Challenges in global surveillance of physical activity

The changing world is changing people, with movement being one of the clearest indicators of this change. The electronic revolution has fundamentally transformed people’s movement patterns by changing where and how they live, learn, work, play, and travel, progressively isolating them indoors (eg, houses, schools, workplaces, and vehicles), most often in chairs.1 People sleep less, sit more, walk less frequently, drive more regularly, and do less physical activity than they used to.2,3 They are increasingly moving from one country to another, from rural to urban areas, from outdoors to indoors, from standing to sitting, from walking to driving, and from active play to digital play and, at a macroscopic level, countries are moving through epidemiological and economic transitions at varying rates. These changes in the human exposome fundamentally affect our movement behaviours, patterns, and contexts and could have profound effects on human health. These effects and how they vary spatially, temporally, or culturally are important, particularly since physical inactivity is the fourth leading risk factor for premature death worldwide, but remain poorly understood.1

In their study published in The Lancet Child & Adolescent Health, Regina Guthold and colleagues’ make a valiant effort to consolidate and present regional and global estimates of the prevalence of insufficient physical activity among adolescents as well as global, regional, and national trends from 2001 to 2016. Using pooled data from 298 school-based surveys from 146 countries, territories, and areas, including 1.6 million students aged 11–17 years, they show that 81.0% (95% uncertainty interval 77.8–87.7) of adolescents are insufficiently physically active, with noticeably fewer insufficiently active boys (77.6% [76.1–80.4]) than girls (84.7% [83.0–88.2]). Furthermore, a significant temporal decrease between 2001 and 2016 was observed for boys whereas there was no change for girls, resulting in a widening of an already important sex difference. Socioeconomic patterns and trends at the country and regional levels were not consistent or clear, although the prevalence of insufficient physical activity was higher in low-income countries (84.9% [82.6–88.2]) than in high-income countries (79.3% [77.2–87.5]), somewhat counter to intuition and other findings.4 These results are arguably the best available estimates of global, regional, and temporal trends in adolescent physical activity levels, showing that the majority of adolescents do not meet current physical activity guidelines and that more boys than girls are active.

Worldwide physical activity surveillance of adolescents is complex, susceptible to temporal and spatial drifts, and affected by many factors intervening at different times and with different intensities within and across countries. It is unknown whether brief, standardised questions about physical activity addressed to adolescents are equally valid across settings and countries and between sexes or whether the questions are interpreted in an equivalent way by each adolescent. Differences in these aspects might have affected Guthold and colleagues’ findings by introducing measurement biases (due to country-specific or cultural-specific variability) or sex biases. Guthold and colleagues used available time trend data as well as possible, but the data are tenuous for reasons identified by the authors themselves (eg, differences in the number of countries, composition of countries, age ranges, sex balance, and questions or criteria for meeting guidelines across time). Some of the findings in Guthold and colleagues’ Article5 do not support the Active Healthy Kids Global Alliance Global Matrix findings,4 which were based on a different surveillance synthesis approach and indicate that children and adolescents in low-income countries are more physically active than are those in high-income countries. This discord raises the question of whether either study, and if so which, is correct.

Despite unequivocal evidence of health benefits of physical activity and of the extraordinary population attributable risk associated with insufficient physical activity, global surveillance of physical activity has been superficial, irregular, incomplete, and fraught with limitations. Monitoring progress toward the global target of a 15% relative reduction in insufficient physical activity6 needs reliable estimates to be derived in the future, which relies on the global deployment of routine, robust, and rigorous surveillance methods. In addition to the inadequate surveillance of global physical activity among adolescents (as well as children and adults), the importance of movement behaviours across the whole day is poorly recognised at a global level, as
Sexual minority youth are at a disadvantage: what now?

Rebekah Amos and colleagues\(^1\) offer important perspectives on the population health needs of sexual minority adolescents in the UK. To our knowledge, their findings are among the first to present population-based estimates of mental health problems, adverse social environments, and negative health outcomes among sexual minority and heterosexual youth in the UK. This work offers considerable insight into how the field of sexual minority youth health can move forward in meaningful ways.

First, this study\(^1\) reiterates the importance of population-based data sources for identification of the health and social resource deficits experienced by sexual minority youth.\(^2\) The inclusion of sexual orientation measures in population-based data in the USA, for example, has led to a veritable explosion in the number of studies that estimate the degree to which sexual minority adolescents experience compromised health relative to their heterosexual peers. These data have been vital to inform policies, programmes, and practices that seek to address the unique health needs of sexual minority young people, albeit at a rate that does not match the urgency that these very real and pressing public health needs require.\(^3\) Unfortunately, outside select countries (eg, the USA and Australia) population-based investigations into the health of sexual minority youth have lagged.\(^4\) However, population health surveillance efforts are necessary for identification of national health priorities, which in turn will guide decisions about research and prevention efforts. The need to collect population-based data on sexual (and gender) minority youth is paramount and deserves continued attention and advocacy.

Second, Amos and colleagues\(^2\) do an admirable job of assessing the degree to which sexual minority adolescents show elevated risk for accumulated mental health problems, adverse social environments, and negative health outcomes. Their findings complicate

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I declare no competing interests.

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