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Towards better nutrition in Europe: Evaluating progress and defining future directions

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ABSTRACT

This paper provides a snapshot of the implementation of the WHO European Food and Nutrition Action Plan 2015–2020 among Member States in the WHO European Region. The focus is on the level and degree of implementation of selected policies recommended in this regional framework to promote healthy nutrition and prevent diet related noncommunicable diseases including obesity. Data was gathered through online and off-line versions of the Global Nutrition Policy Review questionnaire in 2017, through appointed focal points from the ministries of health. Almost all (94%) countries in the European region responded to the questionnaire, although not all responses were equally detailed. Significant progress has been made in some areas of public health nutrition, such as within school food policies, product reformulation, and implementation of trans fat regulations. However, if countries are to achieve global NCD targets, more ambitious policies with appropriate breadth and depth are needed. This is mainly the case for consumer-friendly front-of-package labelling, restrictions on marketing of foods to children as well as policies to protect, promote and support exclusive breastfeeding and appropriate complementary feeding practices. Lastly, it is crucial to prioritize robust monitoring, surveillance and evaluation systems in order to understand the effect of these actions and to guide timely and appropriate adjustment of policies.

1. Introduction

Noncommunicable diseases (NCDs) including cardiovascular diseases, cancer, diabetes and chronic respiratory disease, are the leading cause of death, disease and disability in the WHO European Region. They account for 89% of premature mortality according to the latest Global Burden of Disease Study and one in five deaths globally can be attributed to an unhealthy diet (Abajobir et al., 2017). This growing burden continues to place increasing strain on the health system, hampers full economic development of societies and negatively influences the overall well-being of populations across the region. In response to this, WHO has developed a set of global targets to reduce the burden of NCDs, which include a 25% relative reduction in the risk of premature mortality from NCDs, as well as a 30% relative reduction in mean population intake of salt or sodium and a zero increase in levels of diabetes and obesity (WHO, 2013). Moreover, the Global Nutrition Targets include a 50% increase in rates of exclusive breastfeeding (World Health Organization, 2015d) and no increase in childhood overweight. The UN leads a collective effort to set, track and achieve policy commitments to end malnutrition in all its forms, as part of the UN Decade of Action on Nutrition 2016–2025 (United Nations, 2018) alongside the Sustainable Development Goals, particularly through target 3.4 on reducing premature mortality from NCDs by one-third (World Health Organization, 2017). Most recent evidence shows that overall, countries are widely off-track and will not achieve many of the global targets related to nutrition (Bennett et al., 2018).

Countries in the WHO European Region are rather diverse in terms of income and development levels, as well as food culture and traditions. Despite these differences, some of the challenges related to unhealthy diet are common. These are mainly characterized by energy imbalance and excessive intakes of trans fats, sugars and salt. This can be attributed to the consumption of highly processed, energy-dense manufactured foods and sugar-sweetened beverages (Imamura et al., 2015) and insufficient consumption of vegetables, fruits and whole

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grains (Vereecken et al., 2015). In addition, foods and beverages high in fats, trans fatty acids, sugars and salt (HFSS products) have become more widely available, cheaper and are heavily promoted, particularly to children (Vandevijvere et al., 2015).

As a result, the prevalence of overweight and obesity in the WHO European Region has been increasing steadily, to alarming levels. Recent evidence shows that in 2016, 59% of the adult population of Europe was overweight (World Health Organization, 2018d). Moreover, projected trends estimate that obesity will increase in 44 countries and if the situation remains unchanged, 33 out of 53 countries in the region will have a 20% or higher obesity prevalence (Pineda et al., 2018). The picture is even more concerning for children. Data from the latest round of the WHO European Childhood Obesity Surveillance Initiative (COSI), conducted in 2015/2016, showed that the prevalence of obesity was as high as 17.7% (Rito et al., 2019) and severe obesity up to 5.5% (Spinelli et al., 2019). This study also showed that the prevalence was highest in southern European countries and among groups of low socioeconomic status (Rito et al., 2019).

WHO recommends the adoption of a life-course approach to health promotion. This is based on recognition that the earliest years of life set the tone for the whole of the lifespan, as health and illness are rooted in lived experience at all stages of life, both past and present (World Health Organization, 2015b). Early actions to promote health can begin even before conception. There is evidence that healthy maternal nutrition, exclusive breastfeeding for the first six months of life, followed by nutritious complementary foods and continued breastfeeding up to two years or beyond, and optimal feeding practices for young children are critical to ensure appropriate growth and development (Horta and Victora, 2013). These actions have also been found to reduce the risk of developing overweight and obesity and NCDs later in life, benefiting both mothers and children (Rito et al., 2019). Notably, a study including data from 22 countries of the European Region, found highly increased obesity rates among children who were not breastfed (Rito et al., 2019). WHO/UNICEF recommend exclusive breastfeeding for the first six months of life, and thereafter, introduction of appropriate complementary foods alongside breastfeeding for up to two years and beyond. Despite clear recommendations and substantial evidence of the benefits of adhering to breastfeeding recommendations (World Health Organisation, 1981; World Health Organization, 2009; World Health Organisation, 2017b), the WHO European Region has some of the lowest rates of breastfeeding according to recommendations (World Health Organization, 2016a).

The environments in which we grow-up, play, live and work also have a significant impact on the development of our food preferences and choices and the overall nutritional quality of our diets. Tailored policies and interventions are therefore needed to create healthier food environments. These include measures to promote reformulation of foods and beverages, eliminate trans fatty acids and restrict the marketing of HFSS foods to children, as well as efforts to increase the availability and promotion of healthy foods (e.g. in school settings) and implement interpretive front-of-pack-labelling for guidance on healthy food choices (Lobstein et al., 2015). Moreover, fiscal policies such as taxes (e.g. on HFSS foods and beverages) and subsidies (e.g. on fruits, vegetables or other healthy foods) have also proven to be successful strategies to change people's consumption patterns and to influence purchasing behavior (Sassi et al., 2013).

Furthermore, health systems also play an important role in the prevention and management of diet-related NCDs through appropriate schemes including counselling and education on healthy diets. While there are challenges in ensuring that primary care professionals integrate sophisticated individual and group approaches into daily practice, it has proven to lead to positive behaviour change in the short term, particularly when the intervention is tailored to the individual and addresses multiple risk factors simultaneously (e.g. physical activity in addition to diet). Longer-term success and weight maintenance is most likely when supported by routine follow up by an interdisciplinary team of health professionals (World Health Organization, 2016b). It is important that these health services be provided at free or at subsidized rates to ensure that citizens can access them without incurring financial hardship (World Health Organization, 2013a).

Independent of the type of action undertaken in countries, monitoring, surveillance and evaluation are crucial to understand the progress to achieving health-related targets, as well as to plan, implement and evaluate the effectiveness of food and nutrition policies or programmes (Swinburn et al., 2013).

To support the implementation of comprehensive policies to promote healthy diets and prevent obesity, the European Food and Nutrition Action Plan (FNAP) for 2015–2020 (World Health Organization, 2015a) was adopted by all 53 Member States of the WHO European Region. The action plan includes state-of-the-art knowledge on the factors that influence dietary behaviour throughout the life-course and suggested policies and interventions for a wide range of settings and domains. The aim of this study is to provide a snapshot of progress in implementation of policy actions, based on guidance from the FNAP.

2. Methodology

The FNAP contains five objectives with the aim of contributing to improving food system governance and the overall quality of the population's diet and nutritional status, to ultimately promote better health and well-being. Each objective highlights suggested priority actions and offers practical guidance to support implementation. An overview of the main actions covered in this paper have been numbered and presented in Table 1.

Objective five of the action plan, namely to *Strengthen governance, alliances and networks to ensure a health-in-all-policies approach* shall not be covered in detail in this paper, as available data was not sufficiently complete.

3. Empirical application

The WHO Global Nutrition Policy Review (GNPR) questionnaire is a comprehensive survey designed by WHO to understand whether countries have nutrition policies and programmes, how they are being implemented, what the implementation coverage is, who the stakeholders are and how they are coordinated, monitored and evaluated (World Health Organization, 2013b). The questionnaire is global in scope and is circulated to all Member States of the WHO via its regional offices. The more detailed methodology and results of the first round of data collection were published in the WHO Global nutrition policy review (World Health Organization, 2018c).

For the last round of data collection, parts of the questionnaire were reviewed by external experts and partner agencies to WHO to ensure that the questions would capture all relevant information and that they were consistent with the European Food and Nutrition Action Plan (World Health Organization, 2015a). During the second half of 2016, the revised questionnaire, available in English, French, Russian and Spanish was circulated to appointed national focal points for NCDs within the Ministry of Health. The questionnaire was designed in an online format and broken down into themes, so that different sections of the questionnaire could be completed by relevant national experts.

In order to increase the response rate, an abbreviated version of the questionnaire was prepared as an off-line PDF and disseminated in January 2017. This version contained 42 questions covering the most important areas, although the level of detail was lower compared to the full on-line questionnaire.

Upon receiving the responses, data reported by Member States were validated against documents submitted by respondents, WHO publications, academic literature and other relevant sources as well as by representatives of the Ministry of Health in each country. After careful

Table 1
Objectives and main actions of the WHO European Food and Nutrition Action Plan.

Objective	Main actions
Create healthy food and drink environments.	Facilitate healthier food choices in schools, including setting standards for the foods available. Promote the use of easy-to-understand or interpretative, consumer-friendly labelling on the fronts of packages and healthy retail environments. Improve the nutritional quality of foods and beverages available in supply, through product reformulation including salt reduction programmes and the ban or virtual elimination of trans fatty acids from the food supply. Adapt measures to reduce the overall impact on children of all forms of marketing of foods high in energy, saturated fats, trans fatty acids, sugar or salt, including through nutrient profiling. Implement targeted fiscal measures to influence diets, considering their impact on vulnerable groups.
Promote the gains of a healthy diet throughout life, especially for the most vulnerable groups.	Promote healthy diet and nutrition before conception, including the provision of nutrition recommendations related to preconception, pregnancy and post-partum. Increase measures to protect, promote, support and address barriers to adequate breastfeeding, and provide appropriate complementary feeding; Adopt national guidelines, in addition to monitoring and establishing standards for the marketing of complementary foods, counselling on exclusive breastfeeding as per WHO recommendations (Infant and young child feeding, no date); Implement the International Code of Marketing of Breast-milk Substitutes (the Code) and the Baby-Friendly Hospital Initiative (or similar standards) and include comprehensive monitoring of these. Consider strategic communication with the public to improve the ability of citizens to make healthy choices, taking into account the needs of different age groups, genders and socioeconomic groups. This can include education on nutrition and health diets, media campaigns, dietary guidelines, the use of social media and new techniques to promote healthy food choices and healthier lifestyles.
Reinforce health systems to promote healthy diets.	Provision of education and counselling on nutrition and healthy diets for prevention of overweight, obesity and diet-related noncommunicable diseases in primary health care, including elements of behaviour change and considering effective measures to reach at-risk groups. Improve nutrition capacity and training for relevant health professionals to enable the provision of high-quality nutrition services in health care settings.
Support surveillance, monitoring, evaluation and research.	Strengthen and expand nationally representative diet and nutrition surveys and to ensure the availability of anthropometric data, particularly for children under five years. Establish and maintain food consumption databases and anthropometric surveillance systems that allow disaggregation by socioeconomic status and gender.

review, respondents were contacted to obtain any missing information or to seek clarification, if necessary. Subsequently, further documentation was requested in certain cases.

A full report of the (GNPR|) has been published elsewhere (World Health Organization, 2018c). This paper focuses on responses from countries in the WHO European Region, which covers 53 countries (World Health Organization, 2016d). While the questionnaire was very comprehensive, this report focuses on the indicators that enable the authors to evaluate achievement of the four objectives of the European Food and Nutrition Action Plan (World Health Organization, 2015a), as described above.

4. Results

A total of 50 countries out of 53 responded to the questionnaire,[1] corresponding to 94% of the WHO European Region Member States. Not all countries responded to all sections of the questionnaire. This paper gives priority to those indicators for which the most complete information was available and those that are most relevant to European Food and Nutrition Action Plan. More detailed information on the results of the questionnaire can be found in a publication titled *Better food and nutrition in Europe: a progress report monitoring policy implementation in the WHO European Region* (World Health Organization, 2018a), published by the WHO Regional Office for Europe.

4.1. Objective 1: Creation of healthy food environments

4.1.1. School food and nutrition

Most countries had adopted some measures to promote healthy behaviours in schools, including diet (96%). The most common components of these measures included standard- setting for the foods available (88%), physical education in the school curriculum (67%), nutrition education in the school curriculum (67%), having a school fruit and vegetable scheme (58%), training of school staff on nutrition (56%) and safe drinking water available free of charge in schools (54%) (Fig. 1). Responses did not indicate whether the policies were universally implemented and enforced.

4.1.2. Nutrition labelling

Declarations on pre-packaged food were reported by 90% and list of ingredients in 98% of countries respectively. As for front-of-package labelling (FOPL), 67% reported voluntary actions to promote FOPL and 27% of countries had issued specific guidelines, legislation or regulations to guide such labelling. Fifteen countries reported having a government-endorsed policy on *interpretive* FOPL (27%).

4.1.3. Measures to promote reformulation of foods and beverages

Most countries in the Region (77%) reported activities for reformulation of food products. Of these, 55% concentrated on salt, 27% on saturated fat and 37% on sugar and most of them were voluntary (Fig. 2). Specific targets for saturated fatty acids were reported by 11%, 17% for sugars and 30% for salt. In addition, 15 countries (28%) reported that they have specific legal measures in place to ban or limit the use of trans fats.[2]

4.2. Marketing to children

Across Europe, 54% of countries reported some action to control the marketing of HFSS foods to children. Most of these actions are self-regulatory and the main focus was on broadcast (television and radio), compared to other media, such as digital social media platforms, apps or 'advergames' (an online game which in some way contains an advertisement) (Fig. 3). Moreover, the use of nutrient profile models in

[1] 48 responses were received for the global questionnaire. However, two additional responses were gathered for the European Region after completion of the global version.

[2] After the completion of the GNPR, more countries have recently developed initiatives to ban trans fats (Resolve to Save Lives, 2019).

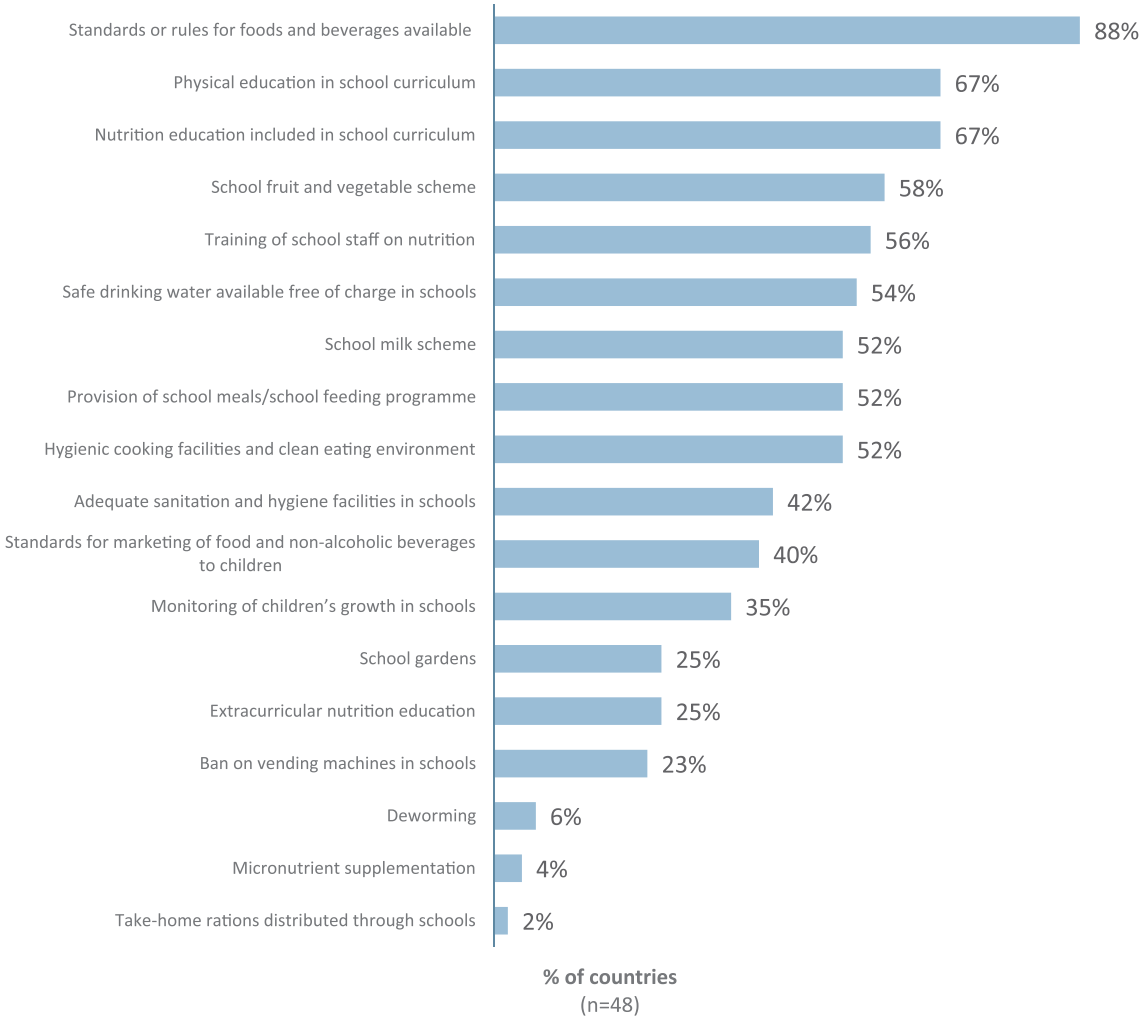

Fig. 1. Components of school health and nutrition policy, programme or standard.

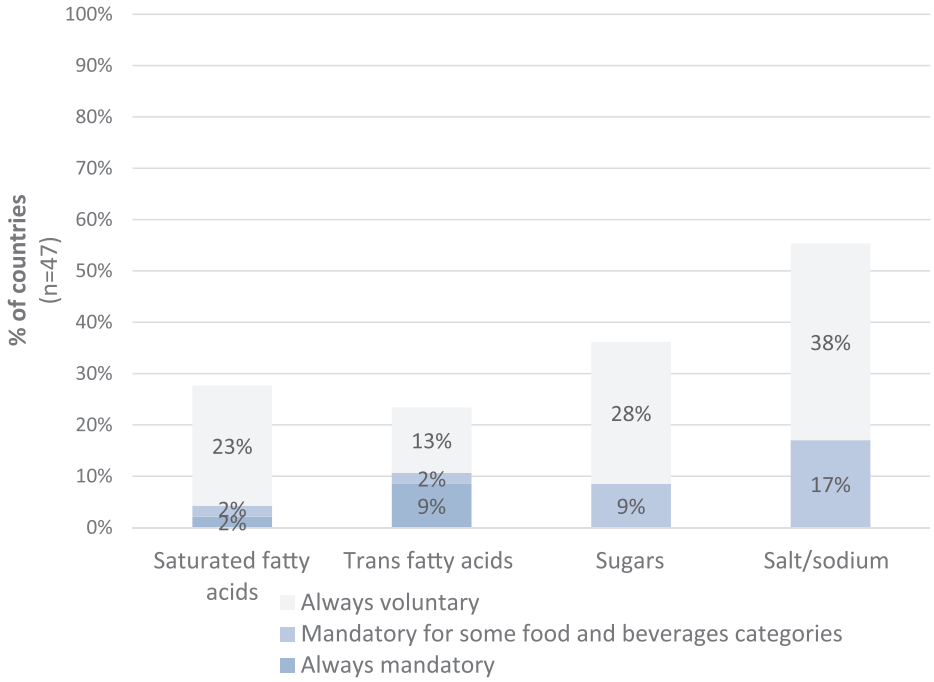

Fig. 2. Mandatory or voluntary reformulation measures to reduce the content of specific nutrients in foods and beverages.

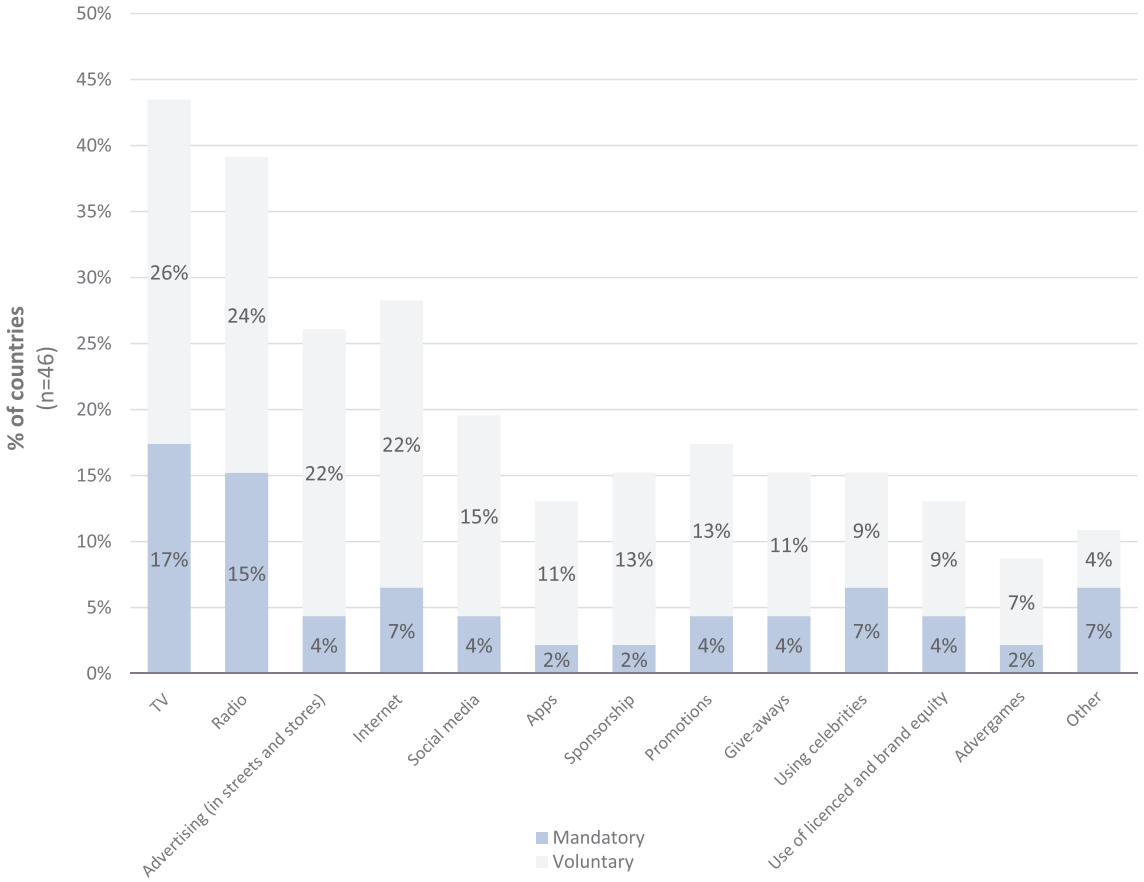

Fig. 3. Mandatory or voluntary measures to regulate or guide marketing of food and non-alcoholic beverages to children in specific communication channels, settings and contexts.

government policies was found in only 13% of countries and formal monitoring of marketing to children in 11%.

4.3. Fiscal policies

Ten countries reported the use of taxes on specific foods, beverages or nutrients aiming to influence what people buy. Of these, five countries (Estonia, France, Ireland, Portugal and the United Kingdom) specified the use of two-tiered taxes, whereby products in the same category (e.g. soft drinks) are taxed differentially according to their sugar content. In Estonia, the tax was adopted by Parliament but not ratified later on. Provision of subsidies was reported in two countries (Denmark and Hungary). However, the school fruit and vegetable schemes reported above can be considered a form of "in-kind" subsidy.

4.4. Objective 2: Promotion of healthy nutrition throughout the life-course

4.4.1. Maternal nutrition

Among countries responding to the survey, 29 (55%) reported that they have national nutrition recommendations relating to preconception, 41 (77%) related to pregnancy and 33 countries (62%) have recommendations related to the postpartum period. Additionally, national Reference Nutrient Intake values (RNI) for pregnant and lactating women exist in 38 countries (72%).

4.4.2. Nutrition in early life

98% of countries reported that they provided counselling on breastfeeding, most commonly for early initiation and continued exclusive breastfeeding to 6 months (Fig. 4) and 78% had counselling on complementary feeding. Moreover, 73% of countries reported that they were currently implementing the Baby-friendly Hospital Initiative.

As for complementary feeding, 78% of countries reported that they provide counselling which includes timely introduction and an appropriate variety of foods to ensure nutrient needs are met.

The most common settings for the provision of counselling on breastfeeding were hospitals and during ante-natal care and post-natal check-ups. For complementary feeding, the most common settings/timings for counselling were during post-natal check-ups, in primary care clinics and community settings (Fig. 5).

4.4.3. Communication with the public/Nutrition literacy

80% of countries in the WHO European Region reported that they had adopted food-based dietary guidelines. Of these, 42% reported using nutrient-based dietary guidelines as the basis for guidance to different target groups and 82% reported running media campaigns to promote healthier diets. The most common objectives of these campaigns were to communicate about the health effects of high intakes of fats, sugars and salt or sodium (39%) and to raise awareness about healthy diets, such as through increasing fruit and vegetable consumption (37%). Less frequently used objectives were providing information on using nutrition labels (22%), interpreting nutrition and health claims (16%) and to control portion size (16%). Additionally, preparation of food guides or educational materials was reported by 50% of countries. As for channels to disseminate information from media campaigns, the most common were internet and social media (37%), television (33%), events (29%) and radio (27%).

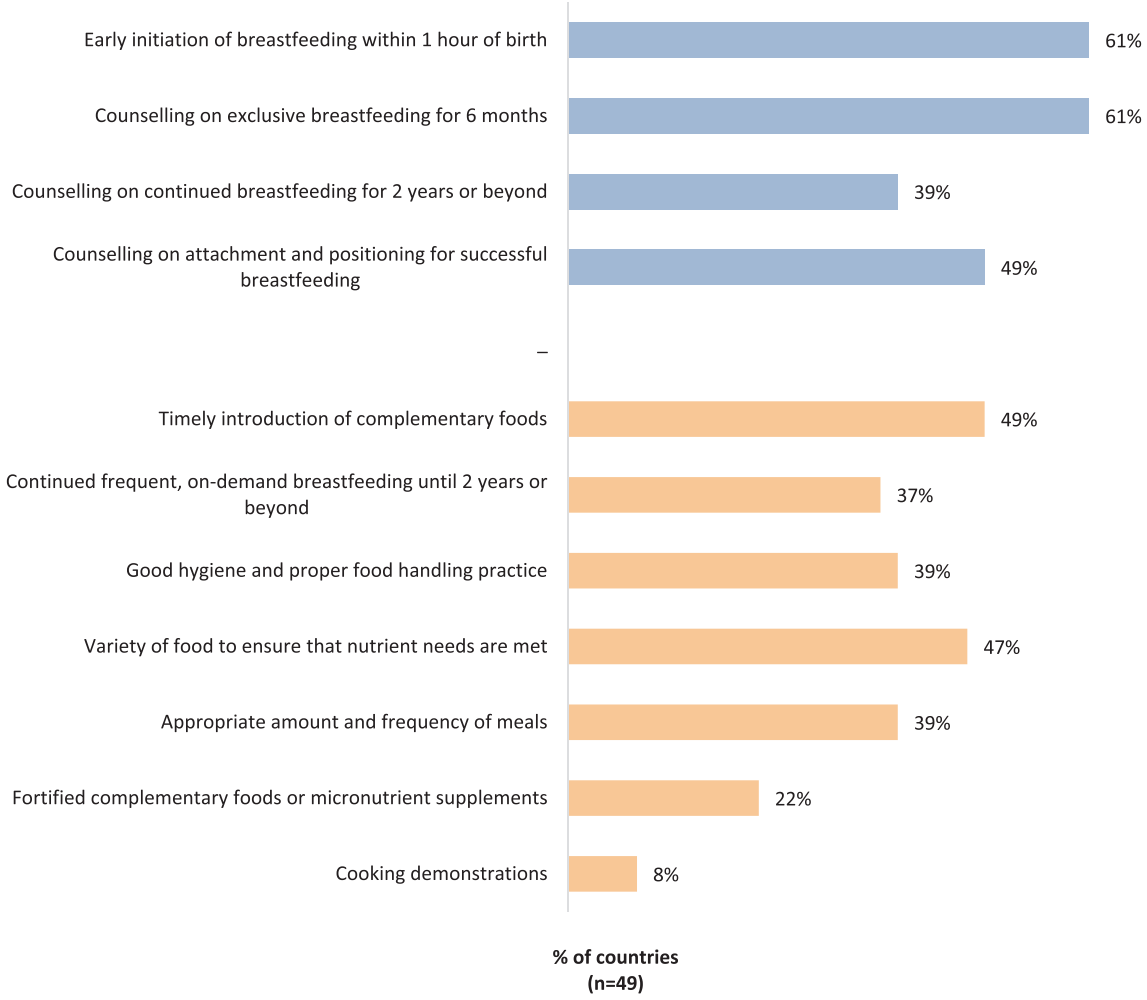

Fig. 4. Components of counselling on breastfeeding and complementary feeding.

4.5. Objective 3: Reinforcement of health systems to promote healthy nutrition

4.5.1. Education and counselling on nutrition and healthy diets for prevention of overweight, obesity and diet-related noncommunicable diseases in primary health care

Most countries (93%) reported that they provided education and counselling on nutrition and healthy diets for the population in health care, most commonly done in primary care settings (54%). As for incorporating elements of behaviour change communication, this was reported by 20%. In most cases, education and counselling was targeted to the general population (46%). Other groups commonly targeted were pregnant and lactating women (17%) and adults (17%).

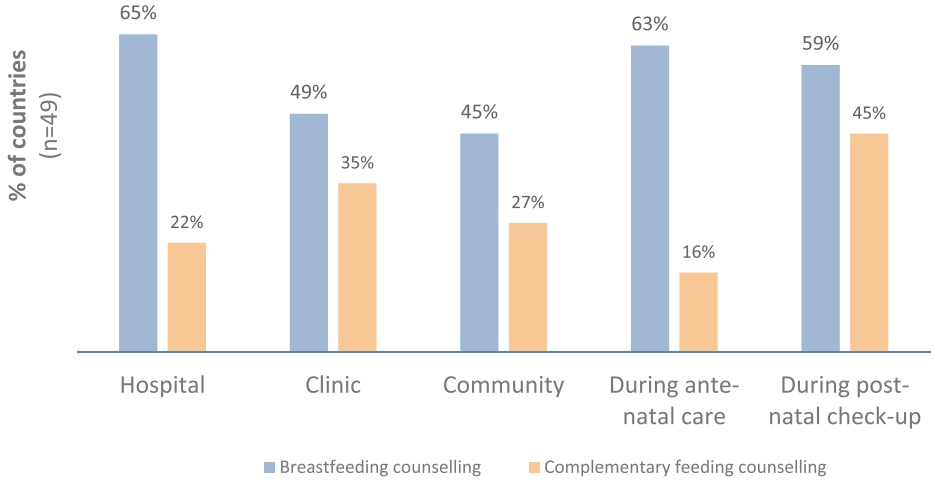

Fig. 5. Settings and time period when counselling on breastfeeding and complementary feeding is provided.

4.5.2. Nutrition capacity

78% of countries reported that they had higher education institutions that offered training in nutrition, and 58% reported that maternal, infant and young child nutrition was included in pre-service training for health professionals.

4.6. Objective 4: Surveillance, monitoring and evaluation

4.6.1. Monitoring the growth of children under 5 years

Of countries that responded to the survey, 91% reported growth monitoring programmes. Taking anthropometric measurements was the most common component of such programmes, reported by 46% countries and overweight and obesity were the most commonly monitored indicators (26%), usually by taking height and weight measurements to calculate body mass index (BMI).

4.6.2. Surveys of food consumption and nutrient intake

Implemented or planned food consumption or nutrient intake surveys were reported by 88% of countries. The most common methods used for dietary assessment were repeated 24-h dietary recall (31%) and food frequency questionnaires (31%), followed by food diaries (27%). As for sodium intake surveys, these were reported in 24% of countries. Of these, 22% used the gold-standard 24-h urinary sodium excretion method. Additionally, existence of national food composition tables or databases were reported by 61% of countries.

5. Discussion

This paper presents progress made by Member States of the WHO European Region to implement the recommended nutrition-related policies included in the WHO European Food and Nutrition Action Plan 2015–2020 (World Health Organization, 2015a). Data from this paper could be used by Member States and WHO to consider what priorities might be relevant for food and nutrition and as part of future policy frameworks and in the context of achieving the SDGs.

A global comparison of results from the 1st GNPR to the 2nd GNPR found improvements in the development of nutrition policies since 2009/2010, with an increase in the inclusion of specific nutrition goals and targets, and relevant actions in national policies (World Health Organization, 2018c). This picture is fully applicable for the WHO European Region as well.

Countries in the Region are making progress in areas related to school health and nutrition. Notably, a large majority of countries (88%) reported setting standards for the foods available in schools. However, when the detail of policies was provided, it revealed areas for further improvement, such as regulation on foods and beverages sold in the immediate vicinity of schools and the availability of vending machines. Such policies can make an important contribution to improving dietary intake as well as reducing overall energy intake throughout the day. Their scope (i.e. the criteria adopted; whether it applies to both secondary and primary schools) and the level of enforcement of the policies were not clear based on the responses to the questionnaire, thus making it difficult to understand the full picture. The extent to which policies apply in the same manner in all schools across the country could not be covered in full.

Evidence from the WHO Childhood Obesity Surveillance Initiative (COSI) questionnaire on school food environment has shown that even in countries where there are policies in place, HFSS food items such as sugary drinks are available in some schools and not others. It is an ongoing challenge for countries to ensure that all foods that are available and/or provided in schools are consistent with dietary guidelines (Aranceta Bartrina et al., 2008). Key issues include foods sold in “tuck shops”, where confectionery and/or savoury snack foods may be sold, in addition to vending machines where sugary drinks are available. Future policies may also need to consider the availability of HFSS foods in the vicinity of schools, as this has been shown to undermine the effectiveness of school nutrition policies (Lucas et al., 2017).

When it comes to food labelling, the general picture is positive regarding mandatory declarations on pre-packaged foods as well as lists of ingredients. However, while many countries reported voluntary front-of-package labelling, very few had specific guidelines or regulations, meaning that uptake was likely to be patchy. Similarly, only a small number of countries had implemented interpretative front-of-package labelling, which has been shown to be most effective, particularly for groups with lower education and socio-economic status (Talati et al., 2017). A recent report by the WHO Regional Office for Europe provided an overview of the different interpretive schemes currently in use in the European region. A limited range of systems were identified to be in use across Europe that provided an indicator for *unhealthfulness*. These included the Nutri-Score system in France, the red warning label in Israel and the colour-coded percentage Reference Intake (%RI) system in the UK. The communication of product unhealthfulness is likely a critical element in the performance of FOPL in supporting better food choices (World Health Organization, 2018f; Scarborough et al., 2015; Rohr et al., 2015). In 13 countries, endorsement logos have been adopted. These logos serve to signpost better-for-you choices, but provide no direct information to indicate if a product is not healthy (Norstat, 2015; Kleef and Dagevos, 2015).

Most countries were to a certain extent active in the area of food reformulation, particularly most often with the aim of reducing the salt content of processed foods. However, fewer countries were in a position to report that they had established specific targets for the reduction of important nutrients of public health concern; this was particularly lacking in the case of sugar and certain fats. Experience with salt reduction in the European Region shows that setting sector-wide targets and holding industry to account via routine monitoring and highly managed stakeholder engagement does deliver results (Webster et al., 2014). Setting targets is an important exercise to be able to monitor the progress of reformulation as well as to standardize the reduction of the nutrient in question. Moreover, national data on food composition (ideally branded) is also crucial for being able to monitor progress (World Health Organization, 2018e) and is an element still missing in a large number of countries.

WHO recommends to virtually eliminate industrially-produced trans-fatty acids from the global food supply, due to their strong association with an increased risk of coronary heart disease (WHO, 2018a). Trans fats should be reduced to no more than two grams per 100 g of the product. Denmark was the first country to successfully impose a national legal limit on the content of industrial trans fats in 2003 (World Health Organization, 2018a) and several countries have followed since with the same model. At the time the GNPR was applied, results showed that more action was needed (World Health Organization, 2018a). After WHO provided evidence showing that levels of trans fats remained worryingly high, particularly in Eastern Europe and Central Asia (World Health Organisation, 2017a), many countries have established statutory bans (Resolve to Save Lives, 2019). Recent actions have also been taken by the European Union (European Commission, 2018) and the Eurasian Economic Commission (Eurasian Economic Commission, 2011) to strengthen regulations and bring the European Region closer to becoming a trans-fat-free Region.

In 2010, the World Health Assembly unanimously adopted the WHO Set of Recommendations on the Marketing of Foods and Non-alcoholic Beverages to Children, urging Member States to reduce the impact on children of the marketing of energy-dense, HFSS and highly processed foods (World Health Organisation, 2010). According to the results of this study, many countries are taking some action in this area; however, a great deal have not, and most countries still focus their efforts exclusively on television and radio advertisement. It has been shown that children are exposed to marketing through many other communication channels and mechanisms, including via product display, packaging and the digital sphere which together amplify the effects of other media (Health Organization Regional Office for Europe, 2016). Existing

regulations also typically limit their scope to child-oriented programming ("targeted at", "directed at", or "designed to attract the attention of", children), leaving a broad range of programmes, media and marketing techniques to which children are exposed unregulated. Such restrictions have proven far too narrow (Boyland and Whalen, 2015). Most adverts that children see in broadcast media or the physical environment do not specifically "target" them; they are shown during family TV programmes such as prime-time sitcoms and reality shows, on billboards and bus shelters, or around sports fields where children and families watch their teams play. Member States should therefore ensure that they focus on the actual exposure of children to HFSS food marketing, rather than on the classification of content or media, and apply rigorous nutrient profiling criteria such as the WHO Europe nutrient profile model (World Health Organization, 2015e). Although some steps have been taken to close existing loopholes by governments, including Ireland, Norway and the UK (World Health Organization, 2018b) and other countries are discussing further steps in nutrient profile models, notably for baby foods, much more could be done in this area.

There is increasingly clear, consistent evidence that taxes and subsidies influence purchasing behaviour and consumption patterns, thus showing strong potential for promoting healthy eating (Sassi et al., 2013). Since the adoption of the WHO European Food and Nutrition Plan, an increasing number of countries are considering or have adopted price policies, notably those applied to sugar sweetened beverages. In 2014, when the FNAP was under consideration, a handful of countries, including France and Hungary, had public health-related taxes in place on HFSS. This has now increased to ten. Countries are also designing more sophisticated evaluations of the policies to capture the impact on purchase and consumption, but also product composition, availability, marketing and substitutions (World Health Organization, 2015c). According to this study, although many countries have school fruit and vegetable schemes in place, the provision of subsidies remains a highly underused measure with great potential to reach vulnerable segments of the population. There is great potential from policies that combine subsidies with taxes. Subsidies have been shown to be effective in increasing the consumption of fruit and vegetables, thus improving the nutritional quality of diets (An, 2013). Introducing a tax on HFSS products in parallel would also help ensure a reduction in caloric intake (Thow et al., 2014). Additionally, one could speculate that taxation could play a role in product reformulation, as manufacturers might decide to adjust the content of the taxed nutrients in their products in order to avoid taxation. Early findings from the United Kingdom and Portugal are testament to this.

In relation to nutrition in early life, countries appear to be well advanced in providing counselling to support new families. A large number of countries also reported to be currently implementing the Baby-friendly Hospital Initiative (BFHI). Nonetheless, exclusive breastfeeding rates in European countries tend to decline considerably after four months, are very low in infants under six months of age in most countries of the European region and inappropriate complementary feeding practices are widespread (Bagci Bosi et al., 2015). The reasons might vary depending on the context but include continued promotion of breast-milk substitutes and poor implementation of the International Code on Marketing of Breast-milk Substitutes. Data on implementation of the Code was not collected as part of the GNPR, but a recent WHO/UNICEF Code Status Report found that 42 WHO European Member States had "few" or "no" provisions in law; of particular note, countries of the EU and EEA were re-categorized as having "few provisions in law", based on an analysis of the EU regulation no. 609/2013 (WHO, UNICEF and IBFAN, 2016). This reflects earlier information obtained from countries that showed only partial implementation of the Code in the European Region (World Health Organization, 2016a)Moreover, insufficient funding to raise breastfeeding rates, lack of skilled counsellors, poor community support after discharge from hospital, inadequate maternity leave regulations which do not fully support exclusive breastfeeding during the first six months, as well as poor provisions for breastfeeding mothers in the workplace also have an influence on breastfeeding rates (WHO UNICEF, 2017).

Despite these challenges, most countries show willingness to support breastfeeding. This has been confirmed through the unanimous resolutions adopting and restating this commitment at the World Health Assembly (World Health Organization, 2018h). Thus, countries of the WHO European region need to consider taking stronger political, legal, and financial measures to increase rates of breastfeeding and secure public support for breastfeeding mothers, which will benefit children and society. Particular attention should be given to enforcing and closing regulatory loopholes in existing legislation of the Code and reinvigorating the Baby Friendly Hospital Initiative to increase the number of hospitals designated "baby friendly" and to scale up monitoring of compliance with the Ten Steps to Successful Breastfeeding (WHO, 2018b). Efforts should also be made to support working mothers with paid maternity leave, breaks for breastfeeding during the workday and facilities for breastfeeding in the workplace.

With regards to nutrition literacy, food-based dietary guidelines can be useful tools to translate nutrient recommendations to messages that the public can understand. These are implemented in most countries in the Region and are often communicated through media campaigns to promote healthier diets. Several countries, such as the Netherlands, have recently taken steps to revise their dietary guidelines as well as found innovative ways to help consumers use the guidelines in their daily life, such as via apps that help identify healthier food options (Voedingscentrum, no date). Nonetheless, health literacy remains a challenge in the region (Sørensen et al., 2015). To increase nutrition literacy, the provision of information on using nutrition labels, interpreting nutrition and health claims and to control portion size should be prioritized. These elements can be very useful for the public but are underused in media campaigns.

Almost all countries report that they provide some form of education and counselling on nutrition and healthy diet in health care settings. However, according to available literature, there are a wide range of challenges to scaling up effective approaches. These include lack of clear guidance or clinical recommendations; limited capacity among primary care providers, including time, accurate knowledge, skills to assess and address resistance to behaviour change among patients; issues with reimbursement of counselling services and/or lack of incentives for healthcare providers; limited task-sharing in interdisciplinary teams; and, a failure to use the community and or peer support services to magnify the effect (World Health Organization, 2016c).

Good quality health information is essential for planning and implementing nutrition policies and to evaluate progress and health status of the populations (Swinburn et al., 2013). Based on the results from this study, almost all countries report that they monitor the growth of children under the age of five as well as food consumption and nutrient intake. However, a deeper dig reveals that there is a continuing need for robust and harmonized data. A review by the WHO Regional Office for Europe found that fewer than two thirds of Member States had conducted nationally representative dietary surveys, with most notable gaps in central and eastern European countries (Rippin et al., 2017). Similarly, evidence from a recent systematic review, shows that only 35 of the 53 Member States have published data on the prevalence of overweight and obesity in children under the age of 5 years (Jones et al., 2017). Large methodological variations were found between the studies, thus limiting the comparability of the data and the ability to identify trends. There is therefore a need for the development of more standardized, harmonized surveillance systems for children under the age of five years. Inspiration could be drawn from the WHO Childhood Obesity Surveillance Initiative (COSI), which ensures continuous, systematic collection, analysis, interpretation and dissemination of descriptive information on population levels and determinants of excess body weight among children 6–9.9 years. The reach of COSI has

Table 2
Summary of policy areas where further attention is needed.

Topic	Policy options
School nutrition	• Ensuring that policies apply to all schools, to the extent possible; • Restricting the availability of HFSS foods in the vicinity of schools; • Ensuring that all foods and beverages available and/or provided in schools are consistent with dietary guidelines.
Food labelling	• Producing specific guidelines or regulations for the implementation of nutrition labelling; • Considering the implementation of interpretative FOPL.
Food reformulation	• Setting sector-wide targets for food reformulation; • Conducting routine monitoring to hold the industry accountable; • Ensuring the availability of national data on food composition (ideally branded); • Considering product reformulation to decrease sugars, trans fat and saturated fat content; • Implementing regulations to reduce the trans fat content of foods to no more than two grams per 100 g of the product or prohibition of PHOs.
Marketing of foods and non-alcoholic beverages to children	• Focusing efforts on actual exposure of children to HFSS food marketing; • Applying rigorous nutrient profiling criteria such as the WHO Europe nutrient profile model;
Fiscal and pricing policies	• Combining subsidies with taxes to improve diet quality.
Nutrition in early years	• Increase funding to raise breastfeeding rates; • Strengthen the implementation of the International Code on Marketing of Breast-milk Substitutes by enforcing and closing regulatory loopholes in existing legislation; • Reinvigorate the Baby Friendly Hospital Initiative to increase the number of hospitals designated “baby friendly” and to scale up monitoring of compliance with the Ten Steps to Successful Breastfeeding; • Improve work-related policies which support breastfeeding, such as paid maternity leave, breaks for breastfeeding during the workday and facilities for breastfeeding in the workplace.
Communication with the public	• Considering the provision of information on using nutrition labels, interpreting nutrition and health claims and to control portion size and other actions to increase nutrition literacy.
Nutrition counselling in healthcare settings	• Increasing capacity among primary care providers; • Considering incentives for healthcare providers and adequate reimbursement of counselling services; • Utilize the community and/or peer support services to magnify the effect of the counselling.
Monitoring and surveillance	• Developing more standardized, harmonized surveillance systems which can lead to more comparable data.

expanded considerably over the years and do date includes over 35 Member States of the European Region and covers at least 300 000 children, based on nationally representative samples and standardized measures of weight and height. Similar approaches are needed for other population groups, such as younger children, adolescents and adults (World Health Organization, 2018g).

In order to address implementation gaps, Member States could consider directing future attention and investment to areas of lower implementation highlighted in this study (Table 2).

The main strength of this survey was the comprehensiveness of the WHO Global Nutrition Policy Review questionnaire, which provided a wide overview of policies and activities in different areas influencing dietary behaviours, as well as the large geographical reach and high response rate among countries in the WHO European Region. Nonetheless, since not all countries completed all sections, the amount and level of detail of the data available varies between countries. For example, to assess nutrition governance, the GNPR included questions on coordination and monitoring mechanisms, as well as partner's involvement in nutrition policies. However, some of the responses from the European Region lacked sufficient detail to fully assess the situation in this study. Additionally, due to a dearth of harmonized national data in this area, this paper did not cover levels of or the response to micronutrient deficiencies in Europe, although it is well known that overall intake of iron, iodine and folic acid are not ideal, alongside vitamin D in some countries (Mensink et al., 2013).

Moreover, some discrepancies were found between what was reported by countries and information available from other published resources, notably in relation to the adoption and implementation of policies for infant and young child feeding. Despite all efforts made to validate the data, some inaccuracies may remain. Similarly, it was not possible to assess the quality of implementation of the policies, which may have a strong impact on their effectiveness. The details and nuances in policies can unavoidably be lost when reporting on so many different policy areas. For example, the details of criteria adopted – such as in labelling, school food or marketing policies – may have a large impact on the policy implementation and potential for public health benefit. Therefore, it is important to break down the information into small components and look at each policy areas in more detail. Examples of this include WHO's recent publications on food marketing policies (World Health Organization, 2018b), front of pack labelling (World Health Organization, 2018f) and commercial foods for infants and young children (World Health Organization, 2019), where these topics are analysed more thoroughly. Looking ahead, it would be worthwhile to identify ways to validate the survey responses in select policy areas where enforcement levels may be low. For example, responses about school food regulations could be validated against objective measures of foods available within a sample of school canteens.

6. Conclusions

The overall findings of this study indicate that significant progress has been made in various areas of public health nutrition, including product reformulation, fiscal policies and monitoring the growth of children under 5 years of age. Other policy areas are underused and thus may require more attention and investment from Member States. These include the implementation of consumer-friendly front-of-package labelling and the introduction of comprehensive marketing restrictions of HFSS foods with appropriate and comprehensive criteria, particularly to children. Significant improvements have been made to impose legal limits on the content of industrial trans fats in foods. However, further efforts are needed if Europe is to become the first WHO Region free of trans fats. Other areas that might need to be improved or extended are price policies and the provision of support for breastfeeding and appropriate complementary feeding.

Member States of the European Region are overall not fully on-track to achieve the global NCD targets related to nutrition. Therefore, if countries are to shift this trend, more ambitious and comprehensive nutrition policies should be implemented at a faster pace. Moreover, expanded and more robust surveillance, monitoring and evaluation systems should be prioritized in order to understand progress and to guide timely and effective policies.

CRediT authorship contribution statement & disclaimer

Joao Breda: Conceptualization, Methodology. **Lea Samanta Nash Castro:** Writing - original draft, Writing - review & editing. **Stephen**

Whiting: Writing - review & editing. **Julianne Williams:** Writing - review & editing. **Jo Jewell:** Writing - original draft. **Kaia Engesveen:** Writing - review & editing. **Kremlin Wickramasinghe:** Supervision. JB, LC, SW, JW, KE and KW are staff members of the World Health Organization.These authors alone are responsible for the views expressed in this article and they do not necessarily represent the views, decisions, or policies of the World Health Organization.

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