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Children working in a shipyard in Bangladesh. Poor adolescents in low- and middle-income countries often have to work, sometimes in dangerous conditions.

Understand young people in low-income countries

For most of the world's adolescents, poverty and social marginalization influence health much more than risk-taking does, argue **Robert Blum** and **Jo Boyden**.

Nearly 90% of current evidence about adolescence comes from research in high-income countries. Yet nine-tenths of people aged between 10 and 24 live in low- and middle-income countries (LMICs), where this life stage looks very different (see 'Worlds apart').

In LMICs, young people's health and well-being tend to be more severely affected by cultural, socio-economic and environmental risk factors than in high-income countries, and there are fewer resources to mitigate such risks. Adolescents in LMICs also tend to have many more family responsibilities than their peers in high-income countries.

Currently, millions of young people in LMICs are condemned to poor health, impaired development and premature death. In fact, since 1990, there have been fewer improvements in health for adolescents (aged 10–19) and young people (aged 15–24) in these countries than for any other age group[1].

We need to better understand the everyday realities of adolescents' lives in LMICs and how this affects their health. This would enable targeted investment to improve well-being and productivity globally — but it

means abandoning Western assumptions about adolescence being predominantly a time for risk-taking. It also means finding better ways to reach adolescents — for instance, through the use of mobile phones, social media and community-based strategies — and applying approaches such as web-based surveys and interactive data-collection methods to build a richer picture of the forces shaping young people's lives.

POVERTY TRAP

Studies show that adolescents in LMICs who are subject to poverty and restricted access to health, education and other services are also more likely to be exposed to environmental toxins and extreme weather events, such as droughts, than their wealthier peers.

And this pile-up of multiple stressors is likely to worsen in the coming years. According to the Notre-Dame Global Adaptation Initiative (http://gain.nd.edu), out of the 100 countries most vulnerable to climate change, 42 are low-income countries, 33 are lower middle-income countries and 14 are upper middle-income countries. Meanwhile, rapid and unplanned urbanization is driving more overcrowding, road injuries, noise pollution and the accumulation of toxins such as lead[2].

In LMICs, adolescents from minority communities tend to be significantly more disadvantaged than those in majority populations. A 2009 study of the health and well-being of more than 10,000 individuals in Vietnam aged 14 to 25 found that young people from ethnic minorities fared worse than those from the Kinh majority in every measure[3]. For example, 10% of young people from ethnic minorities reported being illiterate, compared with 1% of Kinh young people.

Gender is another major determinant of health differences. The pilot of the ongoing Global Early Adolescent Study (www.geastudy.org/), which R.B. is directing, collected predominantly quantitative data between 2015 and 2017 from about 35 families in 15 countries on 5 continents. These data indicate that, compared with their brothers and male peers, girls in LMICs tend to experience more social isolation as they move from childhood to adolescence, and have fewer opportunities in education, recreation and exploration.

Opportunities for education can be just as important as nutrition for adolescent health. According to a 2014 study, for instance, there is a strong link between teenage pregnancy and low levels of literacy in Africa[4]. And a wealth of literature shows that deficiencies early in life cast a long shadow.

As part of Young Lives (www.younglives.org.uk), an ongoing longitudinal study directed by J.B., researchers have been collecting information about 12,000 children in Ethiopia, India, Peru and Vietnam for 15 years. In all four countries, children whose growth is stunted when they are around one year old are likely to remain so until they are at least 15 (ref. 5). Those who experience an early nutritional disadvantage are more likely to have difficulty progressing through school. And stunting at age 8 correlates with lower scores on measures of self-efficacy, self-esteem and educational aspirations at age 12 (ref. 6).

"Adolescents are the least likely of any age group to access conventional health services."

Another characteristic of life for poor adolescents in LMICs is combining the pursuit of education with work. Young Lives data suggest that the time devoted to education remains broadly constant for girls and boys aged 8 to 15. But as they grow older, adolescents tend to do more work, either for pay or as part of family life. Indeed, they are frequently the primary carers of younger siblings or incapacitated adults. Some are even the principal breadwinners in their households (see 'Age of responsibility').

Employment can affect health during adolescence in many ways. Young workers commonly suffer more accidents than adult workers, and they are particularly susceptible when exposed to chemical toxins from mining or agricultural work, for example[7].

NO TIME TO PLAY

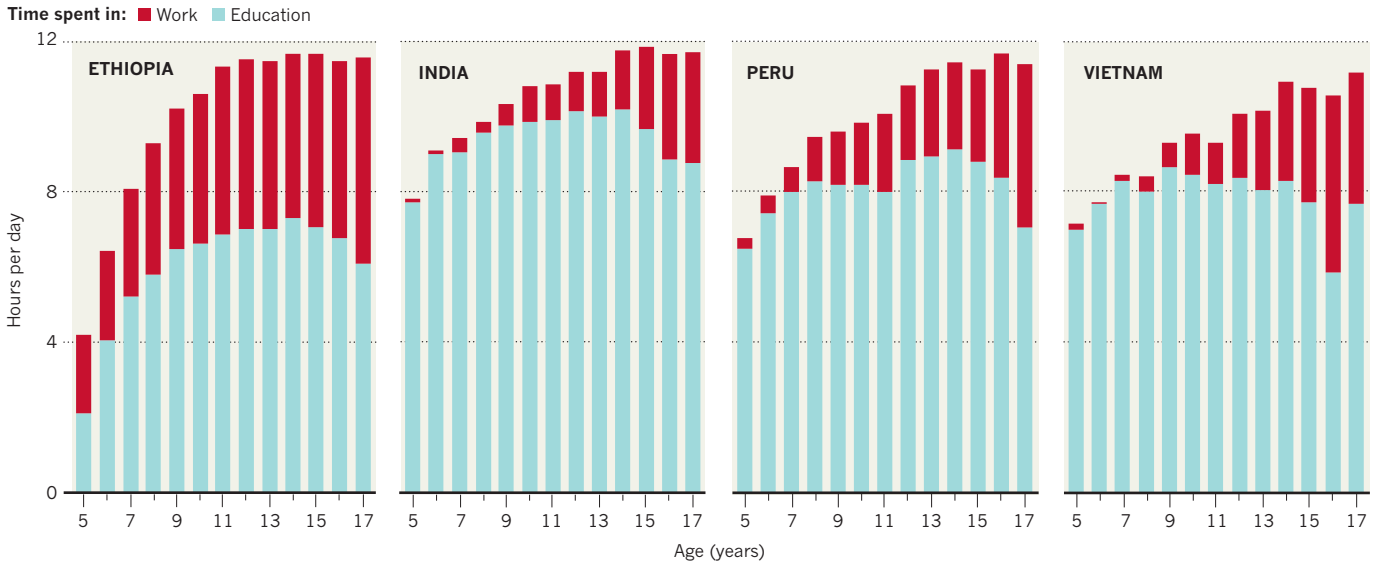
Experts in the Global North generally assume that adolescence is a carefree time of emerging independence, social exploration and risk-taking. This way of thinking carries over to adolescent-focused health programmes and policies in LMICs, which regularly focus on violence, sexually transmitted infections and teen pregnancies.

Too many programmes fail to understand what drives behaviour in the first place, and ignore the broader risks that young people face from poverty, work, social stigma or exclusion from quality services. Also, many centre around the provision of clinical services, even though adolescents are the least likely of any age group to access conventional health services[8].

With the right approach, community-based interventions geared towards reducing a behavioural problem such as violence can also improve the overall health and well-being of young people. Reducing violence

AGE OF RESPONSIBILITY

As they grow up, young people in low- and middle-income countries tend to devote more of their time to work that helps sustain their families. Under-reporting of work is likely because those surveyed described 'a typical day last week' when school was in session.



SOURCE: P. ESPINOZA REVOLLO & C. PORTER, UNPUBLISHED DATA

An apple seller in Changzhi, China. Text messages can provide health information for adolescents.

REUTERS

and the incidence of HIV/AIDS are among the principal aims of South Africa's activity-based Waves for Change surf schools, Soul Buddyz Clubs and AMANDLA EduFootball programmes, for example. But these programmes also improve young people's fitness, psychological well-being and ability to form friendships and take responsibility for others.

Donors, governments and non-governmental organizations in LMICs are expanding their repertoire of approaches. But better research tools and more community-based initiatives are needed that focus specifically on understanding and enhancing resilience among adolescents.

Digital technologies offer fresh ways to improve health and well-being (see page 432). Various surveys conducted over the past decade indicate that young people in LMICs value the unrestricted access to information and the privacy that the Internet affords, and prefer digital media over other delivery channels for health information[9]. Several investigators have already tried to exploit these preferences. In a recent randomized trial in Ghana, for instance, text messages improved girls' knowledge about reproductive health[10]. Evidence on the effectiveness of digital health information in changing behaviours is needed, however.

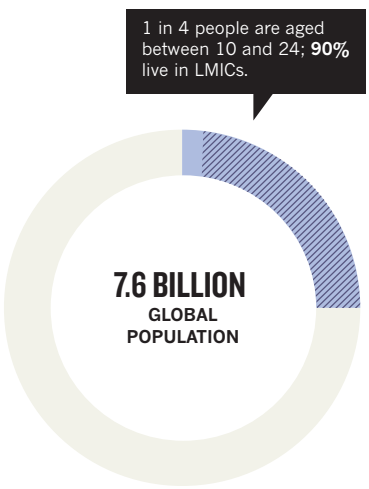
Importantly, researchers, policymakers, practitioners and others must deploy a bottom-up approach in which adolescents are treated as partners in improving their health and well-being, not just the recipients of change. Likewise, the design and implementation of interventions must draw on evidence of what works, for whom and why.

This means that investigators must work in communities and across all settings — not just in hospitals and clinics — to understand how young people spend their time, how they access resources, who controls their earnings, and so on. Researchers must also work out how health measures can be integrated into schools or mobile-phone applications, rather than delivered solely through medical facilities. This is not simply about making schools a hub for health education and services; greater flexibility in timetables or the provision of catch-up classes and vocational measures, for example, could encourage more working adolescents to stay in school for longer.

Finally, international organizations, such as the World Health Organization, the International Labour Organization and the United Nations Children's Fund, should direct much greater effort towards economic analyses and surveys of occupational and environmental hazards, exposures to social risks and the mental health of young people in LMICs.

The second decade of life presents an extraordinary opportunity to improve people's health over the long term. And threats to human health and well-being are becoming more acute in our rapidly urbanizing, industrializing world, with rising environmental risks and the potential for reductions in youth employment opportunities as a result of expanding technologies.

Only with a realistic understanding of the lives of young people in LMICs, grounded in the social, economic and political contexts of their everyday lives, do we stand a chance of shaping their futures for the better. ■



SOURCE: A. KÅGESTEN *ET AL. PLOS ONE* **11,** E0157805 (2016)

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