2-3 years)
    - Associative play (3-4 years)
    - Cooperative play (4-6 years)
- Middle childhood: 6-11 years
  - Early school age: 5-9 years
    - Complete myelin inaction of neural cortex
    - Full handedness
    - Increased ability to attend and learn
    - Sleeping 8-10 hrs
    - Moral development: conventional morality, rules followed without need for reinforcement, conscience develops, empathy increases
    - Social development:
      - Positive feedback from peers important
      - Harsh social judgement
      - Best friend
      - Turn to same sex parent
      - Hero worship

- Understand death, fear parents will die, fear injury and natural events (storms)
- Late school age: 9-11 years
- Adolescence: 11 or 12-18 years
  - Early adolescence: 11-14 years
  - Middle adolescence: 14-16 years
  - Later adolescence: 17+ years
- Puberty: development continues through middle adolescence
- Develop personal values, plan for future
- Moral development: parental value system is questioned
- Peer influences very powerful
- Self esteem: based on perceived views of others
- Appearance: important correlate of self esteem
- High risk behavior and impulsive decision making
  - Brain remodeled over course of adolescence
  - gray matter thickened in childhood; formation of synapses
  - Synaptic pruning
  - Frontal lobe immature (executive function not developed)
  - Hyperactivity in limbic region (emotional reactivity)
- Parenting styles are important
  - Authoritative: strict, inflexible rules; leads to unhappiness, social withdrawal, low self esteem
  - Indulgent-permissive: little or no limit setting with unpredictable parental harshness; leads to poor impulse control, low self esteem, aggression
  - Indulgent-neglectful: noninvolvement in child's life; leads to low self esteem, poor self control, aggression
  - Authoritative-reciprocal: firm rules, shared decision making, loving environment; leads to self reliance, self esteem, social responsibility

### **Adult development**

- Goal of adult development: achieve a modicum of maturity (mental state not age)
- Adult development important in understanding how societies function
- Schools of development
  - Different perspectives
  - Systems: ecological perspective, effects of changes in environment
  - Behaviorist: dev based on learning and cognitive processes
  - Psychodynamic: Freud, emphasizing role of social factors
  - Psychosocial: expands on Freud's ideas, includes social components and expands beyond adolescence
    - Erickson, Levinson, Vaillant, Neugarten
      - Erickson's epigenetic principle (8 stages; successful completion results in a virtue)
        - Trust/mistrust --> hope
        - Autonomy/Shame and doubt --> will
        - Initiative/guilt --> purpose
        - Industry/inferiority --> competency
        - Identity vs identity confusion --> fidelity (to self beliefs)
        - Intimacy/isolation --> love ; age 18-35
          - Settling down, focus on family, seeking intimacy
          - If unsuccessful, isolation may occur
          - Significant relationships with romantic partner/spouse and friends

- Occupation
  - Parenting
  - Generativity/stagnation or self absorption --> care; age 35-55 (or 65)
    - Focus on passing on skills
    - Career is important
    - Take on greater responsibility
    - Work to establish stability, produce something that makes a difference in society
    - Stagnation leads to midlife crisis, infidelity
    - Significant relationships in workplace, community
    - Climacteric: period of life characterized by decreased physiological and biological functioning
- Older adult development
  - Integrity/despair --> wisdom ; age 65+
    - Unsuccessful people feel life has been wasted, experience regrets
    - People who are proud of their accomplishments have integrity
      - Old age generally considered over 65
        - Young old up to 75
        - Old old 75+
  - Aging population = important public health issue
    - Now more older adults than children under 5 years old
    - Women live longer than men
      - Living arrangements : fewer women living with spouses
      - Need to know what patients support is like at home
      - Safe to live alone?
  - Biological factors
    - Twin studies: 30% heritability for successful aging is genetic
    - Telomere length is important
      - More stress leads to shorter telomeres
    - Reduced risk of dementia if there is a lifelong involvement in cognitively a engaging activities
  - Psychological factors
    - Freud: increasing autonomy with increased in control of id and ego
    - Kohut: maintenance of self esteem
  - Social factors
    - Physical activity
    - Nutrition and dietary interventions
    - Cognitive interventions, volunteering
      - Social isolation may occur
      - Financial instability can impact
  - No consensus on successful aging
    - Pathological aging vs normal aging describe
    - Rowe and Kahn
      - Freedom from disease and disability
      - High cognitive and physical function
      - Productive social engagement
    - Valiant and Mukamal study
      - Good and bad aging can be predicted by variables assessed before age 50
    - How many people age successfully?
      - About 12% meet Rowe and Kahn criteria

- Most adults feel they are aging successfully (doctors may disagree)
- Psychological issues
  - Suicide rates are high in the elderly (recent trend for increased suicide rates in middle age)
    - Suicide rates higher in men than women
  - Cognitive impairment/memory impairment
    - Age associated memory impairment
      - Complain of memory loss
      - Have normal score on psychometric testing
      - No impairment in activities of daily living
    - Mild cognitive impairment
      - Subject complaints o PDF memory impairment
      - Some evidence of impairment in testing
      - No impact on activities daily living
    - Neurocognitive disorder (dementia)
      - Complains of memory impairment
      - Deficits in psychometric testing
      - Impairment in activities of daily living
        - Projected prevalence is rising
        - Risk varies by age, women at greater risk, African American and Hispanic men at higher risk
        - Nutrition improving, leading to reduced prevalence?