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Adolescence Health: the Needs, Problems and Attention

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Abstract

Adolescence is a transitional stage of physical and psychological human development that generally occurs during the period from puberty to legal adulthood. There are approximately 1.2 billion adolescents (10-19 years) globally, roughly 90% of whom live in low and middle-income countries. Most are healthy, but there is still significant death, illness and diseases among adolescents. Illnesses can hinder their ability to grow and develop to their full potential. Alcohol or tobacco use, lack of physical activity, unprotected sex and/or exposure to violence can jeopardize not only their current health, but often their health for years to come. The mortality rate decreased from 126 to 111 per 100 000 between 2000 and 2012. This modest decline of about 12% continues the trend of the past 50 years. Mortality rates dropped in all regions and for all age groups except 15–19 year old males in the Eastern Mediterranean and the Americas regions. The leading causes of death among adolescents in recent years were: road injury, HIV, suicide, lower respiratory infections, and interpersonal violence. Promoting healthy practices 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 social infrastructure.

Key Words: Adolescence, Adolescent health, Disability, Illness.

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1-INTRODUCTION

Adolescence (meaning "to grow up") is a transitional stage of physical and psychological human development that generally occurs during the period from puberty to legal adulthood (age of majority) (1-3). The period of adolescence is most closely associated with the teenage years, though its physical, psychological and cultural expressions may begin earlier and end later (3-6). For example, although puberty has been historically associated with the onset of adolescent development (7-9), it now typically begins prior to the teenage years and there has been a normative shift of it occurring in preadolescence, particularly in females (4, 10, 11) physical growth, as distinct from puberty (particularly in males), and cognitive development generally seen in adolescence, can also extend into the early twenties. Thus chronological age provides only a rough marker of adolescence, and scholars have found it difficult to agree upon a precise definition of adolescence (10-13).

1-1. Adolescent health (14-18)

Adolescents – young people between the ages of 10 and 19 years – are often thought of as a healthy group. Nevertheless, many adolescents do die prematurely due to accidents, suicide, violence, pregnancy related complications and other illnesses that are either preventable or treatable. Many more suffer chronic ill-health and disability. In addition, many 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.

1-2. Adolescent health epidemiology

1-2-1. Key points

- Mortality rates are low in adolescents compared with other age groups have shown a slight decline in the past decade.
- Globally, the leading causes of death among adolescents are road injury, HIV, suicide, lower respiratory infections and interpersonal violence.
- HIV-related deaths have more than tripled since 2000, making it the number 2 cause of death among adolescents worldwide.
- Depression, road injuries, iron deficiency anaemia, HIV and suicide are the major causes of disability-adjusted life years lost in 10–19 year olds.
- The African Region has the highest rates of disability-adjusted life years among adolescents.
- Nearly 35% of the global burden of disease has roots in adolescence.

1-3. Adolescent development (19-24)

1-3-1. Key points

- Adolescence is one of the most rapid phases of human development.
- Biological maturity precedes psychosocial maturity. This has implications for policy and programme responses to the exploration and experimentation that takes place during adolescence.
- The characteristics of both the individual and the environment influence the changes taking place during adolescence.
- Younger adolescents may be particularly vulnerable when their capacities are still developing and they are beginning to move outside the confines of their families.
- The changes in adolescence have health consequence not only in adolescence but also over the life-course.

- The unique nature and importance of adolescence mandates explicit and specific attention in health policy and programmes.

1-3-2. Recognizing adolescence

Adolescence is a period of life with specific health and developmental needs and rights. It is also a time to develop knowledge and skills, learn to manage emotions and relationships, and acquire attributes and abilities that will be important for enjoying the adolescent years and assuming adult roles. All societies recognize that there is a difference between being a child and becoming an adult. How this transition from childhood to adulthood is defined and recognized differs between cultures and over time. In the past it has often been relatively rapid, and in some societies it still is. In many countries, however, this is changing.

1-3-3. Age: not the whole story

Age is a convenient way to define adolescence. But it is only one characteristic that delineates this period of development. Age is often more appropriate for assessing and comparing biological changes (e.g. puberty), which are fairly universal, than the social transitions, which vary more with the socio-cultural environment.

1-3-4. Adolescence: physical changes

Adolescence is one of the most rapid phases of human development. Although the order of many of the changes appears to be universal, their timing and the speed of change vary among and even within individuals. Both the characteristics of an individual (e.g. sex) and external factors (e.g. inadequate nutrition, an abusive environment) influence these changes.

1-3-5. Adolescence: neurodevelopmental changes

Important neuronal developments are also taking place during the adolescent years. These developments are linked to hormonal changes but are not always dependent on them. Developments are taking place in regions of the brain, such as the limbic system, that are responsible for pleasure seeking and reward processing, emotional responses and sleep regulation. At the same time, changes are taking place in the pre-frontal cortex, the area responsible for what are called executive functions: decision-making, organization, impulse control and planning for the future. The changes in the pre-frontal cortex occur later in adolescence than the limbic system changes.

1-3-6. Adolescence: psychological and social changes

Linked to the hormonal and neurodevelopmental changes that are taking place are psychosocial and emotional changes and increasing cognitive and intellectual capacities. Over the course of the second decade, adolescents develop stronger reasoning skills, logical and moral thinking, and become more capable of abstract thinking and making rational judgements. Changes taking place in the adolescent's environment both affect and are affected by the internal changes of adolescence. These external influences, which differ among cultures and societies, include social values and norms and the changing roles, responsibilities, relationships and expectations of this period of life.

1-3-7. Implications for health and behaviour

In many ways adolescent development drives the changes in the disease burden between childhood to adulthood—for example, the increase with age in sexual and reproductive health problems, mental illness and injuries. The appearance of certain health problems in adolescence,

including substance use disorders, mental disorders and injuries, likely reflects both the biological changes of puberty and the social context in which young people are growing up. Other conditions, such as the increased incidence of certain infectious diseases, for example, schistosomiasis, may simply result from the daily activities of adolescents during this period of their lives. Many of the health-related behaviours that arise during adolescence have implications for both present and future health and development. For example, alcohol use and obesity in early adolescence not only compromise adolescent development, but they also predict health-compromising alcohol use and obesity in later life, with serious implications for public health.

1-3-8. Implications for policies and programmes

The changes that take place during adolescence suggest nine observations with implications for health policies and programmes:

- Adolescents need explicit attention.
- Adolescents are not all the same.
- Some adolescents are particularly vulnerable.
- Adolescent development has implications for adolescent health.
- Adolescent development has health implications throughout life.
- The changes during adolescence affect how adolescents think and act.
- Adolescents need to understand the processes taking place during adolescence.
- To contribute positively, adults need to understand the processes taking place during adolescence.
- Public health and human rights converge around concepts of adolescent development.

1-4. Adolescent pregnancy (25-29)

1-4-1. Many adolescent girls between 15 and 19 get pregnant

About 16 million women 15–19 years old give birth each year, about 11% of all births worldwide. Ninety-five per cent of these births occur in low- and middle-income countries. The average adolescent birth rate in middle-income countries is more than twice as high as that in high-income countries, with the rate in low-income countries being five times as high. The proportion of births that take place during adolescence is about 2% in China, 18% in Latin America and the Caribbean and more than 50% in sub-Saharan Africa. Half of all adolescent births occur in just seven countries: Bangladesh, Brazil, the Democratic Republic of the Congo, Ethiopia, India, Nigeria and the United States.

1-4-2. Pregnancy among very young adolescents is a significant problem

In low- and middle-income countries, almost 10% of girls become mothers by age 16 years, with the highest rates in sub-Saharan Africa and south-central and south-eastern Asia.

The proportion of women who become pregnant before age 15 years varies enormously even within regions – in sub-Saharan Africa, for example, the rate in Rwanda is 0.3% versus 12.2% in Mozambique.

1-4-3. The contexts of adolescent pregnancies are not always the same

Having a child outside marriage is not uncommon in many countries. Latin America, the Caribbean, parts of sub-Saharan Africa and high-income countries have higher rates of adolescent pregnancy outside marriage than does Asia.
Births to unmarried adolescent mothers are far more likely to be unintended and are more likely to end in induced abortion.

Coerced sex, reported by 10% of girls who first had sex before age 15 years, contributes to unwanted adolescent pregnancies.

1-4-4. Adolescent pregnancy is dangerous for the mother

Although adolescents aged 10-19 years account for 11% of all births worldwide, they account for 23% of the overall burden of disease (disability- adjusted life years) due to pregnancy and childbirth. Fourteen percent of all unsafe abortions in low- and middle-income countries are among women aged 15–19 years. About 2.5 million adolescents have unsafe abortions every year, and adolescents are more seriously affected by complications than are older women.

In Latin America, the risk of maternal death is four times higher among adolescents younger than 16 years than among women in their twenties. Many health problems are particularly associated with negative outcomes of pregnancy during adolescence. These include anaemia, malaria, HIV and other sexually transmitted infections, postpartum haemorrhage and mental disorders, such as depression. Up to 65% of women with obstetric fistula develop this as adolescents, with dire consequences for their lives, physically and socially.

1-4-5. Adolescent pregnancy is dangerous for the child

Stillbirths and death in the first week of life are 50% higher among babies born to mothers younger than 20 years than among babies born to mothers 20–29 years old. Deaths during the first month of life are 50–100% more frequent if the mother is an adolescent versus older, and the younger the mother, the higher the risk.

The rates of preterm birth, low birth weight and asphyxia are higher among the children of adolescents, all of which increase the chance of death and of future health problems for the baby. Pregnant adolescents are more likely to smoke and use alcohol than are older women, which can cause many problems for the child and after birth.

1-4-6. Adolescent pregnancy adversely affects communities

Many girls who become pregnant have to leave school. This has long-term implications for them as individuals, their families and communities. Studies have shown that delaying adolescent births could significantly lower population growth rates, potentially generating broad economic and social benefits, in addition to improving the health of adolescents.

2- MTERIALS AND METHODS

2-1. Literature Search

The following databases were searched for relevant papers and reports: MEDLINE, CINAHL, WHO website, United Nations Children's Fund (UNICEF) and United Nations (UN) website, Embase, Cochrane Collection, Google Scholar, Pubmed, Islamic databases and ISI Web of Knowledge. Key references from extracted papers were also hand-searched.

2-2. Search Terms

To evaluate the texts and websites, the singular or combination forms of the following keywords were used to search for the relevant literature: "Adolescent", "Adolescence", "Children", "Main Health", "Death", and "Morbidity".

3- RESULTS

Around 1 in 6 persons in the world is an adolescent: that is 1.2 billion people aged 10 to 19. Most are healthy, but there is still significant death, illness and diseases among adolescents. Illnesses can hinder their ability to grow and develop to their full potential. Alcohol or tobacco use, lack of physical activity, unprotected sex and/or

exposure to violence can jeopardize not only their current health, but often their health for years to come. Promoting healthy practices 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 social infrastructure.

3-1. Main health issues include:

3-1-1. Early pregnancy and childbirth

Complications linked to pregnancy and childbirth are the second cause of death for 15-19-year-old girls globally. Some 11% of all births worldwide are to girls aged 15 to 19 years, and the vast majority is in low- and middle-income countries. The 2014 World Health Statistics put the global adolescent birth rate at 49 per 1000 girls this age - country rates range from 1 to 229 births per 1000 girls. This indicates a marked decrease since 1990. This decrease is reflected in a similar decline in maternal mortality rates among 15-19 year olds.

One of the Millennium Development Goals, MDG 5, is to achieve universal access to reproductive health, for which one of the indicators is the pregnancy rate among the 15 to 19 age group.

Better access to contraceptive information and services can reduce the number of girls becoming pregnant and giving birth at too young an age. Laws that specify a minimum age of marriage at 18 and which are enforced can help. Girls who do become pregnant need access to quality antenatal care. Where permitted by law, adolescents who opt to terminate their pregnancies should have access to safe abortion (20, 26, 28).

3-1-2. HIV

More than 2 million adolescents are living with HIV. Although the overall number of HIV-related deaths is down 30% since the peak 8 years ago, estimates suggest that HIV deaths among adolescents are rising. This increase, which has been predominantly in the WHO Africa Region, may reflect the fact that although more children with HIV survive into adolescence, they do not all then get the care and support them 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.

MDG 6 to halt the spread of HIV/AIDS has indicators including the prevalence among 15 to 24 year olds and the proportion of this age group with comprehensive correct knowledge of HIV/AIDS.

Young people need to know how to protect themselves and have the means to do so. This includes being able to obtain condoms to prevent sexual transmission of the virus and clean needles and syringes for those who inject drugs. Better access to HIV testing and counselling is also needed (30-33).

3-1-3. Other infectious diseases

Thanks to improved childhood vaccination, adolescent deaths and disability from measles have fallen markedly – for example, by 90% in the African Region between 2000 and 2012. But diarrhoea, lower respiratory tract infections and meningitis are among the top 10 causes of death for 10 to 19 year olds (14, 15).

3-1-4. Mental health

Depression is the top cause of illness and disability among adolescents and suicide is the third cause of death. Violence, poverty, humiliation and feeling devalued can increase the risk of developing mental health problems.

Building life skills in children and adolescents and providing them with psychosocial support in schools and other

community settings can help promote good mental health. Programmes to help strengthen ties between adolescents and their families are also important. If problems arise, they should be detected and managed by competent and caring health workers (34-37).

3-1-5. Violence

Violence is a leading cause of death. An estimated 180 adolescents die every day as a result of interpersonal violence. Around 1 of every 3 deaths among adolescent males in the low- and middle-income countries in the WHO Americas Region is due to violence. Globally, some 30% of girls aged 15 to 19 experience violence by a partner. Promoting nurturing relationships between parents and children early in life, providing training in life skills, and reducing access to alcohol and firearms can help to prevent violence. Effective and empathetic care for adolescent survivors of violence and ongoing support can help deal with the physical and the psychological consequences (38-43).

3-1-6. Alcohol and drugs

Harmful drinking among adolescents is a major concern in many countries. It reduces self-control and increases risky behaviours, such as unsafe sex. It is a primary cause of injuries (including those due to road traffic accidents), violence (especially by a partner) and premature deaths. It also can lead to health problems in later life and affect life expectancy.

Setting a minimum age for buying and consuming alcohol and regulating how alcoholic drinks are targeted at the younger market are among the strategies for reducing harmful drinking. Drug use among 15 to 19 year olds is also a concern (38-43).

3-1-7. Injuries

Unintentional injuries are a leading cause of death and disability among adolescents. In 2012, some 120 000 adolescents died as a result of road traffic accidents. Young drivers need advice on driving safely, while laws that prohibit driving under the influence of alcohol and drugs need to be strictly enforced. Blood alcohol levels need to be set lower for teenage drivers. Graduated licences for novice drivers with zero-tolerance for drink-driving are recommended. Drowning is also a major cause of death among adolescents – 60 000, two-thirds of them boys, drowned in 2012 (37, 40- 42).

3-1-8. 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 both low- and high-income countries (41, 43).

3-1-9. Exercise and nutrition

Available survey data indicate that fewer than 1 in every 4 adolescents meets the recommended guidelines for physical activity - 60 minutes of moderate to vigorous physical activity daily. Anaemia resulting from a lack of iron affects girls and boys, and is the third cause of years lost to death and disability. Iron and folic acid supplements help to promote health before adolescents become parents.

Developing healthy eating and exercise habits at this age are foundations for good health in adulthood. Reducing the marketing of foods high in saturated fats, trans-fatty acids, free sugars, or salt and providing access to healthy foods and opportunities to engage in physical activity are important for all but especially children and adolescents (41-48).

3-1-10. Tobacco use

The vast majority of people using tobacco today began when they were adolescents. Prohibiting the sale of tobacco products to minors and increasing the price of tobacco products through higher taxes, banning tobacco advertising and ensuring smoke-free environments are crucial. Globally, at least 1 in 10 younger adolescents (aged 13 to 15) uses tobacco, although there are areas where this figure is much higher. Cigarette smoking seems to be decreasing among younger adolescents in some high-income countries (49).

5- DISCUSSION

- Many of the health problems seen in adolescence start during the first decade, emphasizing the need for programming across the life-course.
- The mortality and morbidity/disability patterns of adolescence reflect the transition from childhood to adulthood and the impact of the developmental processes taking place during this period.
- Important gender differences include more interpersonal violence and war-related deaths among male adolescents and maternal problems affecting females, although the latter have decreased significantly between 2000 and 2012.
- There are more similarities than differences among regions and between high and low/middle income countries.
- The increase in global HIV-related deaths results primarily from high mortality among adolescents in the African Region.
- The statistics expose some largely neglected issues in adolescent health: mental health problems, suicide, alcohol use, road injuries and other unintentional injuries, interpersonal violence and war.
- Common infectious diseases continue to be a major problem (50-54).

5-1. Morbidity

Morbidity is also important for defining public health priorities for adolescence. Morbidity data allow assessment of the many non-fatal diseases and conditions that develop during adolescence, which not only have implications for service provision today but often also have life-long repercussions.

Years lost to disability (YLD) are estimates based on prevalence data, real or imputed, that quantify the burden of morbidity and facilitate comparisons of various diseases and conditions. As with other estimates, they need to be interpreted with caution since they depend on both the accuracy of reporting, which often is not good, and the methods and assumptions built into the modelling.

There were few significant changes in the top 5 YLDs between 2000 and 2012, and the commonalities across regions and between high income countries and low and middle income countries remain.

The top five ranked causes of YLDs in 10-14 year olds are:

- unipolar depressive disorders
- iron deficiency anaemia
- asthma
- back and neck pain, and
- anxiety disorders.

They are similar for 15-19 year olds except asthma is replaced by alcohol use disorders, the number 2 cause of YLDs in 15-19 year old males. These conditions are responsible for nearly 50% of YLDs in adolescents 10-19 years (55, 56).

5-2. Disability-adjusted life years: Combining mortality and morbidity

Between 2000 and 2012 overall DALYs for adolescents decreased from 165 to 152 per 1000 population, or 8%, less than half of the 17% decline overall for all age groups. The African Region continues to account for the highest DALYs (in 2012, 300 DALYs per 1000 population). The lowest DALYs are in the high income countries and the Western Pacific Region (both 84 per 1000 population, in 2012). The Eastern Mediterranean, South-East Asian, Americas and European regions lie between these extremes (at 165, 148, 125 and 111 per 1000 population in 2012, respectively).

DALYs declined between 2000 and 2012 for all adolescents except for 15–19 year old males in the Eastern Mediterranean Region and Americas Region. DALYs for all adolescents declined most in the South-East Asia Region (21%) and the Western Pacific and European regions (16% and 17% respectively). The smallest declines took place in the Eastern Mediterranean Region (4%).

The major causes of DALYs changed little between 2000 and 2012. In 2012, depression, road injuries, iron-deficiency anaemia, HIV and intentional self-harm were the top five global causes of DALYs for adolescents. The one notable change from 2000 was that HIV ranked number 4 among causes of DALYs in 2012. In 2000 it was not among the top 10.

All the measures of death, disease and disability tell a similar story about adolescent health. Generally, there is remarkable consistency across ages, sexes and regions and between low and middle income countries and high income countries. While there are many similarities between 2000 and 2012, trend data reveal both successes (measles down) and challenges (HIV and war-related deaths and DALYs up).

The estimates of mortality, morbidity and DALYs provide a strong argument to shift thinking away from the assumption that adolescence is generally a healthy period and so needs little attention. Yes, most adolescents are healthy most of the time. But many adolescents have health problems that require serious attention from the health sector, particularly since many conditions and behaviours that start or are reinforced during adolescence affect health across the life-course (55-61).

What are DALYs?

Disability-adjusted life years (DALYs) are a measure of the years of healthy life lost due to ill health, disability or premature death. They estimate the gap between current health status and an ideal health status, with the entire population living to an advanced age free of disease and disability.

For a specific health condition, DALYs are calculated as the sum of the years of life lost (YLL) due to premature death plus disability (YLD) for people living with the health condition (55).

5-3. Road traffic injuries, HIV/AIDS, suicide are top causes of death; Depression is number 1 cause of illness and disability (31- 33, 40, 62-65)

14 May 2014 | GENEVA - WHO's "Health for the world's adolescents" report reveals that depression is the predominant cause of illness and disability for both boys and girls aged 10 to 19 years. The top 3 causes of adolescent deaths globally are road traffic injuries, HIV/AIDS, and suicide. Worldwide, an estimated 1.3 million adolescents died in 2012. Drawing on a wealth of published evidence and consultations with 10 to 19-year-olds around the world, the report also brings

together, for the first time, all WHO guidance on the full spectrum of health issues affecting adolescents. These include tobacco, alcohol and drug use, HIV, injuries, mental health, nutrition, sexual and reproductive health, and violence. The report recommends key actions to strengthen the ways countries respond to adolescents' physical and mental health needs.

5-3-1. Road traffic injuries top cause of death

Road traffic injuries are the number 1 cause of adolescent deaths globally, and the number 2 cause of illness and disability. Boys are disproportionately affected, with more than three times the rate of deaths than that of girls. Increasing access to reliable and safe public transport can reduce road traffic injuries among adolescents. Road safety regulations (e.g. alcohol and speed limits), establishing safe pedestrian areas around schools, and graduated licensing schemes where drivers privileges are phased in over time, can all reduce risks.

5-3-2. Mental health problems take a big toll

Globally, depression is the number 1 cause of illness and disability in this age group, and suicide ranks number 3 among causes of death. Some studies show that half of all people who develop mental disorders have their first symptoms by the age of 14. If adolescents with mental health problems get the care they need, this can prevent deaths and avoid suffering throughout life.

5-3-3. Pregnancy and childbirth-related deaths have fallen

Deaths due to complications of pregnancy and childbirth among adolescents have dropped significantly since 2000, particularly in regions where maternal mortality rates are highest. WHO's South-East Asia, Eastern Mediterranean and African Regions have seen estimated declines of 57%, 50% and 37%, respectively. Despite these improvements, maternal mortality still ranks second among causes of death among 15 to 19-year-old girls globally, exceeded only by suicide.

5-3-4. Deaths due to HIV rising

Estimates suggest that the number of HIV-related deaths among adolescents is rising. The increase is predominantly in the African Region, at a time when HIV-related deaths are decreasing in all other population groups. HIV now ranks as the second cause of deaths in adolescents globally.

5-3-5. Some other infectious diseases still major causes of death

Thanks to childhood vaccination, adolescent deaths and disability from measles have fallen markedly—by 90% in the African Region between 2000 and 2012. However, common infectious diseases that have been a focus for action in young children are still killing adolescents. For example, diarrhoea and lower respiratory tract infections now rank second and fourth among causes of death in 10 to 14-year-olds. Combined with meningitis, these conditions account for 18% of all deaths in this age group, little changed from 19% in 2000.

5-3-6. New data on adolescent health behaviours

New data from countries where surveys have been done show that fewer than 1 in every 4 adolescents does enough exercise (WHO recommends at least one hour of moderate to vigorous exercise per day), and in some countries as many as 1 in 3 is obese. But some trends in adolescent health-related behaviours are improving. For example, rates of cigarette smoking are decreasing among younger adolescents

in most high-income countries and in some middle- and low-income countries as well.

5-3-7. Critical period for preventing chronic disease

Adolescence is an important time for laying the foundations of good health in adulthood. Many health-related behaviours and conditions that underlie the major non-communicable diseases start or are reinforced during this period of life.

5-3-7-1. Top causes of deaths in adolescents

- Road traffic injuries;
- HIV/AIDS;
- Suicide;
- Lower respiratory infections;
- Violence;
- Diarrhoea;
- Drowning;
- Meningitis;
- Epilepsy;
- Endocrine, blood, immune disorders.

5-3-7-2. Top causes of illness and disability

- Depression;
- Road traffic injuries;
- Anaemia;
- HIV/AIDS;
- Self-harm;
- Back and neck pain;
- Diarrhoea;
- Anxiety disorders;
- Asthma;
- Lower respiratory infections.

6-CONCLUSION

- An estimated 1.3 million adolescents died in 2012, mostly from preventable or treatable causes.
- Road traffic injuries were the leading cause of death in 2012, with some 330 adolescents dying every day.
- Other main causes of adolescent deaths include HIV, suicide, lower respiratory infections and interpersonal violence.
- Globally, there were 49 births per 1000 girls aged 15 to 19, according to 2010 figures.
- Half of all mental health disorders in adulthood appear to start by age 14, but most cases are undetected and untreated.

Poor mental health can have import effect on the wider health and development of adolescents and is association with several health and social outcomes such as higher alcohol, tobacco and illicit substances use, adolescent pregnancy, school drop-out and delinquent behaviours. There is growing consensus that healthy development during childhood and adolescence contributes to good mental health and can prevent mental health problems.

Enhancing social skills, problem-solving skills and self confidence can help prevent mental health problems such as conduct disorders, anxiety, depression and eating disorders as well as other risk behaviors including those that relate to sexual behavior, substance abuse, and violent behaviour. Health workers need to have the competencies to relate to young people, to detect mental health problems early, and to provide treatments which include counseling, cognitive-behavioral therapy and, where appropriate, psychotropic medication. Comparing global DALYs across the life-course from 5 to 24 years, only one cause of DALYs is in the top 5 across all four 5-year age groups (5–9, 10–14, 15–19 and 20–24 years): road injuries(41, 48, 49, 53, 56).

6-1. Top 5 cause-specific DALYs 5-9, 10-14, 15-19, 20-24, 2012

There is one additional common condition among the top 5 for 10–19 year olds and 5–9 year olds but not for 20–24 year olds: iron deficiency anaemia. A comparison of

5–9 year olds and 10–14 year olds finds one additional cause in common among the top 5: diarrhoeal diseases.

In addition to the one condition common to all groups, two additional causes are common to 10–19 year olds and 20–24 year olds, but are not seen in 5–9 year olds: unipolar depressive disorders and intentional self-harm. When 20–24 year olds are compared with 15–19 year olds, one additional common cause is added: interpersonal violence. Maternal conditions are the only condition that is in the top 5 causes of DALYs in 20–24 year olds that is not in the top 5 in 15-19 year olds. The DALYs highlight the epidemiological transition taking place during adolescence, from the infectious diseases in childhood to the health problems of early adulthood, including the adoption and impact of health-related behaviours (54, 58).

6-2. Regional highlights:

- 1 of every 3 deaths among adolescent males the Americas Region is due to interpersonal violence.
- 1 of every 5 deaths among adolescents in high income countries is due to road traffic injuries.
- 1 of every 5 deaths among adolescent males the Eastern Mediterranean Region is due to war and conflicts.
- 1 of every 6 deaths among adolescent females in the South-East Asia Region is due to suicide.
- 1 of every 6 deaths among adolescents in the African Region is due to HIV (54, 58, 61).

6-3. Variations by age and gender

Mortality rates are slightly higher at ages 15–19 years than at 10–14 years (127 and 94 per 100,000 respectively), a trend that has been noted in past analyses of mortality and that continues into the 20–24 year age group. Mortality rates are consistently higher for adolescent males than for females, often substantially higher, except among 10–14 year olds in the African Region. Males' higher mortality rates often reflect more deaths from road injuries and interpersonal violence. There are a number of causes of death that predominantly affect a small number of regions, or specific age groups. For example, protein-energy malnutrition is ranked 5 in the Eastern Mediterranean region among 10-14 year girls (3 per 100,000). Although not in the top 5 causes, rates for protein-energy malnutrition in 10-14 year old girls and boys are estimated to be even higher in the African Region, at 12 and 10 per 100,000 respectively. In this age group congenital anomalies are also seen among the top 5 causes in high income countries and the Western Pacific Region, and among girls in the Americas and European regions.

In 15-19 year olds, non-communicable diseases become increasingly important, for example, leukaemia, which is ranked 4 in the Western Pacific Region, and stroke, ranked 3 in the European region. Drug use disorders are ranked 5 for both males and females in high income countries, the rates being higher among males (44, 45, 54, 55).

6-4. Rights of adolescents

The rights of children to survive, grow and develop are enshrined in international legal documents. The Committee on the Rights of the Child (CRC), which oversees the child rights convention, in 2013 published guidelines on the right of children and adolescents to the enjoyment of the highest attainable standard of health.

In 2003, the CRC issued guidelines on states' obligations to recognise the special health and development needs and rights of adolescents and young people. The Convention on the Elimination of Discrimination Against Women

(CEDAW) also sets out the rights of women and girls to health and adequate health care (66, 67).

8-CONFLICT OF INTEREST: None.

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