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Peer-reviewed / Observational study / People

***The Lancet*: Disease, violence and inequality threaten more adolescents worldwide than ever before**

- ***Compared with 1990, in 2016 an additional 250 million adolescents worldwide lived in multi-burden countries with the poorest adolescent health***
- ***Number of adolescents who are overweight or obese more than doubled between 1990 and 2016; number of adolescents with anaemia increased by 20%***
- ***The prevalence of child marriage between 2013-2016 was over 50% in some countries, and three times more young women than men worldwide were not in education, employment or training***
- ***The US stands out for poor adolescent health compared with other high-income countries***

In the first study to track recent global changes to adolescent health, published in *The Lancet*, researchers estimate that, compared with 1990, an additional 250 million adolescents in 2016 were living in countries where they faced a triple burden of infectious disease, non-communicable diseases including obesity, and injuries – including from violence.

Between 1990 and 2016, a decrease in adolescent disease burden in many countries was offset by population growth in countries with the poorest adolescent health.

The authors of the study tracked progress in 12 indicators of adolescent health in 195 countries, including risk factors such as smoking and obesity, and social issues that impact on health such as child marriage and access to secondary education. The findings highlight a slow pace of change in health, education and legal systems, leaving adolescent needs unmet. The study calls for comprehensive investments in adolescent health and for responses that extend beyond health systems, for example in education. Given that the population of people aged 10-24 years is now the largest in history, at 1.8 billion in 2016, it is timely to focus attention on improving their chances to lead healthy and productive lives.

“Adolescence is a formative phase of life during which patterns of growth, development, and behaviour lay a foundation for health in later life and for the next generation,” says corresponding author Dr Peter Azzopardi from the Burnet Institute, Australia. [1]

“A burgeoning adolescent population in many low-income and middle-income countries could provide an unprecedented opportunity to drive socioeconomic development. Adolescent health and wellbeing could be central to achieving sustainable development goals and to poverty reduction. However, many young people in these settings carry a large disease burden, are disadvantaged in the social determinants of health, and are exposed to increasing health risks.”

[1]

The authors recommend that the 12 indicators could be used to agree new targets to improve

adolescent health: “Despite improvements in many settings, the adolescent health challenge is greater today than it was 25 years ago. The case for comprehensive and integrated investments in adolescent health, growth, and development has never been stronger,” says Professor George Patton from the Murdoch Children’s Research Institute and University of Melbourne (Australia) [1], who, in 2016, led The Lancet Commission on adolescent health and wellbeing. [2]

Decline in disease overshadowed by rise in global inequalities

Between 1990 and 2016, population growth was greatest in the countries where adolescent health is poorest. This demographic shift has heightened global inequalities. By 2016 an additional 250 million young people were living in “multi-burden” countries, which are also characterised by high levels of poverty. [3]

In 2016, non-communicable diseases (NCDs) were the leading contributor to disease in adolescents. Multi-burden countries accounted for 55% of NCDs. A quarter of the total disease burden was due to communicable, maternal and nutritional disease. However, almost all of this disease burden is borne by adolescents living in 70 low and middle-income countries. In the US, poor health caused by injury was higher than in similar high-income countries.

Nutrition, alcohol and tobacco in adolescent health

Nutritional health risks became more prominent between 1990 and 2016. In 2016, 324 million - or almost one in five - of the world’s adolescents were overweight or obese, a 120% increase from the 147.3 million in 1990. An even higher proportion of US adolescents were found to be obese or overweight (44% of young women and 45% of young men). Of note, being overweight or obese was the one indicator where the prevalence is increasing for adolescents in almost every setting. Young Chinese women experienced an annual increase of nearly 5% while young Indian women experienced an annual increase of nearly 9%.

Dr Azzopardi says: “Given that recovery from adolescent obesity is rare once established, the consequences on health in later life and for the next generation could be great.” [1]

During the same period, population growth saw the number of adolescents with anaemia increase by 20% from 357 million to 430 million, with 77% of cases in multi-burden countries. Anaemia was more common in young women than in young men. In multi-burden countries, over 40% of young women (188 million of 467 million) had anaemia in 2016. In some countries - including Bhutan, Yemen and India - prevalence in young women was over 50%.

Globally, the number of teenagers aged 15-19 who binge drink changed little from 1990: from 41 million boys and 26 million girls in 1990 to 44 million boys and 27 million girls in 2016. The countries with the highest levels of young women binge drinking - with prevalence over 55% - included Ireland, Denmark, New Zealand and Finland. It was even higher in teenage boys in Austria, Denmark, and Finland. In contrast, prevalence in both sexes in Bangladesh, Pakistan and Egypt was under 1%.

The global number of adolescent daily smokers decreased by around 20%, from 174 million in 1990 to

136 million in 2016. However, the proportion in multi-burden countries increased substantially. Global prevalence among boys and young men aged 10–24 years was still over 10% in 2016. There was a small annual increase of just over 1% among girls and women in multi-burden countries.

Disproportionate number of girls and young women left behind

Gender inequality remains a powerful driver for poor adolescent health, especially in low-income countries. Child marriage remains common, reflecting harmful gender norms. An estimated 66 million women aged 20–24 years reported marrying before turning 18.

Globally, the number of 15-24-year-olds not in education, employment or training (NEET) is estimated to be around three times higher for young women (175 million) than young men (63 million). In India, the prevalence is over 15 times higher in young women than in young men (nearly 54% compared to 3.5%). High prevalence of NEET among young women in multi-burden countries could be explained by high rates of adolescent livebirths, which disrupts education and in turn restricts prospects for employment.

In the US, a relatively high proportion of adolescents were NEET, with over 17% of young women and nearly 16% of young men aged 15–24 years in this category, compared to around 4% for both sexes in the Netherlands and around 11% in the UK. At the same time, a relatively low proportion of young American women have their demand for contraception satisfied (70.9% compared to 87% in the UK).

“Achieving gender equity in determinants of adolescent health and wellbeing will require action on many fronts, including employment and economic empowerment, better access to essential health care including contraception, implementation of legislative frameworks to protect girls from early marriage, and changes in community norms,” says Professor Patton. [1]

This study used modelled estimates to help fill data gaps and to provide as complete a picture of adolescent health as possible. In some instances, primary data were limited, for example for prevalence of binge drinking, child marriage and the number of adolescents not in education, training or employment. As part of a comprehensive response to adolescent health, there must also be an investment in quality data collection.

Writing in a linked Comment, Professor Helen Weiss from the London School of Hygiene and Tropical Medicine, UK, says: “The quality of the data depends on the primary data collected, and ten of the 12 indicators were populated using modelled data, with wide uncertainty estimates indicating the lack of primary data, especially for binge drinking, child marriage, and injuries associated with conflict and war. Nonetheless, the Article is based on data with far higher coverage than previous estimates. This study is an evidence-based call to action to the global health community.”

India, China, Brazil and Mexico: causes of death among 5-14 year olds

India and China together account for a third of the global population of adolescents. A second article in *The Lancet*, published at the same time, focuses on causes of death in 5-14-year-olds in India, China, Brazil and Mexico.

In these countries, more than 200,000 in this age group die every year and the researchers found that most deaths arose from preventable or treatable conditions. In 2016, India had the highest death rates in nearly every category, including from communicable diseases. In China, injuries accounted for the greatest proportion of deaths (20,970 of the estimated 39,430), primarily as a result of drowning (6,130 deaths in boys and 2,600 deaths in girls). Deaths from transport injuries, drowning, and cancer were common in all four countries, with transport accidents among the top three causes of death for both sexes in all countries, except for Indian girls, and cancer in the top three causes for both sexes in Mexico, Brazil, and China.

NOTES TO EDITORS

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The labels have been added to this press release as part of a project run by the Academy of Medical Sciences seeking to improve the communication of evidence. For more information, please see: <http://www.sciencemediacentre.org/wp-content/uploads/2018/01/AMS-press-release-labelling-system-GUIDANCE.pdf> if you have any questions or feedback, please contact The Lancet press office pressoffice@lancet.com

[1] Quotes direct from author and cannot be found verbatim in text of Article

[2] <https://www.thelancet.com/commissions/adolescent-health-and-wellbeing>

[3] Multi-burden countries were defined as those in which more than 2500 disability-adjusted life years (DALYs) were lost per 100,000 adolescents due to communicable, maternal and nutritional disease.

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ADOLESCENT HEALTH:

For embargoed access to the Article and Comment, please see: <http://www.thelancet-press.com/embargo/adolescenthealth1.pdf>

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