Adolescent health

Objectives:

- Define adolescent age: World health organization definition
- Understand adolescent's physiological and behavioral characteristics
- Recognize the importance of adolescent health
- Determine adolescent health problems: physical, psychological and social problems
- Recognize common adolescent health problems in Saudi Arabia: Retrieved from available evidence-based studies
- Understand the comprehensive approach to common adolescent health problems in primary health care
- Understand the role of family, school and community in adolescent health care

References

- http://www.who.int/mediacentre/factsheets/fs345/en/
- Oxford handbook of General practice

Definition

Transitional phase of growth and development between childhood and adulthood.

The World Health Organization (WHO) defines an adolescent as any person between ages 10 and 19.

Physiological changes in females:

Ranges 8-13, usually start at 10 and are complete by the age of ~17y

Changes include:

1- Breast enlargement (first change) 2- pubic and armpit hair 3- growth and change in body shape 4- menarche

Physiological changes in males:

Range 9-14 usually at 11-12 and are complete by the age of ~17y

Changes include:

1- enlargement of the testicles (first change) 2- enlargement of penis 3- erection and ejaculation 4- pubic, armpit, facial and body hair 5- voice change

Behavior changes in adolescent:

- Awareness of self and trying to build up character
- Greater need and feeling of independence and freedom
- Think abstractly and plan long term goal
- Compares self to others
- concern of appearance

Importance of adolescence health

- They face problems adjusting to their rapid physical and emotional change
- 1 in 6 of the world's population, 16% of world population, in Saudi it's 25%
- Psychiatric disorders commonly emerge during adolescent years

- Serious diseases in adulthood have their roots in adolescence. For example, tobacco use, sexually transmitted infections including HIV, poor eating and exercise habits, lead to illness or premature death later in life.
- Promoting healthy behaviors during adolescence, and taking steps to better protect young people from health risks are critical for the prevention of health problems in adulthood, and for countries' future health and ability to develop and thrive.
- Although it is normal for adolescents to show behavioral changes, it is important to distinguish normal behavior from mental illness

Adolescent health problems

1- Early Pregnancy and childbirth
   - The leading cause of death for 15– 19-year-old girls globally is complications from pregnancy and childbirth.
   - Some 11% of all births worldwide are to girls aged 15–19 years, and the vast majority of these births are in low- and middle-income countries
   - primary prevention: better access to oral contraceptives, sexual and reproductive health-care services (such as family planning and education) and legal minimum age of marriage
   - secondary prevention (after getting pregnant): access to quality antenatal care and safe abortion if there was danger to the mother
2- HIV
   - HIV deaths among adolescents are rising
   - more predominant in African region since they do not all then get the care and support they need to remain in good health and prevent transmission
   - In sub-Saharan Africa only 10% of young men and 15% of young women aged 15 to 24 are aware of their HIV status.
   - management: obtain condoms to prevent sexual transmission, clean needles and syringes for those who inject drugs. Better access to HIV testing and counselling, and stronger subsequent links to HIV treatment services for those who test HIV positive
3- Other Infectious diseases
   - Diarrhea and lower respiratory tract infections **USED** estimated to be among the top 5 causes of death, but thanks to vaccination this has been markedly reduced
   - these two together with meningitis are the top three causes of adolescent death in African low and middle-income countries
4- Mental Health
   - Depression is the third leading cause of illness and disability among adolescents, and suicide is the third leading cause of death in older adolescents (15–19 years
   - risk factors include violence, poverty, humiliation and feeling devalued
   - Diagnosis is difficult because of the lack of communication with parents and little contact with Health professionals
   - features of depression include:
     - Unhappiness, tearfulness, apathy, boredom, decrease in ability to enjoy life
     - Antisocial behavior
     - decline in school performance, may admit to poor concentration
     - Separation anxiety reappearing in adolescence
     - Frequent unexplained illness or undue worries about health

    - self-harm
- management:
    - Building life skills in children and adolescents and providing them with psychosocial support in schools and other community
    - Programmes to help strengthen the ties between adolescents and their families
    - If problems arise, they should be detected and managed by competent and caring health workers.

5- Violence
- a leading cause of death in older adolescent males
- Interpersonal violence represents 43% of all adolescent male deaths in low and middle class in the US
- Globally, 1 in 10 girls under the age of 20 years report experiencing sexual violence.
- prevention:
    - Promoting nurturing relationships between parents and children
    - providing training in life skill
    - reducing access to alcohol and firearms
- Effective and empathetic care for adolescent survivors of violence and ongoing support can help deal with the physical and psychological consequences.

6- Alcohol and drugs
- alcohol is most common drug causing problems in adolescents
- reduces self-control and increases risky behaviors, such as unsafe sex or dangerous driving
- It is a primary cause of injuries (including those due to road traffic accidents), violence (especially by a partner) and premature deaths
- It can also lead to health problems in later life and affect life expectancy
- prevention:
    - Setting a minimum age for buying and consuming alcohol
    - regulating how alcoholic drinks are targeted at the younger market
- Drug control may focus on reducing drug demand, drug supply, or both, and successful programmes usually include structural, community, and individual-level interventions.

7- Injuries
- Unintentional injuries are the leading cause of death and disability among adolescents
- adolescent death majorly caused by road traffic accidents
- prevention of injuries caused by road traffic accidents:
    - Young drivers need advice on driving safely
    - Strict enforcement of prohibition of driving under the influence of alcohol and drugs
    - Blood alcohol levels need to be set lower for teenage drivers
    - Graduated licenses for novice drivers with zero-tolerance for drunk-driving
- Drowning is also a major cause of death among adolescents
- two-thirds of drowning deaths are boys
- teaching children and adolescents to swim is an essential intervention to prevent these deaths.

8- Malnutrition and obesity
- Many boys and girls in developing countries enter adolescence undernourished, making them more vulnerable to disease and early death
- the number of adolescents who are overweight or obese is increasing in low, middle and high-income countries.

9- exercise and nutrition
- Iron deficiency anaemia is the leading cause of years lost to death and disability in 2015
- Iron and folic acid supplements are a solution that also helps to promote health before adolescents become parents

- Regular assessment of areas where intestinal helminths such as hookworm are common is recommended to prevent micronutrient (including iron) deficiencies
- foundation for good health:
    - Developing healthy eating and exercise habits
    - Reducing the marketing of foods high in saturated fats, trans-fatty acids, free sugars, or salt
    - providing access to healthy foods
    - opportunities to engage in physical activity, guidelines for physical activity is 60 minutes of moderate to vigorous physical activity daily.

10- Tobacco use

- The vast majority of people using tobacco today began doing so when they were adolescents
- Globally, at least 1 in 10 adolescents aged 13 to 15 years uses tobacco
- Cigarette smoking seems to be decreasing among younger adolescents in some high-income countries.
- management:
    - Prohibiting the sale of tobacco products to minors
    - increasing the price of tobacco products through higher taxes
    - banning tobacco advertising
    - ensuring smoke-free environments are crucial

Overall, WHO carries out a range of functions to improve the health of young people, including:

- production of evidence-based guidelines to support health services and other sectors;
- making recommendations to governments on adolescent health and the provision of high quality, age-appropriate health services for adolescents;
- documenting progress in adolescent health and development; and
- raising awareness of health issues for young people among the general public and other interested stakeholders.

Adolescent health Problems in Saudi Arabia

Source:
http://www.sciencedirect.com/science/article/pii/S1054139X15002542?_rdoc=1&_fmt=high&_origin=gateway&_docanchor=&md5=b8429449ccfc9c30159a5f9aeaa92ffb&ccp=y

- **Bullying and violence**
  - 25% reported exposure of Bullying in school
  - 20% reported physical violence at school or community
- **Tobacco and substances abuse**
  - 16.5% cigarettes
  - 10.5% sheesha
  - 16% sniffing solvent also most common substance in females
  - 7.2% prescription for non-medical purposes
  - 1.4% Alcohol
- **Chronic health**
  - 28.6% overall prevalence
  - Most prevalent being bronchial asthma at 8.4%
- **Mental illness**
  - Most prevalent being depression at 14%
  - Second is anxiety at 6.7%
- **Indicators of health care status and others**
  - Overweight 14.1%
  - Obese 15.9%
  - Underweight 15.2%
  - Vit D 95.6%
  - Car accidents representing 35.4%

The following topics are all taken from the oxford handbook which is listed as one of the references for our SLS in the student guide.

Some of these topics are not included in the PowerPoint file or may be mentioned in brief.

As for if they are included in the exam this depends your interpretation of the objectives. So we have added them for the sake of completeness and to make sure we have covered everything.

School problems

- **Truancy (the action of staying away from school without good reason; absenteeism):** Usually children who are unhappy at home and frustrated at school. They spend their days with others who feel the same
- **Children <10y Younger** may refuse to go to school or recurrently complain of abdominal pain, nausea, or other symptoms that justify staying home. Usually school refusal is a form of separation anxiety, although occasionally it is due to a problem at school. Advise parents to consult the school
- **Older children** School refusal is a more difficult problem. Speak to parents and child together and separately. Try to ascertain if there is a genuine reason why the child avoids school. Liaise with the school. If not succeeding, refer to the child and adolescent mental health team.
- **Poor school work** emotional problems, often affect school work and make it difficult to concentrate; pressure to do well/pass exams may be counterproductive. exams are important, but advise parents not to let them dominate life or cause unhappiness

Behavior problems

It is normal for teenagers and their parents to complain about each other's behavior and disagree frequently. Parents often feel they have lost control over their child. Adolescents resent parental restrictions on their freedom but still want parental guidance. Advise parents to lay down sensible ground rules and stick to them. evidence suggests children are at greater risk of getting into trouble if their parents do not know where they are advise teenagers to let their parents know where they are going and parents to ask.

Trouble with the law

Repeated offending may reflect family culture or may result from unhappiness always ask about emotional feelings when an adolescent is repeatedly getting into trouble.

Maltreatment

Table 24.14 Classification of child abuse: >1 type may occur concurrently

PHYSICAL Hitting, shaking, throwing, burning, suffocating, poisoning, including fabricated or induced illness	EMOTIONAL The child is made to feel worthless, afraid, unloved, or inadequate. Includes age-inappropriate expectations and witnessing domestic violence
NEGLECT Failure to meet the child's basic needs (including medical needs); allowing the child to be exposed to danger	SEXUAL Forcing/enticing a child to participate in sexual activities—physical contact or production of pornographic material

Risk factors ❗ Any child may be a victim of maltreatment.

Parent/carer factors

- Mental illness/learning disability
- Substance/alcohol abuse
- Being abused themselves
- Ongoing physical illness
- Parental conflict/domestic violence/divorce
- Unemployment/poor living conditions

Child factors

- History of sibling abuse
- Learning/behaviour/physical problems
- Unplanned pregnancy/ premature birth
- Poor attachment to parents/carers
- Environment high in criticism
- 'Looked after' children (those under the guardianship of the state, e.g. those in local authority or foster care)

- **Presentation: Always have a high index of suspicion.**
  - **Suspect maltreatment if**
    - The child discloses it
    - Story is inconsistent with injuries (bruising, bleeding, fractures, or other injuries in children not independently mobile are suspicious)
    - Characteristic injuries cigarette burns; scalds (especially if symmetrical or doughnut-shaped on buttocks); finger mark or bite mark bruises; perineal bruising or anogenital injury; linear marks consistent with whipping; buckle or belt marks
    - Late presentation or lack of concern about injury/illness
    - Behaviour of the child is suggestive, e.g. withdrawn, 'frozen watchfulness', sexually precocious behaviour, abnormal interaction between child and parents, unwilling to speak about the injury
    - STI or pregnancy in any child <13y (consider if the child is older)
    - The child is persistently smelly/dirty and/or inadequate home environment (including food and hygiene)
  - **Consider maltreatment within your differential diagnosis if**
    - encopresis, enuresis, or daytime incontinence of urine
    - Failure to thrive

- Severe or persistent infestations (e.g. scabies, head lice), oral injuries, or urinary/anogenital symptoms without adequate explanation
- Failure to attend healthcare appointments and/or poor concordance with treatment plans for significant medical conditions
- Unusual/frequent presentation to healthcare professionals
- Injury as a result of inadequate supervision
- Behavioural problems
- Inappropriate dress (e.g. underdressed in cold weather)

- **Immediate action (Do not ask leading questions.)**

1. **Listen and observe** record the history given, any report of maltreatment, the child's appearance, behaviour, physical signs, and interaction between the child and parent/carer
2. **Seek an explanation** From the adult and the child
3. **Make a decision** If child maltreatment is likely, a possibility or can be excluded
4. **If child maltreatment is a possibility** Check the child's/other family members' records for worrying features; consider asking other practice members if they have concerns; and do ≥1 of the following:
    1. Seek further information from other agencies (e.g. school, social services) or other health
    2. Discuss concerns with a more experienced colleague
    3. Arrange to review the child at a date appropriate to concern and follow-up if the appointment is cancelled or is not kept
5. **If you suspect that child maltreatment is likely** refer to children's social care following local child protection procedures.

Sexual health and contraception

- **Choice of contraceptive method**
    - **Condoms** Most commonly used. Relatively high failure rate. suggest their use in addition to another form of contraception to help prevent STIs
    - **Long-acting reversible contraception (LARC):** IUCD, progestogen implant, injectables, or intrauterine system. Provides high levels of protection against pregnancy with no need for ongoing compliance.
        - medroxyprogesterone acetate (Depo-Provera ®) should only be used when other methods of contraception are inappropriate as it may increase osteoporosis risk (use alternative if other risk factors and try not to use >2y), menstrual irregularity, and weight gain
    - **Combined hormonal contraception** (pill, patch, or vaginal ring) Poor compliance can be a problem and leads to a relatively high failure rate

- **Progestogen-only pill (POP)** compliance problems and is associated with menstrual irregularity. Useful CHC is contraindicated
- **'Morning after pill'** (levonorgestrel 1.5mg <72h or ulipristal acetate 30mg <120h after unprotected intercourse). Not suitable as regular contraception.

Drugs, solvents, and alcohol

Most teenagers never use drugs or inhale solvents, and of those that do, most never get beyond the experimenting stage. Alcohol is the most common drug causing problems for adolescents but consider the possibility of any form of drug use when parents notice serious, sudden changes in behavior.

Emotional problems

Teenage unhappiness is common and does not necessarily indicate depression. Over-eating, excessive, sleepiness, promiscuity, and a persistent over-concern with appearance may be signs of emotional distress. Phobias and panic attacks may appear.

- **Distinguishing mental illness from normal adolescent behavior:**
  - They go on for more than a few weeks
  - They do not vary, e.g. persistently low mood in all circumstances
  - are severe, e.g. self-harming behavior, violence
  - is a significant impact on relationships, school performance, and/or usual activities

- **Childhood depression:** response to childhood stress. Distinguish from depressive symptoms occurring as part of other emotional or con-duct disorders. Most common in adolescence
  - **Diagnosis:** Difficult, especially among adolescents. Adolescents often do not communicate well with their parents and have little contact with health professionals
  - **Presenting features**
    - Unhappiness and/or tearfulness, apathy, boredom, d ability to enjoy life
    - Antisocial behavior especially after bereavement (more in males)
    - decrease school performance and may admit to poor concentration
    - Separation anxiety reappearing in adolescence
    - Frequent unexplained illness or undue worries about health
    - Self-harm
    - Bipolar depressive disorder is rare before puberty, and mania must be present to make a diagnosis
  - **Management** Unless a mild episode related to a single precipitating event and no other risk factors for depression, refer for specialist advice.

Disorders of puberty

Delayed puberty affects ~2%. No pubertal changes by 13y in girls or 14y in boys, or no progression of puberty over 2y. May be constitutional (>50% boys) or pathological (80% girls). In all cases, refer to a paediatrician for further assessment.

- **Pathological causes:**
    - Failure of the ovaries/testes (primary or hypergonadotrophic hypogonadism)
    - Failure of stimulation of normal gonads to produce sex hormones (secondry or hypogonadotrophic hypogonadism)

- **Precocious puberty:** Puberty before the normal age for the population (in the UK: <8y for girls; <9y for boys). Affects 4–5% girls. Mostly in females 5:1. In all cases, refer for further investigation. Types:
    - **Central or true precocious puberty (80%)**. Premature activation of the hypothalamic–pituitary–gonadal axis. No pathological cause is found in most. There may be a family history
    - **Pseudo-precocious puberty (20%).** invrease level of sex hormones in the absence of excess FSh or Lh. There is usually a pathological cause

- **Other problems of puberty**
    - **Asymmetric breast growth in girls** almost universal. reassure that usually evens out by the time of full maturation
    - **Gynecomastia in boys** 50% during puberty. Small, firm lump under one/both nipples. Reassure. Usually resolves without treatment
    - **Primary amenorrhea**: no menstruation by age 16y (without delayed puberty)
    - **Premature pubarche (or adrenarche)** early appearance of pubic ± axillary hair and body odor, without other signs of precocious puberty. If no other abnormalities of androgen excess, reassure

Eating disorders

Identification of and screening for eating disorders Target groups for screening include:

- Young women with low BMI compared with age norms
- Patients consulting with weight concerns who are not overweight
- Women with menstrual disturbances or amenorrhoea
- Patients with GI symptoms
- Patients with symptoms/signs of starvation—sensitivity to cold, delayed gastric emptying, constipation, ↓ BP, bradycardia, hypothermia
- Patients with physical signs of repeated vomiting—pitted teeth ± dental caries, general weakness, cardiac arrhythmias, renal damage, ↑ risk of UTI, epileptic fits, ↓ K^+
- Children with poor growth
- Young people with type 1 DM and poor treatment adherence

Screen target populations with simple screening questions[N]

- Do you worry excessively about your weight?
- Do you think you have an eating problem?

• Patients who are pregnant or have DM are at particular risk of complications if they have eating disorders. Refer early for specialist support and ensure everyone involved in care is aware of the eating disorder.

- **Anorexia nervosa**: Prevalence 0.02–0.04%. More in females. Usually begins in adolescence. Peak prevalence at 16–17y.
  - **Features**:
    - Refusal to keep body weight >85% of that expected (BMI <17.5kg/m 2)
    - Intense fear of gaining weight, though underweight
    - Disturbed experience of body weight or shape or undue influence of shape on self-image
    - Amenorrhea in women for ≥3mo and decrease sexual interest
    - Patients tend to have a set daily calorific intake, e.g. 600–1,000 calories, and may employ strategies, e.g. bingeing and vomiting, purging, or excessive exercise to try to lose weight.
    - Depression and social withdrawal are common
    - Symptoms secondary to starvation.
  - **Management**
    - Give ongoing support and information
    - Check electrolytes
    - Refer to a specialist eating disorders clinic (if available) or the mental health team. Treatment involves family therapy for adolescents, psychotherapy, and possible admission for refeeding
    - Follow-up in Patients with enduring anorexia nervosa not under secondary care and should be offered an annual physical and mental health check
  - Many patients with anorexia nervosa have compromised cardiac function. Avoid prescribing drugs which adversely affect cardiac function (e.g. antipsychotics, TCAs,

macrolide antibiotics, some antihistamines). If prescribing is essential then follow up with ECG monitoring

- **Bulimia nervosa:** Prevalence 1–2%. Mainly females aged 16-–40y.
  - **Features**:
    - Recurrent episodes of binge eating, far beyond normally accepted
    - Inappropriate compensatory behavior to prevent weight gain, e.g. vomiting; use of laxatives, diuretics, and/or appetite suppressants. Bulimics can be subdivided into those that purge and those that just use fasting and exercise to control their weight
    - Self-image unduly influenced by body shape
    - Normal menses and normal weight. If low BMI classified as anorexia
  - **Management**
    - Give ongoing support and information
    - Check electrolytes
    - First-line treatment:
      - Evidence-based self-help program
      - Antidepressant medication **fluoxetine** 60mg is the drug of choice
    - If unsuccessful, refer to a specialist eating disorders clinic (if available) or the mental health team. CBT may help
  - **Advice for patients purging**
    - **If Vomiting** Advise patients to avoid brushing their teeth after vomiting, rinse with a non-acid mouthwash after vomiting, and decrease acid oral environment (e.g. by limiting acid foods)
    - **If laxative** abuse is present, advise patients to gradually Decrease laxative intake. laxative abuse does not significantly decrease calorie absorption

- **Binge eating disorder:** A pattern of consumption of large amounts of food, even when a patient is not hungry. Common.
  - Usually associated with obsessive feelings about food and body image, feelings of guilt/disgust about the amounts consumed, and/or a feeling of lack of control.
  - Management
    - Give ongoing support and information
    - First-line treatment:
      - Evidence-based self-help program and/or antidepressant medication (SSRI is the drug group of choice)
    - If unsuccessful, refer to a specialist eating disorders clinic (if available) or the mental health team. CBT may help
    - In all cases, provide concurrent advice and support to tackle any co-morbid obesity

- **Body dysmorphic disorder (BDD)** Preoccupation with an imagined defect in appearance or markedly excessive concern over a slight physical anomaly. Prevalence: 0.5–0.7%.

    - **Features**: Time-consuming behaviors, e.g. mirror gazing, comparing self to others, camouflage, reassurance seeking, and skin picking.
    - **Screening questions:**
        - Do you worry about the way you look and wish you could think about it less?
        - What specific concerns do you have about your appearance?
        - On a typical day, how many hours a day is it on your mind (>1h excessive)?
        - What effect does it have on your life?
        - Does it make it hard to do your work or be with friends?
    - **Management in children and young people**
        - **Mild functional impairment** offer CBT Consider guided self-help. Include support and help for family and careers
        - **Moderate/severe functional impairment** Offer CBT including ERP adapted to patient's age in a group or individual setting. Refer if symptoms do not improve. Drug therapy should only be initiated in secondary care.