

Module A1: Understanding adolescent development from a bio-psycho-social perspective

Entry Scenarios

The entry scenarios address a variety of issues and problems associated with the module topic. They may be used at the beginning of the course to stimulate the students to identify their own needs and interests. The results may be utilized by the individual to assess own learning process, or be integrated with class objectives.

1. You are involved in a school health service. The director of a co-educational school wants to update regulations regarding the minimum age requirements for adolescent students to engage in certain behaviours such as leaving school at lunchtime to visit nearby cafés, joining the school fitness center / gym, allowing alcohol at certain school events and wearing piercings to school. The students come from middle and lower class families, as well as from a nearby Moroccan community. Although the school director feels that today's teenagers reach maturity earlier than before, some older teachers feel differently. You propose opening a forum discussion with the teaching team to consider the process of adolescent maturation, to review the average development stage reached by each class level, and to discuss the individual variations in maturation as well as the possible factors contributing to those variations.

2. In your clinic you see a 13 year old girl with diabetes who asks to see you by herself. She has had diabetes since age 8 years but now refuses to let her parents be involved at all in her treatment, wanting to manage her diabetes entirely by herself. Her mother feels she is too young and is worried about the control of her diabetes deteriorating. However, her father feels she is now a woman since she has started her periods at age 12 years.

General Goals for Learners

by completing the module the participant will be able to:

1. Understand the history, definitions and varying interpretations of the concept of adolescence, and recognize that adolescent development is influenced by cultural, social and economic contexts
2. Understand the biological, psychological and social elements of adolescent development
3. Identify the developmental stage of a young person at a given time, and understand the potential impact of developmental stage on

health behaviors and on the management of health issues

Goal 1: Understand the history, definitions and varying interpretations of the concept of adolescence, and recognize that adolescent development is influenced by cultural, social and economic contexts

Training Objectives Key topics to be covered	Educational Methodology	Activities, Issues, and Questions
<p>A. Review the evolution of the concept of adolescence, and explore existing definitions</p> <ul style="list-style-type: none"> • WHO definitions, national definitions • Traditional to modern cultures • Legal frameworks relating to young people • Challenges to traditional notions of adolescence due to economic and social development 	<p>Interactive Lecture</p>	<p>Invite audience to define adolescence and to identify markers of adolescence in different societies and for different generations (possibly referring to their own adolescence).</p> <p>Provide traditional psychological definitions of adolescence, e.g. Erikson, Piaget, Freud.</p> <p>Present WHO chronological definition of adolescence and compare with national definitions of adolescence in your country</p> <p>Discuss the international trend to include young adults i.e. AYA (adolescents and young adults) aged 10-24 years</p> <p>Discuss the legal framework relating to adolescence and the end of childhood in your country</p>
<p>B. Examine the reasons for the variability of the definitions of adolescence</p> <ul style="list-style-type: none"> • Operational definitions vs. 	<p>Group discussion</p>	<p>Ask group to reflect on the contrast between operational and chronological definitions; note that different definitions are useful for different purposes (e.g. chronological definitions are necessary for epidemiological purposes and for defining access to health services).</p> <p>Note that adolescence contains biological, psychological and social elements, and that multiple</p>

<p>chronological</p> <ul style="list-style-type: none"> • Influence of context • “Bio-psychosocial” construct 		<p>definitions exist. Present the following examples and discuss whether they are adolescents: a 9 year-old who has started her periods; a 15 year-old who is pre-pubertal; a 25 year -old young man who is still living with parents; a 40 year-old woman with a mental age of 12 years.</p> <p>Highlight the influence that context has on the definition of adolescence, using such comparisons as a 15 year-old Nigerian girl who is married and pregnant compared with a 21 year-old English girl who is studying at the university, living with her parents and has never had a partner.</p> <p>Discuss the significance of the term “bio-psychosocial”. What is its meaning and use to the health practitioner in dealing with adolescents?</p>
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Attitudes

Training Objectives Key topics to be covered	Educational Methodology	Activities, Issues, and Questions
C. Identify attitudes and perceptions that people may have of adolescents	Quick class exercise or individual self-questioning	List terms commonly used in one’s culture to describe young people or the period of adolescence, indicating whether a term has a negative or positive emotional value. Identify which terms and perceptions appear to be universal, and which appear to be more limited to single cultures.

Goal II: Understand the biological, psychological and social elements of adolescent development

Knowledge

Training Objectives Key topics to be covered	Educational Methodology	Activities, Issues, and Questions
A. Review one’s personal experience as	Small group	Ask group members to reflect on their own adolescence and identify the events and

<p>an introduction to the concepts of ‘tasks’ and ‘processes’ in adolescence</p>	<p>discussion and plenary review</p>	<p>feelings they went through to become adults (e.g. identify when and why did you stop feeling like a child and when did you start feeling like an adult? What events do you remember?)</p> <p>Bring these ideas together in plenary review and record responses. Trainer asks group members how they would classify the events; suggest that these can be divided into biological, psychological and social elements of early, mid and late, using the grid in appendix 1. Biological changes in the brain and body start the cascade of psychological changes of adolescence, with social changes heavily influenced by context and feeding back to influence psychological change.</p> <ol style="list-style-type: none"> 1. <u>Biological</u>: changes in body shape, appearance and function of many organs (puberty) and changes in the brain 2. <u>Psychological</u>: changes in the way of thinking about oneself (identity and sexual identity) and the ability to think about the world (thinking pattern, development of abstract thinking) 3. <u>Social</u>: changes in the way young people relate to their families, to other young people, and to the outside world. <p>Need to discuss cognitive development in terms of consent and refer to Ethics module.</p>
<p>B. Identify the biological events and timings of puberty and growth, the means of assessing these, and consequences for medical management</p>	<p>Interactive Lecture</p>	<p>Discussion on normal pubertal development should include the following elements:</p> <ul style="list-style-type: none"> • Events and timings of puberty and growth, normal variations • Timing of menarche and secular changes over past 30 years (use examples from trainer’s country) • Uses of Tanner staging of puberty • Use of growth reference charts, calculation of growth velocity (growth spurt) • Meaning of BMI changes in adolescence • Bone mineral accretion • Other physiological changes (blood pressure, lipids, hematology, enzyme system maturation, brain effects of sex steroids)

		<ul style="list-style-type: none"> Note Pharmacological issues i.e. drug doses, contraindications specific to adolescence, drug interactions (e.g. contraception), effects on growth and bone mineralization <p>This discussion should be brief. For greater detail and resources see Puberty & Growth module</p>
<p>C. Understand brain development in adolescence</p>	<p>Mini-lecture including TED talk</p>	<p>Topics to be covered</p> <ul style="list-style-type: none"> Rapid structural cortical development from age 10 to 20 years, including synaptic pruning Functional development of the social brain networks leading to heightened social emotions (shame and guilt) and vulnerability to peer influences Developmental mismatch theory: mismatch between slower development of self-regulatory control and rapid increases in sensation seeking in early adolescence, leading to heightened adolescent risk taking in middle adolescence Influence of puberty on brain development
<p>D. Identify the psychological events of adolescent development</p> <p>(See topics to be covered in activities column)</p>	<p>Small group work with plenary review OR interactive lecture</p>	<p><i>NB. Activity for Objectives D and E. may be done separately or together in the same small groups, with a final plenary review. Appendix 1 can be used as a record sheet.</i></p> <p>Break audience into small groups and set a task to identify psychological aspects of adolescent development.</p> <p><u>Case study 1</u>: an 11 year-old girl with early puberty (menarche at 10) is worrying her parents because she has become aggressive, oppositional and provocative at home. Her parents suspect that the girl is upset because she was the first girl in her class to get her period, and she may be confused by her developing sexuality.</p>

		<p><u>Case study 2:</u> 16 year old boy has severe arthritis, undernutrition and delayed puberty. He spends all his time online and only has online friends. He is having trouble sticking with his medical regimen and doesn't see the point of controlling his arthritis as he believes he's not going to live very long. His parents are concerned he might be depressed.</p> <p>At plenary review, insure the following are included and explored:</p> <ul style="list-style-type: none"> • Understand how psychological development follows from and interacts with biological (brain and body) development • Development from concrete to abstract thinking styles • Personal identity development (e.g. challenging parents and the ideal child image, questioning moral and social structures, seeking spiritual paths, developing ideas about the workings of the world and their place in it) • Development of body-image and sexual self (sexual orientation, gender issues, sense of attractiveness, doubt about normality/abnormality) • Development of more variable mood / affect • Linking and interactions of psychological, physical and social development
<p>E. Identify the events of social development in adolescence</p> <p>(See topics to be covered in activities column)</p>	<p>Small group work with plenary review or interactive lecture</p>	<p>Break audience into small groups and set a task to identify social aspects of adolescent development.</p> <p><u>Case study:</u> A boy of 19 has left home because he wants to live with his girl friend. He is still studying, receives some money from his parents but always asks for more at the end of the month. Although he says his parents do not understand him, he still calls his mother every day. He would like to quit his studies like some of his friends have, but says he does not want to take any job he doesn't like.</p> <p>At plenary review, insure the following are included and explored:</p> <ul style="list-style-type: none"> • Increasing autonomy from parents and integration into peer group (mid-

		<p>adolescence)</p> <ul style="list-style-type: none"> • Educational achievement (all adolescent stages) • Financial independence (late adolescence) • Developing intimate/ partner relationships (later adolescence) • Challenging social structures and values • Increasing responsibility within communities <p>Note that the above psychological and social development does not occur as a smooth process. It involves back and forth movements and paradoxical attitudes that typical for many young people during adolescence.</p>
<p>F. Identify the factors that modify social development in adolescence</p> <ul style="list-style-type: none"> • Gender • Social status • Culture • Family factors • Sexual orientation 	<p>Short video or “discovery” through audience interview.</p>	<p>Illustrate these factors using a short video (to be identified by the teacher) or through audience interview.</p> <p>For audience interview: Insure that a mix of males and females participate. If time is limited, ask only a small number of participants. Note that some participants may not be willing to participate. Suggested questions include,</p> <ol style="list-style-type: none"> 1. When did you first go on a vacation or overnight trip without your parents? 2. If you drink, when did you first have an alcoholic drink and when did you first drink in front of your parents? 3. Did you / when did you ever have a boyfriend/girlfriend home for the night in your parents’ house? 4. Can you briefly describe an adolescent you have met who showed evidence of rapid or slow social development for a particular reason? <p>Participants discuss what may account for the differences in their personal experiences, especially the speed of social development. Trainer guides discussion to show the influence of the key factors listed at left.</p>

Goal 3: Identify the developmental stage of a young person at a given time, and understand the potential impact of developmental stage on health behaviors and on the management of health issues

Skills

Training Objectives Key topics to be covered	Educational Methodology	Activities, Issues, and Questions
<p>A. Identify the maturational stage of an adolescent in biological, psychological and social terms, and evaluate the consequences of adolescent biological development on behaviors.</p>	<p>Case discussion</p>	<p><u>Example Case study:</u> A 15 year-old boy who is very short and young looking presents at clinic. He has been in trouble at school repeatedly for disruptive behavior in class and for smoking. He has also been harassing girls in the class. He was a model student until about 14 years of age, when most of his peers started to grow. His parents are divorced and he lives with his mother who is very concerned about his short stature and smoking. On examination you find no concerns but note that he's only just in puberty (Tanner stage G2P2 testes 6ml).</p> <p>Present other case studies illustrating similar issues.</p> <p>Ask learners to assess the developmental stage of the case study young person in terms of early, mid or late adolescence, exploring possible links between development and behaviour.</p>
<p>B. Evaluate the consequences of adolescent psychosocial development on adolescent health behaviors</p>	<p>Small group discussion with plenary review</p>	<p>In small groups, discuss the consequences of adolescent thinking styles and social development on their health behaviors. Groups formulate examples to be used by the teacher in discussing the relation between a psychosocial characteristic and a particular behavior.</p> <p>Alternatively, examples such as the following can be proposed by the teacher for comments by the students: Cannabis smoking spreading in your local secondary school. List the factors related to psychosocial development that may increase the risk of this</p>

		<p>behavior (for detail, see appendix 2, Module B8).</p> <p>In plenary, review:</p> <ul style="list-style-type: none"> • Development of exploratory /risk behaviors and experimentation with drugs/alcohol/sex/cigarettes/violence (examine rationale for exploratory behaviors including issues regarding future thinking ability) • Effects of mood state (not trait) on behavior • Poor compliance/adherence with treatment or medical advice • Peer effects • Media influences • Rebellion against status quo and authority figures
<p>C. Manage the delivery of health care according to adolescent development</p>	<p>Role play, small group discussion with plenary review</p>	<p>Consider how one might target health promotion messages to the individual adolescent in a clinical situation. Use role play and formulate sentences for delivering messages.</p> <p>Examples of problematic situations:</p> <ul style="list-style-type: none"> • A 14 year-old boy binge drinks every weekend with his friends. • A 15 year-old girl is having unprotected sex; she is sure she cannot become pregnant because her menses are irregular. • A 17 year-old unaccompanied migrant young man rides a motorcycle without a protective helmet. • A 13 year old boy with type 1 diabetes won't blood test or inject insulin in front of his friends <p>Consider how, in a setting such as a school or youth club, to target health promotion messages to a group of young people. Have the students develop concrete strategies (e.g. small group work on a real scenario). Discuss the following:</p>

		<ol style="list-style-type: none"> 1. Developing strategies to reduce online victimization and bullying for school curriculae 2. Tailoring the delivery of information about sexual activities for different levels in elementary and secondary school 3. Managing of the situation in Goal IIIB of cannabis use spreading in the school. <p>At plenary, discuss the following principals:</p> <ul style="list-style-type: none"> • Health promotion messages need to be developmentally appropriate i.e. based upon concrete concepts of immediate costs or benefits relevant to young people rather than future consequences/benefits. • Health promotion messages need to follow strategies adapted to adolescent psychosocial functioning (such as sensitivity to peers).
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Suggested reading and references

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4. Puberty - Normal Growth and Development. Neinstein: Adolescent Health Curriculum, USC. https://www.usc.edu/student-affairs/Health_Center/adolhealth/content/a1.html
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6. Patton G, Viner R, Pubertal transitions in health, *The Lancet*, 2007 Volume 369, Issue 9567, Pages 1130 – 1139
7. Caldwell JC, Caldwell P, Caldwell BK, Pieris I. The construction of adolescence in a changing world: implications for sexuality, reproduction, and marriage. *Stud Fam Plann.* 1998 Jun;29(2):137-53.
8. Mills K, L, Goddings A, -L, Clasen L, S, Giedd J, N, Blakemore S, -J, The Developmental Mismatch in Structural Brain Maturation during Adolescence. *Dev Neurosci* 2014;36:147-160
9. Blakemore, S. The developing social brain. *Neuron.* 2010 Mar 25; 65(6): 744–747. doi: [10.1016/j.neuron.2010.03.004](http://dx.doi.org/10.1016/j.neuron.2010.03.004)
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11. Goddings, A.-L., Mills, K. L., Clasen, L. S., Giedd, J. N., Viner, R. M., & Blakemore, S.-J. (2014). The influence of puberty on subcortical brain development. *Neuroimage*, 88, 242–251. <http://doi.org/10.1016/j.neuroimage.2013.09.073>
12. https://www.ted.com/talks/sarah_jayne_blakemore_the_mysterious_workings_of_the_adolescent_brain



Notes for Teachers

1. Identify novels about adolescence. Novels to read to prepare for this would preferably be in the local language. Others may include Tom Jones; Tom Sawyer; Tom Brown's Schooldays; Jung Werther; Catcher in the Rye (JD Salinger); The Diary of Anne Frank; Angela's Ashes; various Pagnol novels.
2. Identify films and TV programs that demonstrate the issues of adolescence
3. Find national definitions of adolescence (medical professional bodies)
4. Identify data on national trends in age of menarche in the teacher's country



Appendix 1

Development	Early Adolescence	Mid Adolescence	Late Adolescence
Biological			
Psychological			
Social			