

Adolescents Health

Shahad Aljeraibah
Kowthar Almousa
Sara AlQahtani
Suha Alenazi
Atheer Aljeraibah

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

The Biggest Winner



MCQ1

What is the first sign of puberty in females?

1. Voice changes
2. Axillary hair
3. Breast development
4. Menarche

MCQ 2

Adolescents period begins from:

1. 10 to 20
2. 11 to 20
3. 10 to 19
4. 11 to 19

MCQ3

Which of the following make an adolescents less likely to seek health Services?

1. Initiatives arranged by non-governmental organization clinics.
2. Doctor who treat him equally to everyone else.
3. Board in the healthcare facility indicating what health services are provided and how much they cost.
4. Attitude of receptionists.

MCQ 4

What is the leading cause of death in adolescents in 2016?

1. Suicide
2. Injuries
3. Infections
4. Violence

MCQ 5

Bullying and Physical Violence is not associated with mental problems in adolescents.

1. True
2. False

1. Define adolescent age:

World health organization definition

Shahad Aljeraibah



Adolescence Definition

1. Adolescence begins with the onset of physiologically normal puberty, and ends when an adult identity and behaviour are accepted. This period of development corresponds roughly to the period between the ages of 10 and 19 years. (WHO's definition of adolescence).

2. Adolescence is the period of transition from childhood to adulthood, and it is characterized (a) by efforts to achieve goals related to the expectations of the mainstream culture and (b) by spurts of physical, mental, emotional, and social development.

While the onset of adolescence is usually associated with the commencement of puberty and the appearance of secondary sex characteristics, the end of adolescence is less clearly defined. It varies greatly from culture to culture as far as the attainment of adult independence is concerned. The transition is characterized by:

- biological development from the onset of puberty to full sexual and reproductive maturity;
- psychological development from the cognitive and emotional patterns of childhood to those of adulthood;
- emergence from the childhood state of total socioeconomic dependence to one of relative independence (1).

2. Understand adolescent's physiological and behavioral characteristics



2. Understand adolescent's physiological and behavioral characteristics



Adolescent's physiological characteristics

What is Puberty?

- It is the transitional period between childhood to adulthood.
- The physiological changes leading to the development of adult reproductive capacity.
- The period of attainment of adult sexual & reproductive characteristic.

(Puberty = PHYSIOLOGICAL changes)

- **What are the major characteristics of this period?**

1-Maturation of the 1ry sexual characteristics: The gonads are regulated by Hypothalamic Pituitary Ovarian/testicular Axis

2-Development of 2ry sexual characteristics: Sexual hair, breasts and genitalia.

3-Dramatic growth spurt.

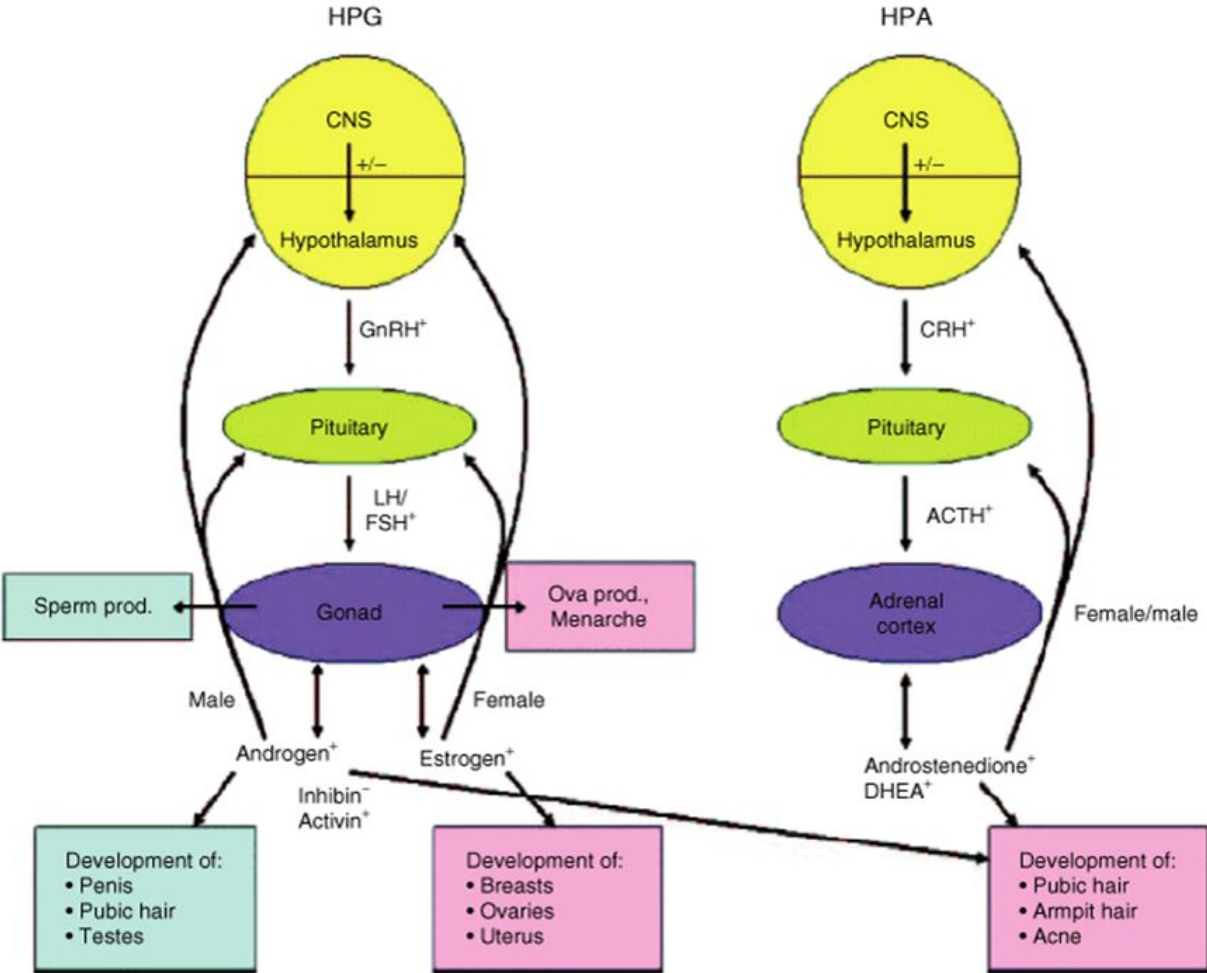
4-Psychological changes: mental & emotional maturity.

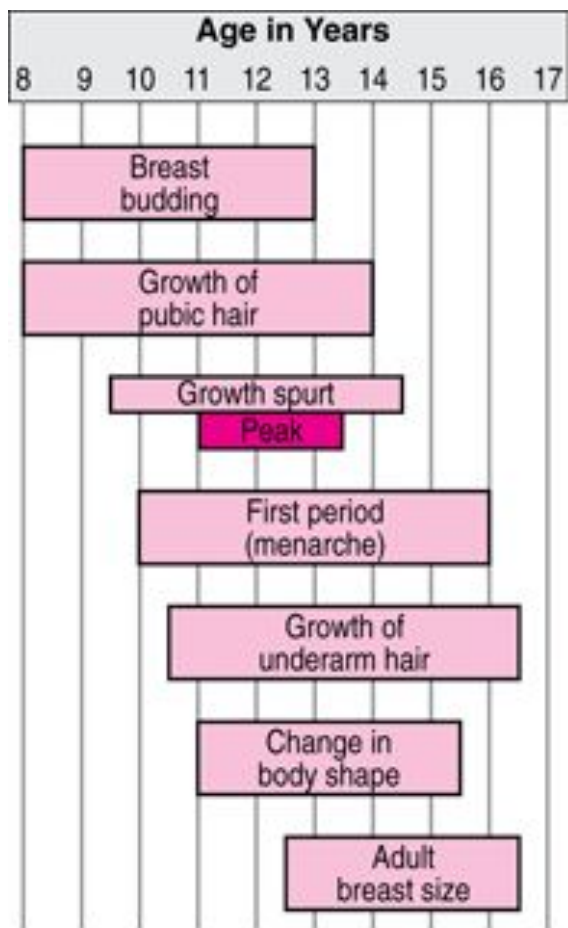
- **What is the age of onset of puberty ?**

- Females: 8-13

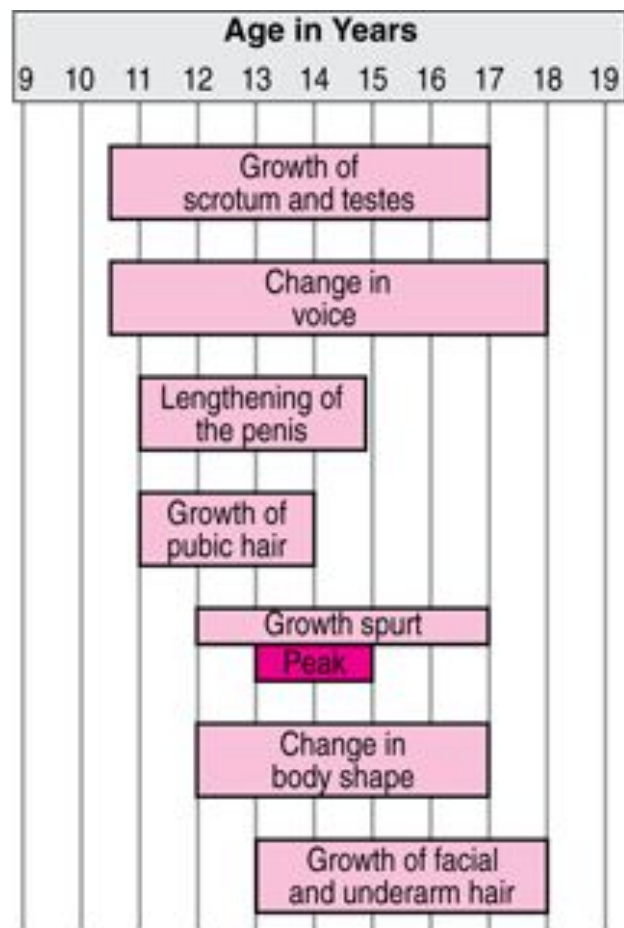
- Males: 9-14

How does it start?





Girls



Boys

Adolescent behavioral characteristics

Social changes

- Searching for identity
- Seeking more independence
- Seeking more responsibility
- Looking for new experiences:
- Influenced more by friends, especially when it comes to behaviour, sense of self and self-esteem
- Communicating in different ways: the internet, cell phones and social media can significantly influence how your child communicates with friends and learns about the world.

Emotional changes:

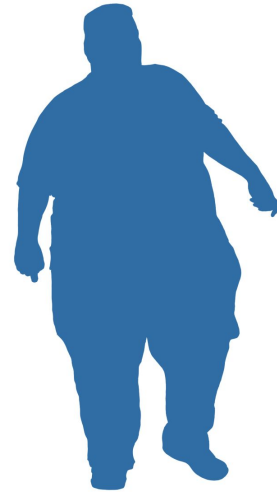
- More self conscious specially about physical appearance.
- Intense emotions at different times > unpredictable moods.
- More emotional.

Dietary changes:

- Obesity due to bad eating habits e.g. eating junk food and physical inactivity.
- Anorexia nervosa and bulimia due to physical appearance perception.

3. Recognize the importance of adolescent health

Kowthar Almousa



- **25% of the populations in our country are adolescents!**
- **Adolescents** are at risk for smoking, alcohol intake and drug abuse cancers, infertility, hypertension, heart disease → and premature death.
- **Adolescents** have significant needs for health services. Adequate care and support should be given to them so that they enter into their adulthood in good mental and physical health.

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4. Determine adolescent health problems:
physical, psychological and social problems

Key Facts:

- More than **1.1 million** adolescents aged 10-19 years **died** in 2016, over 3000 every day, mostly from preventable or treatable causes.
- **Road traffic injuries** were the leading cause of death among adolescents in 2016. Other major causes of adolescent deaths include **suicide, interpersonal violence, HIV/AIDS** and **diarrhoeal diseases**.
- **Half** of all mental health disorders in adulthood start by **age 14**, but most cases are **undetected and untreated**.
- Globally, there are **44 births per 1000 to girls aged 15 to 19 per year** → Death due to complications!

1. Physical problems:

Leading causes of **death** among adolescents in **2016**:

1. Injuries: Unintentional injuries are the leading cause of death and disability among adolescents (most common is RTAs)

2. Suicide: second leading cause of death in adolescents

3. Violence: Interpersonal violence is the third leading cause of death in adolescents

4. Infectious diseases: lower respiratory tract infections, HIV/AIDS, and diarrhoeal diseases

-Diarrhoea and lower respiratory tract infections are estimated to be among the top 10 causes of death for 10–19 year olds

-2.1 million adolescents were living with HIV in 2016

Other problems...

- Cardiomyopathy and Sudden death
- Thalassemia and Sickle cell anemia
- Inherited diseases caused by genetic mutations.
- Orthopedic conditions: scoliosis, fractures, strains, SCFE.
- Dental health: hygiene, carries, braces, wisdom teeth extraction.
- Acne.
- Iron deficiency anaemia.
- Asthma: Allergy, exercise-induced.
- Diabetes type 1

2. Psychological problems:

- **Depression** is one of the leading causes of illness and disability among adolescents
- Mood disorders, anxiety disorders, and thought disorders (such as schizophrenia)
- **Eating disorders**, such as anorexia nervosa and bulimia nervosa.
- **Stress** can also lead to loss of appetite and sleeplessness.
- Self-esteem or confidence issues.

3. Social problems:

Alcohol and drugs It reduces self-control and increases risky behaviours

Nutrition and micronutrient deficiencies Iron deficiency anaemia was the second leading cause of years lost by adolescents to death and disability in 2016

Undernutrition and obesity Globally, in 2016, over one in six adolescents aged 10–19 years was overweight

Physical activity WHO recommends for adolescents to accumulate at least 60 minutes of moderate- to vigorous-intensity physical activity daily

Tobacco use at least 1 in 10 adolescents aged 13 to 15 years uses tobacco!

5. Recognize common adolescent health problems in Saudi Arabia

Retrieved from available evidence-based studies

Sara H. AlQahtani



Time for an Adolescent Health Surveillance System in Saudi Arabia: Findings From “Jeeluna”

AlBuhairan FS, Tamim H, Al Dubayee M, AlDhukair S, Al Shehri S, Tamimi W, El Bcheraoui C, Magzoub ME, De Vries N, Al Alwan I. Time for an adolescent health surveillance system in Saudi Arabia: findings from “Jeeluna”. *Journal of Adolescent Health*. 2015 Sep 1;57(3):263-9.

Results: A total of 12,575 adolescents participated. Various health risk behaviors, including dietary and sedentary behaviors, lack of safety measures, tobacco use, bullying, and violence were highly prevalent. **Twenty-eight percent** of adolescents reported having a **chronic health condition**, **14.3%** reported having symptoms suggestive of **depression**, **30.0%** were **overweight/obese**, and **95.6%** were **vitamin D deficient**.

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Table 1
Health risk behaviors among adolescents in Saudi Arabia and gender differences

Health risk behaviors	Prevalence		Prevalence by gender									
	n = 12,575 (%)		95% CI		Male n = 6,444 (%)		95% CI		Female n = 6,131 (%)		95% CI	
			Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Dietary behaviors (daily)												
Breakfast intake (sometimes/daily) ^a	54.8		50.8	58.7	62.3		60.7	64.0	46.3		44.6	48.0
Fruit intake (≥1 servings)	38.1		34.0	42.1	43.6		41.5	45.7	31.8		29.7	33.9
Vegetable intake (≥1 servings)	54.3		50.7	58.0	55.7		53.8	57.7	52.8		50.8	54.8
Carbonated beverage consumption (≥2 drinks)	37.5		34.0	41.1	43.9		41.9	45.9	30.4		28.3	32.5
Energy drinks consumption (≥1 drinks)	21.8		19.7	23.9	25.5		23.8	27.2	17.7		16.1	19.3
Activity												
Physical exercise (daily)	13.7		10.4	16.9	19.0		17.4	20.6	7.7		6.9	8.5
Television viewing (≥2 hours/day)	42.4		41.0	43.9	40.4		38.8	42.1	44.7		42.8	46.6
Video game playing (yes)	55.6		47.7	63.4	68.0		66.4	69.6	41.6		39.3	43.9
Internet use (≥2 hours/day)	30.1		26.8	33.4	26.0		24.3	27.8	34.6		32.5	36.8
Cellular phone (>1 hour/day)	14.8		13.2	16.3	13.2		12.0	14.4	16.6		14.8	18.3
Traffic safety												
Seat belt using (sometimes/always)	13.8		11.4	16.3	17.0		15.3	18.7	10.2		9.0	11.4
Car taking without permission (yes)	17.9		11.7	24.2	28.6		26.8	30.4	5.9		5.1	6.7
Bullying and violence												
Exposure to bullying ^a	25.0		23.0	27.0	27.1		25.1	29.0	22.7		21.3	24.2
Exposure to violence at school ^b	20.8		15.8	25.7	28.9		26.3	31.5	11.7		10.4	12.9
Exposure to violence in community ^b	19.7		17.6	21.8	22.9		21.3	24.5	16.1		14.6	17.6
Tobacco and substance (ever use)												
Cigarette smoking	16.2		12.5	19.9	22.1		20.0	24.2	9.6		8.2	10.9
Sheesha smoking	10.5		8.4	12.5	13.5		11.8	15.3	7.1		5.7	8.4
Solvents sniffing	16.2		12.7	19.6	11.5		10.3	12.6	21.4		19.7	23.0
Prescription medication use for nonmedical purpose	7.2		5.7	8.7	6.0		5.3	6.8	8.5		7.4	9.6
Alcohol consumption	1.4		1.1	1.8	2.1		1.7	2.5	.7		.5	1.0
Stimulants use	1.5		1.1	1.9	1.6		1.3	1.9	1.4		1.0	1.8
Marijuana use	1.0		.6	1.5	1.6		1.2	2.0	.4		.2	.6

CI = confidence interval.

^a During the past 30 days.

^b During the past 12 months.

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Table 2

Health status among adolescents in Saudi Arabia and gender differences

	Prevalence			Prevalence by gender					
	n = 12,575 (%)	95% CI		Male n = 6,444 (%)	95% CI		Female n = 6,131 (%)	95% CI	
		Lower	Upper		Lower	Upper		Lower	Upper
Self-reported health status									
Chronic illness									
Bronchial asthma	8.4	7.1	9.8	10.8	9.6	11.9	5.8	5.1	6.5
Allergies (not asthma)	4.9	3.5	6.2	4.2	3.5	4.9	5.6	4.7	6.5
Hematological disorder	3.7	2.9	4.6	3.1	2.5	3.7	4.5	3.7	5.2
Skin disorders	3.6	2.6	4.6	3.1	2.6	3.6	4.2	3.4	5.0
Musculoskeletal	1.5	1.0	1.9	1.5	1.0	2.0	1.4	1.0	1.8
Genitourinary	1.2	.7	1.6	.9	.6	1.2	1.4	.9	1.8
Diabetes	.7	.5	1.0	.9	.7	1.2	.6	.3	.8
Others	4.6	3.8	5.4	5.0	4.0	6.0	4.2	3.3	5.0
Mental health									
Sadness/depression	14.3	11.0	17.6	10.1	9.3	11.0	19.0	17.6	20.4
Anxiety	6.7	5.2	8.3	4.6	3.9	5.3	9.1	8.0	10.2
Measured indicators of health status									
BMI^a									
Underweight	15.2	13.7	16.7	17.2	15.3	19.0	13.0	11.8	14.2
Healthy weight	54.8	51.2	58.4	48.8	47.2	50.3	61.5	60.0	63.1
Overweight	14.1	13.4	14.9	13.9	12.8	15.0	14.5	13.4	15.5
Obese	15.9	12.6	19.1	20.2	18.7	21.7	11.0	9.8	12.3

BMI = body mass index; CI = confidence interval.

^a BMI: underweight <5 centile; healthy weight 5 to <85 centile; overweight ≥85 to <95 centile; and obese ≥95 centile based on Center for Disease Control and Prevention charts (2000).

The relationship of bullying and physical violence to mental health and academic performance: A cross-sectional study among adolescents in Kingdom of Saudi Arabia

AlBuhairan F, Abbas OA, El Sayed D, Badri M, Alshahri S, de Vries N. The relationship of bullying and physical violence to mental health and academic performance: A cross-sectional study among adolescents in Kingdom of Saudi Arabia. *International Journal of Pediatrics and Adolescent Medicine*. 2017 Jun 1;4(2):61-5.

Results: A total of 9073 students participated. **Twenty-six percent** of adolescents reported exposure to **bullying in the preceding 30 days**, and **one out of every three adolescents reported exposure to physical violence** at school during the past year. More males than females, and more older adolescents were exposed to bullying. **Exposure to physical violence and bullying were both associated with higher odds of having more frequent symptoms of depression and anxiety.** Those exposed to physical violence were at higher odds of having **poorer academic performance.**

Table 2

Adjusted and un-adjusted odds ratios of Academic performance and mental health with bullying and PV.

	Bullying		Physical Violence		Bullying		Physical Violence	
	U-OR (95%CI)	P Value	A-OR (95%CI)	P Value	U-OR (95%CI)	P Value	A-OR (95%CI)	P Value
Academic Performance								
Average or below	Ref		Ref		Ref	<.001	Ref	<.001
Above average	0.76 (0.609–0.940)	.012	0.81 (0.653–1.011)	.062	0.52 (0.442–0.629)		0.54 (0.436–0.667)	
Depression								
No	Ref	<.001	Ref	<.001	Ref	<.001	Ref	<.001
Yes	2.56 (2.313–2.842)		2.66 (2.399–2.959)		1.26 (1.151–1.378)		1.694 (1.535–1.869)	
Anxiety								
No	Ref	<.001	Ref	<.001	Ref	.04	Ref	<.001
Yes	2.86 (2.589–3.157)		2.89 (2.699–3.309)		1.1 (1.003–1.207)		1.476 (1.333–1.633)	
Mental Health Problems								
No	Ref	<.001	Ref	<.001	Ref	<.001	Ref	<.001
Yes	3.28 (2.924–3.673)		3.44 (3.063–3.865)		1.33 (1.208–1.455)		1.84 (1.662–2.037)	

A-OR: Adjusted Odds Ratio/U-OR: Unadjusted OR.

Medical and Behavioral Problems among Saudi Adolescents

Naeem Z. Medical and behavioral problems among Saudi Adolescents. International Journal of Health Sciences. 2013 Jun 3;7(2).

A study in Riyadh city among adolescents found that overall prevalence of cigarette smoking 12.7% (n=187) among the study sample, the habit is more common in males (19.0%) than females (4.0%). Finding of same study indicate that adolescents males who drive car 45% of them had a car accident. The prevalence of drug use in this survey was 6.4% (10.6% in males and 0.8% in female study subjects), volatile substance was commonly abused among adolescents. ⁽³⁾

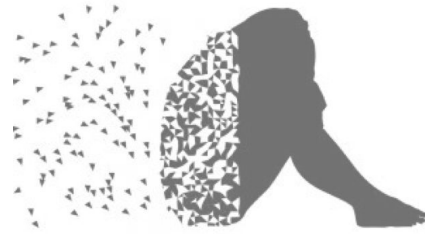
Mental health problems frequently start at this age group. A study carried out in Tiaf Governorate, Saudi Arabia, revealed that most important problems were anxiety (13.5%), somatic disorders (12.2%) obsession (10.8%), aggression (8.1%), delinquency and depression (4.1%). ⁽⁴⁾

Recent evidence indicates that emotional and behavioral disorders frequently lead to poor school performance and dropping –out of school. This wastes education resources and seriously impairs the economic and social potential of such children. ⁽⁵⁾

Pattern of Injuries among Children and Adolescents in Riyadh, Saudi Arabia: a household survey

Gad A, Al-Eid R, Al-Ansary S, Saeed AB, Kabbash A. Pattern of injuries among children and adolescents in Riyadh, Saudi Arabia: a household survey. Journal of tropical pediatrics. 2010 Aug 19;57(3):179-84.

Results: The study included 1650 children and adolescents. Of them, 22.2% reported having had injuries in the previous 12 months. The most common injuries were falls (40.4%), Road Traffic Accidents (RTA) (15%), food intoxication (8.8%). Males were more affected by injuries than females (26% vs. 18%). Males living near playgrounds or public gardens, playing in the street are independent risk factors for occurrence of both falls and RTA injuries.



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6. Understand the comprehensive approach to common adolescent health problems in primary health care

Suha Alenazi

What are the barriers that adolescents face in obtaining the health services they need?

These barriers relate to the availability, accessibility, acceptability and equity of health services.

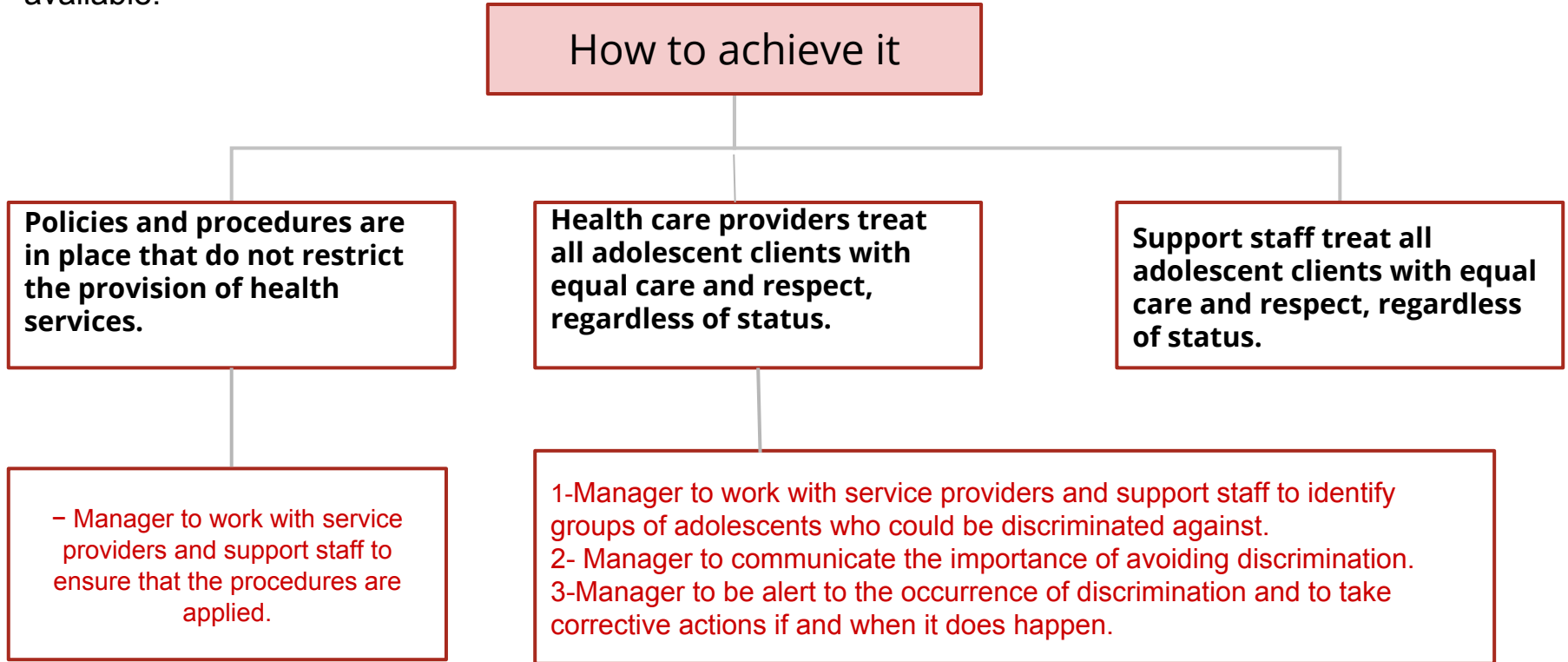
1. Adolescents are neither children nor adults and generally do not fit well into existing systems of health care.
2. The young people most in need are those least likely to seek help.
3. Certain physical, aesthetic and organizational features of conventional agencies can put young people off.
4. Young people require and expect confidentiality.
5. The attitudes and skills of those providing the services

Characteristics of adolescent- friendly health services and how to achieve them :

1. **Equitable.**
2. **Accessible.**
3. **Acceptable.**
4. **Appropriate.**
5. **Effective.**

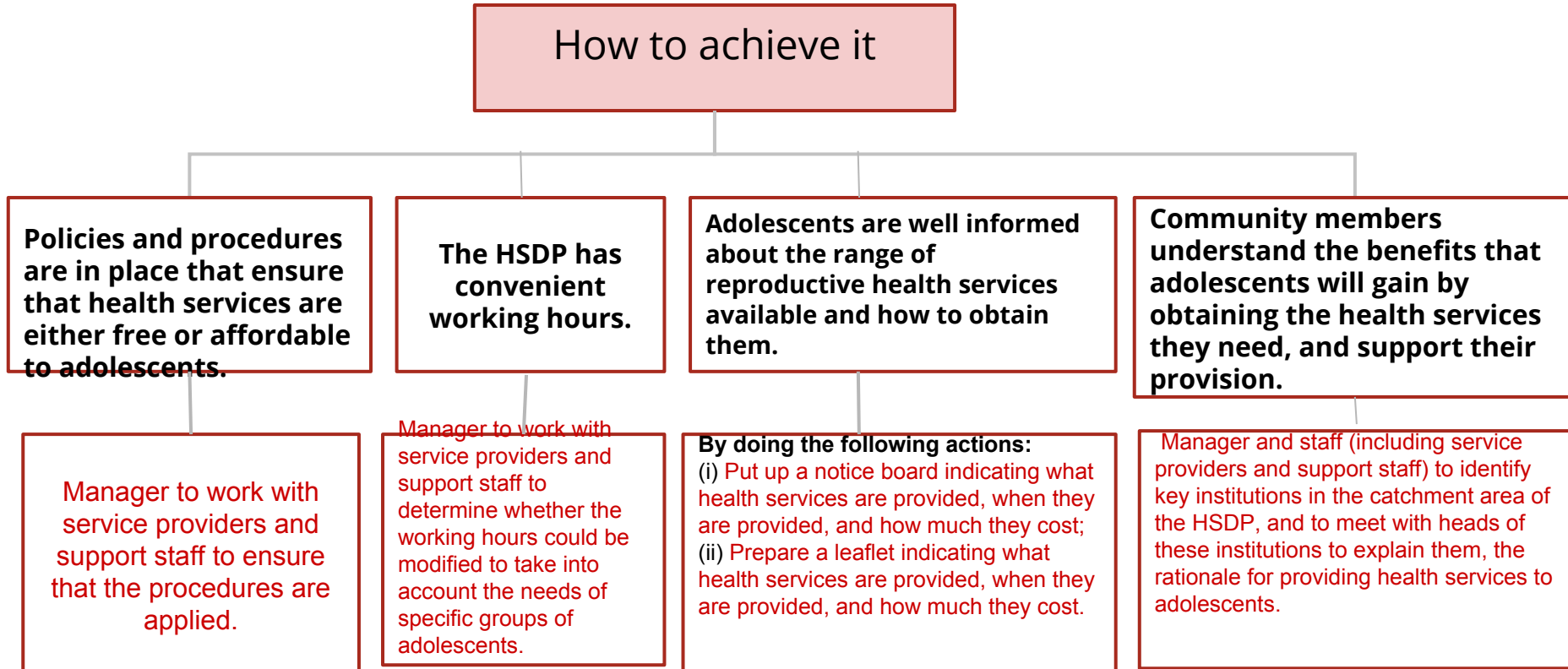
Equitable

All adolescents, not just some groups of adolescents, are able to obtain the health services that are available.



Accessible

Adolescents are able to obtain the health services that are available.



Acceptable

Adolescents are willing to obtain the health services that are available.

How to achieve it

Policies and procedures are in place that guarantee client confidentiality.

Point of service delivery ensures privacy.

Health care providers are non-judgmental, considerate, and easy to relate to.

Point of service delivery ensures consultations occur in a short waiting time, with or without an appointment, and (where necessary) swift referral.

Point of service delivery has an appealing and clean environment.

Point of service delivery provides information and education through a variety of channels.

Appropriate

The right health services (i.e. the ones they need) are provided to them.

The required package of health care is provided to fulfil the needs of all adolescents either at the point of service delivery or through referral linkages.

Managers to ensure that HSDPs provide all the health services they are required to, and facilitate access to those they do not provide with referral linkages to other HSDPs.

Effective

The right health services are provided in the right way, and make a positive contribution to their health.

How to achieve it

Health care providers have the required competencies to work with adolescents and to provide them with the required health services.

Health care providers use evidence-based protocols and guidelines to provide health services.

Health care providers are able to dedicate sufficient time to deal effectively with their adolescent clients.

The HSDP has the required equipment, supplies, and basic services necessary to deliver the required health services.

7. Understand the role of family, school and community in adolescent health care

Atheer Aljeraibah



FAMILY

- Active good parenting is very important in promoting the lifelong health and safety of their children.

This includes: -Becoming **positive role models**
-Providing guidance and setting boundaries

- Adolescents who have good communication and are bonded with an adult are **less likely** to engage in risky behaviors.

SCHOOL

- School can help in **adolescents health** by:
 - Promoting health programs
 - Promotes healthy eating (school cafeteria)
 - Provides areas for physical activity through physical education class (football, basketball, etc.)
- Provide a **safe environment** for adolescents to express their opinion.
- The school social environment affects **student's attendance**, academic achievement, and behavior.
- School environment and behavior of teachers play a major role in **character building** and personality development of adolescents.

COMMUNITY

- **Promoting physical activities** through community efforts such as community sponsored sports programs. Such programs will help adolescents stay healthy as well as allow to socialize with others.
- Establishing **Antismoking program** involving prohibition of the sale and use of cigarettes in public places.
- **Apply** a firm traffic laws forbidding adolescents aged less than 18 years from driving.

COMMUNITY

- **Raising awareness** of health issues for young people among the general public and special groups.
- **Supervision over media content** because, adolescents who are exposed to media portrayals of violence, sexual content, smoking, and drinking are at risk for adopting these behaviors.

MCQ1

What is the first sign of puberty in females?

1. Voice changes
2. Axillary hair
3. Breast development
4. Menarche

MCQ 2

Adolescents period begins from:

1. 10 to 20
2. 11 to 20
3. 10 to 19
4. 11 to 19

MCQ3

Which of the following make an adolescents less likely to seek health Services?

1. Initiatives arranged by non-governmental organization clinics.
2. Doctor who treat him equally to everyone else.
3. Board in the healthcare facility indicating what health services are provided and how much they cost.
4. Attitude of receptionists.

MCQ 4

What is the leading cause of death in adolescents in 2016?

1. Suicide
2. Injuries
3. Infections
4. Violence

MCQ 5

Bullying and Physical Violence is not associated with mental problems in adolescents.

1. True

2. False

References

1. World Health Organization Young people's health – a challenge for society Report of a Study Group on Young People and Health for All by the Year 2000, Technical Report Series, No 731. Geneva: World Health Organization; 1986.
<http://whqlibdoc.who.int/trs/WHO_TRS_731.pdf> (Version current at September 8, 2003). [[PubMed](#)]
2. H. Hirsch, I. (2017). *Male Reproductive Endocrinology - Genitourinary Disorders - MSD Manual Professional Edition*. [online] MSD Manual Professional Edition. Available at:
<https://www.merckmanuals.com/en-pr/professional/genitourinary-disorders/male-reproductive-endocrinology-and-related-disorders/male-reproductive-endocrinology>
3. Adolescents: health risks and solutions: WHO 5 February 2018 website
4. making health services adolescent friendly @World Health Organization 2012
https://apps.who.int/iris/bitstream/handle/10665/75217/9789241503594_eng.pdf;jsessionid=9037D1A063DA9FEB074398A1DDC911E0?sequence=1

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Any Questions?

Thank You!