Global status report on physical activity 2022

World Health Organization

Global status report on physical activity 2022

World Health Organization

Global status report on physical activity 2022

ISBN 978-92-4-005915-3 (electronic version)
ISBN 978-92-4-005916-0 (print version)

Suggested citation. Global status report on physical activity 2022. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

Sales, rights and licensing. To purchase WHO publications, see http://apps.who.int/bookorders. To submit requests for commercial use and queries on rights and licensing, see https://www.who.int/copyright.

Contents

Foreword

Supporting people to be more active through walking, cycling, sport, and other physical activity has huge benefits not only for the physical and mental health of individuals, but also for societies, environments, and economies.

However, this first *Global status report on physical activity* shows that progress towards the Global action plan on physical activity target of a 15% relative reduction in physical inactivity by 2030 is slow and unequal. The COVID-19 pandemic set things back even further.

This must change – and change fast.

That is why it is important to implement evidence-based, effective policies, as outlined in WHO's Global Action Plan on Physical Activity. For example, policies to encourage walking and cycling can reduce air and noise pollution and mitigate climate change. And increased participation in sport can help bring communities together and build valuable life skills.

These actions can also help reduce the financial and systemic burden on national health systems through prevention and management of noncommunicable diseases.

This report proposes five recommendations for enhanced leadership, practical guidance, engaging communities, better data, and sustainable funding. To accelerate progress and achieve the physical activity targets for 2025 and 2030, all countries, especially low- and middle-income countries (who have the most to do and the least resources), will require varying levels of financial and technical support. WHO provides global guidance and tools to support regional and country capacity-building and to strengthen country implementation. More training is needed to develop skills and capabilities to deliver programmes and services.

Advocates and influencers have a vital role to play, as does engaging with local communities and policy makers at all levels across multiple sectors about the need for change and the potential gains for improved health and well-being, sustainable environments, and socioeconomic development.

Future global reports will track progress towards reaching the physical activity targets for 2030. In the meantime, WHO urges all countries to promote physical activity in primary health care plans and NCD policies, sustainable mobility plans and sport policies, as well as national COVID-19 response and recovery plans.

We hope countries and partners will use this report and its recommendations to build more active, healthier, and fairer societies for all.

Dr Tedros Adhanom Ghebreyesus
Director-General
World Health Organization

Acknowledgements

The *Global status report on physical activity 2022* benefited from the contributions of a number of WHO staff and collaborators.

Fiona Bull provided strategic direction and coordinated the writing of the report with contributions from May Cho, Daniel Friedman, Andreia Santos, and Juana Willumsen. Rüidger Krech provided oversight of the project.

Thanks to the technical units responsible for the original surveys that provided data and advice on data management and analysis, in particular Melanie Cowan and Kacem Iaych. Leanne Lester was responsible for data management and statistical analysis.

Thanks also to the WHO internal steering group: Faten Ben Abdelaziz, Melanie Cowan, Regina Guthold, Thiago Hérick De Sa, Ivan Ivanov, Lindsay Lee, Alana Officer, Karen Reyes Castro, Leanne Riley, Yuka Sumi, Nhan Tran, and Cherian Varghese.

The following WHO colleagues from regional offices provided inputs and feedback: Angela de Silva, Samar Elfeky, Fabio Gomes, Gyanendra Gongal, Wasiq Khan, Leo Nederveen, Binta Sako, Josaia Tiko, and Stephen Whiting.

WHO also wishes to thank the following external peer reviewers who provided expert feedback and suggestions: Toyyib Abdulkareem (NCD Alliance), Shifalika Goenka (Centre for Chronic Disease Control, Public Health Foundation, India), Goh J-Ing (Health Promotion Board, Singapore), Nanette Mutrie (Physical Activity for Health Research Centre, University of Edinburgh, United Kingdom), Kate Oldridge-Turner (World Cancer Research Fund), Matias Portela (Health Promotion, Department of Public Health, Ministry of Health, Chile), Maryam Selk Ghaffari (Sports Medicine Research Center, Tehran University of Medical Sciences, Iran (Islamic Republic of)).

Finally, WHO wishes to thank Germany, Japan, Norwegian Agency for Development Cooperation (NORAD) and DG for International Cooperation and Development (DEVCO), European Commission for their financial support for the development and publication of this report.

Executive summary

Regular physical activity promotes both mental and physical health. It is beneficial for people of all ages and abilities, and it is never too late to start being more active and less sedentary to improve health. Yet 81% of adolescents and 27.5% of adults currently do not meet WHO's recommended levels of physical activity and this affects not only individuals over their life span and also their families, but health services and society as a whole.

The COVID-19 pandemic revealed the vital importance of regular physical activity for both mental and physical health. It also, however, exposed inequities in access and opportunities for some communities to be physically active.

The COVID-19 pandemic has shown that physical activity must be a core component of public policy, with all countries ensuring provision of equitable physical activity opportunities for all.

To help countries increase levels of participation, WHO's Global Action Plan on Physical Activity 2018–2030 (GAPPA) provides a set of evidence-based policy recommendations to increase levels of participation across four strategic policy areas: active societies, active environments, active people and active systems. Effectively implemented by all countries, GAPPA will accelerate action towards meeting the global target of a 15% relative reduction in population levels of physical inactivity by 2030.

The cost of physical inactivity

The economic burden of physical inactivity is large. Globally, almost 500 million (499 208 million) new cases of preventable NCDs will occur between 2020 and 2030, incurring treatment costs of just over US$ 300 billion (INT$ 524 billion) or around US$ 27 billion (INT$ 48 billion) annually if there is no change in the current prevalence of physical inactivity. Nearly half of these new cases of NCDs (47%) will result from hypertension, and 43% will result from depression. Three quarters of all cases will occur in lower- and upper-middle-income countries. The largest economic cost is set to occur among high-income countries, which will account for 70% of health-care expenditure on treating illness resulting from physical inactivity.

The purpose of this report

This first *Global status report on physical activity* presents a synthesis of global progress on implementation of GAPPA recommendations. The report was requested by Member States under World Health Assembly Resolution 71.6 and describes the current situation – and where possible, recent trends – using the best available data and set of 29 indicators. Data for this report are drawn from two primary sources: the WHO Noncommunicable Disease Country Capacity Survey (2019 and 2022) and the *WHO Global status report on road safety* (2018). These data also offer the first insight into the impact of COVID-19 on countries' capacity for, and progress towards, implementing policies related to physical activity.

This report is for everyone involved in promoting and delivering national and subnational policies that provide the environments and programmes that drive participation in physical activity. It provides five recommended actions to promote physical activity as the world continues to respond to, and recover from, the COVID-19 pandemic, and to accelerate action to achieve the SDGs – particularly SDG 3 on health and well-being.

Main findings

There are few areas in public health – such as physical activity - where evidence on required action is so convincing, cost effective and practical. While some countries have started to implement different recommended GAPPA policy actions, overall global implementation since its adoption 5 years ago has been **slow and uneven,** resulting in little progress towards increasing population levels of physical activity. A consequence of this "inaction" is that already stretched health systems are burdened with preventable disease today and even more so in the future, and communities fail to benefit from the wider social, environmental and economic benefits associated with more people being more active.

Only two GAPPA policy indicators show implementation by over three quarters of all countries: conducting national surveillance of physical activity (among adults, and among children and adolescents); and the presence of national road safety design standards for safe crossings for pedestrians and cyclists. For nine GAPPA policy indicators, between a half to two thirds of countries report implementation. For the remaining 18 GAPPA policy indicators, less than half of countries report implementation in 2021 (see Table 1). Uneven implementation across WHO regions and country-income level results in **inequities** in people's access to opportunities and environments that support being regularly and safely active.

This first global assessment of policy actions to increase physical activity reveals **significant gaps in policy implementation**. These gaps are demonstrated by the overall modest level of GAPPA-recommended policy development and the notable gap between the presence of a policy and its operational status. In the majority of countries, policy development and implementation must be strengthened and accelerated if global targets on physical activity are to be met.

Gaps in policy are a result of multiple interconnected factors that fall into five areas: **political, technical, financial, collaboration and capacity building, and data systems** – all of which can either limit or accelerate policy progress. When positively aligned, these "policy enabling" factors combine to set and advance the national agenda. Conversely, the absence of one or more of these factors can reduce, divert and even reverse policy progress. As the national policy cycle for physical activity is not "one size fits all", all countries need to identify and strengthen the policy enablers to drive a positive and virtuous cycle of collective action to enable more physical activity.

GAPPA policy implementation: results by policy area

GAPPA policy area – active systems:

The number of countries reporting a national NCD policy (including physical activity, or a standalone physical activity policy) has increased since 2017 and 2019. However, this progress is tempered by the 28% of countries that report these policies are not being implemented in 2021 (i.e. reported as not "operational"). These results, combined with evidence that less than 50% of countries report having a national NCD coordinating mechanism to support multisectoral collaboration, are of major concern and contribute to explaining the low level of policy implementation on physical activity seen across the indicators presented in this report.

GAPPA policy area – active societies:

Just over half of countries report conducting at least one communication campaign to raise awareness and knowledge around physical activity in the past two years – a figure that has declined since 2019. About half of countries implemented mass-participation events to engage people in physical activity through free, community-wide events. This figure has also declined since 2019, likely due to the COVID-19 pandemic.

GAPPA policy area – active environments:

Global progress in policy action to provide environments that support physical activity is varied. National design standards for road safety features that protect people when walking and cycling are present in three quarters (76%) of countries for safe road crossings, and two thirds (66%) of countries for design for the safe management of speed. Only half of countries report national standards requiring separated infrastructure for walking and cycling, and less than half report the presence of all three of these national road safety design standards. Furthermore, while legislation on speed limits and drink–driving is present in most countries, only a quarter (26%) of these countries' legislation meets WHO best-practice standards. Low levels of best-practice legislation combined with an absence of road design standards presents increased risks to people walking and cycling in these local communities.

GAPPA policy area – active people:

Implementation of policies that ensure opportunities for physical activity in key settings where people live, work and play, and targeted programmes to support key population groups, is reported by less than half of all countries. Notably, less than 40% of countries report having national protocols for the management of physical activity in primary health care, despite strong evidence of the protective benefits of regular physical activity against leading NCDs and for mental health. Although this indicator shows a modest increase since 2019, the slow level of implementation of this recognized "best buy" policy is of particular concern given the high number of people living with, or at risk of, NCDs.

TABLE 1

Summary of results by GAPPA policy action area

Key for colour coding	
●	Good progress > 75% of countries
●	Moderate progress 51–75% of countries
●	Poor progress 0–50% of countries
NA	No data available

Key for symbols	
^	Increase since 2019
=	No change since 2019
v	Decrease since 2019
NA	No data available

GAPPA POLICY ACTION AREA	% OF COUNTRIES	CHANGE SINCE 2019
AREA 1: CHANGING KNOWLEDGE AND MINDSETS		
National communication campaign on physical activity	52%	v
National mass-participation events	58%	v

GAPPA POLICY ACTION AREA	% OF COUNTRIES	CHANGE SINCE 2019
AREA 2: ENABLING ENVIRONMENTS		
National policy on walking and cycling	42%	NA
National policy on public transport	73%	NA
National road design standards for separated infrastructure for pedestrians and cyclists	53%	NA
National road design standards for safe crossings for pedestrians and cyclists	76%	NA
National road design standards for management of safe speed	64%	NA
National road design standards for *all three* road safety features	46%	NA
National road safety strategy	80%	NA
National road safety strategy that is fully funded	18%	NA
National road safety assessment of *all* new roads	48%	NA
National assessment of road safety of existing roads for all road users	64%	NA
National legislation of speed limits meeting best practice	26%	NA
National legislation on drink–driving meeting best practice	26%	NA
National legislation on distracted driving due to use of mobile phone	89%	NA
National legislation on distracted driving due to use of drugs	87%	NA
National policy on public open space	NA	NA

GAPPA POLICY ACTION AREA	% OF COUNTRIES	CHANGE SINCE 2019
AREA 3: PROVIDING OPPORTUNITIES AND PROGRAMMES FOR PHYSICAL ACTIVITY		
National protocols on the management of physical inactivity in primary health care	40%	↑
Promotion of physical activity in childcare settings	30%	NA
Promotion of physical activity in the workplace initiatives	36%	NA
Promotion of physical activity through community-based and sports initiatives	47%	NA
Promotion of physical activity in public open spaces	42%	NA
Promotion of walking and cycling	40%	NA
Promotion of physical activity as part of active ageing	40%	NA
National mobile health (mHealth) initiatives	37%	↑
Provision of quality physical education in schools	NA	NA
Promotion of physical activity for people living with disability	NA	NA

GAPPA POLICY ACTION AREA	% OF COUNTRIES	CHANGE SINCE 2019
AREA 4: NATIONAL POLICY FRAMEWORKS AND GOVERNANCE		
National NCD policy including physical activity	86%	NA
National NCD policy including physical activity that is operational	66%	↓
National physical activity policy	47%	NA
National physical activity policy that is operational	39%	=
Either operational national NCD policy including physical activity or a standalone operational physical activity policy	72%	↓
National coordination mechanism for NCDs	46%	=
National guidelines on physical activity for *any* age group	46%	↑
National guidelines on physical activity for *all* age groups	30%	↑
National physical activity targets	53%	↓
National surveillance on physical activity in adults	92%	↑
National surveillance on physical activity in youth	75%	↑
National surveillance on physical activity in children under the age of 5 years	29%	↑

Strengthening data for global and national GAPPA monitoring

Monitoring GAPPA implementation, outcomes, and impact will help evidence-based decision-making and country and global progress. This report presents results based on the 29 policy implementation indicators identified in the GAPPA monitoring framework. While global data exist to monitor the presence of national policies, strategies and action plans covering NCDs, physical activity, walking and cycling, public transport and road safety, there are clear data gaps. These include a lack of detail such as on the policy content, and on policy reach and enforcement.

At least two improvements are needed for future GAPPA monitoring. First, there is a need to develop additional indicators to ensure full coverage of all GAPPA policy recommendations. Second, there is a need to review and strengthen existing data collected for those indicators currently identified. To address some of the identified gaps, new data collection systems and instruments may be needed. It is possible that conducting a periodic global survey to assess national progress on GAPPA implementation may be required. This approach is used for other NCD risk factors (for example tobacco use and unhealthy diet) and the applicability and feasibility to do the same for physical activity should be explored.

Gaps were also identified in current global and national data systems to track levels of physical activity over time, across the life-course, and in key subpopulations. These include the absence of national surveillance of physical activity among people living with disability, as well as among children aged 6–9 years and children under the age of 5 years. In addition, there are no global data on sedentary behaviours and key domains of physical activity such as sport and active transport (walking and cycling). These deficiencies in global and national surveillance systems must be addressed. Multiple government departments can benefit from coherent and consistent data on trends in specific physical activity domains, and such data must be collected and harmonized to maximize use and efficiency.

Given the potential advantages of wearable and mobile devices to support tracking of physical activity, global consensus is needed on the technical tools and protocols for (as well as action to mitigate the financial barriers to) their use in national and global monitoring systems. Regular updates on global levels of physical activity are needed to report on progress towards the primary GAPPA outcome of increasing physical activity by 15% by 2030.

As GAPPA called for a multisectoral, whole-of-system policy response, monitoring GAPPA implementation and impact also requires a whole-of-system approach. There is an urgent need to strengthen the methods and tools to capture the total health, social, and economic costs and returns of increasing physical activity. These data are vital to ensure and reinforce the engagement of all relevant sectors, not just sport and health, and include strengthening the use of impact assessment tools, particularly in transport and urban planning decision-making.

The way forward: five recommendations

Accelerating physical activity policy implementation is vital to achieve targets set for 2030. It will require identifying opportunities across government and mitigating policy constraints within each country. To assist countries, five actions aimed at closing the policy-implementation gap are recommended.

1. **Strengthen whole-of-government ownership and political leadership**

- Establish and reinforce leadership on physical activity within and across all relevant government departments and at all levels.
- Invest in advocacy for policy action on physical activity.
- Increase awareness of the crosscutting contributions of physical activity policy to national development and to multiple global priorities as set out in the SDGs.

2. **Integrate physical activity into relevant policies and support policy implementation with practical tools and guidance**

- Review relevant national policies as well as regulations and standards to identify and strengthen the inclusion of physical activity, where relevant, and ensure policy coherence and accountability.

- Develop and disseminate policy implementation tools and guidance, tailored to culture and context, combined with workforce training.

3. **Strengthen partnerships, engage communities and build capacity in people**

- Ensure there is an appropriate national coordinating mechanism for physical activity to strengthen cross-government, multi-stakeholder collaboration and strengthen policy implementation.

- Effectively engage nongovernmental actors and the community to ensure policy and programmes are relevant and sustainable in local communities, with a priority focus on increasing opportunities for those who are least active, including people living with disabilities, older adults and young people.

4. **Reinforce data systems, monitoring, and knowledge translation**

- Strengthen national and subnational (including city-level) monitoring and information systems to track policy progress and provide governments and stakeholders at all levels with information that can inform and drive the policy implementation cycle.

- Invest in and strengthen research capacity and scale knowledge-translation through partnerships between government and nongovernmental actors to design and evaluate policy implementation.

5. **Secure sustainable funding and align with national policy commitments**

- Review current national and subnational government funding allocation to policies that aim to increase physical activity and, where needed, revise future budget distributions to strengthen alignment of national budgets with policy commitments in all relevant ministries.

- Explore and test innovative financing mechanisms to increase funding sources to support physical activity policy actions and programmes, particularly within national COVID-19 recovery plans and national development agendas.

Conclusion

This report serves as a clarion call for stronger collective action in all countries to close the gap in policy implementation, and to advocate for accelerated political action. As the world responds to the impact of the COVID-19 pandemic on physical and mental health, promoting physical activity can save lives, improve health and support stronger, more resilient health systems and communities.

1. Introduction

Regular physical activity promotes and protects both mental and physical health. It is beneficial for people of all ages and abilities, and it is never too late to start benefiting from being more active. Yet more than one in four adults and more than 80% of adolescents do not meet WHO's recommended levels of physical activity for optimum health. Physical inactivity contributes not only to missed opportunities for children and adults to have better health, but also to the increasing burden of morbidity and mortality that results from noncommunicable diseases (NCDs). Widespread physical inactivity is also a major economic burden to national health systems, and to the economy worldwide.

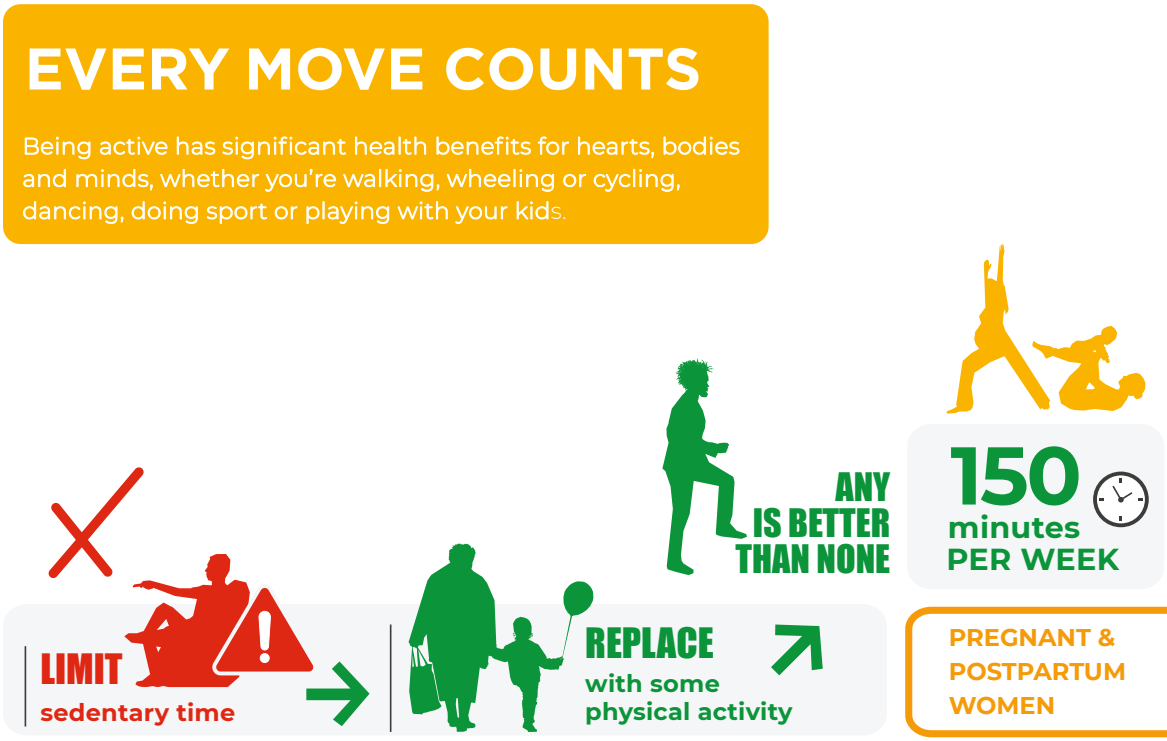
WHO recognizes the promotion of physical activity as a public health priority and in 2018 launched the Global Action Plan on Physical Activity 2018–2030 (GAPPA) *(1)*. GAPPA raises awareness of the need for accelerated whole-of-government efforts around the world to achieve the global target of a 15% relative reduction in the prevalence of physical inactivity by 2030.

GAPPA provides countries with a set of evidence-based policy recommendations that, if collectively implemented, can increase population levels of physical activity. GAPPA outlines the principles for effective implementation of the recommendations and encourages a systems approach to overcome the multiple barriers to being physically active. Adopting a systems approach can help governments maximize the opportunities offered when the goals of different policies intersect, and the opportunities offered by working in partnership with stakeholders across multiple sectors.

This *Global status report on physical activity* is WHO's first dedicated global assessment of countries' progress in implementing GAPPA policy recommendations. Its findings reinforce the need and urgency to position physical activity as a shared, whole-of-government priority, and the need for strengthening coordination and partnership between government and nongovernmental organizations (NGOs) to promote physical activity. Given the health and economic impact of COVID-19 worldwide, this status report is both a timely situation assessment and a call for accelerated action.

FIGURE 1

Summary of recommended levels of physical activity



Source: *(2)*

1.1 Physical activity and good health and well-being

Regular physical activity is a key protective factor for the prevention and management of NCDs – indeed, those who meet recommended levels of physical activity have a 20–30% reduced risk of premature death *(2)*. About 7–8% of all cases of cardiovascular disease, depression and dementia, and about 5% of type-2 diabetes cases, could be prevented if people were more active. These preventable NCDs have an impact not only on individuals and their families, but also on health services and society as a whole.

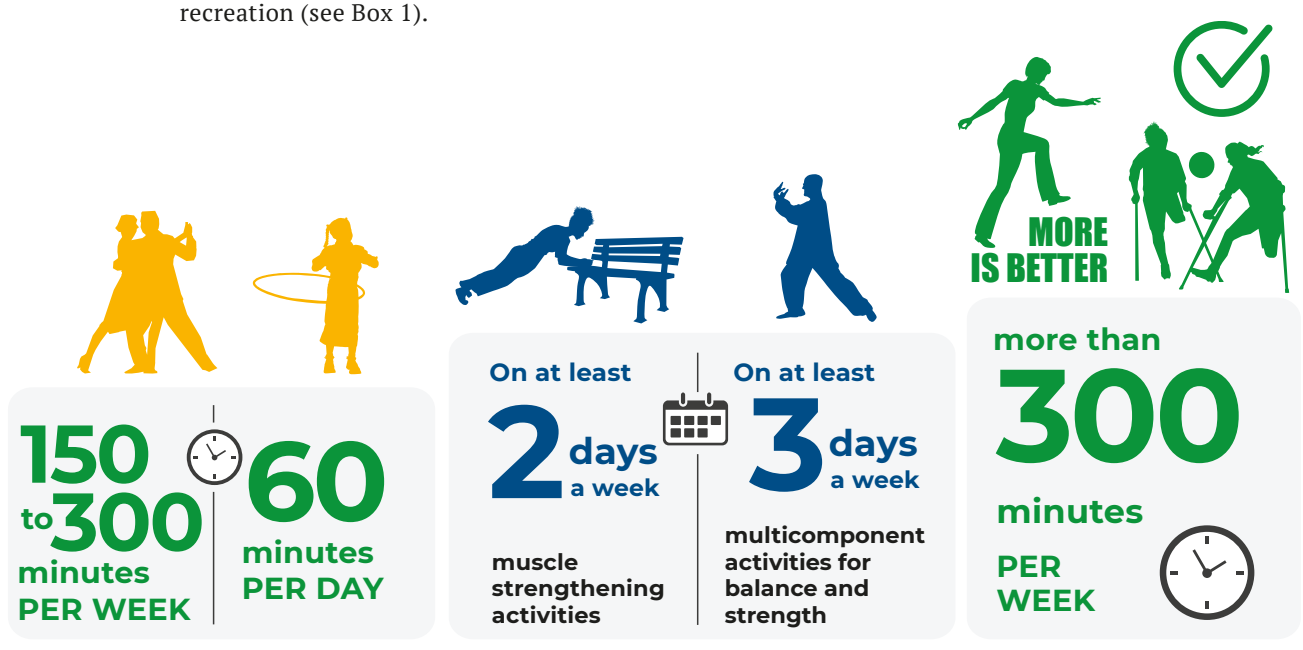
Physical activity also benefits mental health, including prevention of cognitive decline and symptoms of depression and anxiety, and improves children's educational attainment. It can also contribute to the maintenance of healthy weight and general well-being.

Physical activity can be undertaken in a variety of ways, such as walking, cycling (for the purposes of this report, the term cycling includes other forms of personal mobility, such as the use of scooters or wheelchairs) and sport or active recreation (see Box 1).

Meeting the recommended levels of physical activity, including among pregnant and postpartum women, and among people living with chronic conditions or disability (see Fig. 1), brings significant health benefits and can:

- prevent and help manage coronary heart disease, hypertension, and type-2 diabetes;
- reduce the risk of developing several cancers (including breast and colon cancer);
- reduce the symptoms of depression and anxiety;
- enhance brain health, including cognitive function and academic performance;
- strengthen muscles and bones;
- help prevent falls among older adults.

Enabling more people to be more active not only benefits population health and well-being, it also brings societal, environmental and economic co-benefits. For example, walking and cycling can reduce air and noise pollution and contribute to healthy environments, while increased participation in sport can help bring communities together and build valuable life skills in individuals.



Box 1. Defining physical activity

Physical activity is defined as any bodily movement produced by skeletal muscles that requires energy expenditure *(3)* and can be done at a variety of intensities, and accumulated through work, domestic chores, transportation or during leisure time, or when participating in sport, walking, cycling, active recreation, and active play.

What is physical inactivity?
Physical inactivity is defined as doing insufficient physical activity to meet current physical activity recommendations.

What is sedentary behaviour?
Sedentary behaviour is defined as any waking behaviour while in a sitting, reclining or lying posture with low energy expenditure *(4)*.

See the glossary for further information.

1.2 The impact of COVID-19 on physical activity

The COVID-19 pandemic revealed the vital importance of regular physical activity for both mental and physical health. Walking and cycling became essential forms of exercise, and transport for short trips. Access to public open spaces was essential and provided opportunities to be active outdoors when sport and exercise facilities were closed. These factors were critical in helping people manage stress and maintain physical health through times of national constraints and movement restrictions in response to COVID-19.

However, the pandemic also exposed and exacerbated existing inequities in access and opportunities for some communities to be physically active. School closures denied many children one of the opportunities they had to be active in communities where options for physical activity, sport and recreation are absent or inaccessible. The pandemic highlighted how many people live in communities where streets are poorly designed and unsafe for walking and cycling, and where there is limited access to public open spaces or affordable exercise or sport facilities that meet their needs. The response to the pandemic also revealed the importance of providing opportunities that enable everyone to be regularly active no matter their age, gender, income, ethnicity or physical ability. The experience of the pandemic has made it clear that physical activity can no longer be viewed as a "nice to have" component of public policy. It highlighted that it is time for all countries to make policies that promote physical activity as a "must have" and to ensure provision of equitable opportunities to be active for all *(5)*.

Physical activity provides social, environmental and economic benefits.

1.3 Aim of this report

The *Global status report on physical activity* presents the first dedicated synthesis of global progress on implementation of the recommended policy actions outlined in GAPPA across four strategic policy areas, namely active societies, active environments, active people and active systems. The report was requested by Member States under World Health Assembly Resolution 71.6 *(1)*, and presents a picture of the current situation and (where possible) recent trends using the best available data and an existing set of agreed global indicators.

As we approach the halfway mark for achieving Sustainable Development Goal (SDG) 3 on good health and well-being, including target 3.4 on reducing premature mortality resulting from NCDs, this report serves as a clarion call and advocacy tool to accelerate political action. It also serves as a resource to guide policy implementation by government actors, including ministries of health, sport, education, transport and finance; local authorities; and all other relevant stakeholders. The objectives of the report are to:

- summarize the health benefits of physical activity, current levels of physical activity, and current global recommendations;
- provide new global estimates on the economic cost of physical inactivity to health systems;
- present an assessment of current GAPPA policy implementation;
- highlight areas of progress and identify gaps in GAPPA implementation;
- identify data needs to strengthen future reporting on global progress on physical activity; and
- present five recommendations on how countries can accelerate progress on policy implementation to increase physical activity.

1.4 Who this report is for

Effective action to promote physical activity in all its forms across multiple settings requires all key sectors to work in partnership in order to strengthen their collective impact. This report is intended for all stakeholders involved in promoting and delivering national and subnational policies that provide the environments and programmes that drive physical activity participation. This includes:

- policy-makers and officials across national and subnational government sectors, including health, welfare, education, transport, urban planning, sport, tourism, and finance;
- NGOs, civil society organizations (CSOs) and social enterprises;
- the private sector and employers;
- sport and exercise organizations;
- academics and researchers;
- teachers and training institutions; and
- public health advocates on NCD prevention, mental health, healthy ageing, road safety, and health promotion.

These key advocates and decision-makers may work at global, regional, national, or community level to integrate action on physical activity into stronger health systems, as well as COVID-19 recovery plans, environmental and urban health mitigation agendas and national development plans.

2. Global burden of physical inactivity

Globally, there are inequalities in levels of physical activity between women and men, girls and boys, old and young, and the socioeconomically advantaged and disadvantaged – this is unfair and unjust.

2.1 The overall prevalence of physical inactivity

Latest global estimates show that 1.4 billion adults (27.5% of the world's adult population) do not meet the recommended level of physical activity to improve and protect their health *(6)*. Worryingly, this figure has remained largely unchanged *(7)*. Of particular concern are the wide differences in levels of physical activity between regions, countries, age groups and sexes. In adults in 2016, levels of inactivity in high-income countries (36.8%) were double those in low-income countries (16.2%) *(6)*. In most countries women are less active than men – particularly in the Eastern Mediterranean Region and the Region of the Americas (see Fig. 2).

Across all WHO regions, both women and men become less active as they get older, despite clear evidence that being active benefits older adults in relation to preventing falls, remaining independent, reducing isolation and maintaining social links to improve psychosocial health (see Fig. 2).

And despite their natural inclination for active play and recreation, by adolescence young people are far less active than might be expected. The most recent global data reveal that the majority (81%) of boys and girls aged 11–17 years spend less than one hour a day doing moderate- to vigorous-intensity physical activity; and more girls are inactive than boys in most countries (85% and 77.6% respectively) *(8)*. Where modest improvements in physical activity levels for adolescents have been achieved, these have been among boys rather than girls (see Fig. 3), further entrenching the sex differences in physical activity that persist throughout the life-course.

Alarmingly, if this trend continues, the global target of a 15% relative reduction between 2018 and 2030 will not be met for adults, as shown in Fig. 4. There is therefore an urgent need to scale and redouble efforts so that the full contribution of physical activity to health, well-being and the economy is realized.

FIGURE 2

Prevalence of adults aged 18+ years not meeting WHO physical activity guidelines, by WHO region, 2010–2016

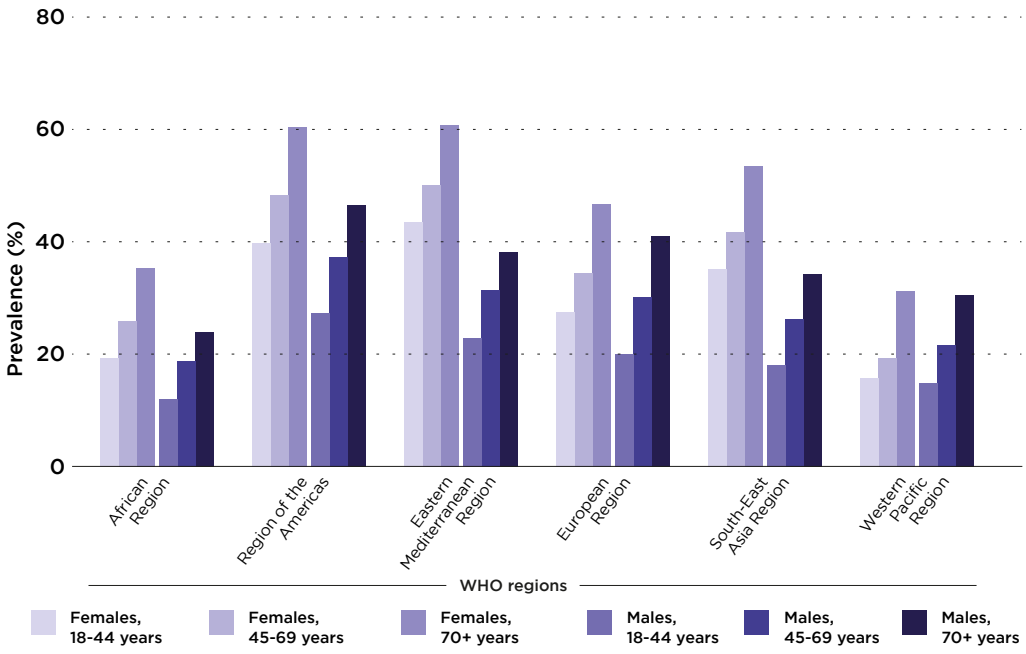


FIGURE 3

Prevalence of school children aged 11–17 years not meeting WHO physical activity guidelines, by WHO region, 2010 and 2016

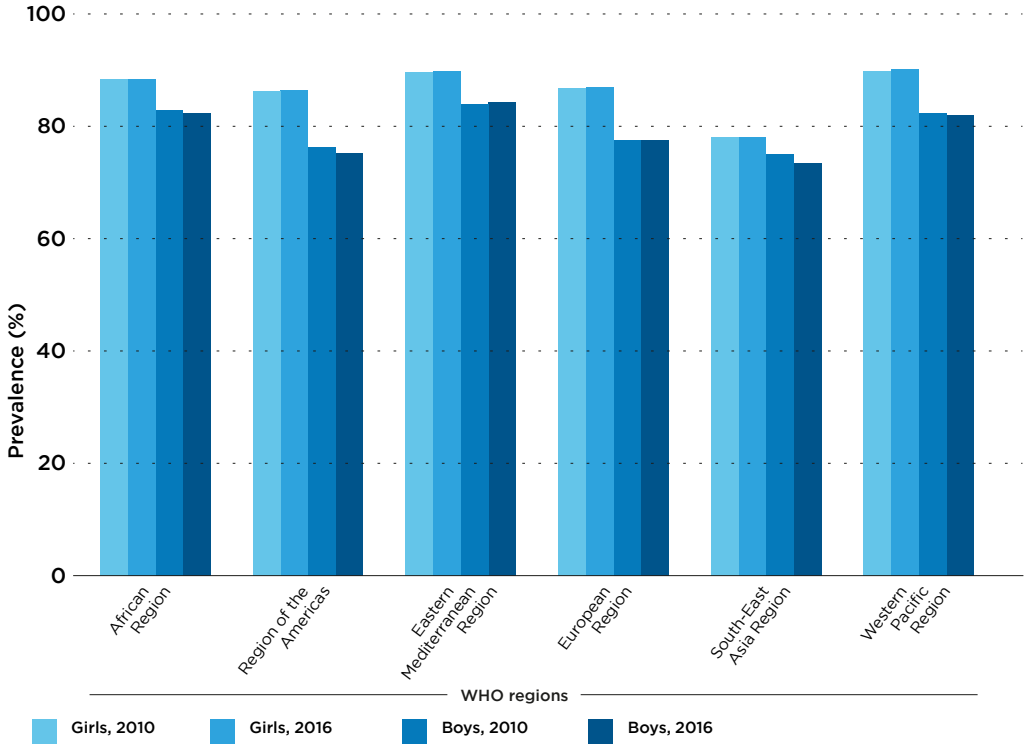
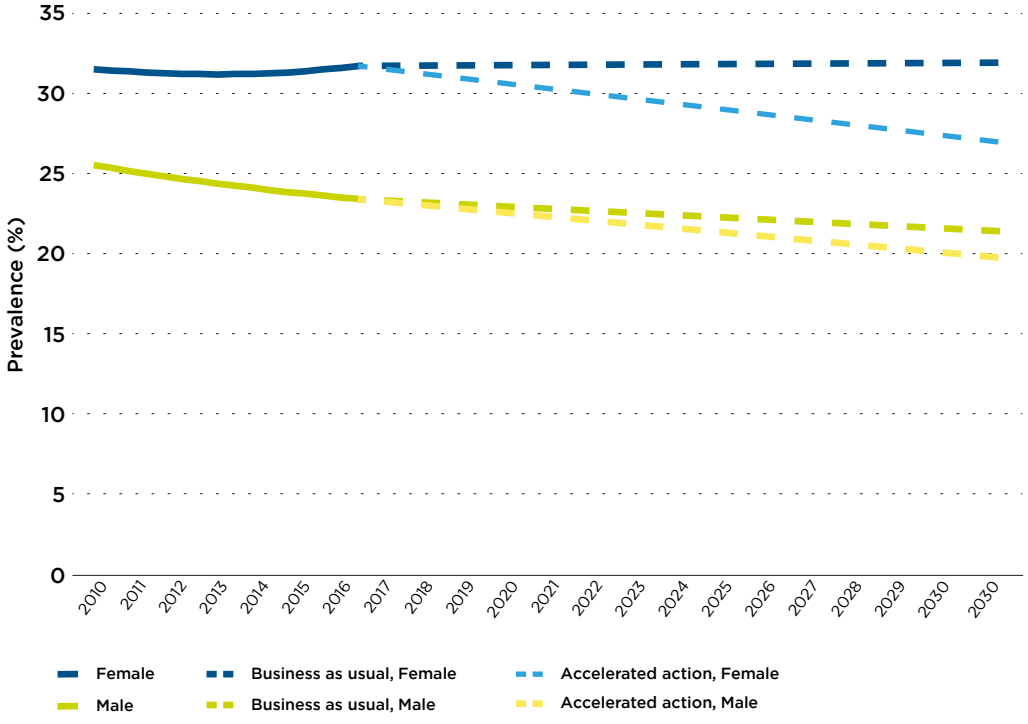


FIGURE 4

Two scenarios for future global physical activity trends – business as usual or accelerated action to achieve the global target for adults by 2030



2.2 The economic burden of physical inactivity

Physical inactivity is associated with a range of chronic diseases and premature deaths *(2)* that carry not just a human but also an economic cost. Estimating the economic burden of physical inactivity is important to inform policy and decide resource prioritization. Previous global estimates of the economic burden of physical inactivity, undertaken in 2016, showed a global cost in 2013 of INT$ 67.5 billion per year due to health care expenditure and productivity losses *(9)*.

2.2.1 Methods for estimating the burden

Using standard methods *(9, 10)* the directly attributable health care costs of physical inactivity to the health system were estimated using the best data available for 142 countries, representing 93.2% of the world's population. Direct costs were estimated for the period 2020–2030 for coronary heart disease, stroke, type-2 diabetes, hypertension, six cancers (breast, colon, endometrial, gastric, oesophageal, renal, and bladder), and, for the first time, two mental health outcomes, namely dementia and depression *(11)*.

National estimates of the prevalence of physical inactivity from countries in 2016 *(6)* were used to calculate population-attributable fractions (PAFs) associated with physical inactivity for each disease outcome. More detailed description of the methods are provided in Annex 1 *(11)*.

2.2.2 The cost of physical inactivity

The economic burden of physical inactivity is large. Globally, almost 500 million (499 208 million) new cases of preventable NCDs will occur between 2020–2030, incurring treatment costs of just over US$ 300 billion (INT$ 524 billion) or around US$ 27 billion (INT$ 48 billion) annually if there is no change in the current prevalence of physical inactivity.

The burden of new cases will largely fall on lower- and upper-middle-income countries, which are set to account for nearly three quarters – 74% – of estimated new cases of NCDs, with the Western Pacific Region predicted to be hardest hit (see Fig. 5) *(11)*.

Globally, nearly half of new NCD cases (47%) will result from hypertension, and 43% will result from depression. The new cases of these two diseases will account for 22% and 28% respectively of total direct health care costs. Meanwhile, 21% of costs will be incurred for the treatment of dementia, even though this only accounts for 3% of total preventable cases (see Fig. 6). This high cost is due to the nature of dementia management treatment, and the duration for which it is needed.

As might be expected, and similar to findings in 2016 *(9)*, the economic burden of physical inactivity is unequally distributed across regions and is disproportionate in relation to the disease burden. The largest economic cost is set to occur among high-income countries, which will account for 70% of expenditure on treatment for illness resulting from physical inactivity.

These estimates show that society is paying the price for not acting to reduce levels of physical inactivity. Moreover, these estimates are conservative. The inclusion of other important health outcomes, for example costs of treatment and management of preventable cases of falls and their associated injuries, would provide a comprehensive estimate of the impact of physical inactivity on health systems. In addition, if models were extended to include productivity losses due to morbidity and mortality, they would reveal the even greater economic costs associated with physical inactivity *(12)*.

FIGURE 5

Number and proportion of preventable new NCD cases attributed to physical inactivity, by country-income level, 2020–2030

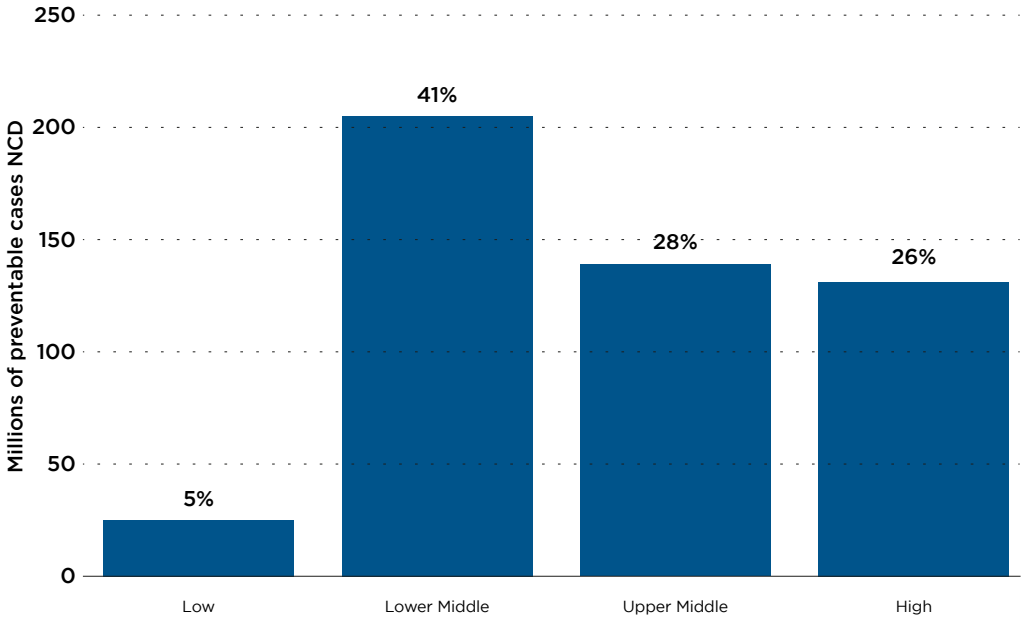
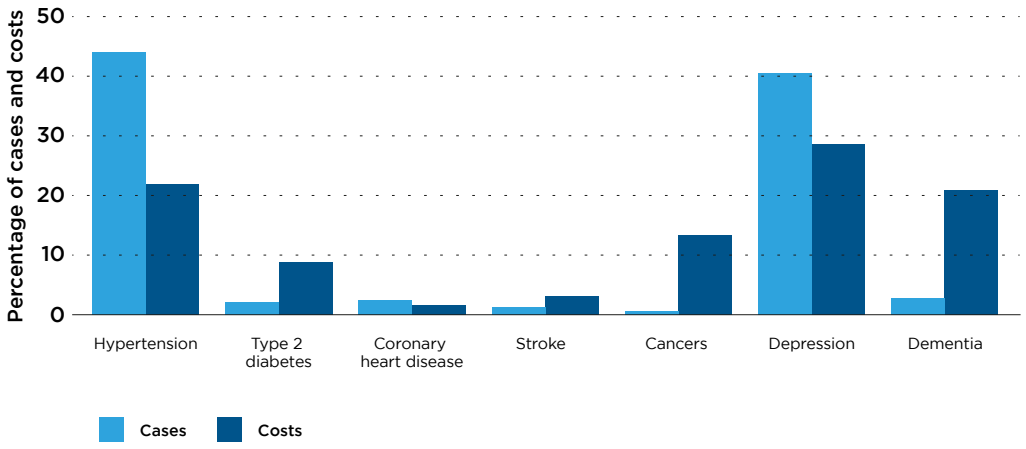


FIGURE 6

Distribution (%) of total number of cases and costs by type of NCD attributed to physical inactivity, 2020–2030



Globally, physical inactivity costs health systems US$ 27 billion a year and by 2030, US$ 300 billion.

3. Frameworks for action and monitoring progress

To increase levels of physical activity, GAPPA recommends four strategic policy areas: *active societies, active environments, active people and active systems*. Countries are encouraged to address all four policy areas using a whole-of-system approach, in which all relevant government departments provide leadership in their areas of influence and stakeholders are engaged from across multiple sectors, including health, sport, education, transport, and urban planning.

The four strategic GAPPA policy areas are:

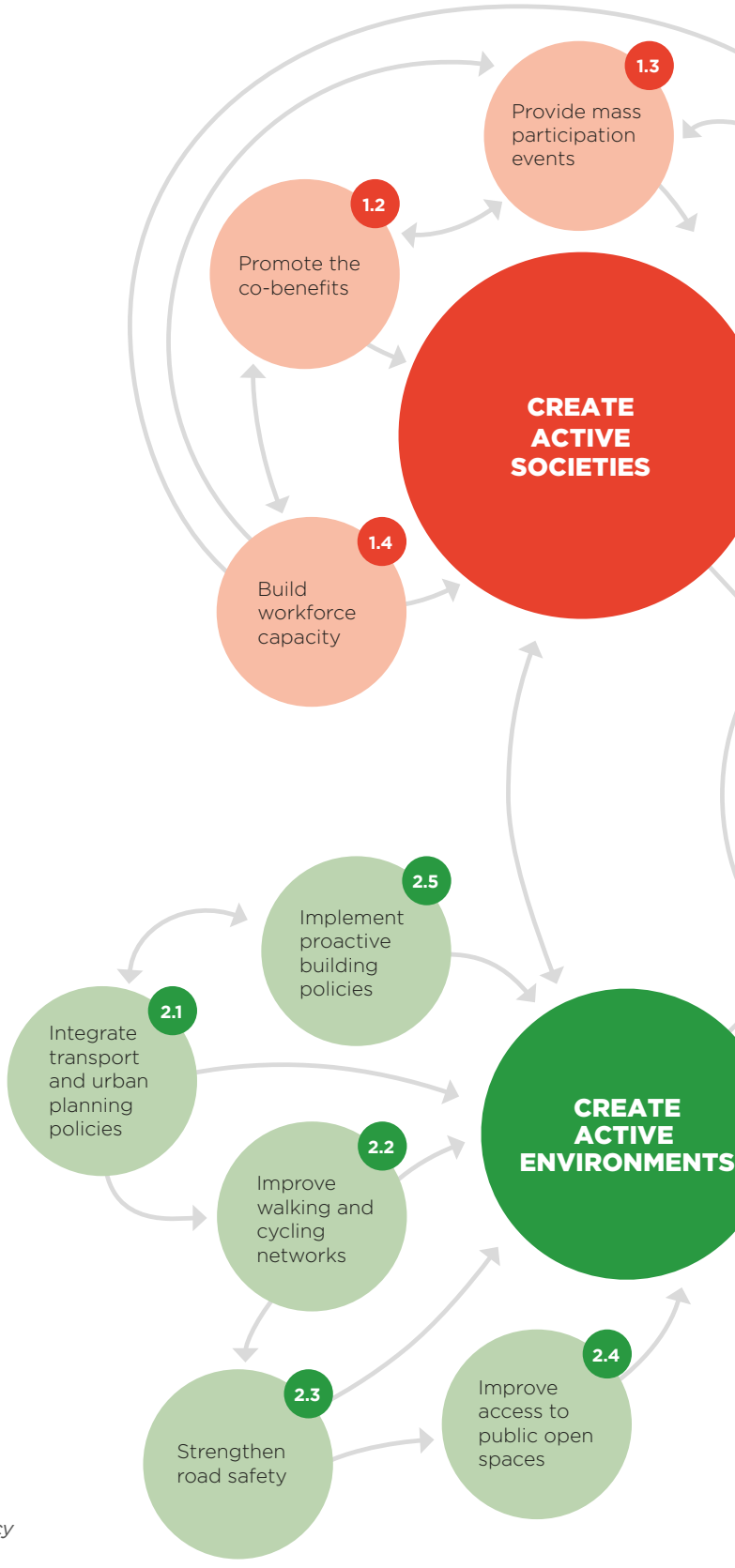
- **Active societies:**
  these require sustained, community-wide communication campaigns using diverse mass-media communication channels and inclusive messages and images (tailored to communities) to effectively reach large numbers of people to inform, motivate and engage them in more physical activity.

- **Active environments:**
  these require safe, affordable places and spaces that invite, support and enable people of all ages and abilities to be active in different ways. For example, green public open spaces provide places for sport and play, while separated cycle lanes invite more people to cycle for short trips.

- **Active people:**
  these require access to programmes, services and equipment that provide affordable, enjoyable and inclusive opportunities for all people to be active where they live, work and play, including in schools, at work, in parks and in other community venues.

- **Active systems:**
  these require governance and policy enablers that provide leadership, relevant policy, legislative and regulatory frameworks, multisectoral coordination and partnerships; a trained workforce; and information systems to support policy implementation and evaluation.

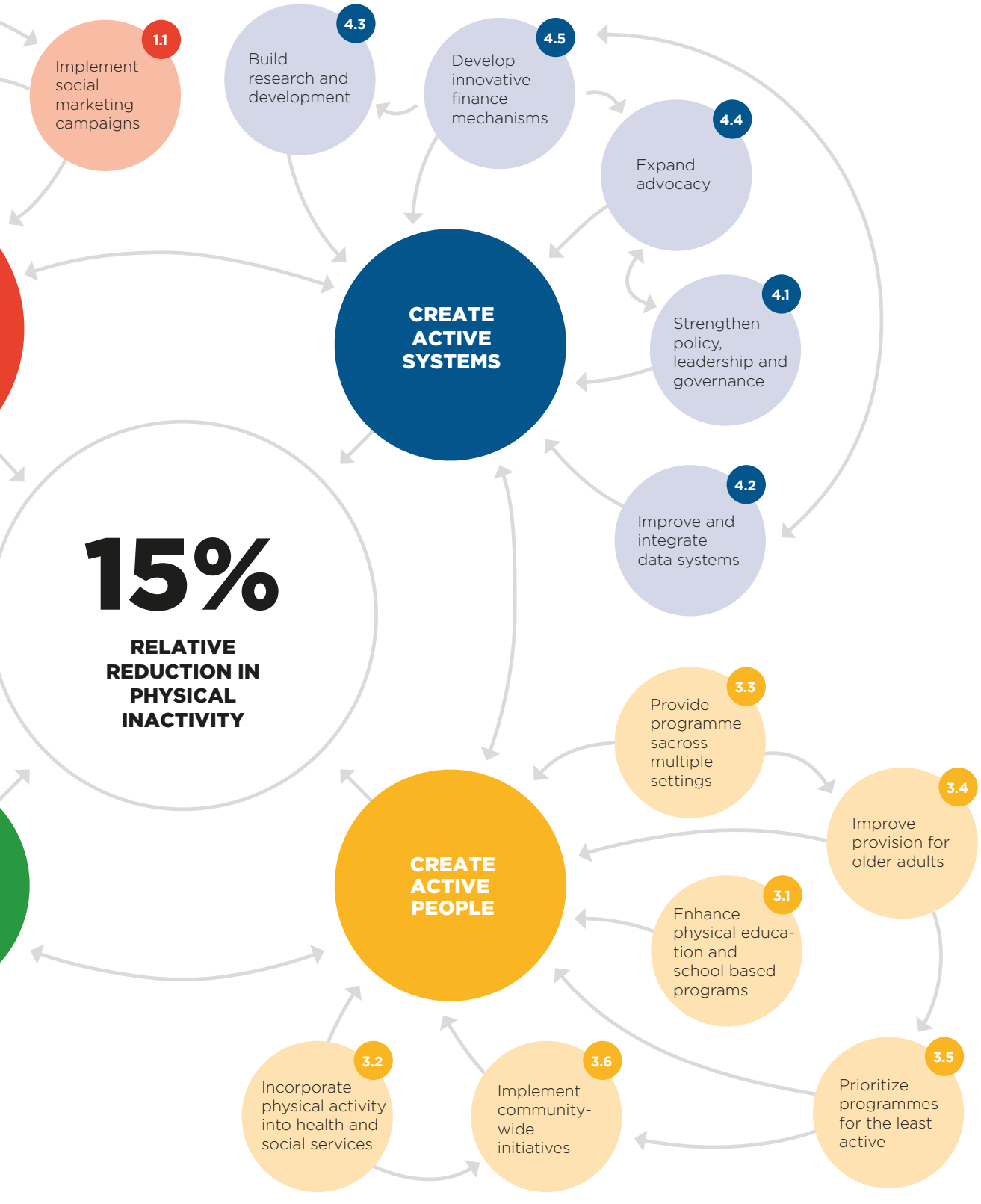
To achieve these four policy objectives, GAPPA sets out 20 policy actions (allocated among the four strategic policy areas) as an interconnected system, offering multiple opportunities for joined up and synergistic action (see Fig. 7 and Table 2).



Numbers shown refer to the recommended policy actions. For full details refer to the main report.

FIGURE 7

GAPPA policy recommendations as a systems approach to increasing physical activity



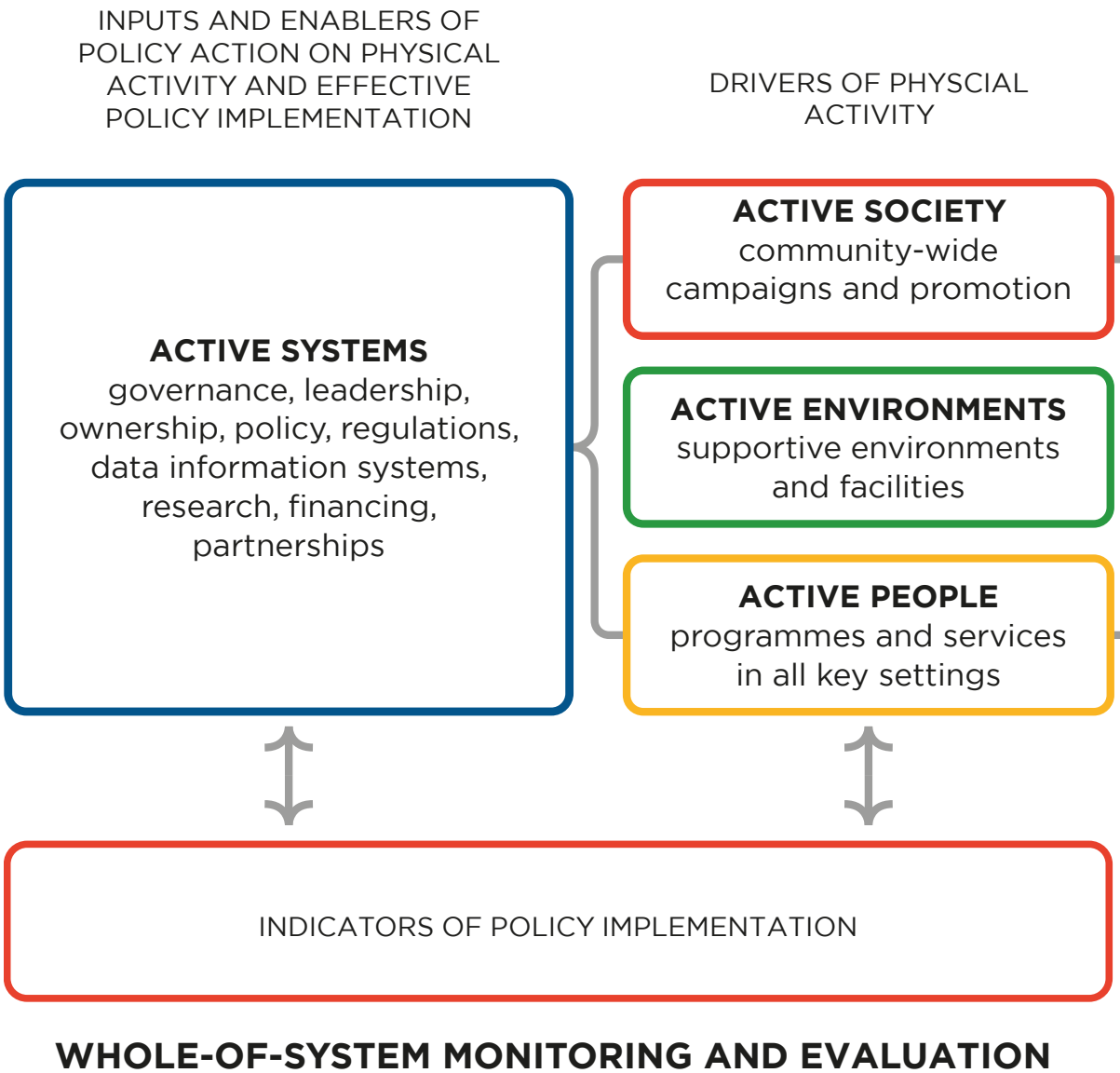
3.1 Framework for monitoring physical activity

Tracking countries' progress in implementing GAPPA-recommended policy actions is essential to provide an assessment of global progress towards achieving the global target of a 15% reduction in physical inactivity by 2030. Global monitoring is important because it provides standard, robust, and comparable data to inform decision-makers and support global, regional and national priority setting and resource allocation.

For this report, a GAPPA policy model and GAPPA monitoring framework have been developed (see Fig. 8 and Table 2). As shown in Fig. 8, an increased level of physical activity among people of all ages is set as the primary outcome of implementing GAPPA policy actions. The wider impacts of change

FIGURE 8

GAPPA policy model for increasing physical activity



in levels of physical activity are monitored through macro-level indicators of population health, the environment, and the economy. These macro-level indicators are set as the impact indicators of physical activity on society (see Fig. 8).

To fully understand whether recommended policies are being implemented at country level, a set of indicators to track policy implementation process is required. This set of indicators must capture the diversity of policy-related activities recommended to countries in GAPPA, many of which require implementation by sectors outside of health. Therefore, consistent with GAPPA itself, the monitoring framework of GAPPA should adopt a systems approach and incorporate indicators of policy implementation outside the health sector.

For this first global assessment, 29 indicators were identified that align with the recommended policy actions in each of the four GAPPA policy areas (see Table 2). The process of selecting indicators is outlined in section 3.1.1.

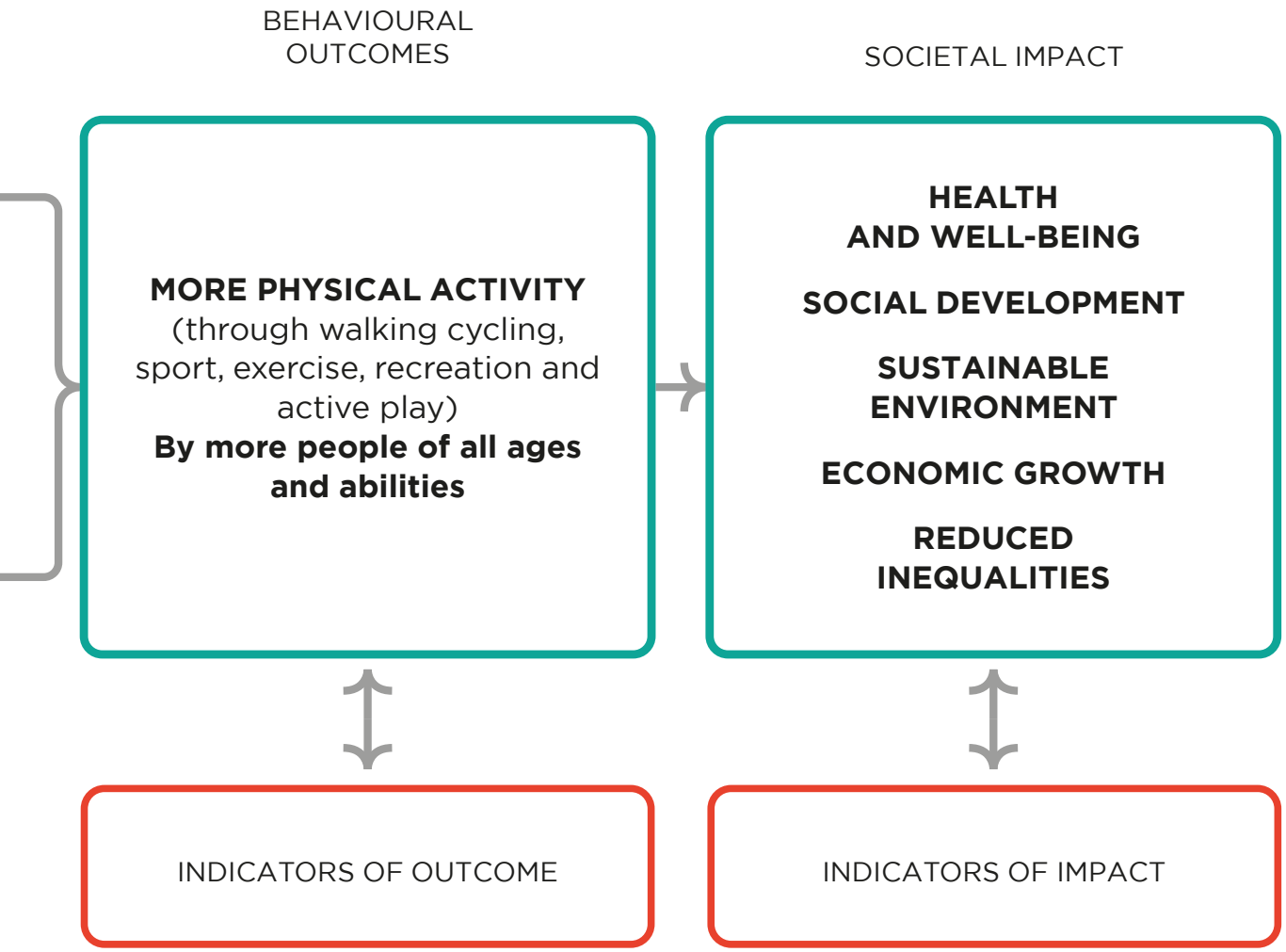


TABLE 2

Summary of indicators by GAPPA policy action area

	GAPPA POLICY ACTION	DATA AVAILABILITY	SHORT INDICATOR NAME	DATA SOURCE
	ACTIVE SOCIETIES			
1.1	Conduct best practice communication campaigns, linked with community-based programmes, aimed at promoting and supporting behaviour change on physical activity	Yes	National communication campaigns on physical activity: that link with community-based initiatives that are supported by environmental improvements that promote the co-benefits of physical activity	NCD Country Capacity Survey (CCS)
1.2	Conduct national and community-based campaigns linking to the social, economic, and environmental co-benefits of physical activity	Yes	National physical activity communication campaigns promoting co-benefits of physical activity	NCD CCS
1.3	Conduct free mass-participation physical activity events to encourage and celebrate participation	Yes	National mass-participation events on physical activity	NCD CCS
1.4	Strengthen workforce skills and knowledge through pre- and in-service training programmes across relevant disciplines both within and outside the health sector	No		

	GAPPA POLICY ACTION	DATA AVAILABILITY	SHORT INDICATOR NAME	DATA SOURCE
	ACTIVE ENVIRONMENTS			
2.1	Strengthen integration of urban (land use) planning and transport planning to provide compact and sustainable urban development and support non-motorized transport	Partial	National policy on public transport	Road Safety Survey
2.2	Improve provision of walking and cycling infrastructure and networks	Partial	National policy encouraging walking and cycling	Road Safety Survey
2.3	Increase access to safe public open spaces and sport/recreational facilities	No		Road Safety Survey

	GAPPA POLICY ACTION	DATA AVAILABILITY	SHORT INDICATOR NAME	DATA SOURCE
2.4	Improve road safety to increase pedestrian and cyclist safety		National road design standards for separated infrastructure	Road Safety Survey
			National road design standards for safe crossings	
			National road design standards for safe speed	
			National road safety strategy that is fully funded	
			Road safety assessment of new road infrastructure	
			Road safety assessment of existing road networks	
			Legislation on speed limits meeting best practice	
			Legislation on drink–driving meeting best practice	
			Legislation on distracted driving due to use of mobile phone	
			Legislation on distracted driving due to use of drugs	
2.5	Review building design and regulations to encourage activity in and around buildings such as in public buildings, schools and educational facilities, health care settings and workplaces	No		

	GAPPA POLICY ACTION	DATA AVAILABILITY	SHORT INDICATOR NAME	DATA SOURCE
	ACTIVE PEOPLE			
3.1	Implement a whole-of-school approach to ensure quality physical education and physical activity opportunities	No		
3.2	Integrate screening and promotion of physical activity in primary and secondary health care services	Yes	National protocols on the primary health care management of physical inactivity	NCD CCS
3.3	Implement initiatives across public open spaces and other settings to engage people of all ages and abilities to do regular physical activity, prioritizing the least active and disadvantaged communities	Yes	Policy promoting physical activity in child care	NCD CCS
			Policy promoting physical activity in the workplace	
			Policy promoting physical activity through community-based sport	
			Policy promoting physical activity in public open spaces	
			Policy promoting walking and cycling	
			National initiatives to deliver health care via mobile devices (mHealth)	

	GAPPA POLICY ACTION	DATA AVAILABILITY	SHORT INDICATOR NAME	DATA SOURCE
3.4	Strengthen programmes and services aimed at older adults	Yes	Policy promoting physical activity for older adults	NCD CCS
3.5	Increase the opportunities for physical activity in the least-active groups, such as girls, women, older adults and vulnerable or marginalized populations	No		
3.6	Implement whole-of-community (e.g. healthy city) programmes that include promotion of physical activity	No		

	GAPPA POLICY ACTION	DATA AVAILABILITY	SHORT INDICATOR NAME	DATA SOURCE
	ACTIVE SYSTEMS			
4.1	Strengthen national policy, guidelines, leadership, and governance	Yes	National NCDs policy including physical activity	NCD CCS
			National physical activity policy, strategy or action plan	
			National guidelines on physical activity	
			National physical activity targets	
			National coordination mechanism for NCDs	
4.2	Ensure strong data and information systems relevant to physical activity to support effective coordinated policy implementation and evaluation	Yes	National surveillance on physical activity	NCD CCS
4.3	Support research and development, including the use of digital technologies, to promote physical activity	No		
4.4	Strengthen advocacy on physical activity	No		
4.5	Strengthen financing mechanisms to secure sustained implementation of national and subnational action	No		

3.1.1 Methods and indicator selection

To minimize the burden on countries of new data collection and reporting requirements, and to ensure alignment with other relevant global monitoring frameworks, each GAPPA policy was mapped against identified existing global monitoring indicators and their data sources *(13, 14)* across key related areas, such as NCDs, road safety, urban and environmental health, healthy ageing, adolescent and school health, and nutrition (see Table 2). Monitoring frameworks used at WHO regional level *(15, 16)* were reviewed, as well as similar frameworks used by CSOs (see https://new.globalphysicalactivityobservatory.com/, and https://www.activehealthykids.org/).

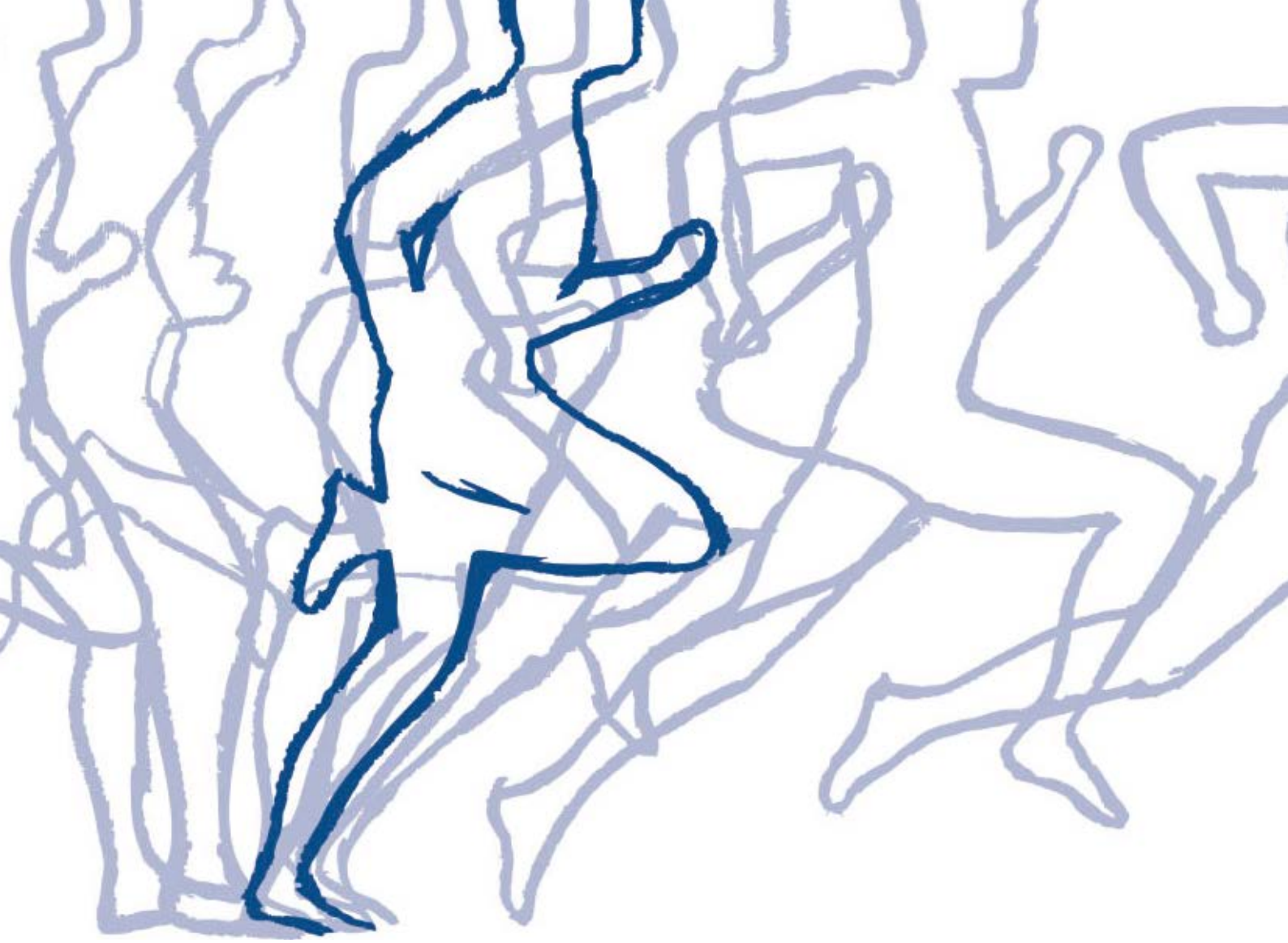
Use of an existing indicator was considered only if an established mechanism to collect data was present in all 194 Member States, as well as a globally agreed, standardized measure used at national level. Indicators derived from sources with an established data collection mechanism not only provided an existing infrastructure for ongoing GAPPA monitoring, but also provided access to trend data that can likely track progress.

In addition, indicators in use or under development for tracking global progress towards SDG targets *(17)* were also reviewed to identify relevant indicators for GAPPA. Alignment with UN SDG targets was identified for two GAPPA policy actions: the development of global indicators for public open space (SDG Target 11.7); and access to public transport (SDG Target 11.2). However, at the time of publication, data for both indicators are only available for some countries and only at the city – not national – level. As such, they were not suitable for inclusion in this first report on GAPPA implementation.

A full list of the 29 final indicators included in the current monitoring framework is presented in Table 2. For full details for each indicator, including the definition, computation, data source and technical notes, can be found in the GAPPA Monitoring Framework Indicator Data Dictionary, available as a web annex https://apps.who.int/iris/handle/10665/363531.

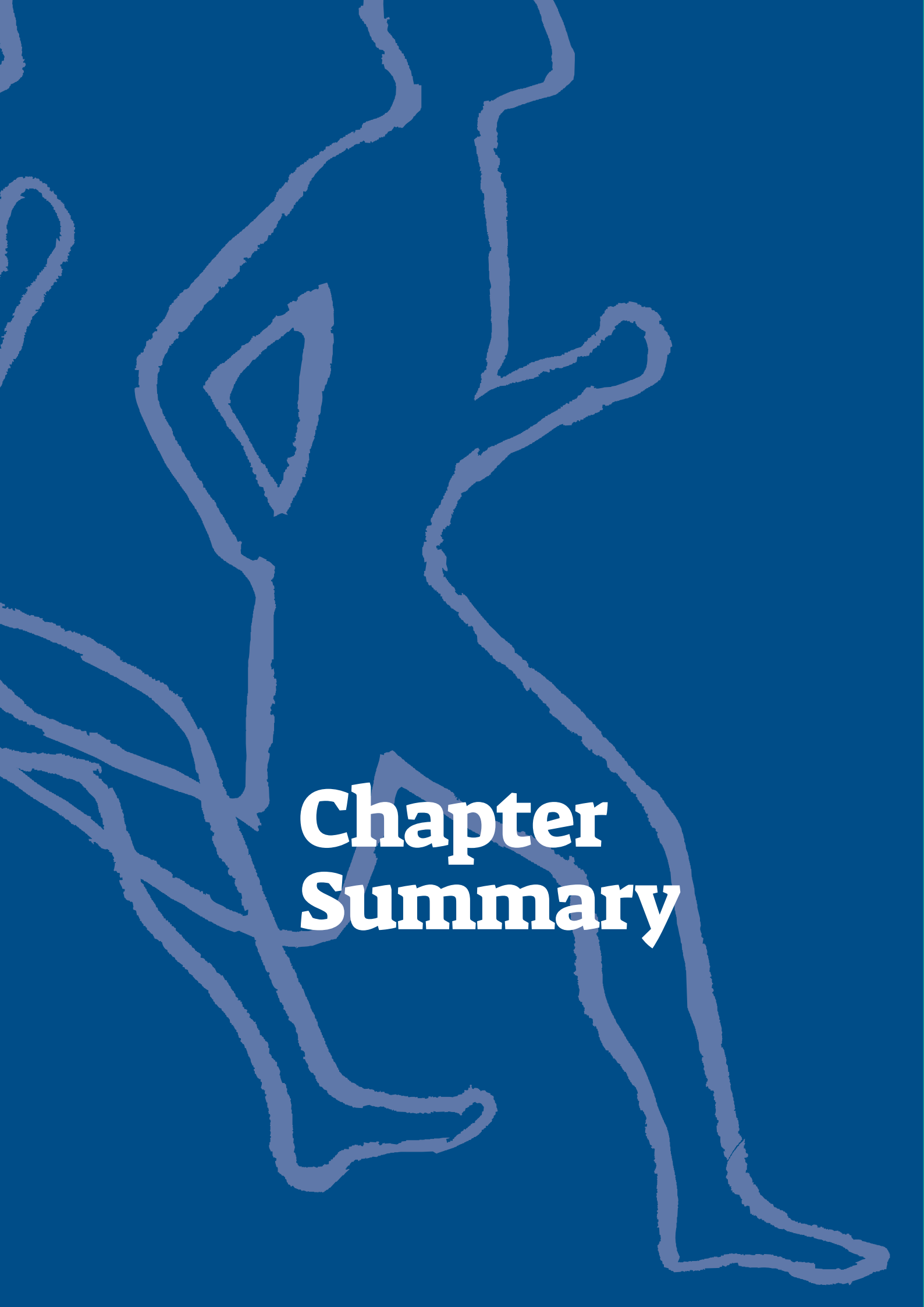
3.1.2 Data sources

Two primary sources provided data for the majority of indicators: the WHO Noncommunicable Disease Country Capacity Survey (NCD CCS) that provides data on all 194 Member States *(13)* and the *WHO Global status report on road safety*, providing data on 174 countries *(14)*. Further information on these data sources is provided in Annex 2.



4. Progress towards active systems

Leadership, governance and multisectoral partnerships are key to making the improvement of physical activity participation a national priority. National governments have committed to developing and implementing policies to address physical activity, and by strengthening their policy framework can provide the necessary guidance for coordinated action across sectors and stakeholders. Information systems across sectors can track progress against defined targets and in turn support resource mobilization.



Chapter Summary

4.1

National NCD plans, policies or strategies on physical activity set the agenda for action to improve physical activity.

- Only two thirds of countries have an operational NCD policy that includes physical activity.
- Just over one third of countries have an operational standalone physical activity policy.
- About three quarters of countries have either an operational national NCD policy including physical activity, or an operational national, standalone physical activity policy.
- There has been a decline in the number of countries with either an operational NCD or physical activity policy since 2019, which in part may reflect the impact of the COVID-19 pandemic and health system disruption.

4.2

National guidelines provide recommendations on the amount and type of physical activity that will provide health benefits and inform national action on physical activity.

- Just over half of countries globally do not have national guidelines on physical activity.
- There has been an increase in the number of countries with national guidelines.
- Just under one third of countries globally have national guidelines addressing all ages across the life-course.

4.3

National physical activity targets set a clear common and measurable goal for action.

- Approximately two thirds of all countries have set national target(s) for physical activity.
- Physical activity targets were more frequently reported in lower-middle and upper- middle income countries compared to high- and low- income countries.

4.4

National surveillance systems for physical activity provide standard and consistent data to track changes in levels of physical activity and inform national policy and priorities

- Almost all countries have undertaken population-based surveillance of physical activity.
- The majority of countries track physical activity in adults, but only three quarters of countries reported monitoring physical activity among both children (aged 5–19 years) and adults, and only one third report assessing physical activity in children aged under 5 years.
- About half of all countries have not conducted physical activity surveillance for over 5 years.

4.5

Governments have a central role in providing leadership, coordination and accountability for policy implementation and reporting on national policy commitments on physical activity.

- Just under half of countries reported an operational NCD mechanism and these were mostly high- and middle-income countries.

4.1 National policy and governance

A national NCD policy, strategy or plan provides countries with an overarching national policy framework and sets the agenda for action on both the management and prevention of multiple chronic diseases through a combination of clinical health services and population-based approaches. WHO has been tracking countries' development and operational status of national policies on NCDs and physical activity since 2013 *(13)*.

4.1.1 NCD policy or plan

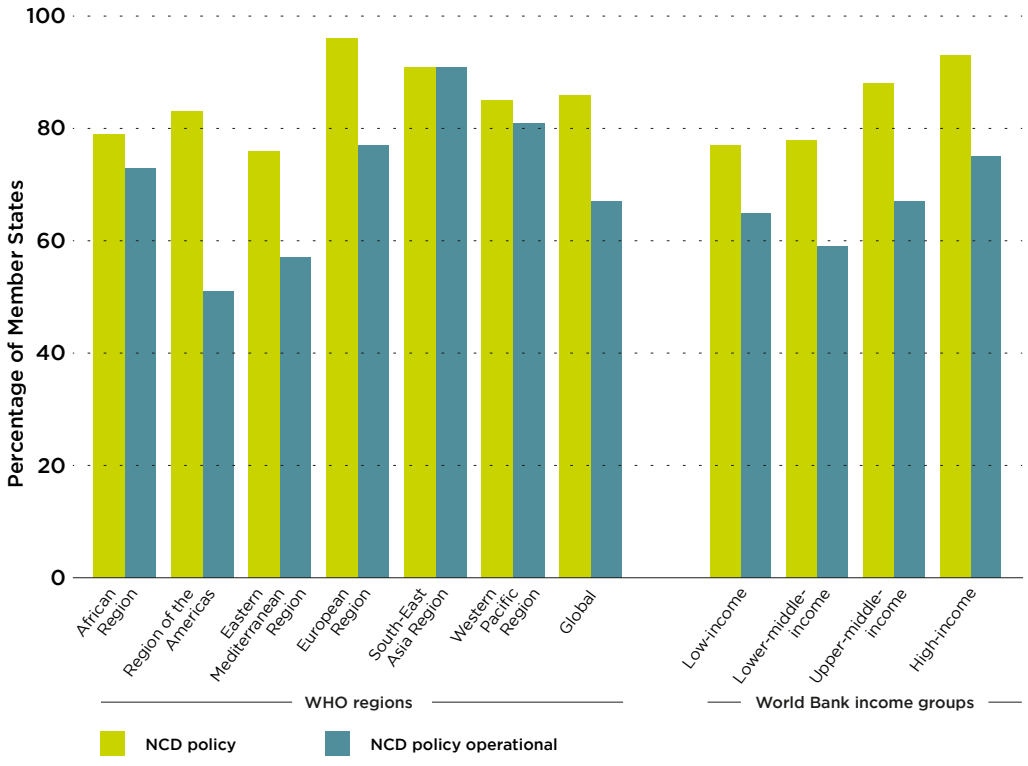
All countries have committed to implementing or strengthening national policies and strategies to address the four leading NCD risk factors – physical inactivity, tobacco, alcohol and unhealthy diet *(18-20)*. In 2016, these commitments were reinforced in Transforming our World: The 2030 Agenda for Sustainable Development *(21)*, in which countries agreed (as part of SDG Target 3.4) to achieve a one-third reduction in premature mortality from NCDs by 2030. Increasing the level of physical activity is a core part of reaching this target, and contributes to reaching multiple other SDG targets.

In 2021:

- The majority of countries (n=166, 86%) report having a national NCD policy, strategy or action plan that includes physical activity as one of the four key NCD risk factors (see Fig. 9).
- Between 2017 and 2019 there was a small increase in the number of countries reporting an operational[1] NCD policy including physical activity (n=136, 70% in 2017 to n=140, 72% in 2019). However, this dropped in 2021 (n=130, 67%) (see Fig. 10).
- The European Region, South-East Asia Region, and the Western Pacific Region report the highest proportion of countries with an operational NCD policy including physical activity (see Fig. 10).

FIGURE 9

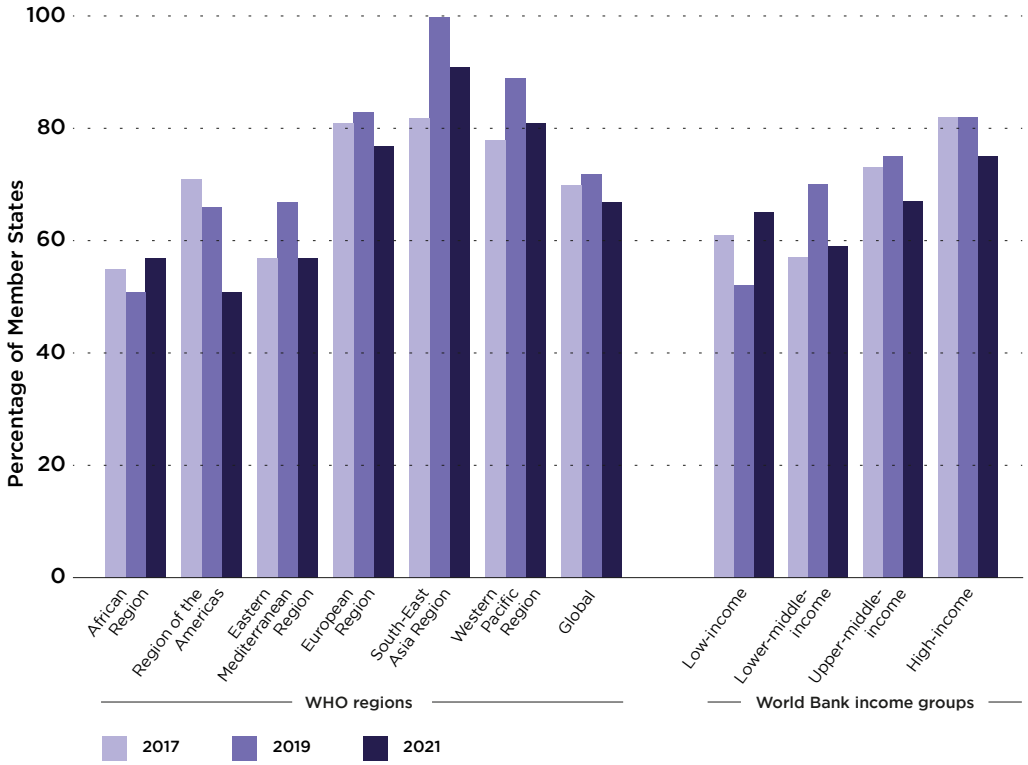
Countries with a national NCD policy including physical activity, by region and country-income level, 2021



1 An "operational NCD policy" is defined in the WHO NCD CCS survey as a policy, strategy or plan of action that is being used and implemented in the country and has resources and funding available to implement it.

FIGURE 10

Countries with an operational, national NCD policy including physical activity, by region and country-income level, 2017, 2019 and 2021



4.1.2 Standalone physical activity policy or plan

Developing a specific, standalone national policy, strategy or action plan for physical activity can provide even more detailed policy actions. It can also set out timelines; the roles and responsibilities of relevant stakeholders; and prioritize resource allocation and implementation, particularly where this involves sectors outside of the health sector and across multiple settings. Having either an NCD policy including physical activity, or a standalone physical activity policy, has been called for by GAPPA.

In 2021:

- Just under half of countries (n=91, 47%) report a standalone national physical activity policy, strategy, or action plan (see Fig. 11).
- Of these, only 74 countries report that the physical activity policy, strategy, or action plan is operational, representing only 38% of 194 Member States (see Fig. 12).
- The European Region has the highest proportion of countries reporting an operational physical activity policy, strategy, or action plan (64%), followed by the Eastern Mediterranean Region (48%) and the Western Pacific Region (37%).
- More high-income countries (61%) have an operational standalone physical activity policy compared to lower- and middle-income countries.
- 140 countries (72%) report either an operational NCD policy including physical activity OR an operational standalone national physical activity policy – a fall from 153 countries (79%) in 2019.
- 10 countries report an operational standalone physical activity policy but not a national NCD policy including physical activity.

FIGURE 11

Countries with a national, standalone physical activity policy, strategy, or action plan, by region and country-income level, 2021

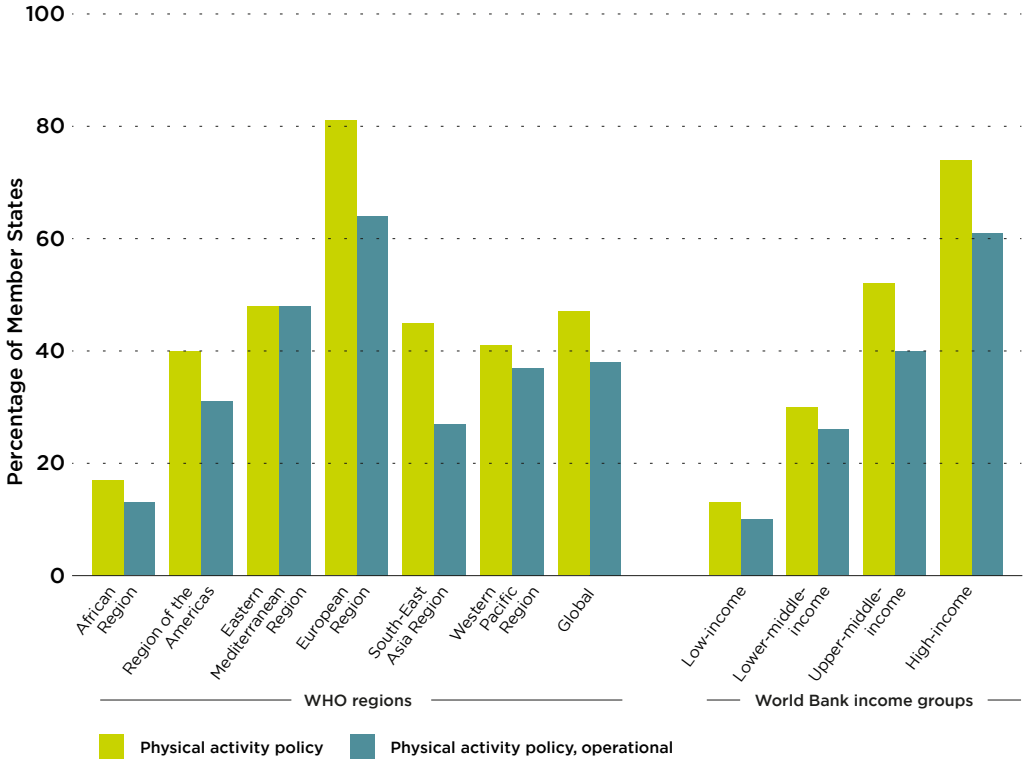
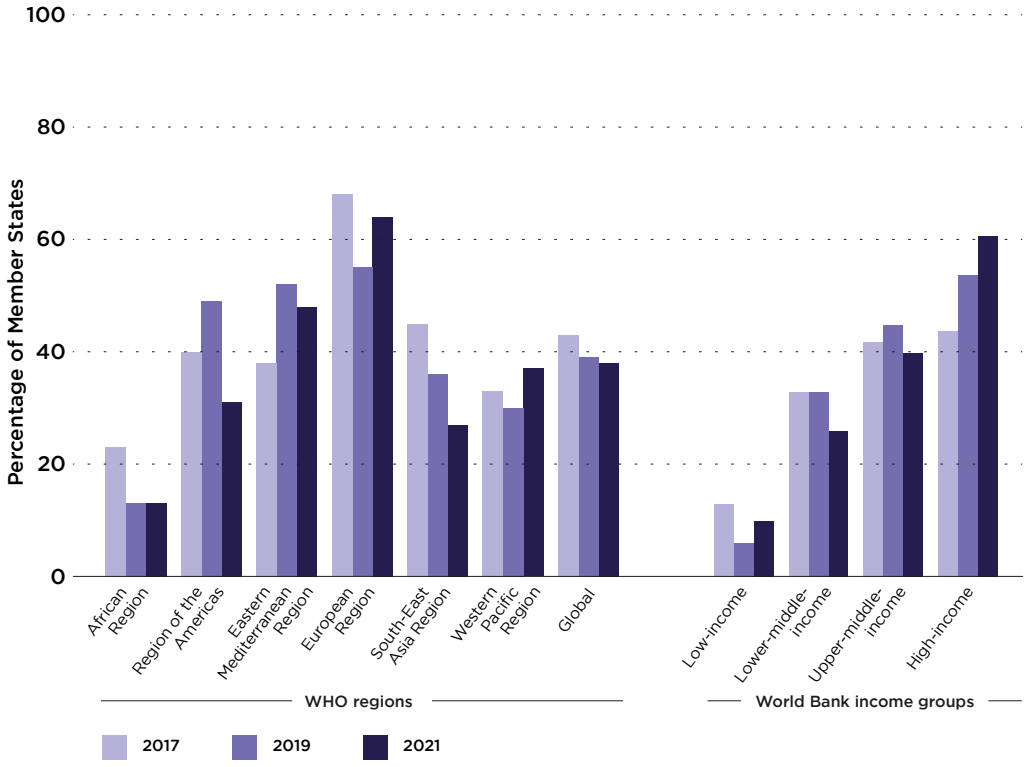


FIGURE 12

Countries with operational standalone national physical activity policy, strategy, or action plan, by region and country-income level, 2017, 2019 and 2021



4.1.3 Discussion

Overall, data show that while the majority of countries have a national NCD policy, only two thirds (67%) report that the policy is operational – a decrease since 2019. Almost half of countries (47%) have a standalone national physical activity policy but only around one third of countries (38%) report that the policy is operational. However, of particular concern is that about one quarter of countries (28%) have neither an operational national NCD policy including physical activity, nor an operational national standalone physical activity policy – a figure that has risen from 21% since 2019.

The absence of a national agenda for physical activity, set out in national policy, is detrimental to country progress as it means there is no central vision or mandate for policy action to address physical inactivity, nor proper resource allocation towards the challenge. While having a national policy does not guarantee resources, a national policy framework is usually a pre-requisite for leveraging stakeholders and scaling action.

The recent decline in countries that report having an operational policy on physical activity may be the result of existing policies expiring, and the significant disruption to health systems caused by COVID-19 throughout 2020 and 2021, including in reducing capacity in areas such as national health policy development. Earlier increases between 2017 and 2019 in the African Region, European Region, and the Western Pacific Region, and between 2019 and 2021 in the Region of the Americas, may reflect the rising visibility and policy attention afforded to physical activity since GAPPA publication in 2018. It may also reflect the increased focus provided by the development of regional physical activity action plans to support countries in implementing GAPPA, for example in the African Region *(22)*, the South-East Asia Region *(23)* and the Eastern Mediterranean Region *(24)*. The European Region had the highest proportion of countries with a national policy addressing physical activity, which likely reflects the existence of a European strategy on physical activity since 2016 *(25)*.

The notable gap between the presence of policy in countries and those policies being reported as operational reveals a gap in either human resource capacity or resourcing constraints, or both. The financial constraints limiting policy implementation to address NCD prevention, including physical activity, was already well known *(26)* but appears to have been exacerbated by the COVID-19 pandemic. There is a clear need to identify and address the barriers to policy implementation, and in recognition of this, WHO has called for collective action to identify more diverse and innovative financing mechanisms and a scaling up of investment in implementing national physical activity policies *(5)*.

Countries without a national policy to set the agenda for action on physical activity are encouraged to develop one *(27)*. To support countries in developing or updating national strategies, WHO has developed a situational assessment tool aligned with GAPPA (GAPPA-SAT) to systematically appraise national progress against GAPPA policy recommendations *(28)*. GAPPA-SAT (pilot version 6) is available on request and publication is planned in 2022.

4.2 Physical activity guidelines

National physical activity guidelines represent a national consensus on the importance of physical activity. They outline the optimal duration, frequency and intensity of different types of physical activities, and the health benefits across the life-course, based on scientific evidence. National physical activity guidelines are used to inform national policy and action plans on physical activity and support policy development in other related areas, such as sport and recreation, physical education, and active transport.

WHO supports countries in maintaining up-to-date national physical activity guidelines by updating its global guidelines on physical activity and sedentary behaviour across the life-course every 5–10 years, ensuring they reflect the latest scientific evidence. Since 2019, the WHO NCD CCS survey *(13)* has tracked countries' progress in developing national physical activity guidelines by age group.

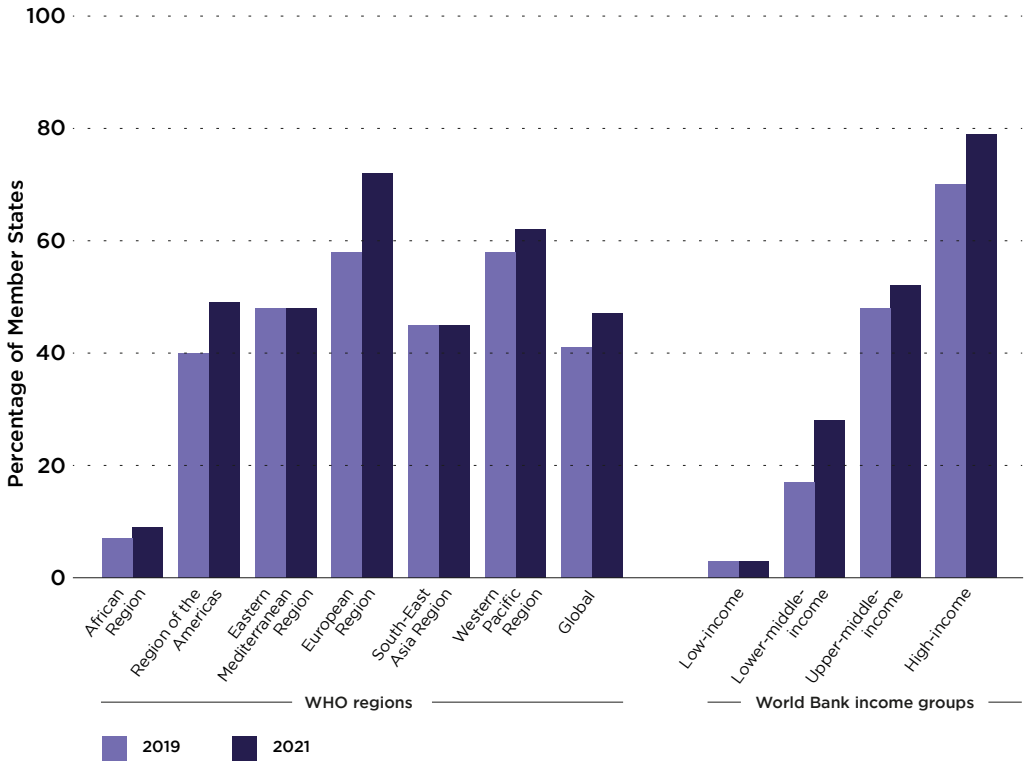
In 2021:

- Just under half of all countries (n=90, 46%) report having national guidelines on physical activity. This ranges from almost three quarters (n=38, 72%) of countries in the European Region to less than 10% of countries (4 out of 47 countries) in the African Region (see Fig. 13).
- There has been a 15% increase in countries reporting national guidelines on physical activity, rising from 78 countries (40%) in 2019 to 90 countries (46%) in 2021. This increase has occurred in countries across all regions (except the Eastern Mediterranean Region) and across all income levels (except for low-income countries).

WHO recommends that all countries establish and update national guidelines that cover all age groups and key subpopulations, such as older adults and people living with disability.

FIGURE 13

National guidelines on physical activity by region and income level, 2019 and 2021

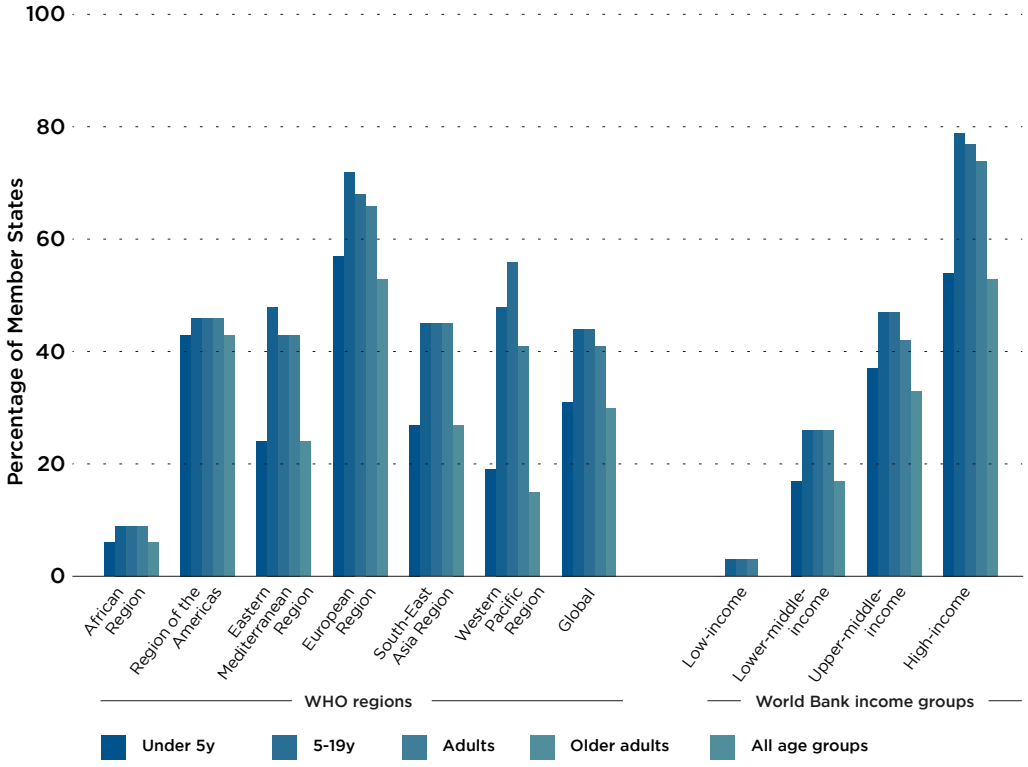


In 2021:

- Just under one third of countries (n=58, 30%) report having national guidelines that address all age groups across the life-course.
- About one third of countries (n=61, 31%) report having guidelines for children aged under 5 years of age – a rise from 40 countries (21%) since the launch of the WHO Guidelines on Physical Activity, Sedentary Behaviour and Sleep in children under 5 years of age in 2019.
- Just under half of countries (44%) report having guidelines for children and adolescents aged 5–19 years, with the same percentage for adults; fewer countries (41%) report having guidelines that cover older adults aged 65 years and above.
- About three quarters of high-income countries report having national guidelines for children, adults and older adults, compared to only half of upper-middle, and one quarter of lower-middle-income countries (see Fig. 14).

National guidelines on physical activity by age, region, and globally, 2021

FIGURE 14



4.2.1 Discussion

Despite an increase in the number of countries reporting having national guidelines since 2019, over half of countries globally have no national guidelines on physical activity. Globally, only one third of countries (30%) have national guidelines addressing all four age groups across the life-course. The greatest progress is seen in the development of national guidelines for children aged under 5 years, which has increased by 53% – from 40 countries in 2019 to 61 countries in 2021 (2019 data not shown in graphs). Conversely, there has been only a modest increase in the development of guidelines for other age groups, indicating a clear need for more support and an acceleration of efforts in countries across all regions.

To avert the costs and burden of developing new scientific guidelines, WHO recommends that countries convene relevant stakeholders to review and adopt its global guidelines on physical activity and sedentary behaviour *(2)*. These enable countries to undertake rapid and cost-effective steps to update or establish national guidelines; to adapt and tailor national guidelines to local contexts; and to ensure multisectoral engagement in this process, and wider dissemination and use.

4.3 Physical activity targets

National guidelines on physical activity provide the basis for setting national goals and targets by establishing standards and benchmarks that enable consistent tracking of physical activity – and inactivity – among different populations.

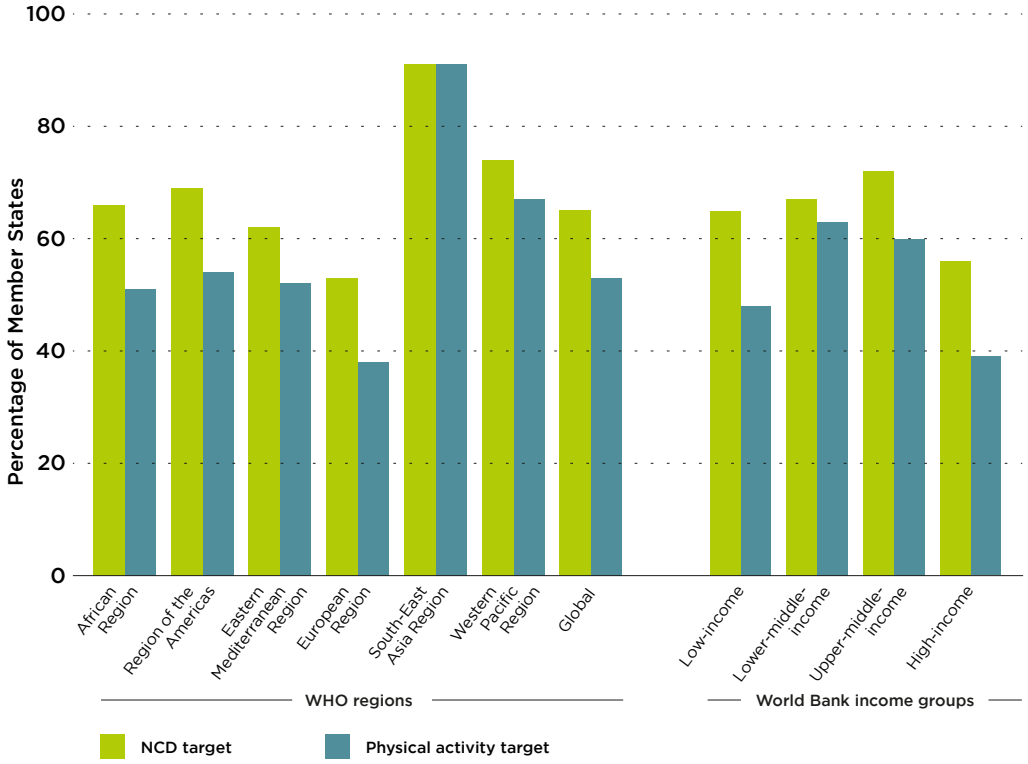
In 2013, nine voluntary targets were established as part of the monitoring framework to track global progress in the prevention and control of NCDs and their key risk factors (see Fig. 15). The target set for physical inactivity was a 10% relative reduction in prevalence of insufficient physical activity among adults and adolescents by 2025, using 2010 data as the baseline. In 2018, countries extended the global target for physical activity by 5 years and agreed on a 15% relative reduction by 2030. This aligns GAPPA with global and national efforts to achieve the SDGs by 2030 and sets out a vision for countries to increase participation over a period of 12 years (2018–2030) through policy action and implementation.

In 2021:

- Around two thirds of countries (n=126, 65%) report having time-bound national targets for NCDs based on the nine voluntary global targets from the NCD Global Monitoring Framework (https://www.who.int/publications/i/item/ncd-surveillance-global-monitoring-framework).
- Just over half of countries (n=102, 53%) have a specific national target for physical activity.
- A reported 91% of countries (10 out of 11) in the South-East Asia Region have a target on physical activity, compared to 67% in the Western Pacific Region. Approximately half of countries in the African Region (51%) have a target, with the figure standing at 54% of countries in the Region of the Americas, 52% in countries in the Eastern Mediterranean Region, and only 38% of countries in the European Region.
- Physical activity targets are more frequently reported by lower- and upper-middle-income countries (63% and 60% respectively), compared to high- and low-income countries (39% and 48% respectively).

FIGURE 15

National time-bound targets related to nine voluntary NCD targets and a national physical activity target, by region and country-income level, 2021



4.3.1 Discussion

Despite their importance, only around half of countries have set national targets for physical activity. Targets are reported more frequently by low-income countries than might be expected, although this aligns with a similar proportion of low-income countries reporting an NCD policy including physical activity. Many countries establishing an NCD policy for the first time and following WHO guidance have also adopted the voluntary target for physical activity of a 10% reduction by 2025.

WHO recommends all countries establish specific, time-bound targets for physical activity as part of national monitoring frameworks and accountability. Countries whose target expires in 2025 may adopt the agreed global target set out in GAPPA, namely at 15% relative improvement by 2030, or adapt this to country context and their own national policy timeframes.

4.4 Physical activity surveillance

Monitoring physical activity at population level enables countries to assess progress towards meeting national physical activity targets; supports evidence-based advocacy by identifying priority populations; and is an important mechanism for ensuring accountability. A core set of national data supports the process of developing a shared understanding among stakeholders on the levels and patterns of participation in physical activity, and helps identify and track differences in overall population levels, between subpopulations, and across geographies.

WHO recommends that all countries undertake NCD risk factor surveillance, including on physical activity, among all age groups, and report regularly on progress (for example, every 5 years). WHO also recommends that countries strengthen their reporting of disaggregated data to enable tracking of trends within subpopulations (such as by sex, age, ethnicity, socioeconomic status, disability), and to identify and track efforts to reduce inequalities in physical activity participation *(29)*.

In 2021:

- Almost all countries (n=185, 95%) report conducting population-based surveillance of physical activity in the past 5 years; the Eastern Mediterranean Region, the South-East Asia Region and the Western Pacific Region have the highest proportion of countries reporting physical activity surveillance (100%), while the African Region has the lowest proportion of countries (87%) (see Fig. 16).
- There has been no change in the proportion of countries reporting surveillance of physical activity between 2019 (95%) and 2021.
- Most countries report surveillance of physical activity among adults (92%); three quarters of countries (n=146, 75%) report surveillance of physical activity among children and adolescents; while one third of countries (n=57, 29%) report surveillance of physical activity in children under the age of 5 years (mostly countries in the European Region) (see Fig. 17).
- Globally, just under one third of countries (n=52, 27%) report surveillance of physical activity in all three age groups (under 5 years, children and adolescents, and adults including older adults).
- Surveillance of children and adolescents is highest in high-income and upper-middle-income countries (89% and 90% respectively), compared to lower-middle and low-income countries (67% and 32% respectively).
- Around one third of countries report that data on physical activity were last collected more than 5 years ago, and around 10% of countries report that their data were last collected more than 10 years ago (see Fig. 18).

FIGURE 16

Trend in national surveillance of physical activity by region and country-income level, 2017, 2019 and 2021

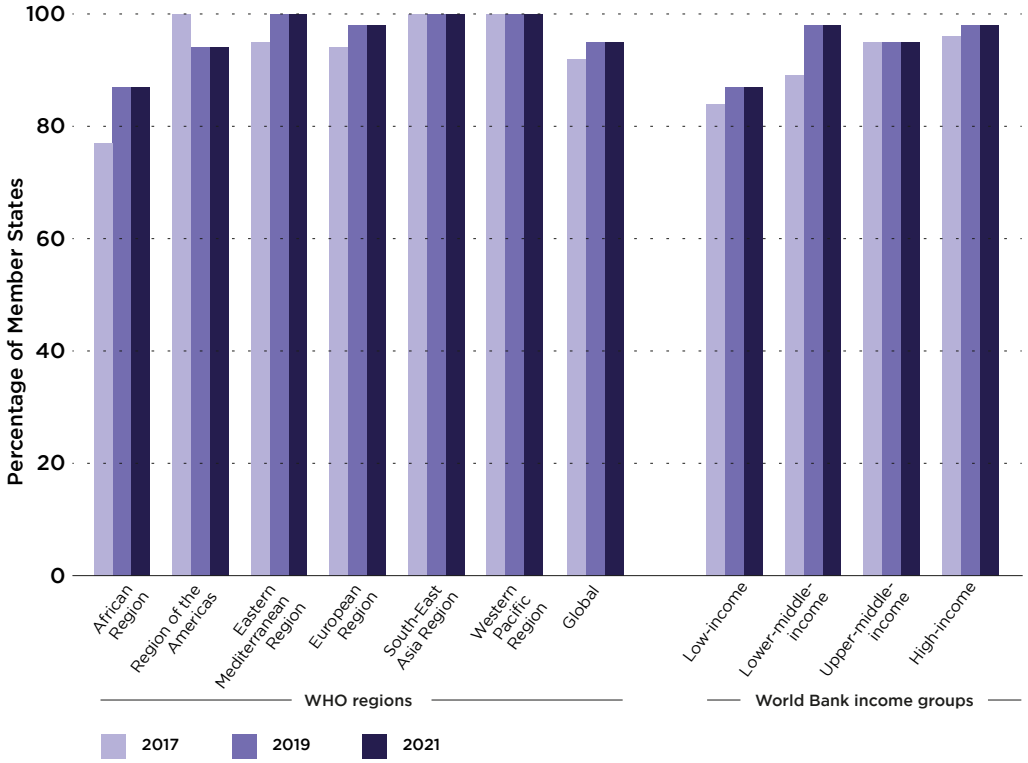


FIGURE 17

National surveillance of physical activity by age group, region and country-income level, 2021

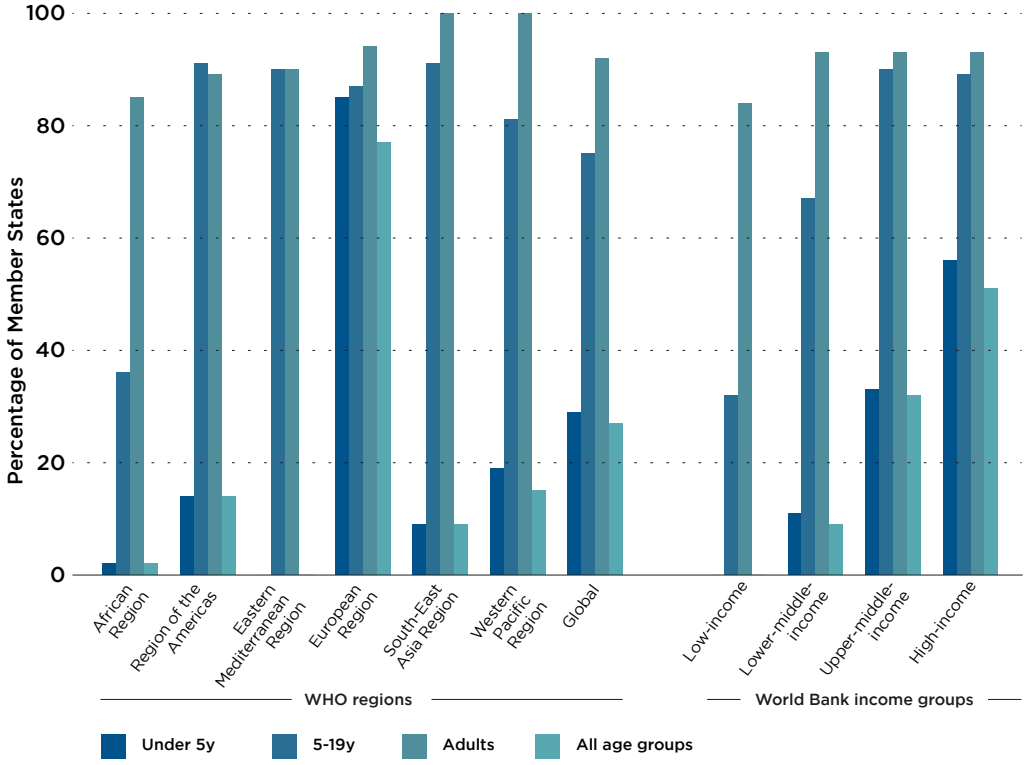
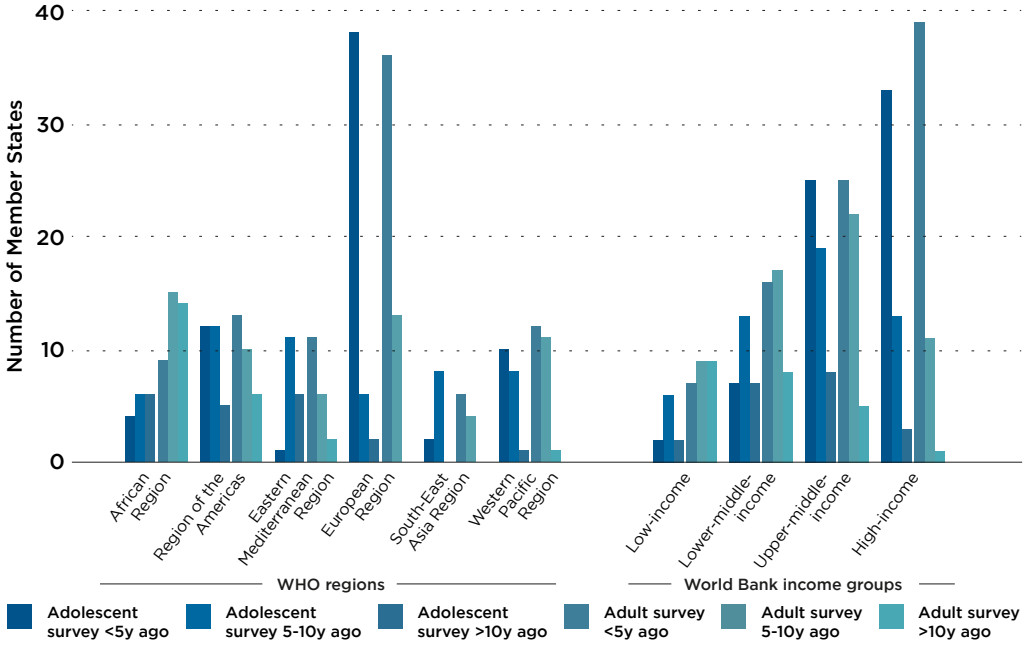


FIGURE 18

Number of years since last survey of population-level physical activity by region and globally, 2021



4.4.1 Discussion

National surveillance on physical activity shows relatively good coverage (92%) in adult populations, with only 16 countries not collecting data in the past 5 years. Monitoring of physical activity in children and adolescents also appears relatively high (75%). It should be noted, however, that in the majority of these countries, data are collected for children aged 11–17 years and only on those attending school. This means that the data do not accurately represent levels of physical activity in children (for example those aged under 10 years) nor physical activity levels among children not in formal education. Given the global health priority to address rising levels of overweight and obesity in children and adolescents, there is an urgent need to disaggregate these data and also to establish global standards and guidance on measurement of physical activity in children under the age of 10 years.

Only 30% of countries report monitoring physical activity among children under the age of 5 years. The lower coverage in this age group may be due to the relatively recent publication of global guidelines on physical activity for this group of children *(30)*, and the absence of a global standard instrument for monitoring early years' physical activity, sedentary behaviour and sleep. Most data for this age group are collected on children aged 4 years and current methods include surveys of parents and/or wearable sensor devices. Developing global standards and suitable, affordable, age-appropriate sensor instruments is necessary to advance country adoption.

Globally, only one third of countries monitor physical activity among all three age groups. Countries without national monitoring systems that cover all ages are encouraged to identify and address any gaps. Consistent and sustained tracking of physical activity across the life-course is required to inform national and subnational policy, as well as guide investment in infrastructure and programme implementation.

The most frequently reported approach to national assessment of physical activity is through use of self-report instruments (data not shown) integrated in a larger NCD (or other) health survey *(31)*. This is a relatively inexpensive method as examples of physical activity can be tailored to cultural and country contexts and combined with show cards of different physical activities to ensure common understanding of the behaviours of interest. The emergence of more affordable digital and wearable technologies to measure and track physical activity is advancing, but their use remains limited within national surveillance systems (see Chapter 8).

4.5 National NCD coordination mechanisms

Government has a central role in coordinating and coherently implementing the multiple policy actions aimed at managing and preventing NCDs. As many of these policy actions are the responsibility of either the health sector, other sectors, or both, robust coordination of the planning, implementation and evaluation of multisectoral action is vital.

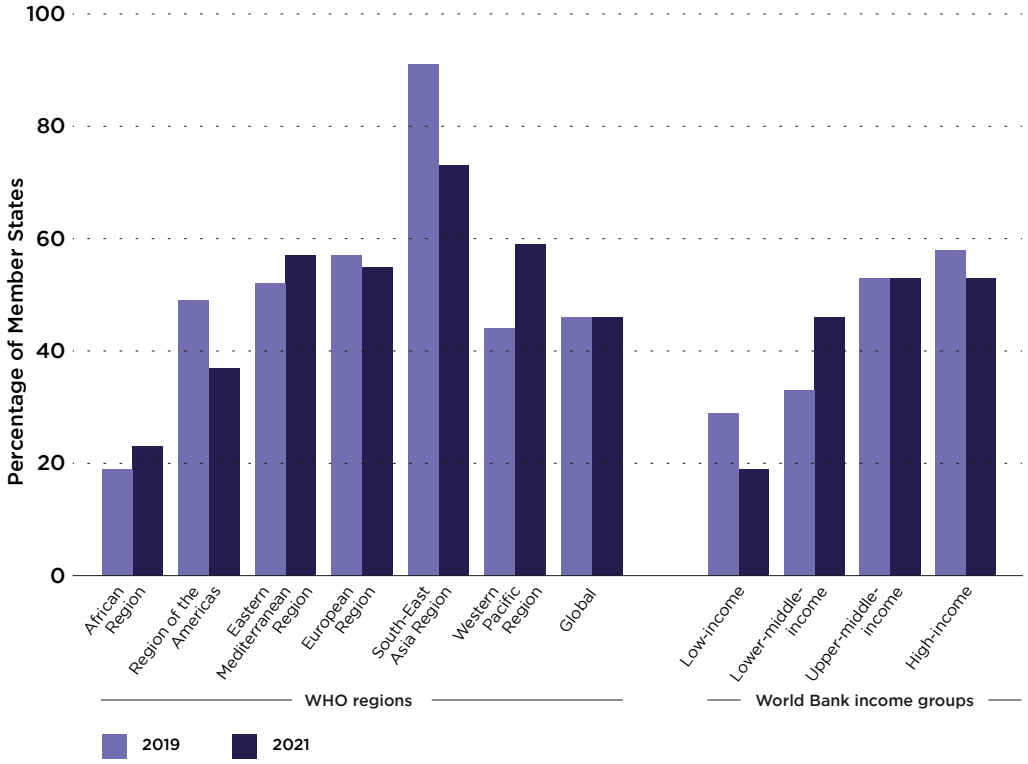
WHO recommends that countries establish a national coordinating mechanism such as a steering committee or task force to ensure all relevant stakeholders are engaged in the implementation of a national policy or plan to address NCDs and their risk factors *(19)*. The national mechanism should comprise all relevant government departments and include non-state actors, as appropriate, to ensure a coherent and cost-effective national response is implemented. WHO has been tracking countries' progress on establishing a national multisectoral commission since 2013.

In 2021:

- Just under half of countries (n=89, 46%) report an operational National NCD Coordination mechanism – this is unchanged since 2019.
- More countries in the South-East Asia Region report having national NCD coordinating mechanisms (73% in 2019 and 91% in 2021), while less than a quarter of countries in the African Region report these mechanisms (23%) (see Fig. 19).
- Fewer low-income countries report having a national NCD coordinating mechanism (19%) than middle-income and high-income countries (47–55%).

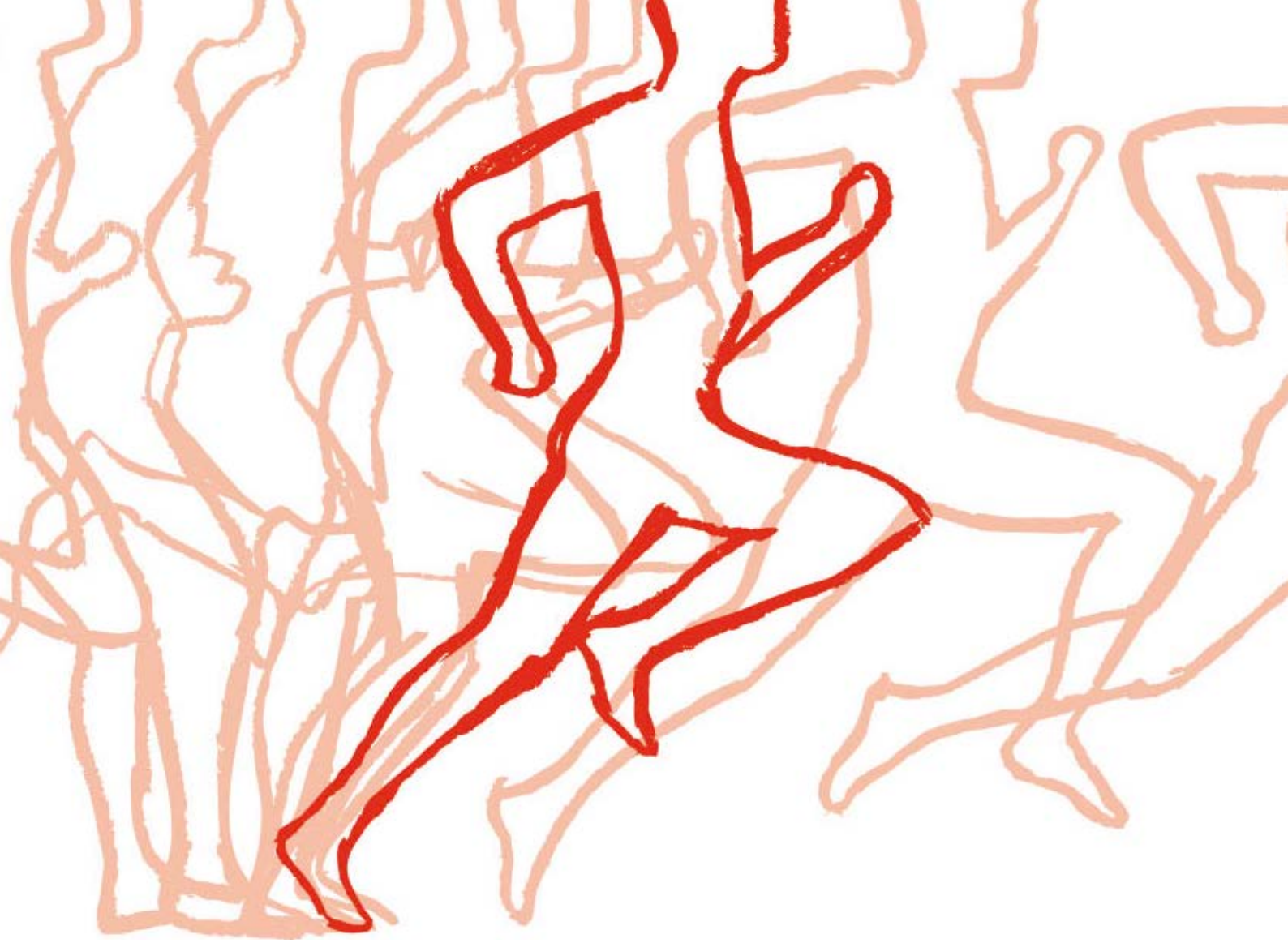
FIGURE 19

National coordination mechanism, by region, globally, and country-income level, 2019 and 2021



4.5.1 Discussion

Data show that only about half of countries (46%) have established a national coordinating mechanism under the NCD agenda to support and harmonize multisectoral action, relevant policy and practice. A systems approach to increasing physical activity requires multiple sectors to engage and cooperate to implement a comprehensive and coherent set of policy and programmes and they should interconnect for maximum effectiveness. Countries that have not already done so should therefore prioritize the establishment of a coordination mechanism.



5. Progress towards active societies

Meeting the global target for physical activity can only be achieved by more people becoming more active. Promoting physical activity through public communication campaigns and mass-participation events that raise awareness of the benefits of physical activity – and the multiple different ways in which people can be active according to ability and at all ages – provide opportunities to strengthen understanding, change mindsets, and create more active societies.

Chapter Summary

5.1

Community-wide communication campaigns provide clear and consistent messages on the benefits of physical activity and can shift cultural norms and support behaviour change.

- Just over half of countries conducted at least one communication campaign on physical activity in the last 2 years, representing a decline since 2019.
- Most countries reporting a campaign also report linking with community programmes and environmental improvements.

5.2

Mass-participation events provide free, enjoyable and social opportunities to be physically active and can engage and motivate large numbers of people to be more active.

- Just over half of countries report holding at least one mass-participation event involving physical activity in the last 2 years.
- Implementation of mass -participation events declined between 2019 and 2021 likely due to the impact of movement restrictions related to the COVID-19 pandemic.

5.1 Communication campaigns on physical activity

Community-wide communication campaigns provide consistent, sustained and clear messages about the benefits of physical activity and have been identified as a cost-effective approach. They are also recommended as a "best buy" for the prevention of NCDs *(32)*. Successful campaigns employ social marketing techniques and use multiple mass-media communication channels, including traditional (for example, print, television, radio) as well as social and digital platforms.

Communication campaigns can work at multiple levels. They raise people's knowledge and understanding of physical activity, change attitudes, increase intention and stimulate behaviour change, thereby increasing participation. Campaigns can also influence the policy agenda through stimulating community discussion and debate, for example about community access or road safety for walking and cycling.

WHO started monitoring countries' progress in implementing physical activity communication campaigns in 2013. In 2017 it strengthened the independent validation process and in 2019 amended the definition of a communication campaign to ensure alignment as a policy recommendation in GAPPA *(1)* and an NCD "best buy" *(33)*.

In 2021:

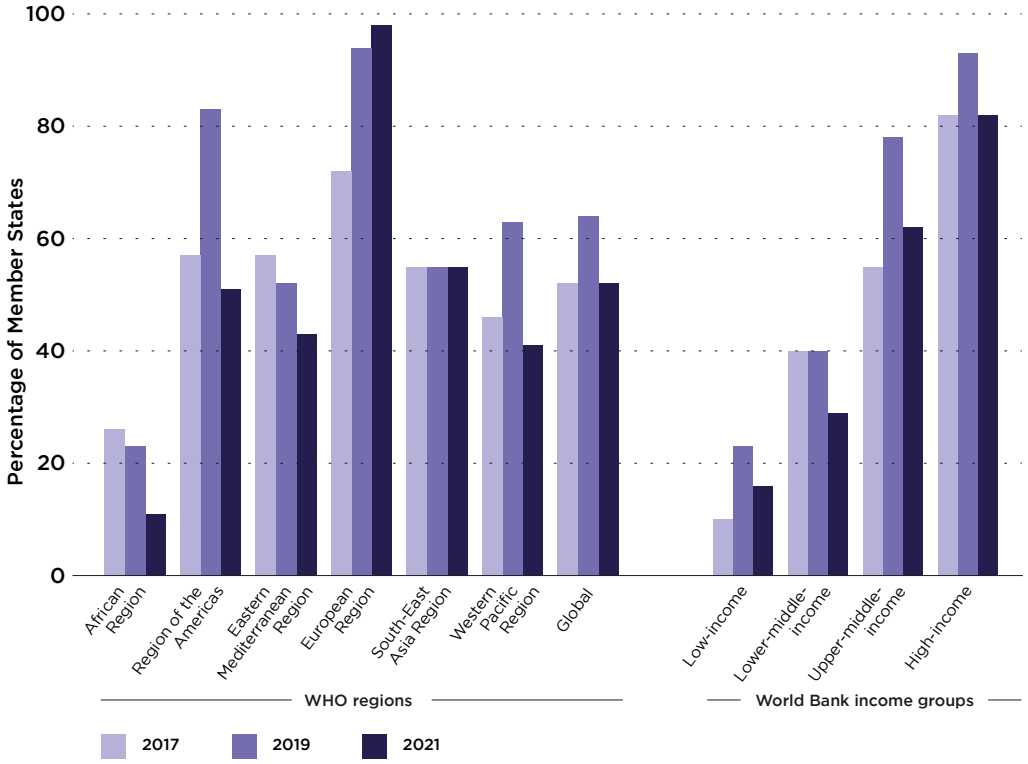
- Just over half of countries (n=101, 52%) report implementing a communication campaign to promote physical activity in the past 2 years (see Fig. 20).
- The European Region reports the highest use of communication campaigns (98%), followed by the South-East Asia Region (55%) and the Region of the Americas (51%). Less than half of countries in all other regions use communications campaigns.
- A higher proportion of high-income and upper-middle countries (82% and 62% respectively) report conducting communication campaigns in the past 2 years compared to lower-middle and low-income countries (29% and 16% respectively).
- Globally, fewer countries report conducting communication campaigns to promote physical activity in 2021 (n=101, 52%) compared to 2019 (n=124, 64%).
- The Region of the Americas, the European Region and the Western Pacific Region show a sharp increase in reporting communication campaigns to promote physical activity between 2017 and 2019; in 2021 this rise continued only in the European Region.
- The African Region and the Eastern Mediterranean Region show a decline in countries reporting communication campaigns between 2017, 2019 and 2021.

Successful communication campaigns are those implemented as part of a comprehensive communications strategy, as standalone, short-term mass-media campaigns are less effective. In addition, communication campaigns with clear links, or "signposts" to community programmes, are more likely to help people respond to the call to start, or be, more active. Combining education campaigns with structural improvements will also support more individuals to act on the information provided by the campaign and are considered to be more effective than solely using educational and health slogans about the benefits of physical activity *(33, 34)*.

Examples include improving local public open spaces and walking and cycling infrastructure, or adding street signage indicating the walking distance and time to local destinations.

FIGURE 20

National physical activity communication campaigns, by region and country-income level, 2017, 2019 and 2021



In 2021:

- About three quarters of countries report communications campaigns that include community-based initiatives (89%) or environmental changes (73%) (see Fig. 21).
- About three quarters of countries (81%) report campaigns that promote the co-benefits (such as social, environmental and/or economic benefits) of physical activity.
- All campaigns in low-income countries include community-based initiatives and environmental changes, and across all country-income groups, about three quarters of campaigns promoted co-benefits.

5.1.1 Discussion

Just over half (52%) of countries report implementing at least one communication campaign in the past 2 years. Reported campaigns on physical activity have declined since 2019 (when the figure was 64%). While the time period for reporting of campaigns included 2019, the impact of COVID-19 on campaigns is not fully known. While movement restrictions and government capacity may have limited conducting campaigns, COVID-19 may also have acted as a catalyst for new campaigns on physical activity, informing populations on the benefits of staying active for mental and physical health benefits as well as providing ideas and examples of ways to be active in and around the home.

The data reported on implementation of physical activity communication campaigns were independently validated by reviewing submitted supporting evidence provided by each country. This analysis revealed considerable diversity across the 105 countries reporting physical activity campaigns in terms of their duration, scale, target audiences, type of media channels, and other aspects. Digital communication channels are widely reported (such as websites, SMS, Facebook, Twitter and others), as well as the traditional channels of television, radio and supporting health education materials.

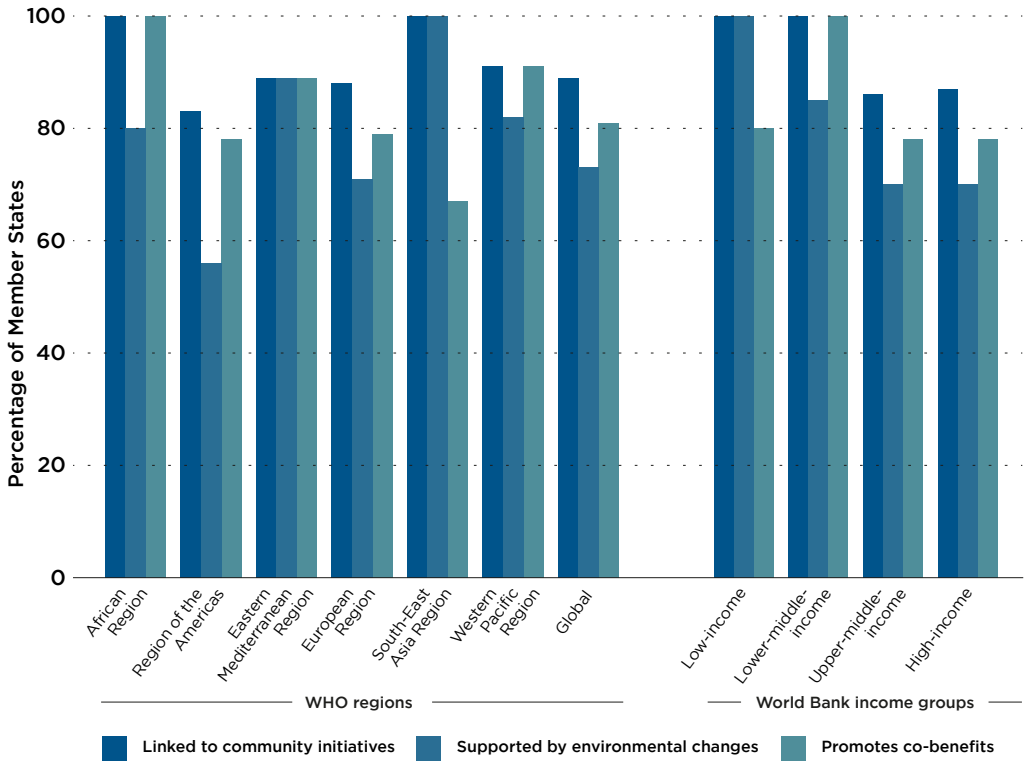
While promoting the health benefits of physical activity is their most common purpose, communication campaigns also promoted other benefits to motivate people to start or increase their physical activity. For example, some campaigns promoted walking and cycling as an alternative to personal motorized transport, bringing benefits such as reduced traffic congestion, road accidents, air and noise pollution and fossil fuel consumption.

As campaigns frame an issue – and when necessary "reframe" an issue – they are useful to shift how communities perceive and understand physical activity, to address biases and/or cultural barriers (for example on women's participation), and improve the social desirability and norms associated with being more active (for example, to youth audiences).

Although it has been more than 8 years since WHO recognized physical activity communication campaigns as a cost-effective "best buy" intervention for NCD prevention *(33)*, there are no agreed global standards or "best practice" criteria by which to assess the quality of such campaigns. These standards do exist for tobacco campaigns *(35)* and WHO is undertaking the development of similar criteria for physical activity, and plans to publish them in late 2022. All countries will be encouraged to apply these criteria to future campaigns and those countries not implementing physical activity campaigns are recommended to start to do so. Future reporting on global progress – be it within the global monitoring of countries' action to prevent NCDs – and tracking of country progress in implementing GAPPA will apply these criteria to encourage all countries to implement communication campaigns that meet best practice and increase campaign effectiveness.

FIGURE 21

National physical activity communication campaigns with links to community-based initiatives, supported by environmental changes and promoting co-benefits, by region and country-income level, 2021



5.2 Mass-participation events on physical activity

Conducting national mass-participation events can engage large numbers of people in physical activity and provide free opportunities for individuals, groups and families to have an enjoyable and social experience while being physically active. Events can provide new experiences and an informal opportunity for people of all ages to try out new or different physical activities. National events such as a "car free day", and national physical activity days, can engage those who are not regularly active and contribute to raising awareness and shifting attitudes, intentions and behaviours towards participating more often.

Mass physical activity events are usually held in easily accessible locations such as city centres, major parks or public open spaces, or in local streets that are closed to exclude motorized traffic. Events focus on providing an inclusive opportunity and enjoyment, and can attract significant media coverage, thus providing additional opportunities and wider reach of health communication messages.

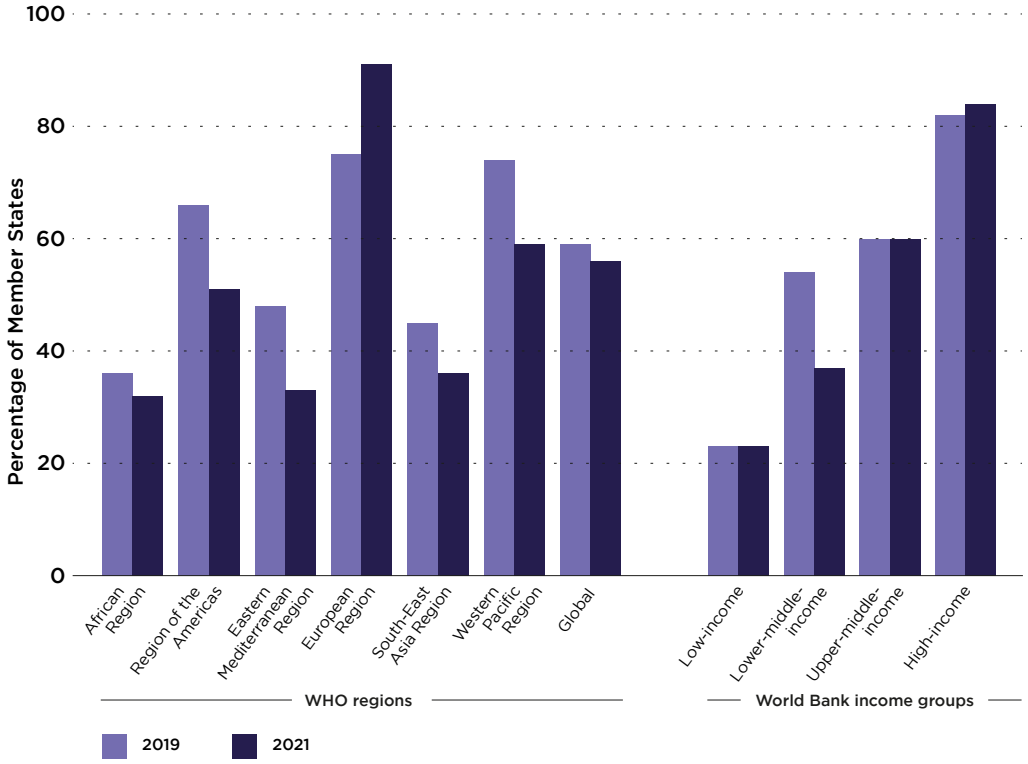
Implementing mass physical activity events can foster national and local partnerships and leadership, and support advocacy calls for policy change. It can also potentially mobilize resources to provide tailored initiatives in local communities. They can be implemented on their own or as part of a larger communication campaign. In 2019 WHO started monitoring countries' progress in implementing mass events after its inclusion as a GAPPA policy recommendation *(1)*.

In 2021:

- Just over half of countries (n=108, 56%) report implementing a national or subnational mass-participation event in the past 2 years to encourage participation in physical activity (see Fig. 22).
- Countries in the European Region (91%), the Western Pacific Region (59%) and the Region of the Americas (51%) report mass-participation events more frequently compared to around a third of countries in the African Region, the Eastern Mediterranean Region and the South-East Asia Region.
- The number of countries that report implementing mass-participation events between 2019 (n=115, 59%) and 2021 (n=108, 56%) declined in all regions except the European Region.
- Low-income countries report conducting mass-participation events much less (just over 20%) in both 2019 and 2021 compared to all other income groups.

FIGURE 22

Trend in national mass-participation events on physical activity, by region, globally and country-income level, 2019 and 2021



5.2.1 Discussion

Just over a half (56%) of countries report implementing at least one mass-participation event aimed at promoting physical activity in the past 2 years. Holding mass-participation events can provide significant opportunities for engaging the local community and specific populations, capturing national media attention and raising political interest and visibility.

The data reported on implementation of mass-participation events were independently validated by reviewing submitted supporting evidence provided by each country. This analysis revealed considerable diversity across the events reported in terms of their duration, scale, target audiences, location and focus. Many reported mass-participation events were single-day celebrations, and often aligned to international health days (such as World Heart Day, World Physical Activity Day, International Day of Sport for Development and Peace). Other mass events were nationally set celebration days and some events were linked to transport or environmental agendas, including "car free days" and "walk to school" days.

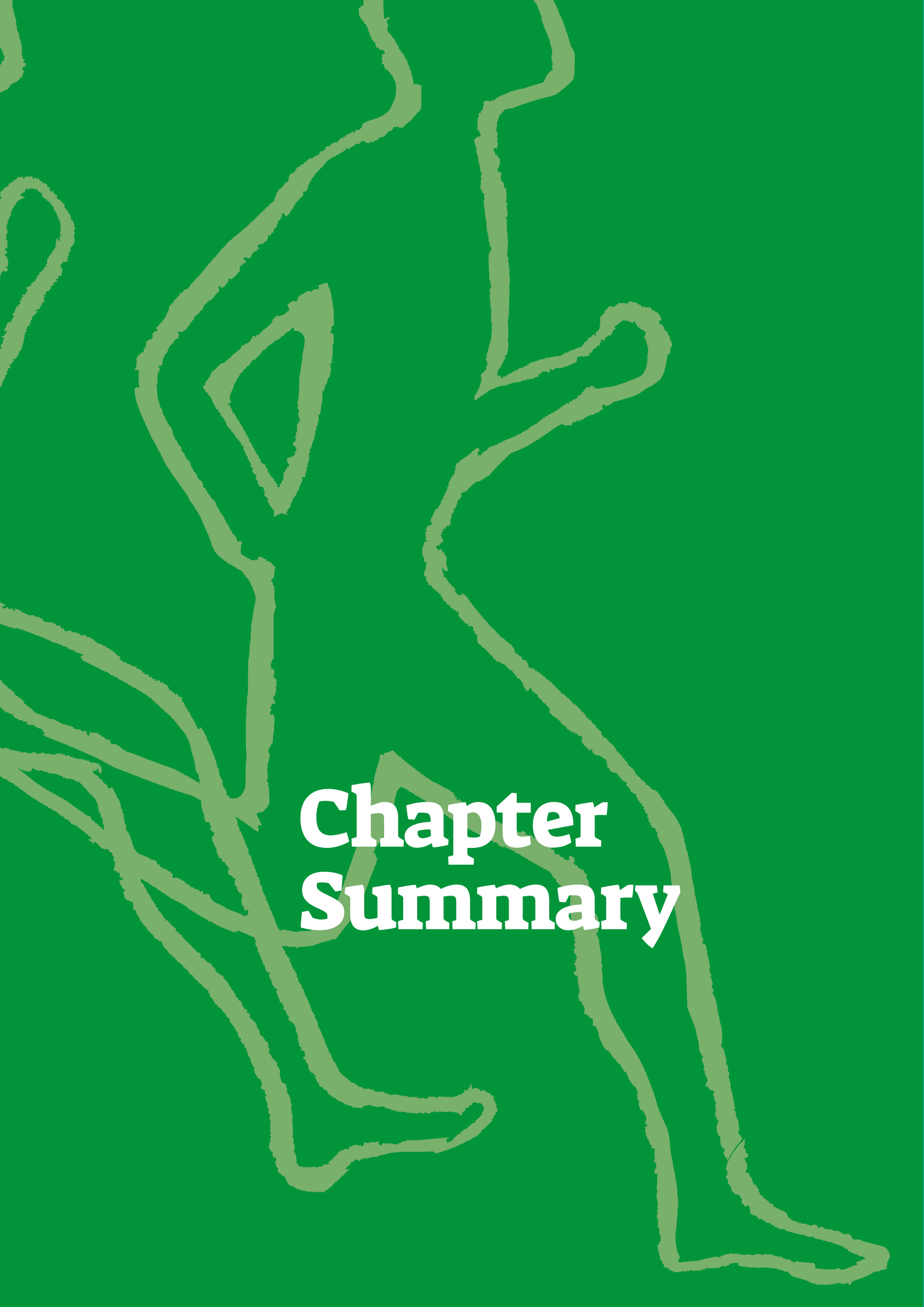
Although the majority of reported mass events were at national scale, some events were held at city level. Some countries report implementation of mass-participation events in association with multi-country or regional initiatives such as "European Week of Sport" (see https://sport.ec.europa.eu/european-week-of-sport) and "Caribbean Wellness Day" (see https://carpha.org/More/Health-Days/CWD). As such, some mass-participation events were sustained over a longer period, such as a week or a month, and repeated annually (though during the COVID-19 pandemic these events may have been held virtually).

Many countries reported the involvement of senior politicians or national celebrities, and using an event as a catalyst for establishing a series of events or even structural changes such as improvements to park facilities or walking and cycling infrastructure. As such, mass-participation events can be part of a strategic communications campaign on physical activity, provide opportunities for advocacy and policy change, and contribute to changing attitudes, levels of motivation and behavioural intent to become more regularly active.

To be successful, community-wide mass-participation initiatives should be strongly supported by government and NGOs as a platform to elevate, adopt and trial physical activity opportunities that are adapted to local context. Grassroots and community groups should be actively engaged in designing mass-participation events that meet their physical activity needs.

6. Progress towards active environments

The environments in which people live, work and spend their leisure time can either help or hinder their opportunities to be physically active. The built environment includes the design and location of homes, schools, retail and commercial centres, workplaces and transport networks, as well as all the spaces between them that make up neighbourhoods and cities. Well-designed urban environments can directly support people to be more physically active, and "nudge" less-active people to be more active by making it an easy choice. Conversely, poorly designed and poorly maintained environments can deter or restrict physical activity by, for example, the absence of necessary infrastructure or by a creating a real or perceived sense of insecurity.



Chapter Summary

6.1

National transport policies set the agenda and priorities that determine investment in mobility systems and should therefore prioritize walking and cycling and public transport as safe and accessible travel modes for everyone.

- Less than half of countries have a national policy that encourages walking and cycling for transport.
- About three quarters of countries have national policies to increase public transport use.

6.2

Safety concerns are the leading reason why people choose not to walk or cycle, meaning road design that provides safe environments for all users is essential.

- Less than half of countries have national design standards that address three key road safety criteria (namely, separating pedestrians and cyclists from motorized traffic, safe crossings for pedestrians and cyclists, and road design for management of speed).
- Although three quarters of countries have a national strategy for road safety, less than 20% of these are fully funded.
- Two thirds of countries require existing roads to have a formal road safety inspection and/or road safety-rating assessment on a regular basis.
- Only about half of countries require a formal road safety audit and/or road safety-rating assessment on *all* planned new roads; another third require this for *some new roads*.

6.3

Safe road-user behaviour is essential, especially for vulnerable users such as those walking or cycling, and should be established and enforced through legislation.

- Over three quarters of countries report having legislation on speeding and drink–driving, however only about a quarter of these laws meet global "best practice" criteria.
- Over three quarters of countries report having legislation prohibiting the use of mobile phones while driving and driving under the influence of drugs.

Access to public transport also affects levels of walking and cycling as a preferred mode of transport. For example, walking and cycling may be the beginning and/or end of a multimodal commute to school or work that relies on interconnected public transport.

Given the established links between levels of physical activity and features of the built environment and transport systems *(36)*, GAPPA provides a set of policy recommendations to guide countries in providing supportive or "physical activity friendly" environments. Monitoring countries' progress on urban planning and transport policy, as well as the provision of safe and supportive streets and infrastructure for walking and cycling, is therefore included in the GAPPA monitoring framework. The indicators for this policy area align with WHO's framework for assessing country progress on road safety *(14)* and implementation of the urban health agenda *(37)*. Data used for this report are from the most recent *WHO Global status report on road safety* (published in 2018), although new data are scheduled for release in 2022 *(14)*.

6.1 Policy on walking and cycling

Increasing levels of walking and cycling as regular modes of transport – particularly for short trips – is recommended to address multiple global health priorities. National transport policies that prioritize investment in walking and cycling, public transport systems, and reducing dependence on personalized motorized vehicles can contribute to reduced traffic accidents, greenhouse gas emissions, and air and noise pollution. They can also help protect green spaces from road expansion, thus contributing to multiple agendas and achievement of many SDG targets.

GAPPA recommends that all countries prioritize walking and cycling in national transport policies and provide appropriate infrastructure such as walking and cycling networks and access to convenient and affordable public transport services.

In 2018:

- Less than half of countries (n=73 of 174, 42%) report having national policies that encourage walking and/or cycling as an alternative to car travel.
- 15% of countries (n=27 of 174) report having subnational policies that support walking and/or cycling.
- National policies are more prevalent in the European Region (65%) and the Western Pacific Region (62%) compared to other regions (17–40%), and are more frequently reported by high-income countries (68%) compared to other income groups (19–39%).
- Almost three quarters of countries (n=127 of 174, 73%) have national policies and accompanying investment in public transport to increase the proportion of the urban population that has convenient access to public transport.

FIGURE 23

National policy on walking and cycling, by region and country-income level, 2018

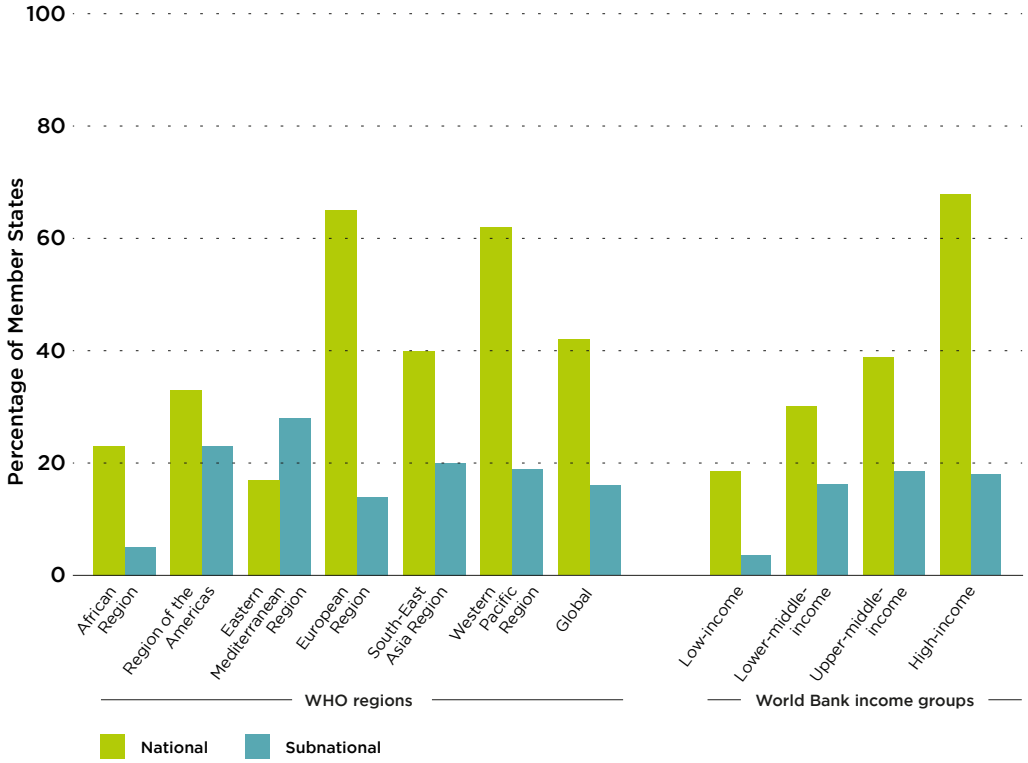
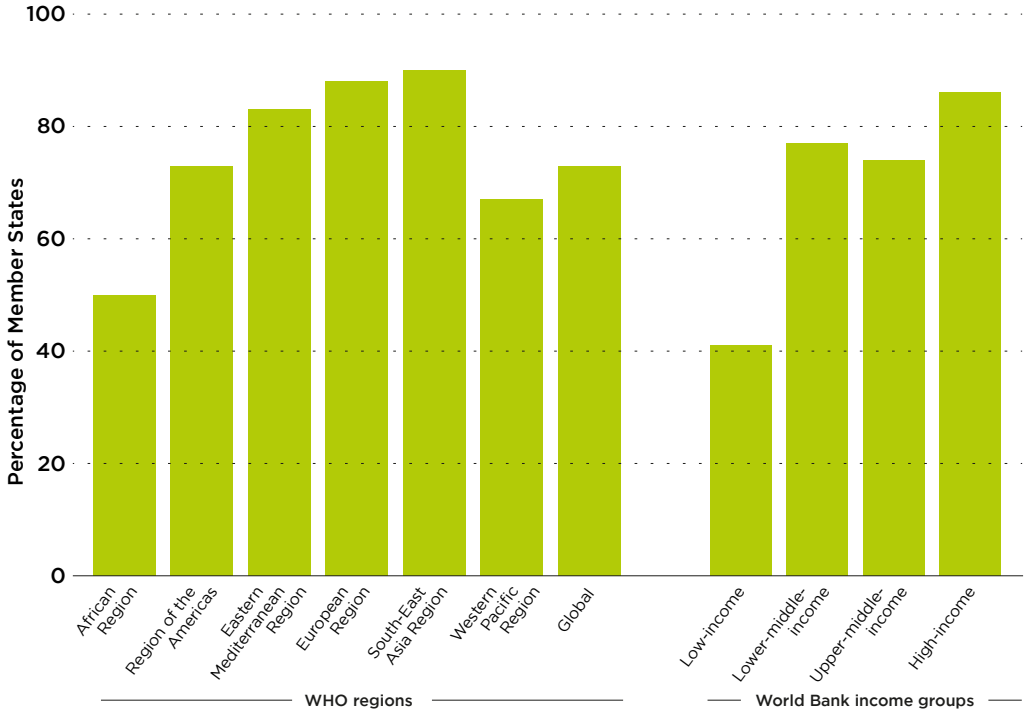


FIGURE 24

National policy on public transport, by region and country-income level, 2018



6.1.1 Discussion

Globally, less than half of countries report having a national policy (42%) or subnational policy (15%) supporting the agenda of walking and cycling for transport (see Fig. 23) – meaning that over half of countries need to strengthen their national walking and cycling policies. Almost three quarters of countries report a national policy for public transport. Ensuring walking and cycling are recognized and valued within government policy, and particularly in urban planning and transport policy, is essential to embedding and ensuring the planning and provision of walking and cycling infrastructure and networks. Designing communities and cities to support more walking and cycling is at the heart of a growing movement towards compact, connected communities, sometimes called "15-minute cities" or "20-minute neighbourhoods" *(38)*. These are communities where people's daily needs can be met within a short walk or cycle ride.

Transport policy determines the accessibility and convenience of public transport as an alternative to personalized motorized transport and can encourage or deter multimodal trips. Globally, nearly three quarters of countries report a policy on, and investment in, public transport – although such policies were reported less frequently in the African Region and the Western Pacific Region (see Fig. 24). Unsurprisingly, public transport policy and investment was notably less frequency in low-income countries compared with middle- and upper-income countries.

Public transport should be universally accessible, reliable, and should serve the needs of those in vulnerable situations, including lower-income communities, women, children, persons with disabilities, and older persons. Integrated public transport systems that are safe, affordable, accessible and convenient have an important role in increasing the number of active commuters. Investment in public transport, as well as walking and cycling, is encouraged in all countries. WHO supports countries to develop robust health and economic cases for such investments through the WHO Health and Economic Assessment Tool (HEAT) *(39)*.

6.2 National road-design standards and national road safety strategy

For the past 100 years, urban infrastructure and road-design standards have focused primarily on meeting the needs of motorized vehicles, with the needs of pedestrians and cyclists being secondary considerations. Road design is strongly linked to serious road injuries and fatalities, and improvements in the infrastructure of roads and the surrounding areas, such as separate bicycle lanes and walkways, are critical to improving overall road safety. Globally, pedestrians and cyclists represent 26% of all road deaths, with those using motorized two- and three-wheelers comprising another 28%. The African Region has the highest proportion of pedestrian and cyclist fatalities – with these groups accounting for 44% of road deaths *(14)*.

Despite the frequent use of walking and cycling in many low- and middle-income countries, the needs of these road users are often given insufficient attention in the planning and design of road networks. The lack of specific infrastructure features that ensure a safe journey, such as separate bicycle lanes and walkways, can leave pedestrians and cyclists vulnerable to impact and injury. GAPPA calls for all countries to strengthen provisions for safe walking and cycling that can be specified and enforced at national and subnational levels through national road safety strategies, national street-design standards, and road safety assessments.

In 2018:

- About half of countries (n=92 of 174, 53%) report having national design standards for separating pedestrians and cyclists from motorized traffic (see Fig. 25).
- 76% of countries (n=132 of 174) report having national design standards for the provision of safe crossings for pedestrians and cyclists.
- 64% of countries (n=112 of 174) report having national design standards for the management of speed.
- Less than half of countries (n=70 of 174, 40%) report national design standards that address all three road safety criteria (separating pedestrians and cyclists from motorized traffic; safe crossings for pedestrians and cyclists; and design to manage speed).
- Over three quarters of countries (n=139 of 174, 80%) report having a national strategy for road safety, but of these, only 18% (n=25 of 139) report the strategy to be fully funded; 76% (n=106 of 139) report only partial funding for the strategy (see Fig. 26).

6.2.1 Discussion

Road design standards help to translate national road safety strategies into practical and operational guidance for transport engineers and urban planners. Around half of countries (53%) have design standards that provide people who walk and cycle with separate, protected space. Three quarters of countries have design standards for safe street crossings, while the remaining countries do not.

While legislation on speed can provide a strong signal to road users, street design can also play a key role in speed management through good design principles and speed deterrents (for example speed humps). Two thirds of countries report street design standards to manage speed, while the remaining one third does not.

Less than half of countries have all three of these desirable and recommended design standards that support the creation of communities in which walking and cycling are made safe. Countries without design standards should develop and enforce these tools at national and subnational levels.

FIGURE 25

National road-design standards addressing safe speed, safe crossing and separation infrastructure, by region and country-income level, 2018

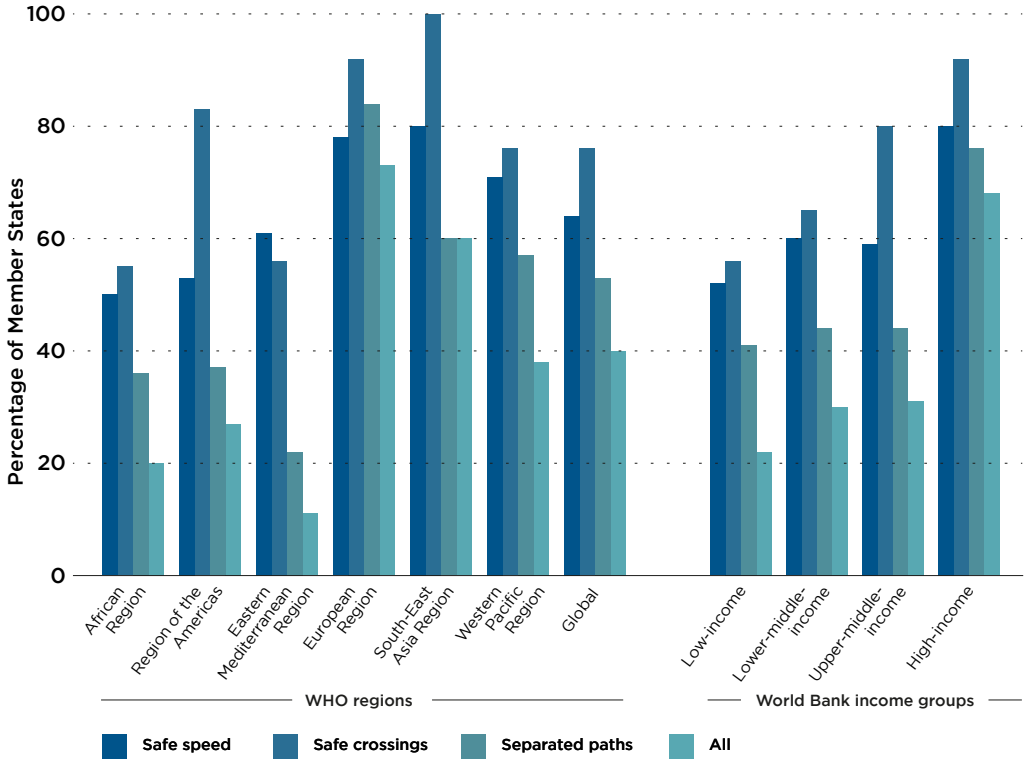
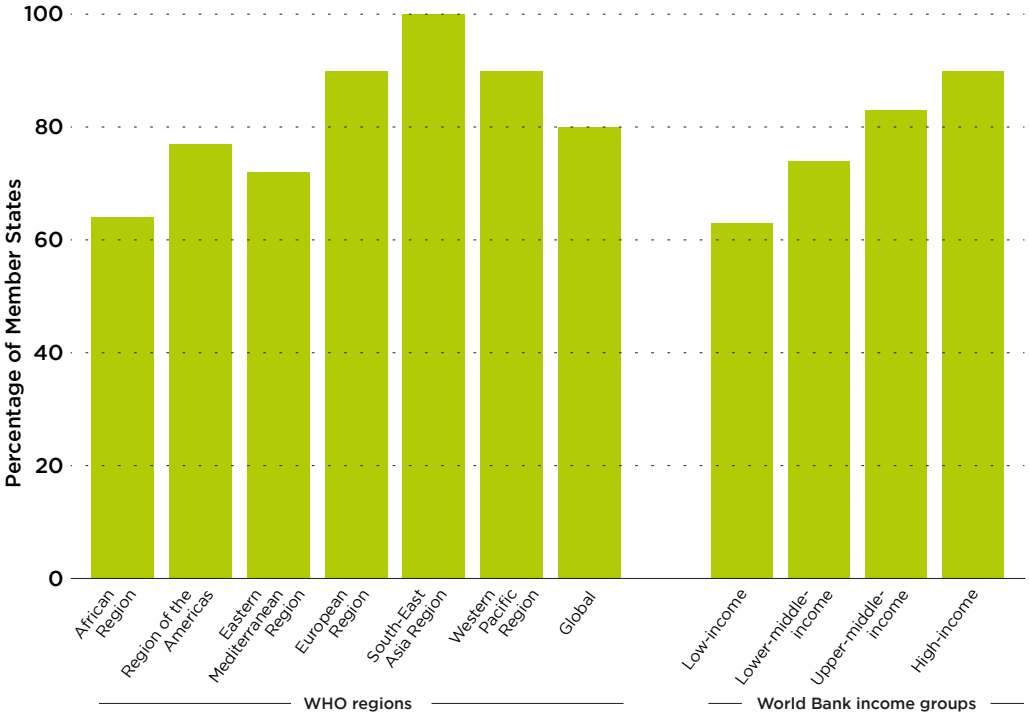


FIGURE 26

National road safety strategy, by region and country-income level, 2018



6.3 Road safety assessments

Roads should be regularly assessed on how safe they are for all users. Road safety inspections and safety-rating systems provide mechanisms to identify existing road design and speed management features that can reduce the likelihood of road crashes. WHO recommends that all countries undertake road safety assessments for all main user groups and report disaggregated data, including separately for people who walk or cycle.

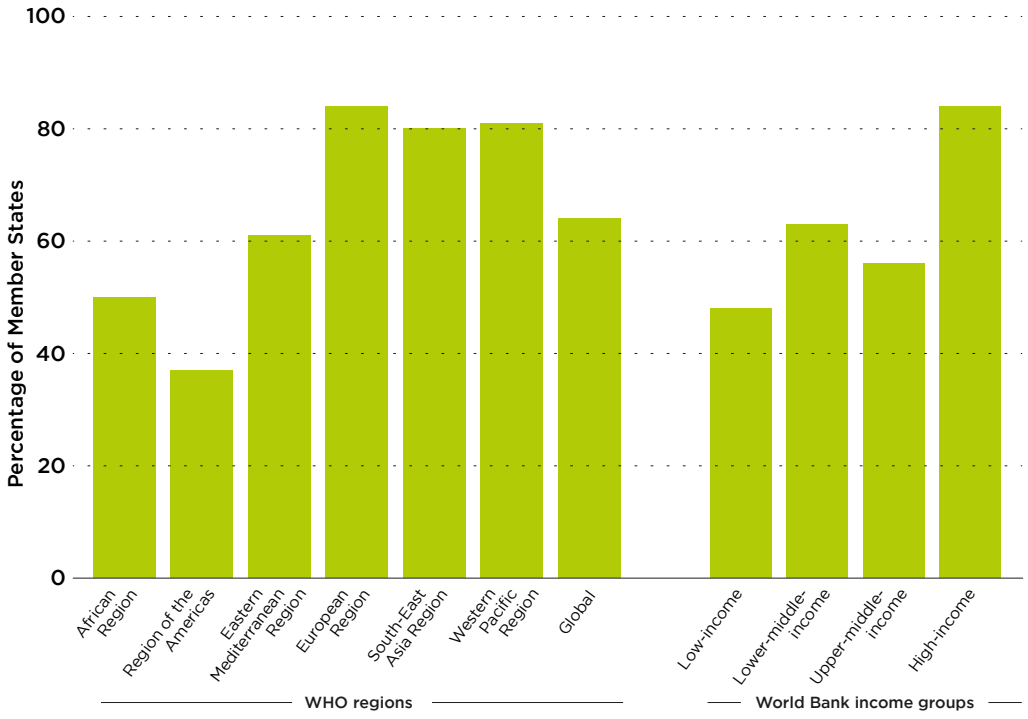
Likewise, planning protocols for new infrastructure projects should include a formal safety assessment of proposed new roads prior to construction. Consistent with recommendations in the WHO Decade of Action on Road Safety *(40)*, GAPPA recommends all countries create safe streets and assess and report road safety separately for all road users.

In 2018:

- Two thirds of countries (n=112 of 174, 64%) report that existing road networks are required to have a formal road safety inspection and a safety-rating assessment on a regular basis (see Fig. 27).
- Just under half of countries (n=84 of 174, 48%) report that all new road infrastructure projects were required to have a formal road safety audit and/or safety-rating assessment prior to construction; an additional 36% of countries (n=63 of 174) report that some new road infrastructure projects were required to complete these assessments (see Fig. 28).

Percentage of countries requiring road-safety assessments on existing road networks, by region and country-income level, 2018

FIGURE 27

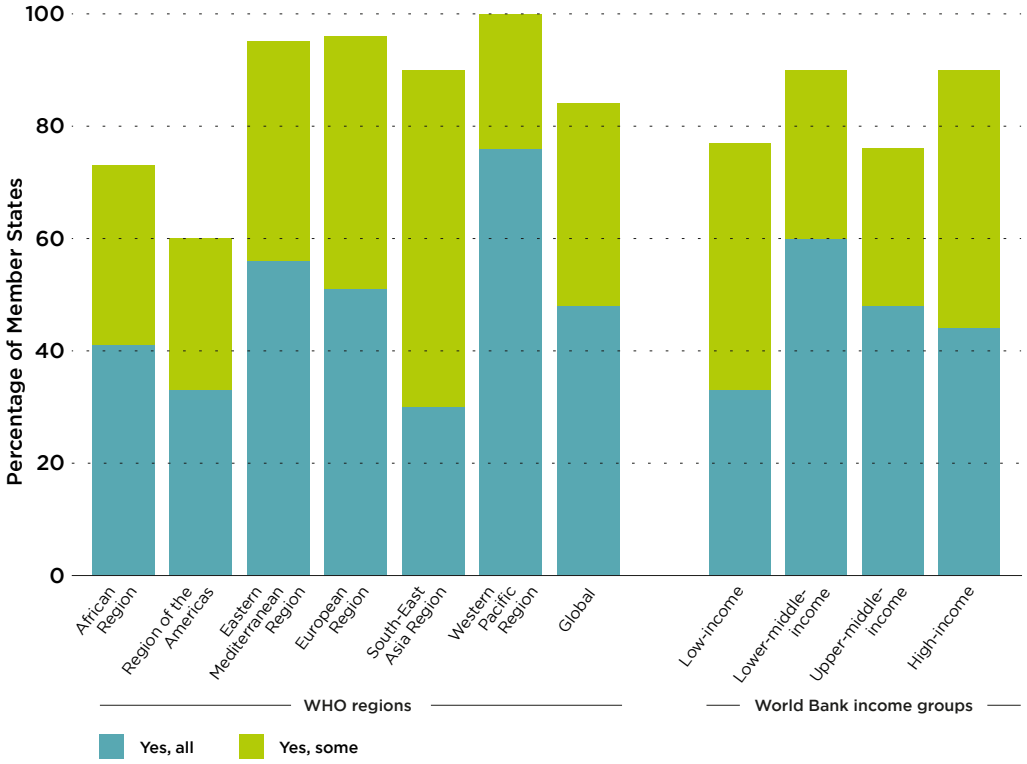


6.3.1 Discussion

Two thirds of countries report conducting regular road safety assessments on existing road networks, but less than half report assessment of safety on all new road-planning proposals. A third of countries report that just some new roads are subject to road safety assessments. As lack of road safety is a primary concern for all people – and a deterrent to many who would otherwise walk or cycle for transport – expanding road safety assessments to cover all existing and new roads should be a high priority. It is vital that assessment tools and data reported are specific to each type of road user. All road assessments must take account of road use by people of all ages and abilities.

FIGURE 28

Percentage of countries requiring road-safety assessments on existing road networks, by region and country-income level, 2018



6.4 Safe road-user behaviour

Enacting and enforcing legislation on key road-user behaviours is essential to make roads safe for all road users, especially vulnerable users such as those walking or cycling. The speed at which a vehicle travels directly influences the risk of a crash as well as the severity of subsequent injuries. Even small reductions or increases in speed affect crash risk. For example, every 1% increase in mean speed produces a 4% increase in the fatal crash risk, and a 3% increase in the serious crash risk *(14)*. For pedestrians hit by a car, the risk of death more than quadruples between 50 km/h and 65 km/h *(14)*.

In addition to reducing speed limits, drivers under the influence of alcohol and/or drugs pose a significant risk to themselves and other road users. Up to 35% of all road deaths are alcohol-related *(14)*. Any amount of alcohol can impair driving behaviour, and there is a rapid and exponential increase in risk where blood alcohol concentration (BAC) exceeds 0.005 g/dl *(14)*.

Distracted driving due to use of mobile phones and other in-vehicle devices is a growing risk factor linked to road injuries and fatalities. Using a mobile phone while driving (whether hand-held or hands-free) quadruples the likelihood of being involved a crash, while texting increases crash risk 23-fold *(14)*. Driver reaction times are 50% slower when using a phone compared to when not using one *(14)*.

An integrated approach to reducing drink–driving through a combination of legislation, public education, highly visible police enforcement, and alcohol locks in vehicles is essential. Enforcement of drink–driving laws that incorporates year-round random breath testing strategies, rather than targeted testing during certain times and in particular locations, is more effective in increasing both the perceived and actual probability of being caught *(14)*. WHO provides global recommendations and guidance on best-practice legislation for countries to support the development of safer roads for all users *(14)* (see Box 2).

Box 2. Best practice criteria for the assessment of legislation

Speed limit legislation:

The country has:

- a national speed limit law;
- urban speed limits not exceeding 50 km/hr;
- devolved power to local authorities to modify speed limits for different contexts.

Drink–driving laws:

The country has:

- a national drink–driving law;
- a BAC limit for the general population not exceeding ≤0.05 g/dl
- a BAC limit for young and novice drivers not exceeding 0.02 g/dl

Source: (14)

In 2018:

- 97% of countries (n=168 of 174) report having national speed limit legislation; only 26% (n=46 of 174) have laws meeting the criteria of best-practice speed legislation (see criteria in Box 2, and Fig. 29).
- 77% of countries (n=134 of 174) report having a national drink–driving law; only 26% of countries (45 of 174) have legislation that met all three criteria for best-practice drink–driving laws (see criteria in Box 2, and Fig. 30).
- 89% of countries (n=155 of 174) report a national law that restricts the use of drugs while driving, and 87% of countries (n=149 of 174) report having national legislation regulating the use of mobile phones while driving.
- 75% of countries (n=132 of 175) report having national legislation addressing all four key road-user behaviour risk factors (speed limits, drink–driving, driving under the influence of other drugs, or using a mobile phone when driving, see Fig. 31).

6.4.1 Discussion

Setting and enforcing appropriate speed limits, and thereby reducing the risk of injury to the most vulnerable road users, can make shared road use safer and increase the number of people choosing to walk or cycle. While the majority of countries report national legislation on speed limits (94%) and drink–driving (77%), only one quarter of countries have legislation that meets the best-practice criteria set for each. Strengthening national legislation to meet best practice is recommended for all countries.

Law enforcement is also important if road user behaviour is to be improved and road deaths reduced to achieve the SDG target of preventing at least 50% of road traffic deaths and injuries by 2030. Given the global burden of road deaths and injuries, and that road crashes are the leading cause of death among people aged 5–29 years, in 2020 the UN General Assembly proclaimed a second Decade of Action for Road Safety (https://www.who.int/teams/social-determinants-of-health/safety-and-mobility/decade-of-action-for-road-safety-2021-2030/). The Global Plan for the decade reflects the Stockholm Declaration, and calls for prioritizing policies to promote walking, cycling and using public transport as inherently healthy and environmentally sound modes of transport *(41)*.

FIGURE 29

National legislation on speed limits meeting best practice, by region and country-income level, 2018

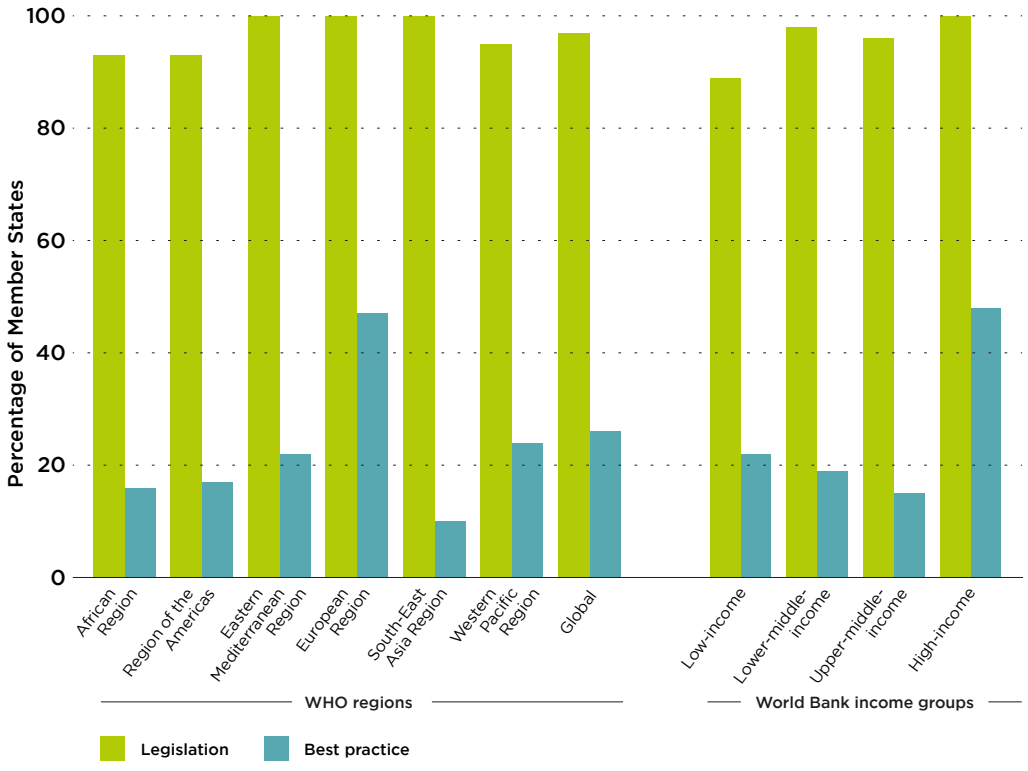


FIGURE 30

National legislation on drink-driving meeting best practice criteria, by region and country-income level, 2018

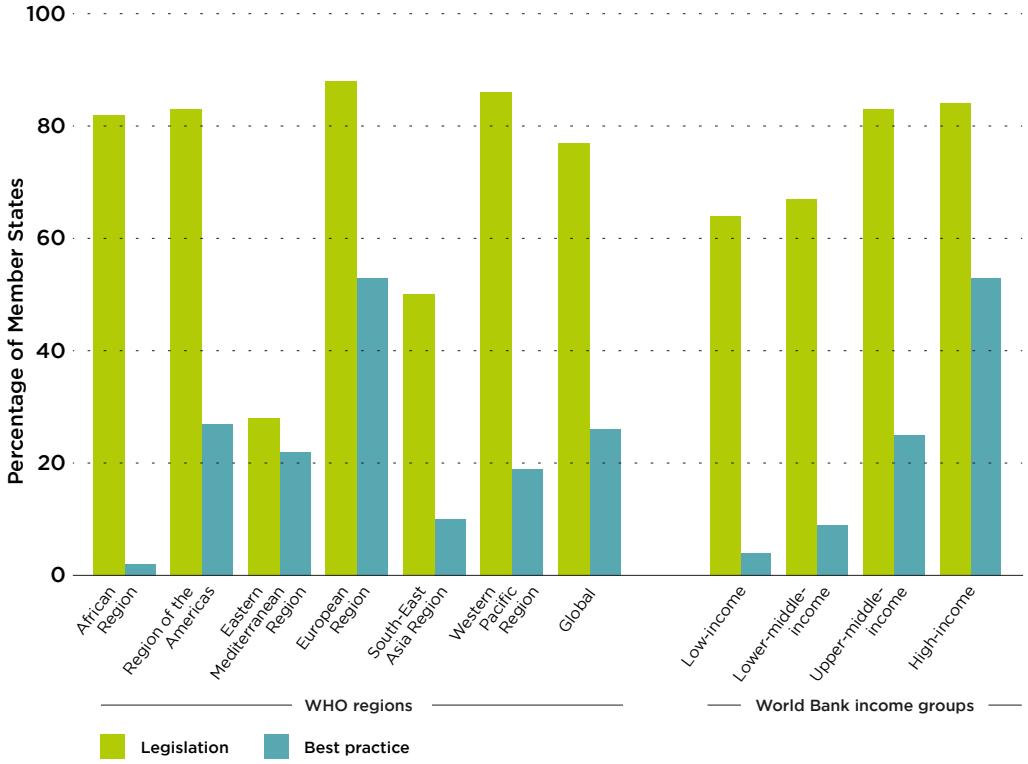
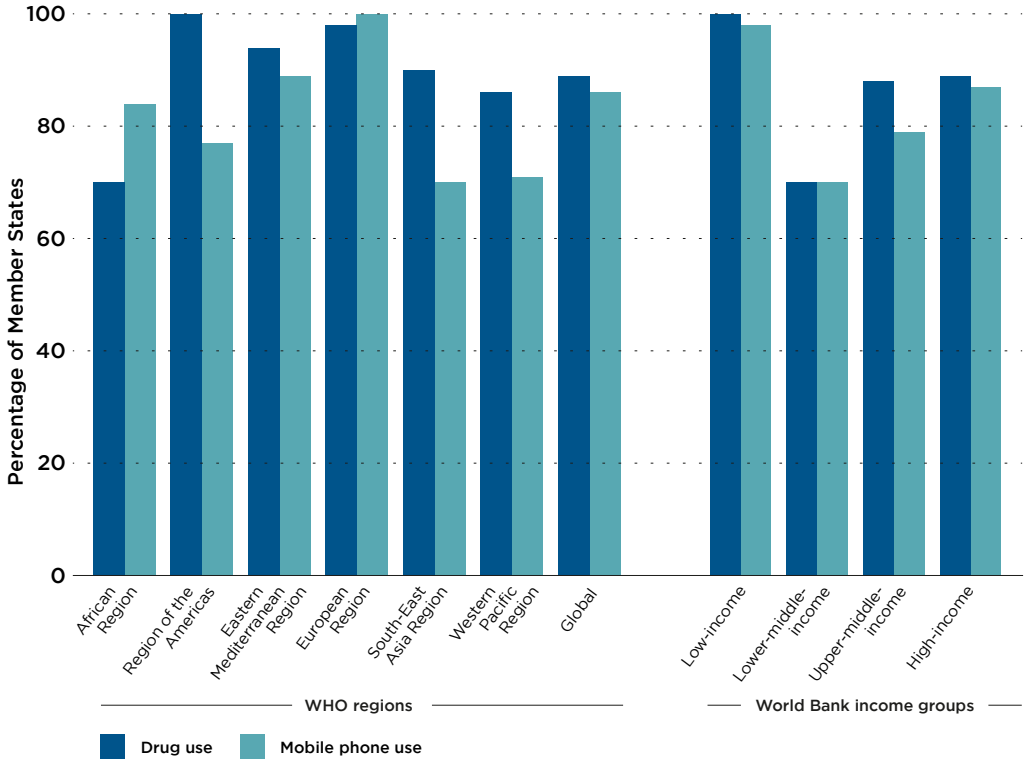
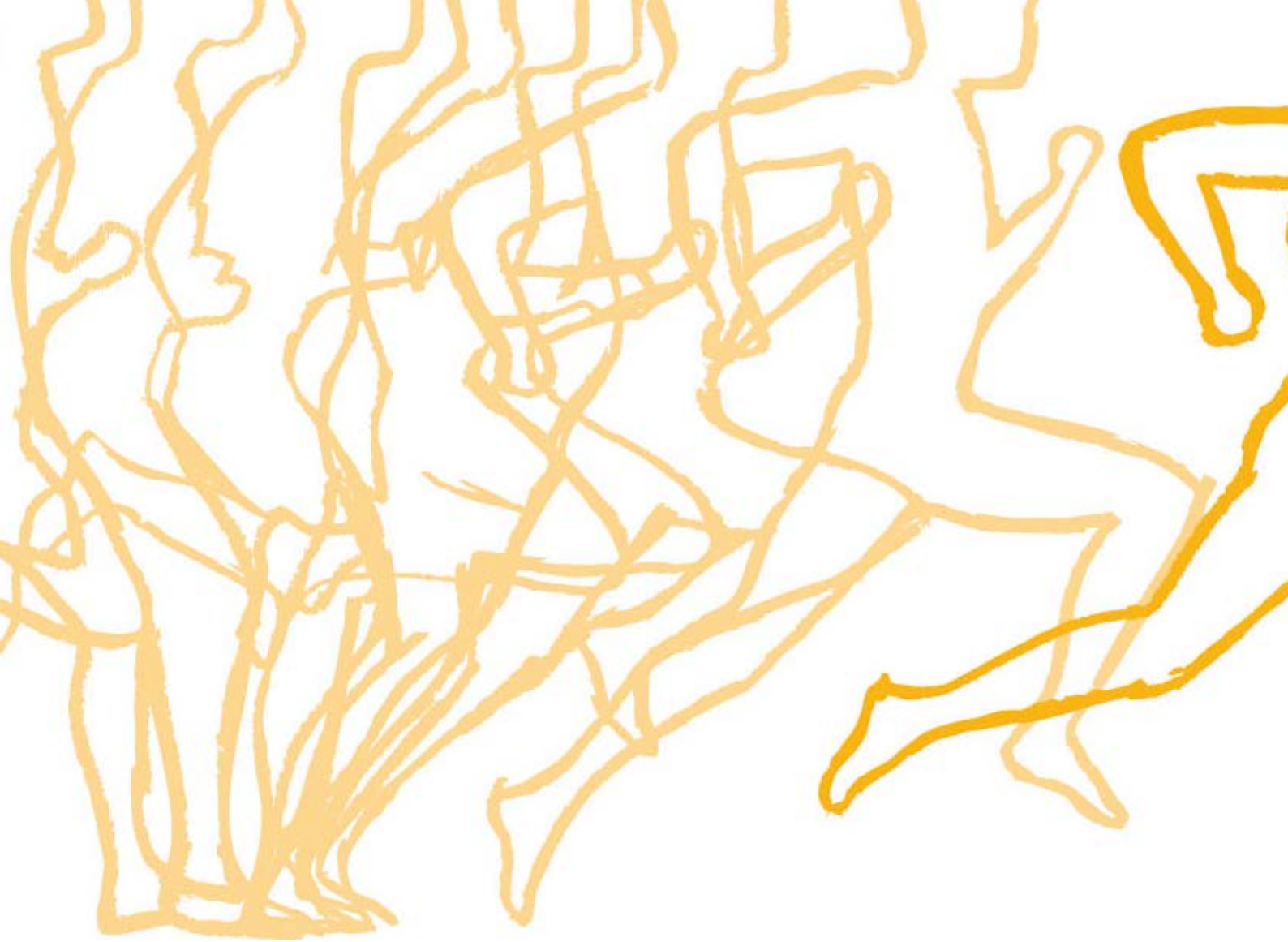


FIGURE 31

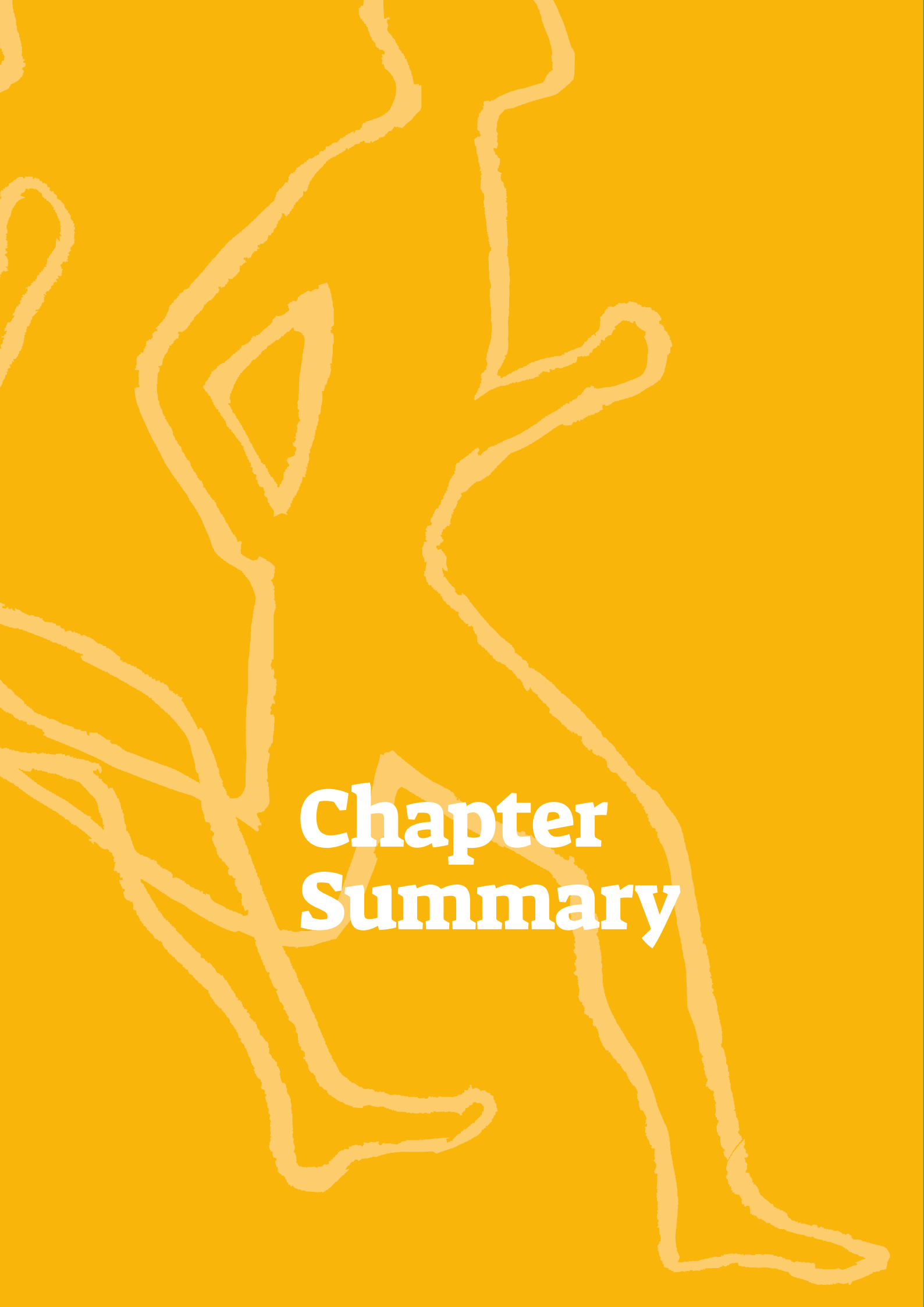
National legislation on distracted driving due to mobile phone use, or drug use, by region and country-income level, 2018





7. Progress towards active people

Being active every day is important for everyone and should be encouraged and enabled in the key settings where people spend most of their time – including in health care, workplace or educational settings; local community venues such as parks and faith settings; and in dedicated settings such as sport and recreational facilities. A settings-based approach to health promotion is well-established *(42)* and governments at all levels, stakeholder organizations and community organizations have a key role to play.



Chapter Summary

7.1

Promoting physical activity in all key settings can provide inclusive, accessible and affordable opportunities for people to be more active in the places they live, work and play.

- Less than half of countries report having a national protocol for the management of physical inactivity in primary care (and these are most often high-income countries).
- Just over half of countries with a protocol report that it is used in more than 50% of health care centres.
- Only around one third of countries report implementing national policies promoting physical activity through child-care settings and workplaces, and only around half of countries report community-based sports initiatives.

7.2

Targeted promotion of physical activity to engage vulnerable populations including older adults and people living with disability is a priority to address inequalities in health and ensure no one is left behind.

- The promotion of walking and cycling, or policies to engage older adults, are reported in less than half of countries.
- Less than half of countries report initiatives in public open spaces (including parks).

7.3

Mobile health, digital technologies (including mobile phones and wearable devices), offer new ways to support people to be more physically active and reduce sedentary behaviours.

- One third of countries report implementing national mobile health programmes as part of NCD-related initiatives – this has increased by (on average) 10% since 2019.

Specific populations can benefit from dedicated opportunities and physical activity programmes tailored to their needs and abilities, delivered in appropriate settings and contexts, for example less-active people, older adults, and people living with disability. GAPPA therefore recommends that all countries identify key settings and strengthen the provision of inclusive physical activity opportunities for people of all ages and abilities *(1, 2)*. Priority should be given to implement physical activity programmes in settings that are particularly appropriate for reaching and engaging vulnerable communities, and the least active people. WHO began tracking the progress of countries' policies and practices for promoting physical activity in primary health care in 2019, and across other key settings in 2021.

7.1 In health care settings

One of the central roles and responsibilities of primary health care providers is to support all patients to live healthy lives. As trusted sources of health information and advice, primary health and other health and social care professionals are at the forefront of direct, face-to face patient assessment and are ideally positioned to provide effective interventions on physical activity for the prevention and management of chronic diseases and mental health. Promoting physical activity as part of routine patient care is a particularly important approach for reaching the least active people, and those living with (or at risk of) chronic NCDs and/or disability.

Brief interventions, which combine assessment, counselling and support, offered in the appropriate context of patient care, can motivate and support patient behaviour change. WHO recommends brief interventions on physical activity as a cost-effective "best buy" when it comes to the management and primary prevention of NCDs *(1, 43)*. To achieve successful integration of physical activity, primary health care systems need standardized national protocols to support health professionals in delivering brief interventions on physical activity as part of patient care pathways.

In 2021:

- 40% of countries (n=78) report having evidence-based national protocols or standards for the management of physical inactivity through a primary care approach recognized or approved by the government or competent authorities (see Fig. 32).
- The proportion of countries reporting national protocols is highest in the European Region (62%), followed by the Western Pacific Region (52%). The percentage is under 50% in all other regions.
- National protocols are reported more frequently in high-income countries (61%) compared to all other income levels.
- The number of countries reporting national protocols has risen from 34% in 2019 to 40% in 2021, seen mostly in the Region of the Americas, the Eastern Mediterranean Region and the European Region.
- Of those countries with national protocols, just over half (n=43 of 78, 55%) report that they included a referral mechanism; this is an increase from 48% (n=31 of 65 countries) in 2019 (see Fig. 33).
- Just over half of countries with national protocols (n=45 of 78, 58%) report that these are being used in more than 50% of primary health care facilities (ranging from 33% in the African Region to 80% in the South-East Asia Region).
- Trends in the use of national protocols on physical activity in primary health care between 2019 and 2021 vary, with an increase in the African Region, the Region of the Americas and the South-East Asia Region, and a decline in the Eastern Mediterranean Region, the European Region and the Western Pacific Region.

FIGURE 32

Trends in use of national protocols on management of physical activity in primary care, by region and country-income level, 2019 and 2021

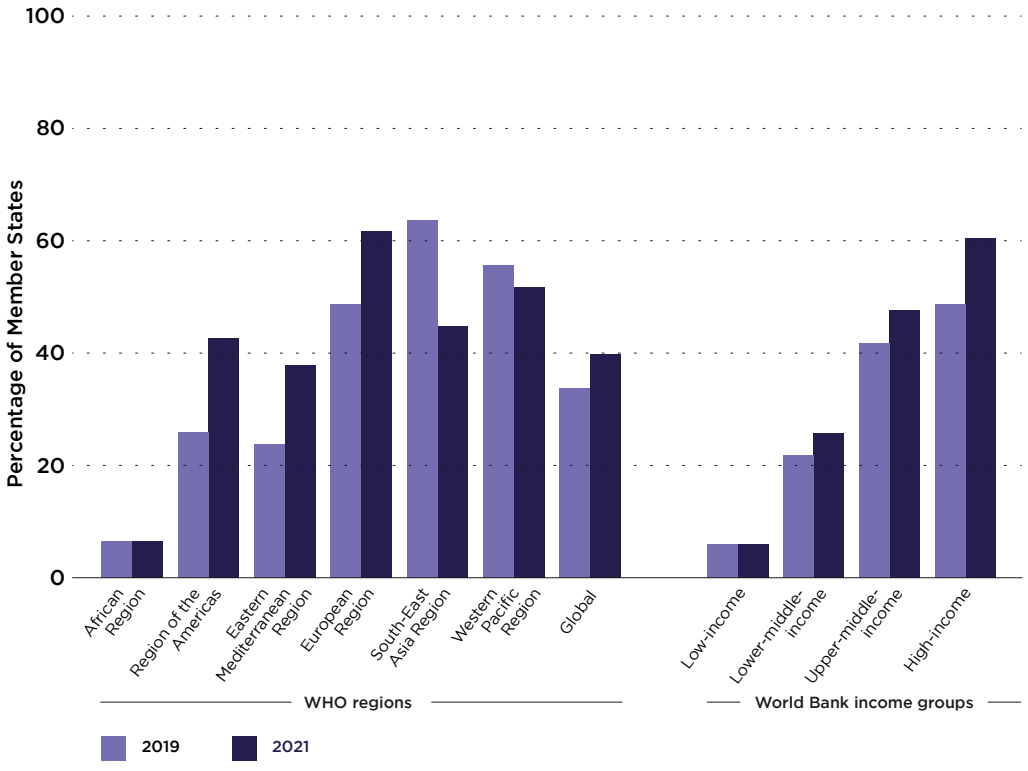


FIGURE 33

Trends in countries reporting a referral component in national protocols on management of physical activity in primary health care, by region and country-income level, 2019 and 2021[a]

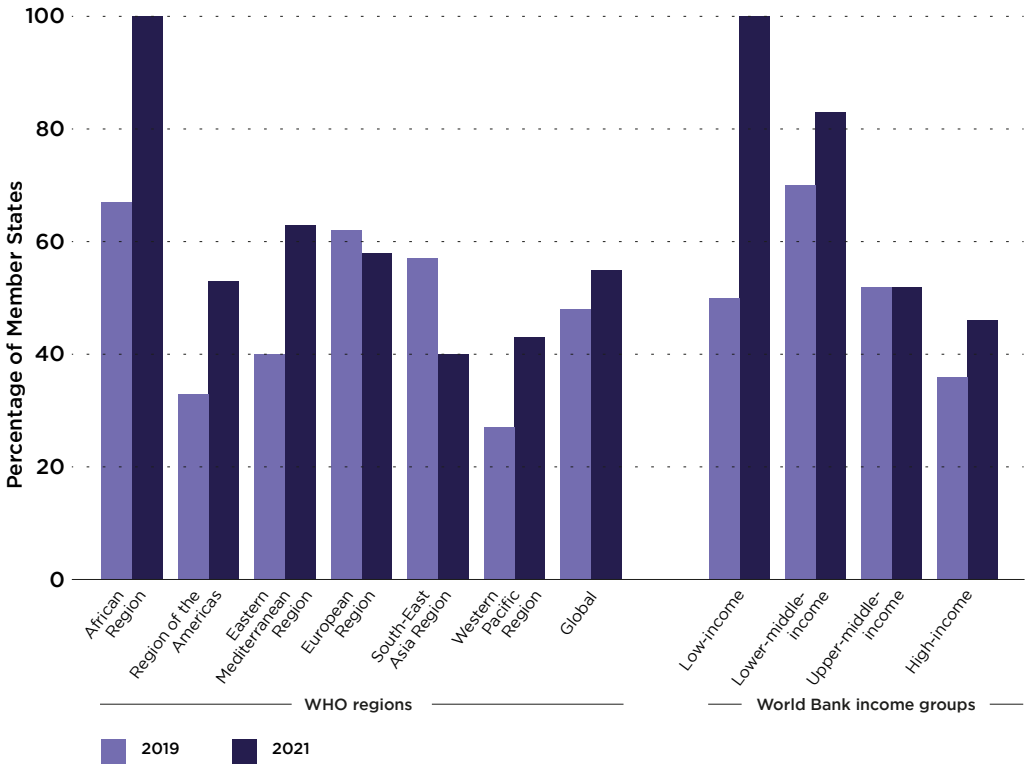
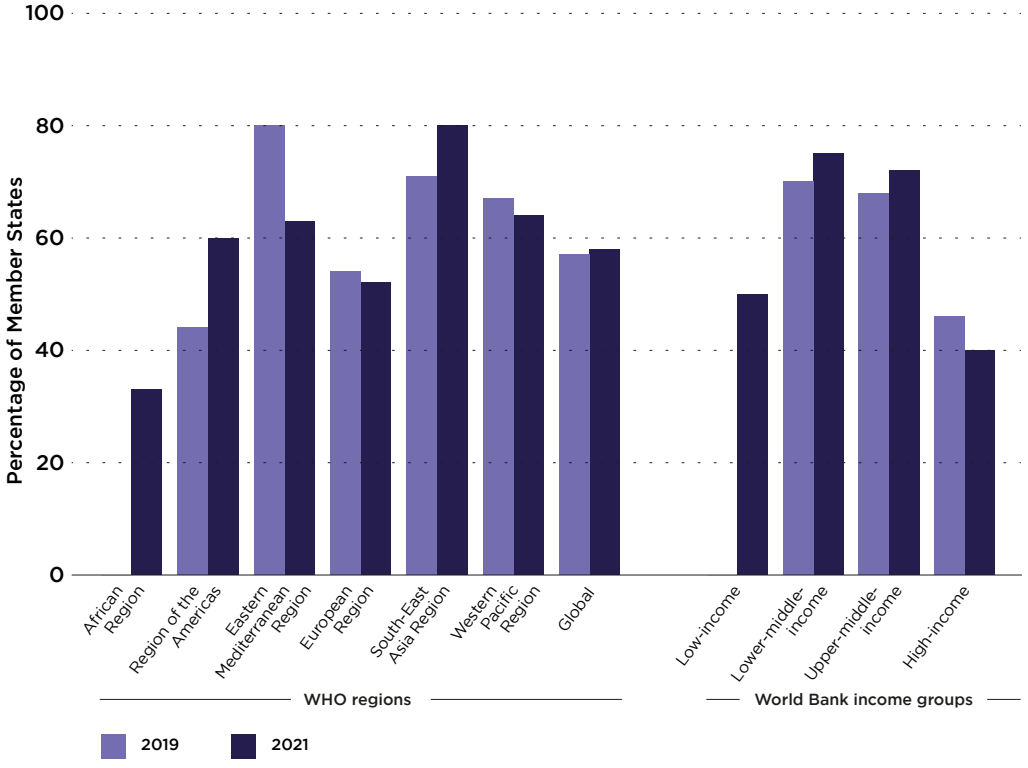


FIGURE 34

Trends in the proportion of countries reporting > 50% use of national protocols on management of physical activity in primary health care, by region and country-income level, 2019 and 2021[b]



[a] Percentage of 78 countries reporting a national protocol

[b] Percentage of 78 countries reporting a national protocol. Note: no countries in the African Region answered "yes" in 2019.

7.1.1 Discussion

National primary health care protocols serve to establish assessment and counselling on physical activity as core components in the management and prevention of NCDs within standard health care systems *(32, 44)*. Currently, less than half of countries (40%) report having national primary health care protocols for the management of physical activity, and even where they exist, one third of countries indicate they are used in less than 50% of health facilities.

Brief interventions on physical activity are recognized as effective and are recommended as an essential health care service in the WHO Universal Health Care Compendium (see https://www.who.int/universal-health-coverage/compendium). They are well-established in WHO NCD technical guidance tools such as HEARTS *(45)*, and in the WHO package of essential NCD interventions (PEN) *(46)*. As such, there is urgent need for countries that have not already done so to develop and implement protocols to ensure patients receive appropriate brief interventions on physical activity through primary health care. All countries are encouraged to ensure implementation is achieved in relevant settings, and that reach and compliance are monitored.

Brief interventions and patient pathways can include referral to either clinical or community-based programmes to provide patients with additional assistance with behaviour change. Referrals can include physical activity classes and/or additional counselling and support. Just over half (55%) of countries with a national protocol (n=43 of 78) report that their national protocols included a referral component. Given there is limited time and resources within most health systems to provide in-depth, tailored, and longer-term help to patients to establish a regular physical activity routine, there is considerable opportunity for collaborations between the health sector and community-based service providers to develop and deliver referral programmes tailored to local context and culture.

To support countries in developing protocols on management of physical activity in primary health care, WHO has developed the WHO ACTIVE toolkit *Promoting physical activity through primary health care (47).* In addition, as part of the WHO Academy (see https://www.who.int/about/who-academy), WHO is developing a free, online training course for policy-makers, programme managers and health care providers to develop and deliver assessment and behaviour-change counselling on physical activity in primary health care settings. It is expected to start in 2023.

7.2 In other key settings

7.2.1 Child-care settings

Early childhood (0–5 years of age) is a critical period for growth and development, and a time when children and their families and caregivers are most susceptible to external influences that can shape health and well-being. Positive healthy experiences can help prevent the development of NCDs later in life *(1, 30, 48)*. Outside the home, child care is a setting where many young children spend a large proportion of time during the working week. Early childhood services and child-care facilities are therefore key settings in which to ensure the appropriate provision of opportunities for active play and recreation throughout the day, safeguarding physical activity as key component of a child's development.

WHO published the first global guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age in 2019 *(30)*. To support countries in implementing these recommendations, WHO has also developed standards for early childhood education and care settings *(49)* to provide guidance on how physical activity, as well as healthy eating, can be promoted and supported.

In 2021:

- Only 30% of countries (n=59) report implementing national policies promoting physical activity in child-care settings.
- A higher proportion of countries (60%) in the European Region report policy actions in child-care settings compared to around one third of countries in the Region of the Americas, the Eastern Mediterranean Region and the South-East Asia Region.
- This figure falls to 19% in the Western Pacific Region and just 4% in the African Region.

7.2.2 Workplace settings

Poor physical and mental employee health, combined with work-related stress, cause lost productivity in many countries *(50)*. With increasing occupational time spent in sedentary behaviours (for example sitting) due to desk-based work and use of digital technologies, musculoskeletal disorders also account for substantial work-related ill health. Combined, these factors negatively impact both national health systems and economies. Given that nearly half the world's population (3.5 billion people) are workers – and illness and injury due to unhealthy and hazardous working conditions account for economic losses estimated at between 4–6% of GDP – improving the health of workers and the work environment is a global priority *(51)*.

Promoting ways to take "active breaks" and generally be more active during work (where appropriate) and enabling employees to reduce sedentary behaviour is recognized as beneficial for employee health *(50)*. Governments and all employers are encouraged to promote and enable all employees to be active. Creating supportive workplace environments for physical activity, as well as other healthy habits, is also recognized as providing good returns on investment as they can contribute to increased productivity and reduction in injuries, ill-health and absenteeism *(50)*.

WHO recommends policies and programmes in government and private sector workplaces that encourage the use of active transport to commute to and from work, and provide opportunities for employees to be active in the workplace or in their local community as part of a healthy workplace *(1, 50)*.

In 2021:

- Just over one third of countries (n=69, 36%) report implementing national workplace physical activity policies, ranging from 6% of countries in the African Region to 58% of countries in the European Region.

7.2.3 Through community-based sport and recreation initiatives

Providing access to and opportunities for locally based sport and recreation programmes and facilities (in addition to any active travel such as walking and cycling to get to places) is central to helping people participate in physical activity outside of work.

Provision and maintenance of sport facilities and programmes offered by the public sector are usually the primary responsibility of national and/or subnational government departments of sport and recreation, as well as the local city or municipality.

The health sector can play a key role in ensuring that health policy and programmes promoting physical activity are connected and aligned with community sport, recreation and leisure services, and vice versa.

In particular, health sector policies can highlight the need to ensure and prioritize provision of community and grassroots sport, exercise, and active-recreation opportunities that are inclusive and accessible to all members of the community, particularly in disadvantaged communities and for those who are least active.

In 2021:

- Just under half of countries (n=91, 47%) report implementing community-based physical activity and sport initiatives, ranging from 11% of countries in the African Region to 75% of counties in the European Region.

7.2.4 In public open spaces

Public open spaces provide free opportunities for people to be active. However, in addition to the provision of parks and recreation areas, these spaces are also a key setting in which physical activity programmes and interventions can be implemented. For example, exercise equipment can be installed in parks to provide "open gyms", which can increase participation, particularly by those who are less active and those unable to afford alternatives, such as young people and disadvantaged communities. Provision and use of exercise and sport equipment in public spaces has the additional potential of motivating others who visit these venues. In this way it can contribute to shifting social norms and the perceived "acceptability" of being physically active and exercising in public spaces.

Private (user pays) and public (free) group programmes or classes can also be provided in public spaces, and national and/or local government policy and regulations can either actively support or inhibit such initiatives.

In 2021

- 42% of countries (n=82) report implementing national policies promoting population physical activity in public open spaces (including parks), ranging from 6% of countries in the African Region to 72% of countries in the European Region.

7.2.5 Promotion of walking and cycling

Walking is the most popular form of physical activity (particularly for older adults) and is a convenient, free, universal behaviour. WHO recommends all countries include a priority focus on retaining current levels and supporting more people to walk and cycle more frequently. This can be achieved through implementing targeted communication campaigns (see Chapter 5) and by providing tailored programmes and services.

Walking and cycling promotion can be undertaken through setting-specific schemes such as Walk to School Programmes *(52)* and Walk in to Work Out *(53)*.

Bike-share schemes are another example of how reducing barriers and increasing convenience and access can enable more people to integrate cycling into their daily activities, for example for short trips during work, or for recreation and tourism. Programmes (for example, see Bike Relief, https://worldbicyclerelief.org/; UCI Bike City https://www.uci.org/bike-city-label/; and ITDP Cycling Cities https://cyclingcities.itdp.org/) and policies that enable more people to cycle can also increase access to schools, work, and health care, and this can enhance health and well-being. As both walking and cycling can be accessible for people of all ages and diverse abilities, they should form an important part of all countries' national action plans on physical activity.

In 2021:

- Less than half of countries (n=78, 40%) report implementing national policies promoting walking and cycling, ranging from just 2% of countries in the African Region to 72% of countries in the European Region (see Fig. 35).

7.2.6 Discussion

Promoting and enabling physical activity across the key settings where people spend large amounts of time is a core recommendation for implementing a whole-of-government approach to increasing levels of physical activity *(1)*.

The data from 2021 show that, on average, around half of countries report implementing a settings-based approach. Across each setting, a higher number of countries in the European Region report policy action on physical activity compared to countries in the African Region. Implementation of policy across different settings varied in the other regions, with no evidence of any clear pattern. There was, however, a sharp trend by country-income level, with high-income counties more likely, compared to low-income countries, to report implementing a settings-based approach to promoting physical activity. Overall, these novel data suggest that nearly all countries should strengthen their national policy on physical activity to ensure that promotion of physical activity covers all key settings.

Countries' efforts to implement a systems approach should be supported by evidence-based recommendations on the most effective approaches to promote physical activity in each key setting, combined with best-practice guidance on implementation. However, global guidance does not yet exist for many of the identified key settings, and WHO is working to address this gap by developing tools on effective approaches and, where relevant, developing standards for provision of supportive environments and programmes in each key setting.

The WHO ACTIVE technical package *(27)* and the set of technical tools provide guidance on promoting physical activity in early childhood education and care settings *(49)*, in schools *(54)* and in health care *(47)*. Tools for promoting walking and cycling and physical activity through community sport and mega sport events are forthcoming. Other existing WHO guidance is also being updated in relation to WHO Healthy Cities *(55)* and WHO Health Promoting Schools *(56-58)*.

Tools and guidance on the promotion of physical activity in each key setting should also identify a set of core indicators to guide practice and strengthen the assessment of country progress. The data provided in this first report on GAPPA implementation should be used to stimulate discussion about what is already being done and what other opportunities exist across countries.

By its very nature, a settings-based approach to promoting physical activity will require multisectoral partnerships and effective collaboration. The development of global guidance – as well as future approaches to global monitoring of settings – should engage all involved sectors to ensure alignment and avoid duplication.

7.3 Promoting physical activity to target populations

Opportunities to be regularly active are not the same for everyone *(5)*. Some people are disproportionately impacted by barriers such as cost, access, availability and cultural norms. These barriers lead to inequalities in levels of physical activity in most countries, for example between men and women, and also by race, ethnicity, education, income, and geography. These inequities in opportunity persist despite international conventions setting out actions to protect the rights of vulnerable groups to health and well-being, in particular children *(59)*, older adults *(60)*, and people living with disability *(61)*.

In pursuit of the targets set for increasing physical activity by 2030, GAPPA has also called for all countries to reduce inequities – to "close the gap" in levels of physical activity between subpopulations. In particular, countries are recommended to implement inclusive policies and programmes to enable and ensure older adults and people living with disability have opportunities and the choice to fully participate in regular physical activity.

The 2020 WHO Guidelines on Physical Activity and Sedentary Behaviour include recommendations specifically for older adults and for people living with disability, and confirm the multiple mental and social health benefits of regular physical activity for people of all ages, including older adults and all abilities, and provide guidance on how to design and deliver inclusive physical activity interventions to enable these populations to be more active *(2)*.

7.3.1 Physical activity programmes for older adults

In most countries physical activity levels decline with age. Yet older adults in particular benefit from regular physical activity to maintain physical, social and mental health, delay dementia, prevent falls, and realize the benefits of healthy ageing *(2, 62)*. Access to appropriate and varied physical activity opportunities and programmes for older adults can enable older people to maintain active lifestyles, live independently for longer, and continue enjoy doing what they value the most.

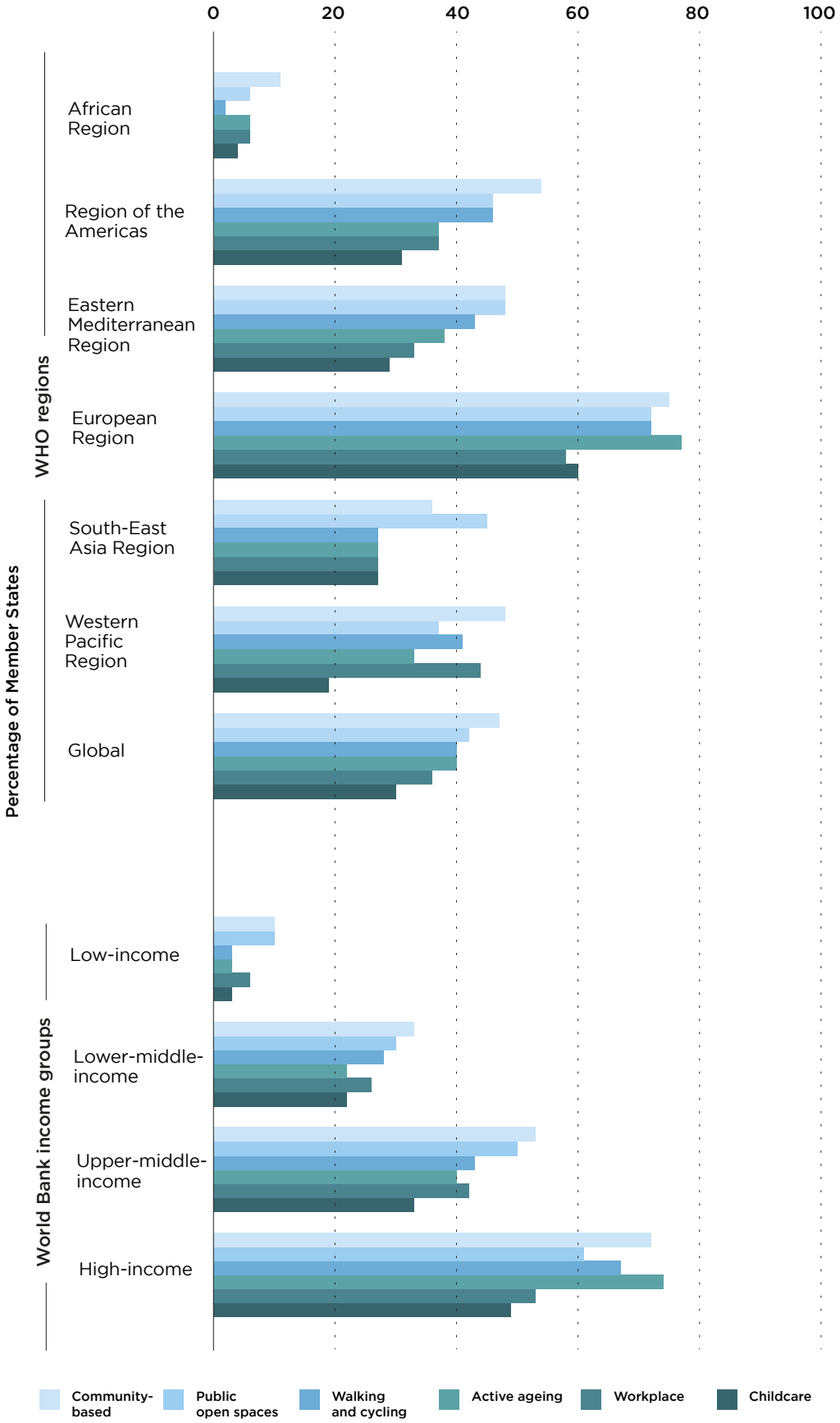
In 2021, WHO commenced tracking global progress in countries on policy actions aimed at providing more opportunities for physical activity for older adults, as recommended by GAPPA policy action 3.4.

In 2021:

- 40% of countries (n=77 of 194) report implementing national policies to promote physical activity as part of active ageing, ranging from 6% of countries in the African Region to 77% of countries in the European Region.

FIGURE 35

Implementation of national policies promoting physical activity across key settings, by region and country-income level, 2021



7.3.2 Physical activity programmes for people living with disability

People living with disability are less likely to be physically active compared to those without disability *(63)*. This increases their NCD risk, while also being potentially detrimental for their mental health and social well-being *(64)*. Providing opportunities for inclusion in physical activity for people living with disability can help eliminate such barriers by changing perceptions, emphasizing strengths and abilities, promoting personal resilience, and having a longer-term impact on inclusion in society *(65)*.

GAPPA recommends all countries implement inclusive policies and programmes to increase the opportunities for people of all abilities and, where needed, provide additional targeted programmes to meet the needs of particular groups or contexts. Despite decades of science and advocacy on this issue, there are no global data sources on country progress on developing and implementing policy and programmes aimed at increasing participation in physical activity for people living with disability.

7.3.3 Discussion

Addressing inequalities is one of the guiding principles of GAPPA, which called for all countries when promoting physical activity to apply proportional universality in the allocation of resources in order that those who need help the most are reached first. This is also the central aim of the 2030 Agenda – to leave no one behind. Applying this principle requires countries to target resources, efforts and interventions towards the needs of the least active populations.

To increase participation in physical activity by older adults and people living with disability it is essential to mitigate the known barriers that limit opportunities and access. This includes increasing knowledge, changing the attitudes of individuals, family and carers, and shifting social norms. Providing access to adaptive technologies and equipment when needed is important, as well as ensuring community spaces and programmes are inclusive of all levels of ability.

Implementing these as part of a systems approach, supported by the necessary policy and governance systems and co-designed with relevant communities, can enable more physical activity and help reduce sedentary behaviour among these populations. As the need for these actions is well known *(62, 64)*, addressing the failure to implement solutions at scale in most countries will require stronger leadership to ensure relevant policy actions are prioritized, and resources proportionate to the need within the context of each country are allocated for implementation.

All countries are recommended to prioritize the promotion of physical activity to older adults and people living with disability. Forthcoming WHO guidance on interventions to promote physical activity among older adults, vulnerable populations and people living with disability aims to redress this balance and ensure that the least active, those facing the greatest barriers, and the most vulnerable are not left behind.

7.4 Mobile health and digital tools to promote physical activity

Advances in digital and mobile technologies are transforming health-care services and providing new opportunities for health promotion *(42, 66)*. Combined with artificial intelligence and augmented reality, these technologies could transform how people receive health care, including support to be more physically active and reduce sedentary behaviours.

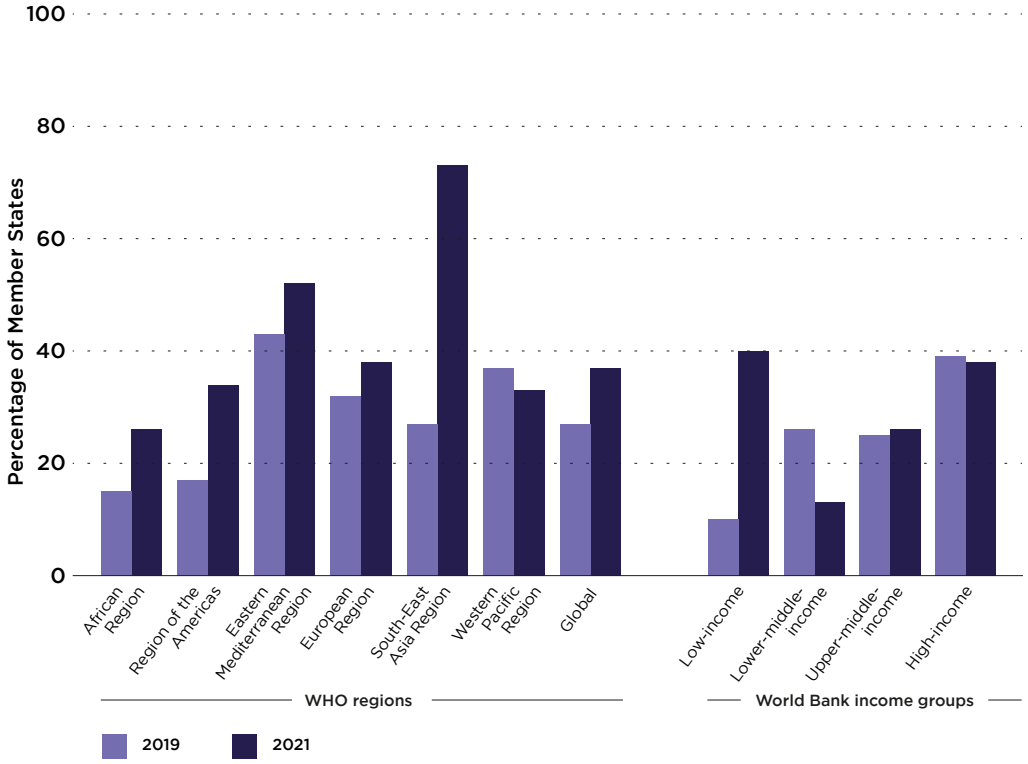
Digital and wearable technologies, such as smart watches and applications, wearable sensor devices (for example pedometers) and smartphones, are already being used to provide individuals with healthy lifestyle advice and behaviour change support *(67)*. There have been significant advances and use of sensor devices and phone applications that track individuals' exercise patterns, and combined with interactive programmes, "gamify" participation. This can increase engagement by people of different ages and abilities, as well as those living with various health conditions *(68)*. One clear practical advantage of digital interventions is their potential to reach and engage large numbers of people at relatively low cost. This has been of particular importance during the COVID-19 pandemic. GAPPA recommended that countries invest in the research and development of innovative and digital approaches to promoting physical activity *(1)*.

In 2021:

- A third of countries (n=72, 37%) report implementing a national mobile health programme as part of NCD-related initiatives in the past 2 years (see Fig. 36).
- Use of mobile health programmes by countries rose between 2019 and 2021, from 27% to 37% of countries. The sharpest increase was in low-income countries, which saw a rise from 10% in 2019 to 40% in 2021.
- Use of mobile health programmes is reported by more countries in the South-East Asia Region (73%) and the Eastern Mediterranean Region (52%), compared to less than half of countries in all other regions.

FIGURE 36

National mHealth initiatives, by region and country-income level, 2019 and 2021



7.4.1 Discussion

Data show over one third of countries use mobile health (mHealth) initiatives for NCD prevention and this has increased since 2019. This increase may reflect the rapid switch to providing virtual health-care services due to the COVID-19 pandemic – an event that has also changed where and how people want to be active. There is now a key role and preference for more "hybrid" approaches into the future *(69)*. Providing combinations (or hybrid approaches) of both in-person and digitally delivered programmes can reach more people and support participation in exercise and sport programmes, particularly by people with less access to facilities. There is, however, a need to ensure that future developments do not widen inequities and that they are inclusive of all people – including the least active, older adults, people living with disability, and those without access to mobile technologies or affordable Internet access *(70)*.

To support countries in applying mobile technologies to improve global health, WHO's Be He@lthy, Be Mobile (BHBM) initiative has developed mobile phone programmes to help countries scale the prevention of leading NCDs including diabetes, cancer, and cardiovascular diseases *(71)*. WHO has applied the BHBM programme principles to develop mActive – a behaviour support programme to increase physical activity through the promotion of walking *(72)*. mActive can be implemented as part of communication campaigns and community-based initiatives, through the workplace, or as a patient support tool used as part of brief interventions by primary health-care professionals.

The currently available data for this indicator provide only a proxy measure of countries' progress on the adoption of mobile technologies as they do not specifically report mobile health programmes on physical activity. There is a need for more tailored and targeted indicators and data collection to better monitor progress in the future. This agenda will require new and stronger partnerships between technology, health and the sport and exercise sectors. In addition, standards and regulations should ensure data security and protect users, and address issues of accountability, ethics and inclusion.

8. Global progress on GAPPA outcomes and impact

The primary aim of the Global Action Plan on Physical Activity (GAPPA) 2018–2030 *(1)* is an increase in population levels of physical activity. This will directly improve mental and physical health and well-being, and contribute to achieving global targets set for NCD prevention as well as other social and economic priorities. Tracking changes in levels of physical activity, and the wider impact of this over time, is core to monitoring national and global progress of GAPPA implementation towards the agreed targets set for population levels of physical activity for 2025 and 2030.

Two global outcome indicators for physical activity, adopted by all Member States at the World Health Assembly *(73)*, are used to assess global progress, namely:

- prevalence of insufficient physical activity among persons aged 18 years and over; and
- prevalence of insufficient physical activity among adolescents (aged 11–17 years).

8.1 Progress in monitoring global and national levels of physical activity

Regular monitoring and dissemination of national trends in physical activity across all population groups is vital to help governments and stakeholders set policy priorities, improve policy implementation, and provide accountability. Since 2004 and the first Global Strategy on Diet and Physical Activity *(74)*, all countries have been recommended to establish national monitoring systems for assessing physical activity as part of a comprehensive approach to NCD prevention and control *(73)*. This policy action was reaffirmed as a core priority of the national implementation of GAPPA *(1)*. WHO supports countries with technical assistance and tools such as the WHO STEPwise approach to NCD surveillance (STEPS), and surveillance instruments such as the Global Physical Activity Questionnaire (GPAQ) *(75)*.

As described in Chapter 4, most countries report having a national surveillance system that includes physical activity for adults (92%, n=185) and for children and young people (n=146). However, around one third of these countries report that their last data collection was more than 5 years ago, and for around another 10% of countries, more than 10 years ago. Of additional concern, a recent WHO assessment revealed that the majority of countries do not have trend data on physical activity (i.e. data from at least two time points using consistent methods) *(6)*. This analysis revealed only 65 (39%) of the 168 countries assessed had useable trend data on physical activity levels among adults *(6)*. The absence of both recent and regular monitoring of trends in physical activity is a significant impediment to national and global progress. All countries are recommended to review the status of their national surveillance of physical activity, and, where needed, to invest in systems to address data gaps and strengthen the frequency of monitoring of physical activity.

8.1.1 Strengthening national monitoring of domain-specific physical activity

There is increasing need to monitor and track participation in the key domains of physical activity in order to provide relevant and timely information to multiple government departments and support a whole-of-government approach to policy and action.

To date and in general, the primary focus of health sector-led surveillance systems is to assess total levels of physical activity and report on the degree to which levels of physical activity recommended by various guidelines and targets are met. However, other sectors also need national data on physical activity and have a specific area of interest. For example, the sport sector is interested in monitoring participation in the domain of "sport"; As such, many countries conduct national surveys to track trends in participation in different sports and some embed questions about sport participation in national household surveys. However, the current diversity of metrics used by the sports sector hinders country and global comparisons. Given the importance of understanding and assessing the contribution of sport to the SDG agenda *(65)*, there is an urgent need to establish internationally comparable measures and indicators to track participation in sport.

Similarly, the transport sector is interested in participation but is largely focussed on walking and cycling in order to inform national transport and mobility planning and investment. Many countries conduct national transport surveys with some questions assessing walking and cycling for transport. However, there is currently no global consensus on the required metrics to use, nor a global data source tracking national levels of walking and cycling for transport. This is despite the significant contribution that both modes of mobility have in global efforts to reduce transport-related CO_2 emissions and reduce

the use of fossil fuel to improve air quality and mitigate climate change *(76)*.

The needs of the sport and transport sectors show how multiple government departments can benefit from coherent and consistent monitoring of trends in specific physical activity domains. Yet in very few countries are these data collected, coordinated and harmonized to maximize efficiency and use. Despite GAPPA calling for all countries to advance the reporting of domain-specific physical activity, there has been limited progress – this means global collaboration to strengthen the monitoring of physical activity domains remains a high priority. Attention must also be given to the development of updated global guidance and technical tools on the surveillance of total, and domain-specific, physical activity that is applicable to, and feasible in, all countries.

8.1.2 Ensuring full coverage and inclusion of physical activity in national surveillance systems

There are several notable gaps in current global and national monitoring systems on physical activity. These include the absence of national surveillance of levels of physical activity among people living with disability, as well as among children aged 6–9 years and children under the age of 5 years. For each of these populations there is a need to establish standardized protocols and instruments that are affordable and practical in diverse contexts. Scientific work is underway to address some of these gaps. The SUNRISE collaboration of over 43 countries across six continents is testing the use of device-based assessment for surveillance of physical activity in children aged 4 years (see https://sunrise-study.com/). The COSI initiative in Europe is testing parent (proxy) assessment of physical activity among children aged 6–9 years, while other countries have developed protocols using wearable devices in this age group (see https://www.euro.who.int/en/health-topics/disease-prevention/nutrition/activities/who-european-childhood-obesity-surveillance-initiative-cosi/about-cosi). Advancing the science and application of technical tools to strengthen surveillance of physical activity in these age groups, as well as among people living with disability, is a priority.

An emerging area for development in most national data systems is the monitoring of sedentary behaviours. Sedentary behaviour was included for the first time in WHO's recent guidelines *(2)* and WHO has called for the development of standardized tools, protocols and affordable instruments to support countries in expanding their national surveillance systems. Undertaking these tasks requires more scientific evidence to guide the establishment of global consensus on the best indicators and thresholds to use. Other areas in need of development include national assessment of the degree to which population groups meet levels set out in specific physical activity guidelines in terms of the different types of exercise that provide specific health benefits (for example, the proportion of the population meeting the global guideline on multicomponent exercise to prevent risks of falls in older adults, or muscle strengthening exercises that are beneficial to all ages). To support future global reporting on GAPPA progress and outcomes, these gaps in national surveillance must be addressed.

8.1.3 Wearable technologies to assess physical activity

One important advantage of using digital and wearable devices to assess behaviour is their ability to assess and record physical activity as well as sedentary behaviours and sleep. Given the interconnected nature of these three behaviours across a 24-hour day, and the complexity of self-report instruments that limit their applicability to national surveillance systems, there is considerable potential of wearable devices to extend the breadth of what can be measured and improve the quality of data gathered. These advantages are relevant to surveillance of physical activity and sedentary behaviours across all age groups and abilities, but particularly young children and youth. Both GAPPA and the WHO Guidelines on Physical Activity and Sedentary Behaviour call for investment and collaboration to advance the scientific development of consensus on device-based measurement and its application to national physical activity surveillance. Alongside developing this global consensus, efforts are also required to reduce and mitigate the financial barriers to using digital technologies in national surveillance systems so the full potential of device-based measures is attainable in all countries.

8.1.4 Global monitoring of population-level physical activity

Reporting on progress towards the physical activity targets set for 2025 and 2030, as requested by Member States, requires monitoring national and global levels of physical activity. The most recent global, comparable estimates in adults were published in 2018 using data collected up to 2016 from 168 countries *(6)*. Similarly, the most recent global estimates on physical activity among adolescents were published in 2019, based on data from only 146 countries and which is now over 5 years old *(8)*. Given the time limitations of these data, there is an urgent need to undertake an update of global comparable estimates of physical activity and this work should seek to align data collection and reporting with the monitoring of country implementation of GAPPA policy actions.

In addition, global reporting on levels of physical activity currently disaggregates data only by age and sex, and this should be expanded to enable reporting by other socioeconomic indicators in line with agreed UN recommendations (such as WHO's NCD Global Monitoring Framework *(73)*, and the UN Convention on the Rights of Persons with Disabilities *(61)*. This would also align and support global monitoring of the agreed GAPPA priority of reducing disparities in levels of physical inactivity.

8.2 Monitoring the impact of physical activity

Assessing the impact of physical activity is vital to "close the policy cycle" and show governments and decision-makers the return on investment in relation to GAPPA policy actions, and to strengthen accountability. One key area to show the impact of reducing physical inactivity is on the prevention and management of NCDs, and the improvement in well-being. While global consensus on well-being measures remains a work in progress, the assessment of the impact on NCDs is well advanced. Previous estimates showed that over 3 million NCD-related deaths per year could be averted by increasing physical activity *(77)* and later updates showed this could reach around 5 million deaths per year by addressing physical inactivity across four NCDs (heart disease, stroke, diabetes and breast and colon cancer) *(78)*. While other global analyses have presented lower estimates *(79)*, the methods and assumptions applied were different and subject to some criticism *(82)*.

One notable limitation to all estimates of the health impact of physical activity is inadequate current and comprehensive data on the prevalence and patterns of physical activity in many countries. This issue is discussed earlier in this report and must be addressed in order to strengthen health impact assessments of physical activity. To support GAPPA implementation yet further, regular global assessment of the contribution of physical inactivity to the prevention of NCDs and mental health conditions should be established.

To support reporting on the impact of physical activity, in this report WHO provides new global estimates of the cost of inaction on physical activity and for the first time includes mental health outcomes (see Chapter 2). The results show that almost 500 million predicted new cases of NCDs and mental health conditions could be averted by 2030 through scaling-up policy actions to increase population levels of physical activity. Such data indicate the magnitude of potential benefits and the impact on society of policy action on physical activity, and support evidence-based advocacy and decision-making.

The benefits of increasing physical activity go beyond NCD prevention and indeed contribute to social and economic development goals. In particular, increased participation in sport is recognized in the SDGs *(65)* and efforts to develop standard metrics to capture these wider societal benefits are underway. For example, social return on investment (SROI) models attempt to capture the benefits to society of disease prevention as well as benefits such as increased volunteering, improved educational outcomes, crime reduction and increased employability and social inclusion. These wider social benefits can be achieved through sport programmes that are intentionally designed to deliver social development impact. While SROI models are widely used, there is no global consensus on methods, and this reduces the comparability of results. Prototype methods

have been applied to major sporting events and single sports such as football (see https://www.uefa.com/insideuefa/football-development/news/0264-10fe1ac0497c-ffe49c301d3e-1000--explainer-football-s-social-value/) and to national and city level initiatives *(81, 82)*. To advance reporting on the impact of physical activity, global collaboration is needed, involving all relevant sectors, to accelerate the development of consensus on methods for social and development impact models. It will also be necessary to invest in developing the data systems and workforce to undertake, communicate and use these results in policy- and decision-making.

Increasing physical activity also contributes to addressing important global priorities related to urban and environmental health, particularly through increased walking and cycling as a mode of sustainable low-carbon (or no-carbon) mobility for short transport trips. The potential contribution of increasing the use of walking and cycling and reducing use of personalized motor vehicles can already be calculated using tools such as WHO's Health Economic Assessment Tool for walking and cycling *(39)*. Further work is needed to embed the use of impact assessment tools in transport and urban planning decision-making, as well as to further develop the integration of other benefits that accrue from increased walking and cycling, such as reduced air and noise pollution and their contribution to the mitigation of impacts of climate change.

8.2.1 Economic impact of investing in physical activity

To date, the economic impact of reducing physical inactivity has been assessed primarily through a health lens, and mostly focused on NCD prevention. Various cost-benefit models are in wide use to assess direct and indirect costs to health-care systems. However, this provides a very conservative assessment because it fails to capture total benefits, including the contribution of increased physical activity to social, environmental and economic development.

There are emerging macroeconomic models that attempt to estimate the overall economic benefit of increasing physical activity to a country's gross domestic product (GDP). These models include recognition of the contribution of the sport sector, through employment, as well as through sport events and tourism. The macro-economic perspective also includes estimates of benefits of physical activity through improved productivity via reduced absenteeism. For example, a recent study estimated that if everyone met WHO's recommendations on physical activity, this would increase global GDP by between 0.15%–0.24% per year by 2050, worth up to US$ 314– 446 billion per year (in 2019 prices) *(11)*. This is an emerging field and there is an urgent need to invest in the development of methods to capture and demonstrate the total economic costs and returns of increasing physical activity to all relevant engaged sectors, not just health. Given GAPPA called for a multisectoral, whole-of-system policy response, monitoring its implementation and impact should be supported by a whole-of-system approach to estimating the return on investment.

In summary, monitoring the global progress and impact of GAPPA implementation requires strengthening national surveillance systems. This will require addressing gaps in coverage and inclusion, and cooperation to align and strengthen the monitoring of specific domains of physical activity (such as walking, cycling, sport), as well as investment in the use of digital tools and wearable technologies. In addition, strengthening economic assessments will provide policy-makers with clarity on the return on investment in physical activity.

9. Summary of key findings

This first *WHO global report on global progress on physical activity* uses a set of 29 existing indicators and the best available global, comparable data to assess country progress in implementing recommended GAPPA policy actions to increase physical activity. Table 3 provides a summary status of policy implementation in 2021, with indicators grouped according to the four GAPPA policy areas and uses a "traffic light" grading system to indicate the current implementation level.

9.1 Summary of key findings on GAPPA policy implementation

9.1.1 Progress is slow and impacted by COVID-19

Globally, progress has been slow in national implementation of recommended GAPPA policy actions to improve physical activity levels. Only two indicators show implementation by over three quarters of all countries: conducting national surveillance of physical activity (among adults, and among children and adolescents); and the presence of national road safety design standards for safe crossings for pedestrians and cyclists. For nine GAPPA policy indicators, only 50–66% of countries report implementation. For the remaining 20 GAPPA policy indicators, less than 50% of countries report implementation in 2021.

- **GAPPA policy area: active systems (Chapter 4).** The number of countries reporting a national NCD policy (including physical activity, or a standalone physical activity policy) has increased since 2017 and 2019. However, this progress is tempered by the 28% of countries that report these policies are not being implemented (i.e. reported as not "operational"). These results, combined with evidence that less than 50% of countries report having a national NCD coordinating mechanism to support multisectoral collaboration, are of major concern and contribute to explaining the low level of policy implementation on physical activity seen across the indicators presented in this report.

- **GAPPA policy area: active societies (Chapter 5).** Just over half of countries report conducting communication campaigns to raise awareness and knowledge around physical activity. The results are similar for mass-participation events that aim to engage people in opportunities to participate in physical activity through free, community-wide events.

- **GAPPA policy area: active environments (Chapter 6).** Global progress in providing supportive environments for physical activity is varied. National design standards for road safety features that protect walking and cycling are present in three quarters (76%) of countries for safe road crossings, and two thirds (66%) of countries for design for the safe management of speed. Only half of countries report national standards requiring separated infrastructure for walking and cycling, and less than half report the presence of all three of these national road safety design standards. Furthermore, while legislation on speed limits and drink–driving is present in most countries, only a quarter (26%) of these countries' legislation meets WHO best-practice standards. Low levels of best-practice legislation combined with an absence of road design standards presents increased risks to people walking and cycling in these local communities.

- **GAPPA policy area: active people (Chapter 7).** Implementation of policies that ensure equitable provision of opportunities for physical activity in key settings where people live, work and play, and targeted programmes to support key population groups, is reported by less than half of all countries. Notably, less than 40% of countries report having national protocols for the management of physical activity in primary health care, despite strong evidence of the protective benefits of regular physical activity against leading NCDs and mental health. Although this indicator shows a modest increase since 2019, the slow level of implementation of this recognized "best buy" *(33)* policy is of particular concern since it has been recommended by WHO to prevent and manage NCDs since 2013 *(19)* – a recommendation reinforced by numerous subsequent NCD initiatives *(43, 46, 83)* including the Diabetes Compact (https://www.who.int/initiatives/the-who-global-diabetes-compact); Accelerating Action on Obesity (WHA75/10 Add 6); Mental health action plan *(84)*; and the WHO Universal Health Coverage menu (https://www.who.int/publications/i/item/ncd-surveillance-global-monitoring-framework).

Yet some areas have improved. Progress in country implementation of GAPPA between 2019 and 2021 shows a positive increase in four areas, namely: national protocols for the management of physical activity in primary health care; the use of mobile health programmes for NCD prevention; national guidelines on physical activity; and national surveillance of physical activity across three age groups. By contrast, there has been a reversal of progress in several key areas. These include fewer countries reporting implementation of community-wide physical activity communications campaigns (101 in 2019 compared with 124 in 2021); and reduction in providing mass-participation physical activity events (115 in 2019 and 108 in 2021). Also, fewer countries report an operational national NCD policy that includes physical activity or an operational standalone physical activity policy, strategy or action plan. There has also been a decline in the number of countries with national targets for physical activity. It is very likely that the COVID-19 pandemic has negatively affected many countries' capacity to advance and fulfil the commitments made in 2018 to implement GAPPA recommendations.

9.1.2 Progress is uneven and exacerbates health inequalities

This report reveals clear differences in GAPPA implementation between high-income countries and low- and middle-income countries on almost all policy indicators for which data are available. High-income countries are more likely to report, for example, national policy, national guidelines, and national design standards compared to all other country income groups. High-income countries are also much more likely to report implementation of policy actions in more of the key settings where people live, work and play (see Chapters 4–6). Conversely, low-income countries are least likely to report policy implementation compared to both middle- and high-income countries, with only a few exceptions. For example, the presence of a national NCD policy that includes physical activity and having a national target for physical activity are reported by the majority of low-income countries. In general, lower-middle-income and upper-middle-income countries report more progress in policy implementation compared to low-income countries, but the magnitude of differences varied by indicator. Furthermore, for some indicators there are also wide gaps between lower-middle-income and upper-middle-income countries (for example 63% of low-income countries had targets for physical activity, compared to only 39% of high-income countries).

Implementation of physical activity policy also varies between the six WHO regions. In general, policy implementation is reported more often by countries in the European Region compared to all other regions, and least frequently by countries in the African Region. However, the magnitude of these regional differences varies by indicator. Notably wide differences appear on the presence of national physical activity guidelines, with less than 10% of African Region countries reporting these critically important governance tools compared to 45% or more of countries in all other regions (see Chapter 4).

African Region countries are also less likely than countries in all other regions to have an active mechanism to support multisectoral collaboration and joined-up implementation of physical activity policies. There are smaller regional differences on reporting national physical activity targets: European Region countries are least likely to report their presence compared to all other regions (see Chapter 4). The proportion of countries reporting surveillance of physical activity is very high overall, and similar across WHO regions, especially for adult populations. These differences in implementation of the policy cycle enablers are of concern given the rapid transitions underway in health, transport and urbanization in the African Region, the South-East Asia Region, and the Region of the Americas. In these regions in particular, establishing strong frameworks for promoting and enabling physical activity can prevent the declines seen in many high-income countries in recent decades.

The greatest difference between regions is seen in implementation of policies that directly drive behaviour change. African Region countries are least likely, compared to other regions, to report conducting community-wide communication campaigns in the past 2 years (see Chapter 5) and least likely to report implementing policy to provide programmes to promote physical activity across all of the key settings (see Chapter 7). There were exceptions to this pattern. For example, about 25% of African Region countries report implementing mHealth programmes in relation to NCDs, compared to 66% of countries in the Region of the Americas and the Western Pacific Region and 75% of countries in the South-East Asia Region (see Chapter 7). While it is not known if, or how, any of these reported mHealth programmes addressed physical activity, it is important to note the increased use of digital solutions globally since 2019. This might reflect both the impact of COVID-19 and the rapid shift towards health services and health promotion advice being provided through digital tools such as mobile phone platforms. However, the large increase in use by African Region countries seen between 2019 and 2021 may also reflect the larger investment and wider use of digital tools to address the prevention of (and emergency response to) communicable diseases and outbreaks, particularly during SARS, Ebola and COVID-19 (see Chapter 7). There is considerable opportunity to extend this capacity to NCD prevention (and specifically promotion of physical activity to support behaviour changes) in the African Region, as well as other regions undergoing rapid economic and digital development.

There are particularly worrying disparities in implementing policies that afford protection of, and provision for, physical activity among the least-advantaged communities. For example, policy gaps in road safety leave those who walk and cycle more vulnerable to death and injury due to road crashes and disproportionately affect the most disadvantaged communities. Two thirds of countries (66%) report they were *not* implementing any targeted policy actions for older people (see Chapter 7) despite the demographic projections that by 2030, one in six people in these countries will be over 60 years of age *(62)*. Similarly, two thirds of countries (66%) globally report no policy implementation promoting physical activity through child-care settings. Given the persistent concerns over rising levels of childhood overweight and obesity, and global recognition of the early years of life being foundational in establishing good diet and physical activity *(48)*, these settings and populations require greater prioritization in national policy on physical activity and adequate resourcing to support policy implementation.

9.1.3 Slow progress impacts health, communities, and the economy

Overall, this report reveals that progress on policy implementation to increase levels of physical activity has been slow and uneven, resulting in little progress on increasing population levels of physical activity *(6)*. This situation impacts the health of around 1 billion adults globally (27.8% of the global adult population) and constrains the contribution of physical activity to achieving SDG 3.4 *(21)*.

The inequities in people's opportunities and access to environments that support being regularly and safely active in order to prevent disease and improve their health disproportionately affects disadvantaged and vulnerable communities. A further consequence is that health systems are burdened with preventable disease and communities fail to benefit from the wider social, environmental and economic benefits that are associated with more people being more active.

Identifying and understanding the constraints to progress and policy implementation, as well as identifying opportunities within each country, is vital to unlocking implementation of physical activity policy and accelerating progress and impact over the next 8 years, to 2030 and beyond.

TABLE 1

Summary of results by GAPPA policy action area

Key for colour coding	
●	Good progress > 75% of countries
●	Moderate progress 51–75% of countries
●	Poor progress 0–50% of countries
NA	No data available

Key for symbols	
^	Increase since 2019
=	No change since 2019
v	Decrease since 2019
NA	No data available

GAPPA POLICY ACTION AREA	% OF COUNTRIES	CHANGE SINCE 2019
AREA 1: CHANGING KNOWLEDGE AND MINDSETS		
National communication campaign on physical activity	52%	v
National mass-participation events	58%	v

GAPPA POLICY ACTION AREA	% OF COUNTRIES	CHANGE SINCE 2019
AREA 2: ENABLING ENVIRONMENTS		
National policy on walking and cycling	42%	NA
National policy on public transport	73%	NA
National road design standards for separated infrastructure for pedestrians and cyclists	53%	NA
National road design standards for safe crossings for pedestrians and cyclists	76%	NA
National road design standards for management of safe speed	64%	NA
National road design standards for *all three* road safety features	46%	NA
National road safety strategy	80%	NA
National road safety strategy that is fully funded	18%	NA
National road safety assessment of *all* new roads	48%	NA
National assessment of road safety of existing roads for all road users	64%	NA
National legislation of speed limits meeting best practice	26%	NA
National legislation on drink–driving meeting best practice	26%	NA
National legislation on distracted driving due to use of mobile phone	89%	NA
National legislation on distracted driving due to use of drugs	87%	NA
National policy on public open space	NA	NA

GAPPA POLICY ACTION AREA	% OF COUNTRIES	CHANGE SINCE 2019
AREA 3: PROVIDING OPPORTUNITIES AND PROGRAMMES FOR PHYSICAL ACTIVITY		
National protocols on the management of physical inactivity in primary health care	40%	▲
Promotion of physical activity in childcare settings	30%	NA
Promotion of physical activity in the workplace initiatives	36%	NA
Promotion of physical activity through community-based and sports initiatives	47%	NA
Promotion of physical activity in public open spaces	42%	NA
Promotion of walking and cycling	40%	NA
Promotion of physical activity as part of active ageing	40%	NA
National mobile health (mHealth) initiatives	37%	▲
Provision of quality physical education in schools	NA	NA
Promotion of physical activity for people living with disability	NA	NA

GAPPA POLICY ACTION AREA	% OF COUNTRIES	CHANGE SINCE 2019
AREA 4: NATIONAL POLICY FRAMEWORKS AND GOVERNANCE		
National NCD policy including physical activity	86%	NA
National NCD policy including physical activity that is operational	66%	▼
National physical activity policy	47%	NA
National physical activity policy that is operational	39%	=
Either operational national NCD policy including physical activity or a standalone operational physical activity policy	72%	▼
National coordination mechanism for NCDs	46%	=
National guidelines on physical activity for *any* age group	46%	▲
National guidelines on physical activity for *all* age groups	30%	▲
National physical activity targets	53%	▼
National surveillance on physical activity in adults	92%	▲
National surveillance on physical activity in youth	75%	▲
National surveillance on physical activity in children under the age of 5 years	29%	▲

9.2 Limitations in data for global monitoring of GAPPA

This section outlines the strengths and limitations of current indicators and data sources, and provides recommendations for strengthening future global monitoring of GAPPA.

9.2.1 Limitations in monitoring national policy, legislation, and regulations

While global data exist on national policies, strategies and action plans on NCDs, physical activity, walking and cycling, public transport and road safety, these data mostly assess only the presence or absence of policies. A strength of some of these data – for example on NCD and physical activity policy, guidelines and targets and road safety legislation – is the use of an independent verification process to validate the presence of any stated policy documents. However, this validation process does not apply to all data on policies; for example, validation was not undertaken for policy documents related to road assessment or road design standards.

A major limitation of the majority of data used to report on policy indicators is that few or no details are available on the policy content, or on the extent or reach of policy implementation. Although an assessment of policy content was deemed important, and a content analysis methodology was piloted, it was found to be too resource-intensive and therefore beyond scope for this first status report.

The analysis undertaken for this report also revealed that current data available to monitor progress on key national governance tools (such as national physical activity targets, national guidelines and national surveillance systems) omit certain age groups. In addition, there are no global data to assess the inclusion of sedentary behaviour in national policy, guidelines or targets.

A strength of this report is the use of global data from outside the traditional scope of NCDs and integration of indicators related to road safety and urban design (such as road design standards particularly as they relate to enabling more walking and cycling. However, these data could be improved by modifying questions to assess separately the regulations and standards for walking and cycling (not both behaviours combined); by providing a more comprehensive assessment of road design; and by ideally including an assessment of a wider set of urban form characteristics such as those defined as "complete streets" *(85)*. Current data provide an assessment of just three elements of road safety design (see Chapter 6).

Only one policy indicator had available data allowing an assessment of enforcement, namely legislation on safe road user behaviours (reported in Chapter 6), for which additional questions collected data on enforcement methods (for example speed limits). Collecting data on the methods used to ensure regulations, standards and laws are adopted and enforced is important and opportunities to strengthen data collection instruments in this area should be explored.

9.2.2 Limitations in monitoring national physical activity initiatives across key settings

The availability of data for monitoring the wide range of different physical activity policies and programmes recommended across multiple settings (such as workplaces, public open spaces, and child care) is severely limited. Given there were no identified existing data sources providing relevant, globally comparable data, in 2021 a new question (with limited response options) was added to the WHO NCD Country Capacity Survey. This collected, for the first time, data on countries' promotion of physical activity across a range of key settings and also for key population groups, namely older adults and people living with disability (see Chapter 7). A limitation of these data is that they only provide a rudimentary (and non-validated) assessment of presence or absence of the promotion of physical activity, and as such the results should be treated with some caution. As policy implementation crosses multiple settings (the majority of which are outside of the health sector), future global monitoring of GAPPA should seek to establish collaborations with relevant authorities associated with each key setting and identify mechanisms to periodically collect representative data on actions to promote physical activity.

9.2.3 Global monitoring of inclusion and equity in physical activity policies

One of the most notable data gaps identified for this first status report on GAPPA policy implementation is the absence of globally comparable data to support monitoring of inclusion and equity in national physical activity policy and implementation. This is particularly evident in the absence of global data specifically focussed on policy actions to support the promotion and provision of physical activity for people living with disabilities – who represent 15% of the worlds' population *(86)*. While some countries may have a selection of policies and programmes in place *(64)*, it is clear there is a need to develop a global approach to monitoring all countries' progress using standard and comparable tools and protocols.

As part of the 2030 Agenda, in 2015 countries committed to ensuring "no one is left behind" *(21)*, and international commitments have repeatedly been made to ensure inclusion and equity of access to sport and physical activity by people living with disabilities *(61)*. But as of 2022, there are no global data to hold any to account. Global monitoring systems and tools need to be developed and implemented to support tracking of policies and actions targeting people living with disability as well as other priority populations such as older adults. The United Nations Decade of Healthy Ageing provides an important platform for advancing this agenda (see https://www.who.int/initiatives/decade-of-healthy-ageing).

9.2.4 Monitoring GAPPA policy implementation at subnational, city and local levels

This report set out to assesses national implementation of GAPPA policy recommendations, and the data sources selected to do this therefore reflect only national-level situations. This is both a strength and a limitation. Monitoring country progress at national level is important but it is recognized that translating national policy to subnational, city, and local municipality-level policy and action is critical. Given the complexity in undertaking an assessment of national action, and gaps outlined in previous sections, it is unlikely that future global assessment can extend to identify and include subnational details. Nonetheless, it is highly recommended that countries conduct their own national and subnational assessments of GAPPA implementation. To support countries in doing this, WHO is developing guidance and a national situation assessment tool (SAT) *(28)*. This tool guides governments and stakeholders to perform a "stocktake" of current policy and action, and identify their priorities for future physical activity policy and implementation across multiple sectors. The GAPPA SAT tool is currently available in English and Arabic, with translation into other languages forthcoming.

9.2.5 Limitations in indicators for monitoring GAPPA policy recommendations

This report has revealed clear gaps in indicators necessary to monitor some of the key GAPPA policy recommendations. These gaps include the absence of any globally agreed indicators with supporting data sources for the following GAPPA policy areas:

- workforce training programmes (pre and in-service) on physical activity in key sectors;
- integrated national urban (spatial) planning and transport policy;
- provision of walking and cycling infrastructure and networks;
- access to public open space and sport/recreational facilities;
- building-design standards/regulations;
- whole-of-school approaches to promoting physical activity, including provision of quality physical education;
- policy, programmes and initiatives across key settings including in the workplace, public open spaces, child care;
- policy and programmes providing community-based (grassroots) sport for all;
- programmes and services providing physical activity for people living with disabilities;
- programmes and services providing physical activity for older adults;
- research and development and use of digital technologies to promote physical activity;
- national funding and financing mechanisms to support policy implementation on physical activity.

This is a long but non-exhaustive list of the key GAPPA policy recommendations for which there is a need to develop clear indicators and monitoring systems. The list highlights there is much to be done. Notably, this report was unable to present any data on current levels of government and nongovernment budget allocations, nor on other national and international financing mechanisms directed towards physical activity policy implementation. Frameworks and indicators for such an assessment at national and global level are required.

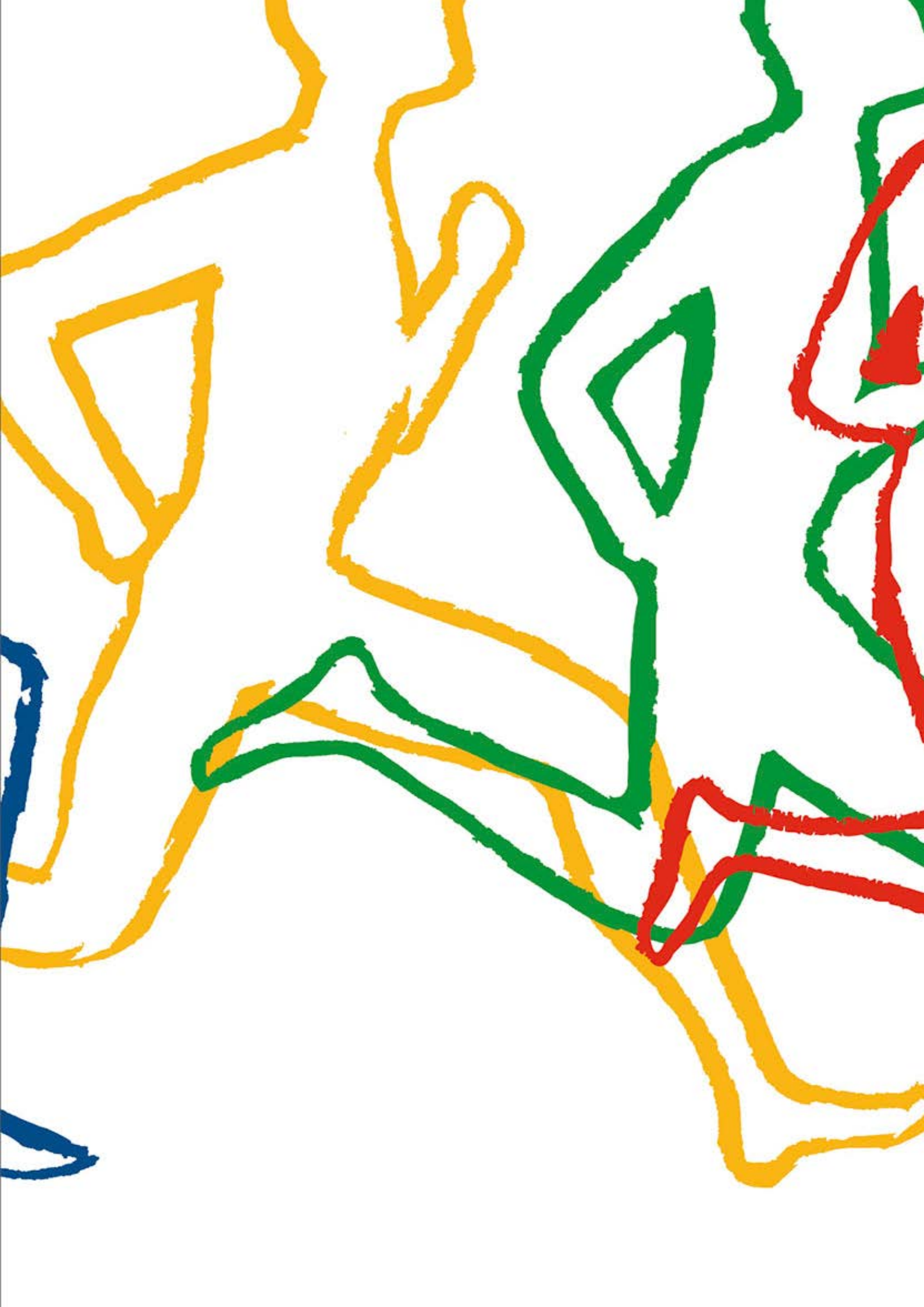
Some progress in addressing these gaps is already being made. For example UNESCO – in collaboration with WHO and others – implemented a new global survey in 2020–2021 to assess the current status of provision of quality physical education and school sports. This initiative aligns with data needs for the monitoring of both GAPPA and the Kazan Action Plan *(87)* (final report is forthcoming). In addition, as part of the SDG targets and monitoring framework UN-Habitat is advancing monitoring systems for two important SDG targets that align with GAPPA policy actions related to access to public open space and access to public transport. The definition of these indicators and methods for data collection and analysis related to them have been completed and results are now available for over 1000 cities (though not yet available for use at national scale) *(88,89)*.

9.2.6 Future opportunities using big data and technology to monitor GAPPA implementation

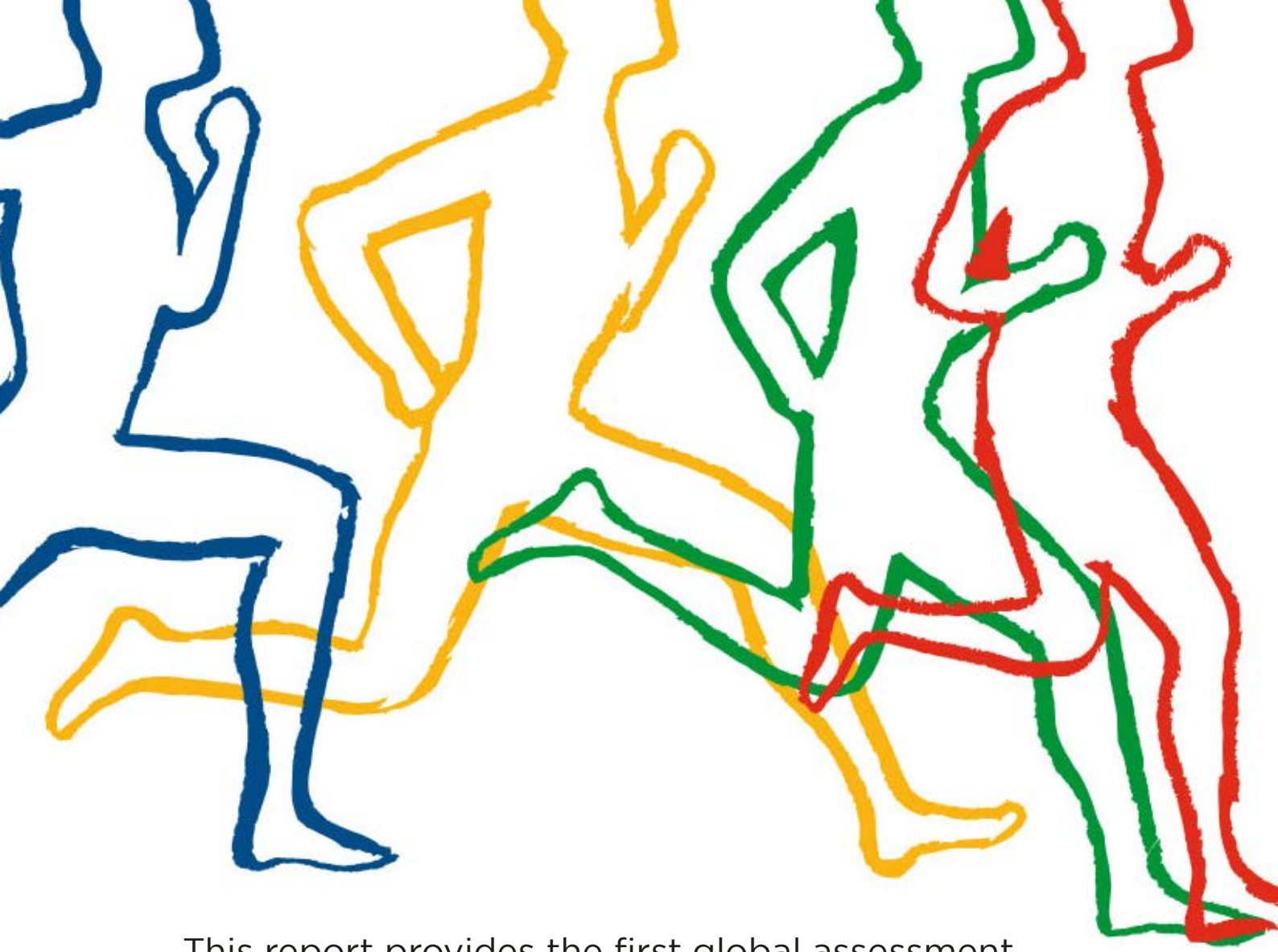
To undertake this first global assessment of GAPPA implementation, existing data sources and indicators were used. This resulted in the collation of a considerable global dataset, albeit with the limitations already outlined. Some of these limitations can be addressed by modifying existing data collection instruments, and this work has already commenced within WHO. For example, identified gaps have informed the development of the 2022 *WHO Global status report on road safety*. There are, however, practical limits to extending current survey instruments with new questions, and it is very probable that there will not be sufficient scope to address all data issues that arise as a result. In this situation, and to address some of the identified indicator and data gaps, the development of new data collection systems and instruments may be required – for example, to collect more detailed and robust data on GAPPA policy recommendations that are implemented in sectors and settings outside of health.

As there is a need to minimize the burden of data collection in all countries, and particularly in low- and middle-income countries, strong alignment with other existing and planned data systems within and outside of the health sector is required. Where no data are available, and/or more in-depth data are required than are currently available, conducting a periodic global survey to assess national progress on GAPPA implementation may be needed. Harnessing the use of technology to provide an online, cross-government and even multistakeholder data collection survey tool is possible. The results would support national policy planning as well as serve and support global monitoring of GAPPA. This approach is not new – for example, the Global Tobacco Survey *(90)* is conducted every 2 years to monitor global progress on the implementation of the international WHO Framework Convention on Tobacco Control. WHO releases biennial reports tobacco on national progress with a focus on specific topics in alternate years, supported by in-depth data collection. Similarly, WHO's global monitoring of implementation of nutrition policy is supported by a periodic global survey *(91)* and an online database. These models of global monitoring systems are applicable to physical activity and should be explored to support and strengthen future monitoring and reporting on GAPPA.

Some indicators for GAPPA policy recommendations may not be best monitored by surveys, and may be better served by increasingly available and feasible methods of geographic spatial (GIS) analyses. For example, assessing the provision of, and access to, public open space or separated cycling networks can be achieved using available street network data combined with other spatial data layers. Recently, a global consortium demonstrated the use of evidence-based spatial metrics related to physical activity in 25 cities across 19 middle- and high-income countries *(92, 93)*. Future indicators and monitoring of GAPPA policy implementation should explore the potential to integrate geo-spatial data and derived metrics along with survey data to enable a full assessment of national progress. Such efforts are already underway by countries as they scale actions to improve urban health and address climate change.



10. The way forward: five recommendations



This report provides the first global assessment of progress on implementing policy actions to drive change in levels of physical activity since the launch of GAPPA in 2018, as requested by Member States under WHA Resolution 71.6. The main aim is to present – using the best available data – the current situation and recent trends in country implementation of GAPPA-recommended policy interventions. It is worth highlighting that while publication of this report was delayed due to the impact of the COVID-19 pandemic, the delay in fact allowed inclusion of the latest available data collected during 2021 for some of indicators, extending the assessment of the trends in policy implementation and encompassing the first 18 months of the COVID-19 pandemic.

This report is therefore able to provide the first global insight into the impact of COVID-19 on countries' progress on physical activity policy implementation, and to provide recommendations on the actions needed as the world continues to respond and recover.

Overall, this report has revealed significant policy implementation gaps. These gaps are demonstrated by the overall modest level of GAPPA-recommended policy development across countries and – even where policies exist – the gap between the presence of a policy and the operational status of that policy. Policy gaps are also evident in the differences between the presence of national legislation and those that meet WHO "best practice" criteria to be most effective. The slow and uneven implementation of GAPPA policy development and policy implementation at national level must be addressed if global targets on physical activity are to be achieved.

As in other areas of public health, gaps in policy related to physical activity result from a multiple and interconnected set of factors. These factors broadly fall into five areas: political, technical, financial, collaboration and capacity building, and data systems – all of which can either limit or accelerate policy progress.

When positively aligned towards a specific policy objective, such as increasing physical activity, their combined contribution can set the national agenda as a government priority; catalyse development of supporting policy, regulatory and technical solutions; mobilize financial and human resources; and secure multisectoral engagement. Conversely, the absence or inadequacy of one or more of these factors can reduce, divert and even reverse policy progress. The exact combination of what can be called "policy enabling" factors and how they are fostered to converge and positively effect physical activity through a "virtuous" policy action cycle will vary between countries depending on the local political economy, needs and cultural contexts.

The policy cycle for physical activity is not a "one size fits all" for all countries. However, lessons have been learned from across countries on the key policy enablers for physical activity since the launch of the WHO Global Strategy on Diet and Physical Activity *(74)*, the Global NCD Action Plan *(19)* and in recent years since the launch of GAPPA. If applied more widely, these policy enablers will help countries to close the policy–implementation gap, scale implementation and deliver the societal benefits from a more active population.

To help countries strengthen the key enabling factors that drive this virtuous cycle of collective action and enable physical activity, five actions aimed at strengthening policy implementation are recommended.

1. **Strengthen whole-of-government ownership and political leadership.**
2. **Integrate physical activity in all relevant policies and support policy implementation with practical tools and clear guidance.**
3. **Support partnerships, engage communities and build capacity in people.**
4. **Reinforce data systems, monitoring and knowledge translation.**
5. **Secure and align funding with national policy commitments.**

Recommendation 1: Strengthen whole-of-government ownership and political leadership

Accelerating national progress requires that physical activity is a government priority and that strong ownership is developed across all relevant government departments responsible for policy actions that support physical activity in its different forms. No single sector has sole responsibility for all the required policies and programmes necessary to increase population levels of physical activity across diverse communities. Nor do the benefits of increasing physical activity accrue to just one sector. Recognizing these two realities is the bedrock of building a cross-government, collective and coordinated national response.

> *All countries are recommended to strengthen their leadership on physical activity within and across government, at all levels, and ensure the responsibilities to deliver specific policy actions is established and accountability is upheld.*

Physical activity contributes to multiple policy areas. Key to establishing physical activity as a cross-government national priority – as a "must have" *(5)* – is ensuring full understanding and a valuing of the multiple benefits that accrue from various policy actions led by each sector. For example, more walking and cycling can help reduce emissions, improve air quality and mitigate global warming; community sport programmes not only provide physical activity but can also contribute to crime reduction, improved community cohesion, and develop employability skills. Increasing knowledge and valuing the benefits of physical activity not only to health, but also for its social, economic and environmental impacts, requires coordinated and consistent advocacy and clear communication, supported by robust evidence of the returns on investment – be that a combination of political, economic, social and or environmental returns.

> *All countries are recommended to invest in building capacity in advocacy for policy action on physical activity and increasing knowledge of the crosscutting contributions of physical activity to national development and to multiple global priorities as set out in the SDGs.*

Recommendation 2.

Integrate physical activity into relevant policies and support policy implementation with practical tools and guidance

National policies set the agenda and targets for specific public health issues. As physical activity is a key contributor to multiple policy areas, it should be included in all relevant policies, including, for example, health (and specifically NCD prevention); road safety; sustainable mobility; health ageing; child development; education; labour and employment; urban planning; sport; and tourism. National policies in each area should draw on evidence on how physical activity can contribute, and where relevant policy actions should be supported through legislation or regulatory frameworks to ensure implementation is equitable and enforceable.

> *All countries are recommended to review relevant national policies as well as regulations and standards to identify and strengthen the inclusion of physical activity, where relevant, and ensure policy coherence and accountability.*

Implementation of these policies, legislation and regulatory frameworks requires tools to help practitioners translate them into actionable, practical steps for effective delivery in local communities. Well-designed technical tools and guidance can bridge the "policy–implementation" gap by articulating the specific actions by which stakeholders can agree timelines and measurable outputs. In addition, using available evidence, implementation tools should specify criteria for "better practice" and outline how practitioners can adapt actions to local conditions and evaluate outcomes. WHO is supporting countries to integrate physical activity into all relevant policies and implement GAPPA policy recommendations with a suite of technical and practical guidance tools, each developed using the best available scientific and practical evidence, and, where available, criteria for "better practice". The WHO ACTIVE toolkits help countries adapt and implement each GAPPA policy recommendation to the local context *(27)*.

> *All countries should strengthen provision of appropriate tools and guidance, combined with workforce training, adapted to local context, to ensure policies to increase physical activity do not remain just an aspiration.*

Research communities play a critical role in establishing the knowledge and evidence that informs both global and national policy, and in developing knowledge translation tools to help close the policy–implementation gap. Building research capacity in physical activity and related areas in low- and middle-income countries remains a key priority.

> *All countries are recommended to invest in strengthening research capacity and knowledge-translation capabilities to build global evidence and local knowledge on how to cost-effectively promote physical activity across the life-course.*

Recommendation 3.
Support partnerships, engage communities, build capacity in people

Policy-making and policy implementation requires NGOs, CSOs, the private sector and local communities to be fully engaged, as appropriate. All stakeholders should identify and take responsibility for the contributions they can make to ensuring effective policy implementation and evaluation. The not-for-profit and social enterprise organizations – be these traditional sport or non-sport related – have an important role in transforming policy into practical, sustainable solutions for local contexts. As major providers of physical activity programmes they can support all levels of government with their wide reach and ability to engage communities.

Private sector also has a key role, both directly to communities and through partnerships with government, to deliver programmes and services that support and enable people to be active. Manufacturers of sport equipment, exercise and fitness providers and sports coaches and trainers as well as developers of digital technologies can all contribute to strengthening the provision of inclusive, affordable opportunities for all people to be physically active. Working effectively in partnerships can strengthen and scale implementation to achieve greater impact than individual stakeholders acting in isolation. This will help bridge the policy–implementation gap and support a whole-of-system response to address physical inactivity.

> *All countries are recommended to review and, where needed, establish national coordinating mechanisms to strengthen multi-stakeholder collaborations and partnerships, and ensure this is combined with effective engagement at subnational government level and with local communities, including those who are least active.*

Given that the foundational principles of good public health and effective health promotion are to enable, mediate and advocate for all people to achieve the highest possible level of health *(42)*, it is necessary to invest in building system-wide capacity, skills and competencies within all workforces and sectors related to enabling physical activity in all its forms. Strengthening the skills and knowledge to enable physical activity during pre-service qualifications and in-service workforce training is vital, and educational institutions and professional associations have a key role to play in accelerating and improving policy implementation.

> *All countries are recommended to strengthen pre- and in-service training on physical activity relevant to each sector and initiate networks and knowledge transfer nationally and internationally (for example through north-south and south-south country collaborations) to help scale knowledge transfer and generate and test innovative solutions across diverse contexts, particularly in low- and middle-income countries.*

Recommendation 4.
Reinforce data systems, monitoring, and knowledge translation

This report has shown considerable gaps in national data and information systems that are necessary to help countries close the policy–implementation gap and accelerate progress on physical activity. All recommendations in this report require regular and reliable data, whether to help set physical activity as a government priority, to inform the development of policy and implementation tools, to guide curricular and workforce training, or provide evidence on outcomes and impact.

Primary research, programme evaluation, industry insights and good knowledge of local community needs are just some of the key areas where regular and reliable data are required to inform and strengthen cross-government policy implementation and multisectoral partnerships. Of critical importance is the need for all countries to invest in strengthening national monitoring of physical activity among people of all ages and abilities, and in evaluating policy and programme implementation.

> *All countries are encouraged to establish national and subnational (including city-level) monitoring and information systems that can track and collate data across these and other important areas relevant to physical activity, to provide governments and stakeholders at all levels with information that can inform and drive the policy cycle.*

Recommendation 5.
Secure and align funding with national policy commitments

This report reveals that the current pace of policy implementation on physical activity is slow, uneven and unfair. Policy implementation is constrained by lack of resources, either financial, human or both. Limited funding is frequently identified as one of the main barriers to policy implementation. For example, funding for community physical activity and grassroots sports programmes is often reported as being too small, too short term and too limited to local pilot projects and subnational demonstration initiatives. Such funding conditions restrict long-term investment in programme staff, affect programme quality and are detrimental to efforts to undertake adequate policy evaluation *(94)*.

Without adequate funding, including for policy and programme evaluation, it is not possible to generate or evaluate long-term impact and provide robust evidence on the health and social returns of investing in physical activity. The absence of evidence on outcome and impact compromises gaining and sustaining political support and the ability to secure additional, more efficient and longer-term funding. Given GAPPA recommends a whole-of-government approach and multiple policies that cut across government priorities, a review of current national funding towards physical activity can inform discussions and future budget decisions on the amount and distribution of national budget allocations across relevant ministries. For example, there is potential to identify untapped opportunities for joint funding of policy implementation aligned to shared objectives.

> *All countries are recommended to conduct a national, cross-government review to ensure funding is adequate and aligned to support effective and efficient national policy implementation and evaluation of outcome and impact.*

Without adequate investment, physical activity targets will not be met. New approaches to financing physical activity-related policy will be required to increase the pace and scale of policy development and implementation in all countries, but particularly in low- and middle-income countries – for example, the use of taxation and subsidies to support infrastructure provision, national programmes and initiatives, and strengthen data and information systems. Grants and loans that provide more sustainable and long-term support, as well as the potential of social bonds and models of social enterprise, need to be explored and tested. As the COVID-19 pandemic has affected levels of participation in physical activity across countries and populations, there is an urgent need to scale policy implementation.

> *Governments, international and multilateral development and finance agencies, and philanthropic organizations are encouraged to assess current funding and explore innovative financing mechanisms to ensure and support all countries to include policy actions that increase participation in physical activity within national COVID-19 response and recovery plans and in National Development Plans (95).*

Conclusion

This report summarizes the progress made in implementing GAPPA policy recommendations based on available data. It also identifies the data gaps that make it difficult to fully track progress in process and outcome indicators, and sets out five actions that all countries can take to strengthen and monitor the implementation of national policy on physical activity.

The five recommendations are interconnected, and their collective impact can help countries address the policy-implementation gap. They will also accelerate progress to increasing physical activity among populations and ensure that everyone – including the least active and most disadvantaged – has the opportunity to be active and reap the social, physical and mental health benefits of being physically active.

The health and economic burden of physical inactivity is not inevitable, and avoiding it requires all countries to accelerate policy action and investment in implementing effective policy and interventions at national scale, adapted to available resources, culture and local communities. This report serves as a clarion call and advocacy tool to do this.

References

1. Global Action Plan on Physical Activity 2018–2030: More Active People for a Healthier World. Geneva: World Health Organization; 2018. https://apps.who.int/iris/handle/10665/272722

2. Guidelines on Physical Activity and Sedentary Behaviour. Geneva: World Health Organization; 2020. https://apps.who.int/iris/handle/10665/336656

3. Global recommendations on physical activity for health. Geneva: World Health Organization; 2010. https://apps.who.int/iris/handle/10665/44399

4. Tremblay MS, Aubert S, Barnes JD, Saunders TJ, Carson V, Latimer-Cheung AE et al. Sedentary Behavior Research Network (SBRN) – terminology consensus project process and outcome. Int J Behav Nutr Phys Act. 2017;14(1):75.

5. Fair play: building a strong physical activity system for more active people. Geneva: World Health Organization; 2021. https://apps.who.int/iris/handle/10665/346169

6. Guthold R, Stevens GA, Riley LM, Bull FC. Worldwide trends in insufficient physical activity from 2001 to 2016: a pooled analysis of 358 population-based surveys with 1.9 million participants. Lancet Glob Health. 2018;6(10):e1077-e86.

7. Sallis JF, Bull F, Guthold R, Heath GW, Inoue S, Kelly P et al. Progress in physical activity over the Olympic quadrennium. The Lancet. 2016;388(10051):1325–36.

8. Guthold R, Stevens GA, Riley LM, Bull FC. Global trends in insufficient physical activity among adolescents: a pooled analysis of 298 population-based surveys with 1.6 million participants. Lancet Child Adolesc Health. 2020;4(1):23–35.

9. Ding D, Lawson KD, Kolbe-Alexander TL, Finkelstein EA, Katzmarzyk PT, van Mechelen W et al. The economic burden of physical inactivity: a global analysis of major non-communicable diseases. Lancet. 2016;388(10051):1311–24.

10. Bloom DE, Cafiero ET, Jané-Llopis E, Abrahams-Gessel S, Bloom LR, Fathima S et al. The global economic burden of noncommunicable diseases. Geneva: World Economic Forum; 2011.

11. Santos AC, Willumsen J, Meheus F, Ilbawi A, Bull FC. The cost of inaction on physical inactivity to healthcare systems. Lancet Glob Health. 2022; IN PRESS.

12. Hafner M, Yerushalmi E, Stepanek M, Phillips W, Pollard J, Deshpande A et al. Estimating the global economic benefits of physically active populations over 30 years (2020 to 2050). Br J Sports Med. 2020;54(24):1487–92.

13. Assessing national capacity for the prevention and control of noncommunicable diseases: report of the 2021 global survey. Geneva: World Health Organization; (in press).

14. Global status report on road safety 2018. Geneva: World Health Organization; 2018. https://apps.who.int/iris/handle/10665/276462

15. Physical activity factsheets for the European Union Member States in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2021. https://apps.who.int/iris/handle/10665/345335

16. Status report on physical activity and health in the South-East Asia Region, July 2018. Delhi: WHO Regional Office for South-East Asia; 2018. https://apps.who.int/iris/handle/10665/274308

17. Global indicator framework for the sustainable development goals and targets of the 2030 agenda for sustainable development (2017). https://unstats.un.org/sdgs/indicators/indicators-list/

18. High-level Political Declaration on Noncommunicable Diseases. United Nations General Assembly Resolution 66/2. New York: United Nations; 2011. https://digitallibrary.un.org/record/710899/

19. Global action plan for the prevention and control of noncommunicable diseases 2013–2020. Geneva: World Health Organization; 2013. https://apps.who.int/iris/handle/10665/94384

20. WHO discussion paper on the development of an implementation roadmap for the WHO global action plan for the prevention and control of NCDs 2023–2030 (https://www.who.int/publications/m/item/implementation-roadmap-2023-2030-for-the-who-global-action-plan-for-the-prevention-and-control-of-ncds-2023-2030, accessed 11 July 2022).

21. Transforming our world: the 2030 agenda for sustainable development. New York: United Nations; 2015. https://sdgs.un.org/publications/transforming-our-world-2030-agenda-sustainable-development-17981

22. Framework for the implementation of the global action plan on physical activity 2018–2030 in the WHO African Region: report of the secretariat. Brazzaville: WHO Regional Office for Africa, Regional Committee for Africa; 2020. https://apps.who.int/iris/handle/10665/333737

23. Roadmap for implementing the global action plan on physical activity in the WHO South-East Asia Region. New Delhi: WHO Regional Office for South-East Asia; 2021. https://apps.who.int/iris/handle/10665/350966

24. Active people, healthier lives in the Eastern Mediterranean Region. Cairo: WHO Regional Office for the Eastern Mediterranean; 2022.

25. Physical activity strategy for the WHO European Region 2016–2025. Copenhagen: WHO Regional Office for Europe; 2015. https://apps.who.int/iris/handle/10665/329407

26. Saving lives, spending less: the case for investing in noncommunicable diseases. Geneva: World Health Organization; 2021. https://apps.who.int/iris/handle/10665/350449

27. ACTIVE: A technical package for increasing physical activity. Geneva: World Health Organization; 2018. https://apps.who.int/iris/handle/10665/275415

28. Situational analysis for physical activity – draft version 4. Geneva: World Health Organization; 2022.

29. Score for health data technical package: Global report on health data systems and capacity, 2020. Geneva: World Health Organization; 2021. https://apps.who.int/iris/handle/10665/339125

30. Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age. Geneva: World Health Organization; 2019. https://apps.who.int/iris/handle/10665/311664

31. Troiano RP, Stamatakis E, Bull F. How can global physical activity surveillance adapt to evolving physical activity guidelines? Needs, challenges, and future directions. Br J Sports Med. 2020;54(24):1473–8.

32. "Best buys" and other recommended interventions for the prevention and control of noncommunicable diseases: Updated (2017) appendix 3 of the global action plan for the prevention and control of noncommunicable diseases 2013–2020. Geneva: World Health Organization; 2017 (https://www.who.int/ncds/man-

agement/WHO_Appendix_BestBuys.pdf, accessed 11 July 2022).

33. Tackling NCDs: "Best buys" and other recommended interventions for prevention and control of noncommunicable diseases. Geneva: World Health Organization; 2017. https://apps.who.int/iris/handle/10665/259232

34. Wakefield MA, Loken B, Hornik RC. Use of mass-media campaigns to change health behaviour. The Lancet. 2010;376(9748):1261–71.

35. WHO report on the global tobacco epidemic, 2011: warning about the dangers of tobacco. Geneva: World Health Organization; 2011. https://apps.who.int/iris/handle/10665/44616

36. The PEP clearing house: the portal for user-friendly access to information on transport, health and environment in the Pan-European Region. Copenhagen: WHO Regional Office for Europe; 2004. https://apps.who.int/iris/handle/10665/350353

37. Urban green spaces and health. Copenhagen: World Health Organization Regional Office for Europe; 2016. https://apps.who.int/iris/handle/10665/345751

38. 20-minute neighbourhoods – creating healthier, active, prosperous communities. An introduction for council planners in England. London: Town and Country Planning Association; 2021. https://tcpa.org.uk/resources/the-20-minute-neighbourhood/

39. Health economic assessment tool (HEAT) for walking and for cycling. Methods and user guide on physical activity, air pollution, injuries and carbon impact assessments. Copenhagen: WHO Regional Office for Europe; 2021. https://apps.who.int/iris/handle/10665/344136

40. Saving millions of lives: decade of action for road safety 2011–2020. Geneva: World Health Organization; 2011. https://apps.who.int/iris/handle/10665/82568

41. Global plan for the decade of action for road safety 2021–2030. Geneva: World Health Organization, United Nations Regional Commissions; 2021. https://www.who.int/publications/m/item/global-plan-for-the-decade-of-action-for-road-safety-2021-2030

42. Geneva charter for well-being. Geneva: World Health Oraganization; 2021. https://www.who.int/publications/m/item/the-geneva-charter-for-well-being

43. HEARTS technical package for cardiovascular disease management in primary health care: team-based care. Geneva: World Health Organization; 2018. https://apps.who.int/iris/handle/10665/260424

44. Technical package for cardiovascular disease management in primary health care: Healthy-lifestyle counselling. Geneva: World Health Organization; 2018. https://apps.who.int/iris/handle/10665/260422

45. HEARTS technical package for cardiovascular disease management in primary health care. Geneva: World Health Organization; 2016. https://apps.who.int/iris/handle/10665/252661

46. Implementation tools: Package of essential noncommunicable (WHO-PEN) disease interventions for primary health care in low-resource settings. Geneva: World Health Organization; 2013. https://apps.who.int/iris/handle/10665/133525

47. Promoting physical activity through primary health care: a toolkit. Geneva: World Health Organization; 2021. https://apps.who.int/iris/handle/10665/350835

48. Commission on Ending Childhood Obesity. Report of the commission on ending childhood obesity. Geneva: World Health Organization; 2016. https://apps.who.int/iris/handle/10665/204176

49. Standards for healthy eating, physical activity, sedentary behaviour and sleep in early childhood education and care settings: a toolkit. Geneva: World Health Organization; 2021. https://apps.who.int/iris/handle/10665/345926

50. Preventing disease through a healthier and safer workspace. Geneva: World Health Organization; 2018. https://apps.who.int/iris/handle/10665/272980

51. Protecting workers' health [factsheet] Geneva Accessed: World Health Organization; 2017. Available from: https://www.who.int/en/news-room/fact-sheets/detail/protecting-workers'-health, accessed 11 July 2022.

52. Hunter RF, de Silva D, Reynolds V, Bird W, Fox KR. International inter-school competition to encourage children to walk to school: A mixed method feasibility study. BMC Res Notes. 2015;8(1):1–11.

53. Mutrie N, Carney C, Crawford F, Aitchison T, Whitelaw A. "Walk in to work out": A randomized controlled trial of a self help intervention to promote active commuting. J Epidemiol Community Health. 2002;56:407–12.

54. Promoting physical activity through schools: a toolkit. Geneva: World Health Organization; 2021. https://apps.who.int/iris/handle/10665/350836

55. Healthy Cities effective approach to a rapidly changing world. Geneva: World Health Organization; 2020. https://apps.who.int/iris/handle/10665/331946

56. Making every school a health-promoting school: implementation guidance. Geneva: World Health Organization; 2021). https://apps.who.int/iris/handle/10665/341908

57. Making every school a health-promoting school: Global standards and indicators. Geneva: World Health Organization; 2021. https://apps.who.int/iris/handle/10665/341907

58. Making every school a health-promoting school: Country case studies. Geneva: World Health Organization; 2021. https://apps.who.int/iris/handle/10665/341909

59. The United Nations Convention on the Rights of the Child. New York: United Nations; 1989. https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-child

60. United Nations Principles for Older Persons. New York: United Nations; 1991. https://www.ohchr.org/en/instruments-mechanisms/instruments/united-nations-principles-older-persons

61. The Convention on the Rights of Persons with Disabilities. New York: United Nations; 2006. https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html

62. Decade of healthy ageing: baseline report. Geneva: World Health Organization; 2020. https://apps.who.int/iris/handle/10665/338677

63. Martin Ginis KA, van der Ploeg HP, Foster C, Lai B, McBride CB, Ng K et al. Participation of people living with disabilities in physical activity: a global perspective. The Lancet. 2021;398(10298):443–55.

64. Rimmer JH, Marques AC. Physical activity for people with disabilities. Lancet. 2012;380(9838):193–5.

65. United Nations General Assembly. Sport for development and peace. In: Sport: a global accelerator of peace and sustainable development for all. Report of the secretary-general. A/75/155. New York: United Nations General Assembly; 2020. https://www.un.org/development/desa/dspd/sport-development-peace/unsg-report2020.html

66. Global strategy on digital health 2020–2025. Geneva: World Health Organization; 2021. https://apps.who.int/iris/handle/10665/344249

67. Gal R, May AM, van Overmeeren EJ, Simons M, Monninkhof EM. The effect of physical activity interventions comprising wearables and smartphone applications on physical activity: a systematic review and meta-analysis. Sports Med. Open. 2018;4(1):42.

68. Li C, Chen X, Bi X. Wearable activity trackers for promoting physical activity: a systematic meta-analytic review. Int J Med Inform. 2021;152:104487.

69. Sweating for the fitness consumer. In: McKinsey & Company [website]. 2021. (https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/sweating-for-the-fitness-consumer, accessed 11 July 2022).

70. Spotlight: access to mobile phones and the Internet around the world. Findex 2017: World Bank; 2017.

71. Be he@lthy, be mobile. In: WHO/Initiatives [website]. Geneva: World Health Organization; 2021 (https://www.who.int/initiatives/behealthy, accessed 11 July 2022).

72. Be he@lthy, be mobile: a handbook on how to implement mobile health for physical activity. Geneva: World Health Organization; 2021. https://apps.who.int/iris/handle/10665/348214

73. NCD Global Monitoring Framework. Geneva: World Health Organization; 2011. https://www.who.int/publications/i/item/ncd-surveillance-global-monitoring-framework

74. Global Strategy on Diet, Physical Activity and Health. Geneva: World Health Organization; 2004.

75. Summary: Surveillance of risk factors for noncommunicable diseases: the WHO STEPwise approach. Geneva: World Health Organization; 2001.

76. Walking and cycling: latest evidence to support policy-making and practice. Copenhagen: World Health Organization Regional Office for Europe; 2022. https://apps.who.int/iris/handle/10665/354589

77. Ezzati M, Lopez AD, Rodgers A, Murray CJ. Comparative quantification of health risks: Global and regional burden of disease attributable to selected major risk factors. Geneva: World Health Organization; 2004. https://apps.who.int/iris/handle/10665/42770

78. Lee IM, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT et al. Effect of physical inactivity on major noncommunicable diseases worldwide: an analysis of burden of disease and life expectancy. Lancet. 2012;380(9838):219–29.

79. Stanaway JD, Afshin A, Gakidou E, Lim SS, Abate D, Abate KH, et al. Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks for 195 countries and territories, 1990–2017: a systematic analysis for the global burden of disease study 2017. The Lancet. 2018;392(10159):1923-94.

80. Stamatakis E, Ding D, Ekelund U, Bauman AE. Sliding down the risk factor rankings: reasons for and consequences of the dramatic downgrading of physical activity in the global burden of disease 2019. Br J Sports Med. 2021;55(21):1222–3.

81. Sport Industry Research Centre. Social return on investment of sport and physical activity in England. Sheffield: Sheffield Hallam University; 2018. https://www.shu.ac.uk/sport-physical-activity-research-centre/sport-industry/case-studies/england-sport-impact

82. Davies LE, Taylor P, Ramchandani G, Christy E. Social return on investment (SROI) in sport: A model for measuring the value of participation in England. Int J Sport Policy. 2019;11(4):585–605.

83. WHO package of essential noncommunicable (PEN) disease interventions for primary health care. Geneva: World Health Organization; 2020. https://apps.who.int/iris/handle/10665/334186

84. Comprehensive mental health action plan 2013–2030. Geneva: World Health Organization; 2021. https://apps.who.int/iris/handle/10665/345301

85. Global street design guide. New York: Global Designing Cities Initiative; 2016. https://globaldesigningcities.org/publication/global-street-design-guide/

86. World report on disability. Geneva: World Health Organization; 2011. https://apps.who.int/iris/handle/10665/44575

87. Kazan Action Plan: Sixth International Conference of Ministers and Senior Officials Responsible for Physical Education and Sport, Kazan, Russian Federation. Paris: United Nations Education Scientific and Cultural Organization; 2017. https://unesdoc.unesco.org/ark:/48223/pf0000252725

88. UN-Habitat. SDG training module: public space. Nairobi: United Nations Human Settlement Programme (UN-Habitat); 2018. https://unhabitat.org/sites/default/files/2020/07/indicator_11.7.1_training_module_public_space.pdf

89. SDG indicator 11.2.1 training module 2: public transport systems. Nairobi: United Nations Human Settlement Programme (UN-Habitat); 2018. https://data.unhabitat.org/documents/GUO-UN-Habitat::indicator-11-2-1-training-module-public-transportation-april-2019/explore

90. WHO report on the global tobacco epidemic, 2021: addressing new and emerging products. Geneva: World Health Organization; 2021. https://apps.who.int/iris/handle/10665/343287

91. Global nutrition policy review 2016–2017: country progress in creating enabling policy environments for promoting healthy diets and nutrition. Geneva: World Health Organization; 2018. https://apps.who.int/iris/handle/10665/275990

92. Giles-Corti B, Moudon AV, Lowe M, Adlakha D, Cerin E, Boeing G et al. Creating healthy and sustainable cities: what gets measured, gets done. The Lancet Global Health. 2022;10(6):e782–e5.

93. Giles-Corti B, Moudon AV, Lowe M, Cerin E, Boeing G, Frumkin H et al. What next? Expanding our view of city planning and global health, and implementing and monitoring evidence-informed policy. The Lancet Global Health. 2022;10(6):e919–e26.

94. Reinvent webinar 6. Measure what you treasure: Strengthening impact and investment in sport and physical activity [video] Geneva Accessed: World Health Organization; 2021. Available from: https://www.who.int/multi-media/details/reinvent-webinar-6.-measure-what-you-treasure-strengthening-impact-and-investment-in-sport-and-pa, accessed 11 July 2022.

95. Bas D, Martin M, Pollack C, Venne R. The impact of COVID-19 on sport, physical activity and well-being and its effects on social development [policy brief]. New York: United Nations Department of Economic and Social Affairs; 2020. https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/06/PB_73.pdf

Glossary

Active people	Individuals and/or groups who integrate physical activity into daily routines. The goal of active living is to at least meet the global recommendation of physical activity through practices such as walking, cycling, playing, gardening and other activities that can be considered as physical activity.
Active play	Active play among young children is defined as a form of gross motor or total body movement in which young children exert energy in a freely chosen, fun, and unstructured manner.
Active recreation	Outdoor recreational activities that can be considered physical activity, including walking, sport, play, and dance. These activities usually take place in public spaces such as parks and plazas.
Advocacy	A combination of individual and social actions designed to gain political commitment, policy support, social acceptance and systems' support for a particular health goal or programme.
Child-care facilities	Facilities for the care of children while parents are working (for example a crèche, nursery, or child minder).
Civil society organization (CSO)	Non-market and non-state organization in which people organize themselves to pursue shared interests in the public domain, such as environmental groups, women's rights associations, labour unions, and NGOs.
Communication campaigns	A planned and purposeful strategy to change knowledge, attitudes, and behaviour in *a large population or population segment using mass communications strategies* (for example mass media). Such campaigns can be supported by community-based opportunities and environmental improvements aimed at supporting behavioural change.
Direct health-care costs	Costs that are directly attributable to patient care, for example nursing services, drugs, medical supplies, diagnostic imaging, rehabilitation and food services.
Equity	A situation of fairness, in which people's needs guide the distribution of opportunities for well-being. All people have an equal opportunity to develop and maintain their health, through fair and just access to resources for health.
Exercise	A subcategory of physical activity that is planned, structured, repetitive, and purposive, in the sense that the improvement or maintenance of one or more components of physical fitness is the objective. "Exercise" and "training" are frequently used interchangeably and generally refer to physical activity performed during leisure time with the primary purpose of improving or maintaining physical fitness, physical performance, or health.
Fitness	The ability to carry out daily tasks with vigour and alertness, without undue fatigue, and with ample energy to enjoy leisure-time pursuits and respond to emergencies. Physical fitness includes a number of components, including cardiorespiratory endurance (aerobic power), skeletal muscle endurance, skeletal muscle strength, skeletal muscle power, flexibility, balance, speed of movement, reaction time, and body composition.
Grassroots groups/ organizations	These practice the use of collective action at the local level to effect change at the local, regional, national or international level. These groups are usually associated with bottom-up, rather than top-down decision-making.
Health promotion	The process of enabling people to increase control over, and to improve, their health.

Inclusive	The process of including or covering everyone that reflects the willingness, intent, actions, and resources needed to increase accessibility for people with disabilities and other marginalized groups.
Indicators	A specially selected, specific, observable and measurable characteristic that can be used to show changes or progress in a programme or strategy towards achieving a specific outcome or result. Indicators are useful in highlighting problems, identifying trends, and contributing to the process of priority setting, policy formulation and evaluation and monitoring of progress.
In-service training	Professional training or staff development given to employees during the course of employment.
Insufficient physical activity	As defined in WHO recommendations on physical activity (2020): adults aged ⩾ 18 years: < 150 minutes of moderate-intensity activity per week; Adolescents: < 60 minutes of moderate- to vigorous-intensity activity daily.
Legislation	A law or laws that have been enacted by the governing bodies in a country.
mHealth	The use of mobile and wireless technologies to support the achievement of health objectives.
Multimodal commute/ trips	The combination of two or more different forms of transport within a single trip from origin to destination. This may consist of different vehicles, such as a car, bicycle, tram, bus or train, or different services, such as stopping or express services.
Multisectoral	An intentional collaboration or partnership between different stakeholder groups (for example government, civil society, private sector and non-government) and across different sectors (for example health, environment, sport, transport, housing, education, planning) to jointly achieve a goal or outcome. This can be in the form of a collaboration, partnership or engagement.
National policy, strategy, action plan:	i. Policy: a specific, official decision or set of decisions designed to carry out a course of action endorsed by a political body, including a set of goals, priorities and main directions for attaining these goals. The policy document may include a strategy to give effect to the policy. ii. Strategy: a long-term plan designed to achieve a particular goal. iii. Action plan: a scheme of course of action that may correspond to a policy or strategy, with defined activities indicating who does what (type of activities and people responsible for implementation), when (time frame), how, and with what resources to accomplish an objective.
National protocols/ guidelines/standards for chronic diseases and conditions	A recommended, evidence-based course of action to prevent a chronic disease or condition, or to treat or manage a chronic disease or condition, with the aim of preventing complications and improving outcomes and patients' quality of life.
Operational	A policy, strategy or plan of action that is being used and implemented in the country, and has resources and funding available to implement it. Also applies to a multisectoral commission/mechanism that is functional and meets regularly.
Physical activity	Any bodily movement produced by skeletal muscles that requires energy expenditure. Examples of common types of activity are: walking, cycling, running, dancing, swimming, yoga, and gardening.
Physical inactivity	An insufficient physical activity level to meet present physical activity recommendations.
Primary health care	Health care provided in the community for people making an initial approach to a medical practitioner or clinic for advice on prevention and management of diseases. It is the first point of contact for someone when they contract an illness, suffer an injury, or experience symptoms that are new to them.

Principles of compact, mixed-land use	A spatial planning and design approach that promotes a higher density of built area and population, with concentration of urban functions. Having a cross section of residential, commercial and community infrastructure in a neighbourhood increases the demand for walking, cycling, and use of public transport.
Productivity losses	Productivity costs are indirect costs that occur when the productivity of individuals is affected by illness, treatment side-effects, disability or premature death. They are usually estimated in terms of lost earnings due to sickness.
Public open space	Open space in the city that can be accessed equitably by city inhabitants, including walkways, sidewalks, bicycle lanes, public parks, squares, recreational green areas, public playgrounds, and open areas of public facilities.
Recreational physical activity	Physical activity performed by an individual that is not required as an essential activity of daily living, and is performed at the discretion of the individual. Such activities include sport participation, exercise or training, or activities such as going for a walk, dancing, and gardening.
Sedentary behaviour	Any waking behaviour characterized by an energy expenditure of 1.5 Metabolic Equivalent of Task or lower while sitting, reclining, or lying. Most desk-based office work, driving a car, and watching television are examples of sedentary behaviours; these can also apply to those unable to stand, such as wheelchair users.
Spatial and urban planning	The methods used by the public sector to influence the distribution of people and activities in spaces of various scales.
Sport	Sport covers a range of activities performed within a set of rules and undertaken as part of leisure or competition. Sporting activities involve physical activity carried out by teams or individuals and may be supported by an institutional framework, such as a sporting agency.
Surveillance	The continuous, systematic collection, analysis and interpretation of health-related data needed for the planning, implementation and evaluation of public health practice. Such surveillance can serve as an early warning system for impending public health emergencies; document the impact of an intervention, or track progress towards specified goals; and monitor and clarify the epidemiology of health problems to allow priorities to be set and inform public health policy and strategies.
Whole-of systems-approach	This involves all stakeholders in the numerous policy opportunities that exist to influence physical activity – policies that can strengthen or weaken each other and which therefore need to be viewed holistically.
Children, adolescents, young people	Children: people aged under 19 years. School-aged children are generally assumed to be aged 5 years or above. Adolescents: aged 10–19 years. Youth: aged 15–24 years. These terms are used in this document to reflect the situation in many countries where young people may be attending secondary school, yet may be older than adolescents (aged 10–19 years).
Universal access	Environments, products and systems to be usable by all people to the greatest extent possible without the need for adaptation or specialized design.
Whole-of-government	The joint activities performed by diverse ministries, public administrations and public agencies in order to provide a common solution or support to particular priorities or issues.

Annex 1: Methodology to estimate the cost of physical inactivity

Step 1: Identify the scientific, evidence-based ***relative risk*** for major NCDs where physical inactivity is a recognized risk factor *(1–3)*.

Step 2: Identify scientific, evidence-based estimates for the ***prevalence*** of physical inactivity for all WHO Member States, among persons aged 18 years and above, disaggregated by sex *(4)*.

Step 3: Identify the ***population data*** for all WHO Member States, WHO Regions and World Bank income levels, by age group and sex *(5)*.

Step 4: Identify the ***annual number of new cases of major NCDs*** for which physical inactivity is a recognized risk factor *(6–9)*.

Step 5: Calculate the ***proportion of all new cases*** for each disease ***that is attributed to physical inactivity***, by using the prevalence of physical inactivity and the relative risks *(10)*.

Step 6: Estimate the ***total number of cases for each disease due to physical inactivity*** in each country and by WHO Region and World Bank income level by multiplying Step 4 and Step 5.

Step 7: Identify ***available data on average annual direct health care costs for each disease***, for each country *(11, 12)*.

Step 8. When data on average annual direct health-care costs for specific diseases are unavailable, ***identify 28 European Member States (Euro-28) cost estimates to be extrapolated the countries*** *(13)*.

Step 9: Extrapolation of costs can be done ***using the ratio of health care expenditure for the relevant Member State, to the average Euro-28 health expenditure*** as a weight for the costs *(14)*.

Step 10: Apply the weight for the costs to ***estimate the annual direct health care costs of diseases not available globally, for all countries*** *(15, 16)*.

Step 11: For each WHO Member State, WHO region, and World Bank income group, ***quantify the total annual (in 2020 value) and cumulative (2020 to 2030) direct health care costs attributable to physical inactivity*** based on Steps 6, 7, and 10.

References:

1. Lee I-M, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. The Lancet. 2012;380:219–29.

2. Katzmarzyk PT, Friedenreich C, Shiroma EJ, Lee I-M. Physical inactivity and non-communicable disease burden in low-income, middle-income and high-income countries. Br J Sports Med. 2022;56(2):101–106.

3. Livingston G, Huntley J, Sommerlad A, Ames D, Ballard C, Banerjee S et al. Dementia prevention, intervention, and care: 2020 report of the Lancet Commission. The Lancet. 2020;396:413–46.

4. Guthold R, Stevens GA, Riley LM, Bull FC. Worldwide trends in insufficient physical activity from 2001 to 2016: a pooled analysis of 358 population-based surveys with 1.9 million participants. Lancet Glob Health. 2018;6(10):e1077–86.

5. World population prospects 2020 [Internet]. New York: United Nations Department of Economic and Social Affairs; 2021 (https://population.un.org/wpp/, accessed 12 July 2022).

6. Cancer Today [online database]. International Agency for Research on Cancer, World Health Organization; 2021 (https://gco.iarc.fr/today/online-analysis-table?v=2020&mode=cancer&mode_population=continents&population=900&populations=900&key=asr&sex=0&cancer=39&type=0&statistic=5&prevalence=0&population_group=0&ages_group%5B%5D=4&ages_group%5B%5D=17&group_cancer=1&include_nmsc=1&include_nmsc_other=1, accessed 12 July 2022).

7. World Alzheimer report 2015 – the global impact of dementia: an analysis of prevalence, incidence, cost and trend. London: Alzheimer's Disease International (ADI); 2015 (https://www.alzint.org/u/WorldAlzheimerReport2015.pdf, accessed 12 July 2022).

8. Noncommunicable diseases: risk factors (blood pressure). The Global Health Observatory [online database]. Geneva: World Health Organization; 2021 (https://www.who.int/data/gho/data/themes/topics/noncommunicable-diseases; accessed 12 July 2022).

9. Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2019 – Results [online database]. Seattle: Institute for Health Metrics and Evaluation; 2019 (http://ghdx.healthdata.org/gbd-results-tool8, accessed 12 July 2022).

10. Levine B. What does the population attributable fraction mean? Prev Chronic Dis;4(1): A14.

11. Diabetes-related health expenditure per person, US$. IDF Diabetes Atlas 10th edition [online database]. Brussels: International Diabetes Federation; 2021 (https://diabetesatlas.org/data/en/indicators/19/, accessed 12 July 2022).

12. Global status report on the public health response to dementia. Geneva: World Health Organization; 2021 (https://apps.who.int/iris/handle/10665/344701, accessed 12 July 2022).

13. Health at a glance: Europe 2018. State of Health in the EU Cycle [online database]. OECD, European Union (https://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-europe-2018_health_glance_eur-2018-en, accessed 12 July 2022).

14. Global Health Expenditure Database [online database]. Geneva: World Health Organization. 2021 (https://apps.who.int/nha/database/Select/Indicators/en, accessed 12 July 2022).

15. Breakaway: The global burden of cancer – challenges and opportunities. London: Economist Intelligence Unit; 2009 (http://graphics.eiu.com/upload/eb/EIU_LIVESTRONG_Global_Cancer_Burden.pdf; accessed 12 July 2022).

16. Ding D, Lawson KD, Kolbe-Alexander TL, Finkelstein EA, Katzmarzyk PT, van Mechelen W et al. The economic burden of physical inactivity: a global analysis of major noncommunicable diseases. Lancet. 2016;388(10051): 1311–1324.

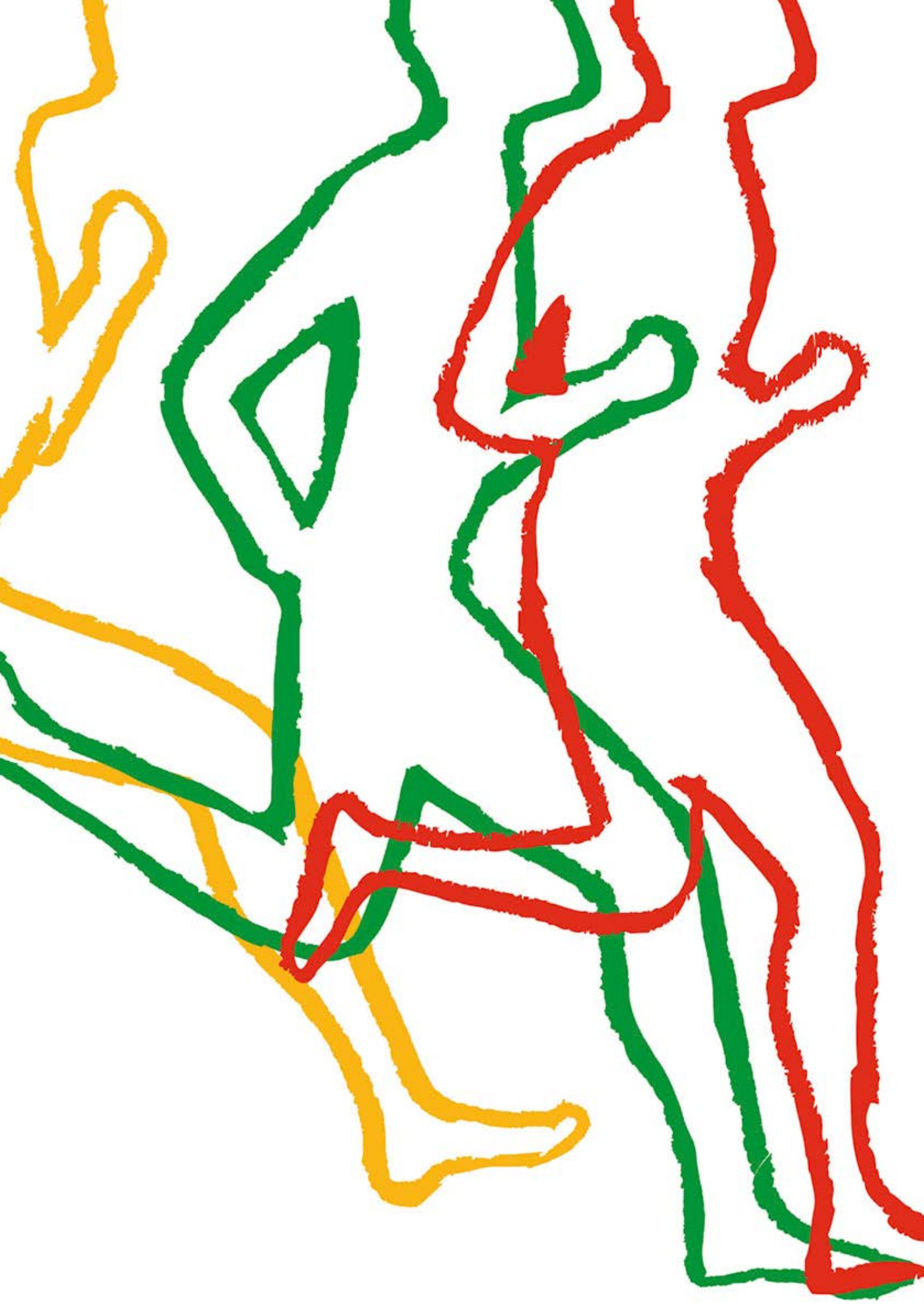
Annex 2: Data sources

Five key data sources were identified for the proposed set of indicators, all of which are either globally standardized measures or globally comparable.

1.	**WHO NCD Country Capacity Survey (NCD CCS):** This is the primary and major source of the data for this report. WHO's NCD surveillance team conducts a periodic assessment of national capacity for NCD prevention and control through the use of a global survey to all 194 Member States, known as the NCD Country Capacity Survey (NCD CCS). The survey is completed by national NCD focal points or a designated person within the ministry of health. This survey has been conducted in 2001, 2005, 2010, 2013, 2015, 2017, 2019 and 2021.
2.	**Global Road Safety Respondent Questionnaire**: This is the secondary source of the data for this. The WHO Safety and Mobility unit administers a survey containing questions relating to the status of the five pillars of the Decade of Action on Road Safety to 175 Member States. The survey is completed by Regional or National Data Coordinators in collaboration with national NCD focal points or a designated person within the ministry of health.
3.	**WHO NCD STEPS survey**: This is one of the data sources for this report. The WHO STEPwise Approach to NCD Risk Factor Surveillance (STEPS) is a population survey collecting data on key NCD risk factors: tobacco use, alcohol use, physical inactivity, and unhealthy diet. It also collects data on key biological risk factors: overweight and obesity, raised blood pressure, raised blood glucose, and abnormal blood lipids. The survey is completed by trained interviewers and supervisors.

Other data sources reviewed but not used

4.	**WHO: Measuring Age Friendly Cities**: WHO Aging and Health unit with administrative support from International Federation on Ageing (IFA) in collaboration with the six WHO Regional Offices and country offices in WHO Member States created a platform for Member States and partner organizations to share and learn from each other. The network data is generated by members and affiliates.
5.	**SDG Indicator Framework**: This is a data sources especially in relation to data generated for measuring SDG 11 (i.e., SDG 11.7.1, public open space; and SDG 11.2.1, access to public transport). UN-Habitat is the custodian of these two indicators. The data is city level metric using the spatial analysis. Data are available from the UN-Habitat global databases.



For further information, contact:

Department of Health Promotion
World Health Organization
20 avenue Appia
1211 Geneva 27
Switzerland
Website: https://www.who.int/

9789240059153