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Urban Learnings: An analysis of Dutch municipal approaches to combatting childhood overweight and obesity

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The NWGN promotes the inclusion of nutrition specific as well as nutrition sensitive approaches in evidence-informed development policies and strategies of Dutch stakeholders, taking into account the complexity of malnutrition in all its forms. More details can be found at: <https://the-nwgn.org/>.

The analysis of Dutch municipal approaches, a first exploration on translation to other contexts and reporting of these findings was coordinated and written by Michelle van Roost and Manon van Eijdsden (Voedingsjungle), with contributions from Paulien Dekkinga (an MSc student at Wageningen University), Aaira Mitra (a BSc student at Erasmus University College), Evelien Mulder (an MSc student at University of Groningen) and Linde Walchenbach (a BSc student at Erasmus University College). A specific NWGN working group consisting of Leonie Barelds (UNICEF Nederland), Regien Biesma-Blanco (UMCG), Coosje Dijkstra (VU), Alida Melse (WUR), Laura Platenkamp (GAIN), Annemieke van de Riet (GAIN), Herbert Smorenburg (PWP) and Anouk de Vries (GAIN) initiated the study, reviewed the outcomes, and combined the study with the UNFSS dialogue into this publication. We would like to thank all experts, JOGG (the Dutch acronym for 'Youth at a Healthy Weight') advisors, municipal program coordinators, policy officers and other stakeholders for their time and willingness to share their valuable insights.

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List of abbreviations

AHWA	Amsterdam Healthy Weight Approach
BMI	Body Mass Index
EPODE	Ensemble Prévenons l'Obésité Des Enfants (English: Together Let's Prevent Childhood Obesity)
FAO	Food and Agriculture Organization of the United Nations
GAIN	Global Alliance for Improved Nutrition
HiAP	Health in All Policies
HIC	High-income country
ICIA	Integrated community-wide intervention approach
JOGG	Jongeren Op Gezond Gewicht (English: Youth at a Healthy Weight)
LMIC	Low- and middle-income country
NCDs	Non-Communicable Diseases
NWGN	Netherlands Working Group on international Nutrition
RIVM	Rijksinstituut voor Volksgezondheid en Milieu (English: National Institute for Health and Environment)
SDH	Social Determinants of Health
SES	Social Economic Status
SUN	Scaling Up Nutrition
PWP	Partnering with Purpose
UMCG	University Medical Centre Groningen
UNFSS	United Nations Food Systems Summit
UNICEF	United Nations International Children's Emergency Fund
VU	Vrije Universiteit Amsterdam
WHO	World Health Organization
WUR	Wageningen University & Research

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Executive summary

In the past 40 years, the global prevalence of childhood obesity has expanded tenfold. Nowadays, 1 in 10 children is overweight or obese and this number is rising. While overweight and obesity was once considered a high-income country (HIC) problem, low- and middle-income countries (LMICs) are now increasingly confronted with overweight and obesity in their populations alongside the still existing problems related to undernutrition. This so-called double burden of malnutrition occurs particularly in urban settings. Given the complexity, multitude and diversity of their determinants, overweight and obesity are considered 'wicked problems', problems that require a systematic approach rather than interventions focusing only on individual behaviour. The World Health Organization (WHO) Independent High-Level Commission on Non-Communicable Diseases has stated that local governments have an important role in developing and fostering such integrated, systematic or 'whole systems' approaches. In the Netherlands, the national government has advocated the use of local integrated approaches to combat, in particular, childhood overweight and obesity since 2009. In 2010 the first cities implemented the so-called JOGG approach – the Dutch acronym for 'Youth at a Healthy Weight' (nowadays called 'Healthy youth, Healthy future'), referring to a local programmatic approach modelled on the French EPODE program (Together Lets Prevent Childhood Obesity, in French: 'Ensemble Prévenons l'Obésité Des Enfants'). Nowadays, over 170 Dutch cities are part of the JOGG movement and, with the support of the national JOGG organisation, have implemented an integrated approach or coordinated interventions across various levels and stakeholders to create a strategy to combat overweight and obesity among children.

Since the start of the JOGG movement, Dutch municipalities have accumulated a wealth of experience regarding key principles and

insights behind implementing an integrated, systematic approach for childhood overweight and obesity. These experiences may benefit other local governments, in other countries, that aim to design and implement an integrated approach to combatting childhood overweight and obesity. In consultation with the City of Amsterdam, Vrije Universiteit Amsterdam (VU), the Global Alliance for Improved Nutrition (GAIN) and the Scaling Up Nutrition (SUN) movement, the Netherlands Working Group on international Nutrition (NWGN) identified the need to collect the 'urban nutrition' experiences of the Netherlands and to explore the potential avenues for other countries, in particular LMICs, to translate and adapt these lessons to their own needs and infrastructure. This report synthesises these findings, focusing on the key elements, facilitating factors and barriers of implementing an integrated approach to tackling childhood overweight and obesity in Dutch municipalities. The research was executed in three phases:

- **Phase 1:** exploration of the building blocks of Dutch municipal approaches to combat child overweight and obesity;
- **Phase 2:** literature review to gain insight in recurring elements of these municipal approaches, and
- **Phase 3:** qualitative analysis of urban municipalities' integrated approaches.

Addendum 1 is a first, high level exploration of the potential avenues for translating and adapting the Dutch findings to the infrastructure in LMICs and includes a literature study and qualitative expert interviews. Addendum 2 provides the insights from an independent dialogue, as part of the United Nations Food System Summit, which facilitated discussions with interested stakeholders around the key findings from the research into the Dutch municipalities' approaches, with the aim to further translate these findings to a wider context.

Findings from Dutch municipal approaches to combatting child overweight and obesity

Using exploratory desk research and interviews with relevant expert stakeholders in phase 1, we identified five main themes of Dutch approaches to combat childhood overweight and obesity. These themes were captured into a framework (Figure A), which served as a basis to structure the findings from the literature search (phase 2) and as a guideline for the qualitative research (phase 3).

We selected 33 Dutch urban municipalities that met the definition of cities according to the 'Degree of Urbanisation' model and interviewed key stakeholders operating at the interface of the tactical and operational level (JOGG coordinators and JOGG advisors) as well as stakeholders operating at the interface of the strategic and tactical level (policy officers). A total of 23 municipalities included were part of the JOGG movement, the approach of the other 10 urban municipalities was unknown prior to the interview. In total, we executed 25 interviews during the qualitative phase. We interviewed seven JOGG advisors, eight JOGG coordinators, 12 policy officers of municipalities that are part of the JOGG movement and six policy officers of non-JOGG municipalities. Due

to the Covid-19 situation all interviews were executed through online teleconferencing.

The main findings from the literature and qualitative interviews (phase 2 and 3) with representatives of the municipal approach are presented in Figure B. These findings concern the main themes of the framework, and in addition the supporting role of a national JOGG organisation and the relevance of the political context. The major findings that were identified can be summarised as follows:

Overweight and obesity are wicked problems, that need to be tackled from a whole systems perspective. This requires **a long-term vision for lasting change, and therefore a long-term political mandate with proper structural funding**. We observed that the recurring process of securing funding is time consuming and usually only results in short-term funds. When funding is secured for the longer term, all time and effort spent on finding enough resources can be used for implementing the approach. **Collaboration between policy domains** makes the realisation of a long-term integrated systematic approach to combatting childhood overweight and obesity more feasible because it then becomes a shared responsibility across

Municipal organization and political support	This refers to the elements of political commitment, organisational structure, intersectoral collaboration, leadership, budget, time, and expertise in the team.
Collaborations with civil society, academia and private parties	This refers to all types of collaborations seen in integrated approaches, including collaborations with civil society, academia and commercial collaborations (i.e. public-private partnerships).
Activities on prevention and care	This refers to all activities, strategies and interventions implemented within the approach, on the level of prevention and care.
Communication	This refers to the communication means used internally in the organisation to communicate about output and outcome, and communication tools and means reaching the target group(s).
Monitoring and evaluation	This refers to learning approaches, how results are monitored and what evaluations are being done.

Figure A. Framework for the analysis of Dutch municipal approaches to combatting child overweight and obesity

a broader range of municipality domains. When a municipality employs Health in All Policies (HiAP), health is included in decision making in all domains. The WHO defines HiAP as “an approach to public policies across sectors that systematically takes into account the health implications of decisions, seeks synergies, and avoids harmful impact to improve population and healthy equity” (WHO, 2014).

Engagement at all three levels – strategic, tactical, and operational – **of all organisations involved is required to establish a long-term commitment.** Having a **steering committee at the strategic level** from the start ensures a support base. Including partners from the private sector may help to establish public-private partnerships, although these collaborations are accompanied by sensitivities that require a lot of attention. For such partnerships to succeed, it is imperative to find a common goal and look for synergy between activities. In the Netherlands, private partners include for example companies that supply drinking water and that can help with implementing water taps. WHO’s Framework of Engagement with Non-State actors may be a valuable resource for local and national governments to explore the collaboration with private partners. Public-private partnerships should be a means to an end, not a target in itself.

As going to school is compulsory in the Netherlands, **school-based interventions and activities** are the starting point for the approach taken by almost all municipalities to tackle childhood overweight and obesity. Keeping track of the activities at schools that are already taking place, giving recognition for these activities and connecting these to the approach can be a great source of inspiration and boost further development of the approach. However, this should be followed up by focusing all activities towards a structural programmatic approach.

An **overarching national roadmap for the implementation** of an approach should not

just lay out specific activities and actions but should also allow for adaptation to the local context. Defining **clear core values on behavioural targets** – e.g. related to nutrition, physical activity, screen time and sleep, but also underlying determinants such as poverty and housing – can help municipalities with implementation. Such values can also help to establish a common goal to facilitate successful partnerships. When setting up an approach, it is sensible **to take a potential maturation of the approach into account** by choosing a name that is able to grow alongside the approach. A positive name, that focuses on well-being, can be useful here, such as ‘Goed bezig’ (‘Doing well’) or ‘Lekker fit’ (‘Feeling fit’).

Although it is an essential part of integrated approaches, most municipalities struggle with **monitoring and evaluation, and implementing a learning approach.** When municipalities work together with other municipalities it can empower them to implement such a learning approach, especially when they shift the focus from Body Mass Index (BMI) as single outcome indicator towards behavioural outcomes, such as drinking water or eating healthier, or towards underlying determinants such as poverty and housing. Having tools that are simple and take little time to monitor activities and record output in a standardised way could help. Collaboration with academic partners and the Public Health Service can provide municipalities with epidemiological knowledge and can help to set concrete goals.

Every municipal integrated approach is dependent on the local, regional and national political context. **Policies and initiatives at national level can have positive or negative impact on policies at the regional and local level.** The implementation of the Dutch National Prevention agreement (2018) for example had a positive influence on the regional and municipal levels. However, the decentralisation of preventive health care seemed to impact municipalities negatively. The Public Health

Service can play an important role in the local integrated approach, but their organisational structure determines how this works out in practice. In addition, municipalities must deal with national laws, that sometimes overrule local initiatives for regulations. Conversely, when large cities join forces, they can push for national legislation to encourage the goals of a common integrated approach.

Finally, while our study found various enablers to adequately start up and implement an approach, it is important to realise that the success of the implementation of an integrated approach is **highly dependent on individuals, capacity, and resources**. Investing in intrinsically motivated, skilled individuals that already have or are willing to develop a broad network can really make a difference in the success of an approach.

Exploring potential avenues for translation and adaptation to LMICs

The main findings from this analysis appear to be relevant and applicable not just to the Dutch situation, but also to other countries. As the NWGN's mission is to ensure Dutch stakeholders include nutrition in their policies and programs targeting the Sustainable Development Goals, we added a first exploration on how these insights and findings may be useful in LMICs. As part of the United Nations Food System Summit process, we conducted a literature review, interviewed experts in the Netherlands and abroad and held an Independent Dialogue. It should be noted that it will take many more dialogues with relevant stakeholders and in particular learning from practice to understand how to translate these findings to the local context in other countries, and in particular LMICs.

Integrated approaches to combatting childhood overweight and obesity in LMICs need to first **acknowledge the double burden of malnutrition** – the coexisting forms of undernutrition and overnutrition – experienced in most of these countries. Hence, double-duty

actions which simultaneously target both sides of the malnutrition spectrum are increasingly relevant.

Socioeconomic status (SES) was found to be positively correlated with childhood overweight and obesity incidence in most LMICs, which differs from the negative correlation between childhood overweight and obesity incidence and SES in countries like the Netherlands. A difference is also noted between urban and rural areas, with the former experiencing higher rates of childhood overweight and obesity. Such differences require **strategies and avenues within an integrated approach to be adapted to higher SES, urban families** which opt for more energy-dense, processed foods and live increasingly sedentary lives. This also suggests that the changing urban food environment would need to be addressed with adequate regulation, similarly to HICs. Here, double-duty actions should be considered in creating a food landscape contributing to prevention of all forms of malnutrition.

In addition, schools and healthcare systems have potential as avenues for an integrated approach, however, programs for undernutrition need to be adjusted to additionally account for overweight prevention.

In LMICs, public-private partnerships may be important for providing resources if structural governmental funding is difficult to obtain. However, the **private sector** may be more **fragmented and unregulated**, which may also pose **challenges to adequate public-private partnerships, regulation, and engagement**. Ideally, public-private partnerships would include partners from the perspective of synergy, for example partners that provide funding for agricultural activities, such as school gardens, around schools. Multinational corporations could contribute to double-duty actions, for example by creating nutrition standards and creating accessibility to foods adhering to these standards for their employees and families, using their supply chains.

Themes	Main findings
Municipal organization and political support	<ul style="list-style-type: none"> • A clear priority to combat childhood overweight and obesity is needed to tackle this in an integrated approach. Reliable data on overweight and obesity rates of children helps to prioritise this. • An integrated approach requires a long-term vision for lasting change and a long-term mandate. Strong leaders, that are action-oriented and seek improvement can catalyse the process of implementing an integrated approach. • Collaboration between policy domains is essential to work towards a truly integrated, whole systems approach. Focus on 'healthy living' instead of 'weight' helps including other policy domains. This refers to learning approaches, how results are monitored and what evaluations are being done.
Collaborations with civil society, academia and private parties	<ul style="list-style-type: none"> • Building a network and securing engagements at all three management levels of the organizations involved (strategical, tactical and operational) is required. This demands clear communication between the three levels. • Public-private-partnerships are a means to an end and not a target by itself. A steering group with representatives of private partners at the strategic level helps setting up relevant partnerships. • A common goal is central to successful partnerships. Clear cooperation agreements and guidance with stakeholders can help avoid confusion between roles and tasks.
Activities on prevention and care	<ul style="list-style-type: none"> • Primary schools are a great starting point for integrated approaches, as most children can be found there. • Focusing all activities towards a structural programmatic approach can stimulate cooperation and recognition between different initiatives. • Community involvement is considered important for the success and acceptance of an approach. Involve citizens in small steps, convert their input into action quickly and have professionals taking a leading role. • Care for children with overweight/obesity and those at risk are an essential part of an approach. • Collaboration between healthcare professionals is essential in a so-called targeted chain-of-care with a central care provider. This puts the child and their parents central by gaining insights in their needs and wishes using shared decision-making.
Communication	<ul style="list-style-type: none"> • Positive branding helps in setting a new norm in the community. • Excellent professionals are instrumental in conveying the key messages. • Know the target group and their needs and wishes to really reach out to them.
Monitoring and evaluation	<ul style="list-style-type: none"> • Monitoring and evaluation are an essential part of integrated programs. • Focus on behavioral outcomes rather than BMI as a single outcome indicator. • Involve the Public Health Service and/or academic partners as they can provide epidemiological knowledge and help to set concrete goals. • Use simple tools that require little time to monitor activities and record output in a standardised way.

Supporting role of a national organisation

A national organisation:

- Can join forces with municipalities to **influence national policies**.
- May facilitate municipalities with setting up an approach, by providing a **well-defined implementation scenario**, that is flexible enough to accommodate the local context.
- Can help **setting up a network of municipalities**, that can learn from each other and share best practices.
- Would ideally **require municipalities to incorporate monitoring and evaluation** into their approach and empower them by stimulating cooperation with other municipalities or academic partners.

Relevance of political context

- **National laws impact local policies** as they overrule local initiatives for regulations. Conversely, when large cities join forces, they can push for national legislation to encourage the goals of a common integrated approach.
- **Decentralisation of preventive health care can impact execution** of the approach. For example, in the Netherlands the Public Health Service plays an important role in implementation and monitoring and evaluation, but the extent to which depends on the local structures.
- **National and international regulations** can also **impact the environment** in which individual food choices are made. Taxes for example influence pricing, while lower pricing is a very simple stimulant for healthier choices.

Figure B. Summary of the main findings from the literature and interviews.

Finally, childhood overweight and obesity may also need to be better brought to the attention of the development sector since focus remains largely on the prevention of undernutrition. The role of international, in addition to national, **non-profit organisations** may also be **useful to provide support to local authorities** and to help prioritise focus on all forms of malnutrition.

Concluding remarks

This study aimed to assemble the lessons learnt in Dutch municipal integrated approaches to combatting childhood overweight and obesity. Using a mixed-methods approach, including a literature review and interviews with policy officers, JOGG advisors, and JOGG coordinators, we systematically analysed the Dutch findings

on the development and implementation of an integrated approach. We hope that these insights also prove to be helpful to stakeholders who are working outside of the Dutch context. Through a first exploration of translation and adaptation to other contexts, and an independent dialogue to discuss these findings, we aimed to provide a starting point for further dialogues on supporting countries to create cities as a healthy place for children to grow up.

It is clear that local, but also regional and national governments have an important role to play if they truly want to impact the health of future generations by changing the environment and tackling malnutrition problems. In the end, it is not just a village that is required to raise a child, it is the whole country.

1. Introduction

Overweight and obesity is one of the most urgent public health problems in society. Global prevalence of childhood overweight and obesity has also expanded tenfold in the past 40 years, leaving 1 in 10 children obese or overweight (WHO, 2019). In 2016, over 340 million children and adolescents aged 5-19 were overweight, of which more than 124 million were obese (WHO, 2020). Obesity rates are predicted to increase to 254 million by 2030 (World Obesity Federation, 2019). Although once considered a high-income country problem, childhood overweight and obesity are also rapidly rising in low- and middle-income countries (LMICs), particularly in urban settings (Abarca-Gómez et al., 2017; WHO, 2020). Over half of the world's population lives in cities and this number is expected to grow even more, especially in Africa and Asia. It is estimated that in 2050, 7 out of 10 people will reside in urban areas (UN, 2019). Urban areas, especially in LMICs, are thus confronted by the complex challenge known as the double burden of malnutrition. Not only do they need to tackle the existent problems of undernutrition amongst children, they also need to combat the rising problems of overweight and obesity. Overweight and obesity are considered 'wicked problems' because of the complexity, multitude and diversity of determinants underlying these problems, which range from biological and personal factors to socioeconomic and political environments (Ang et al., 2012; McGlashan et al., 2019). As the causal mechanisms are often intertwined and difficult to identify (Swinburn et al., 2011), such problems require a systematic approach, an approach that tackles them through interactions at multiple levels within systems relevant to population health, rather than through interventions that only focus on individual behaviour (Sniehotta et al., 2017; Rutter et al., 2017). The WHO Independent High-Level Commission on Non-Communicable Diseases (NCDs) (2018) states that local governments have

an important role in developing and fostering such integrated, systematic or 'whole systems' approaches (see Box 1). In the Netherlands, the national government has advocated the use of local integrated approaches to combat especially childhood overweight and obesity since 2009 (Ministerie van Volksgezondheid, Welzijn en Sport & Ministerie van Jeugd en Gezin, 2009) and the first so-called JOGG approaches were conceived in five Dutch cities in 2010 (Blokstra et al., 2020). JOGG is the Dutch acronym for 'Youth at a Healthy Weight' and refers to a local programmatic approach modelled on the French EPODE program (Together Lets Prevent Childhood Obesity, in French: 'Ensemble Prévenons l'Obésité Des Enfants') (Seidell & Halberstadt, 2020). In 2014 a national JOGG bureau was established, to support municipalities to implement their local approaches (Blokstra et al., 2020). In August 2021 over 180 Dutch cities are part of the JOGG movement and have implemented an integrated approach or coordinated interventions across various levels and stakeholders to create a strategy to combat overweight and obesity in children (JOGG, n.d.).

Since the beginning of the JOGG movement, Dutch municipalities have accumulated a wealth of experience regarding key principles and insights behind implementing an integrated, systematic approach for childhood overweight and obesity. These experiences may benefit other local governments, in other countries, that aim to design and implement a more systematic approach to combatting childhood overweight and obesity. In 2018, the Netherlands Working Group on International Nutrition (NWGN), the City of Amsterdam, Vrije Universiteit Amsterdam (VU), the Global Alliance for Improved Nutrition (GAIN) and the Scaling Up Nutrition (SUN) movement identified the need to collect these 'urban nutrition' experiences of the Netherlands. This report aims to synthesise

Box 1. Integrated approach or whole systems approach?

The whole systems perspective in public health strategies and policies is increasingly receiving attention. In the whole systems perspective, health can be considered the result of a system. However, there is no consensus on the definition of a 'whole systems approach' to combat health problems (Bagnall et al., 2010). In practice, such approaches are seen to recognise and respond to the multiple and multilevel socio-cultural, economic, and environmental determinants of public health using local, cross-disciplinary, multi-agency and multi-level community activities. For this report, we will use the term 'integrated approach', which is in line with the definition used for the JOGG approach in the Netherlands. This approach has been defined as an 'integrated, community-based approach' – an approach that '[...] targets multiple sectors and multiple levels of influence: interpersonal, organizational, community and policy' and is implemented '[...] by multiple organisations in the community, both within and outside the health domain' (Wilderink et al., 2020). Most approaches in Dutch cities may be considered integrated approaches but not whole systems approaches. Some cities are however working towards a whole systems approach. Amsterdam, in particular, has been adopting the whole system perspective in their approach since 2013. In the Amsterdam Healthy Weight Approach (AHWA), childhood overweight and obesity are addressed at all levels of council policies and policy actions, with interventions and strategies at the level of professionals, communities, and individuals. But most importantly, the AHWA has the capacity for responsive adaptations, which may be considered one of the working principles of a whole systems approach: by using a learning approach, the AHWA enables adaptation of the program in response to changes in the local system (i.e. the municipality of Amsterdam) (Sawyer et al., 2021).

these findings and to explore the potential avenues for other countries, in particular LMICs, to translate and adapt these findings to their own needs and infrastructure. This report is not about the impact of individual municipal initiatives, but presents overarching principles and insights supporting an integrated municipal approach to combat childhood overweight and obesity.

1.1. Goal of the Urban Learnings project

The goal of the Urban Learnings project is to collect, organise and analyse information and experiences on the integrated approaches of Dutch local (municipal) governments in combatting childhood overweight and obesity,

and to share the gathered findings on how to design, implement and evaluate these with (local) governments in other countries, particularly in LMICs.

To meet this goal, we selected Dutch urban municipalities that meet the definition of cities according to the 'Degree of Urbanisation' model that was recently developed by a coalition of international organisations.¹

1.2. Structure of the report

The goal of this report is to collect and summarize the key principles and insights behind implementing an integrated, systematic approach for childhood overweight and

¹ This coalition includes the European Union, The Food and Agriculture Organization of the United Nations (FAO), the International Labour Office (ILO), the Organization for Economic Cooperation and Development (OECD), United Nations Human Settlements Programme (UN-Habitat) and the World Bank (Dijkstra et al., 2020; UN Statistical Commission, 2020)).

obesity in Dutch municipal settings. Using desk research, expert dialogues, literature review and qualitative stakeholder interviews we gained insight on the major elements, facilitating factors, and barriers of implementing an integrated approach, and distilled the main findings.

Addendum 1 explores the first, high level potential avenues for LMICs to translate and adapt the Dutch learnings to their own needs and infrastructure. This exploration is based on

both a literature study and qualitative expert interviews with stakeholders well experienced with interventions in LMICs. Addendum 2 shows the outcomes of an independent dialogue organised to discuss the findings from the research into the Dutch municipalities' approaches with interested international stakeholders with the aim to further translate these to the wider context such as LMICs. This dialogue was part of the United Nations Food System Summit process.

Findings from Dutch municipal approaches to combatting childhood overweight and obesity

2. Methods

In the first part of this Urban Learnings report, we aimed to identify the main elements, facilitating factors and barriers of implementing an integrated approach in Dutch municipalities. This was executed in three phases: exploration through expert interviews and desk research (phase 1), literature review (phase 2), and qualitative analysis of urban municipalities' approach through interviews (phase 3; see Figure 1).

2.1. Phase 1: Exploration

In the first phase of the Urban Learnings study, we identified the existing dimensions of the Dutch municipal approaches to combat childhood overweight and obesity. We collected information on experiences and insights on implementing an integrated approach via expert interviews with relevant stakeholders

(see Appendix 1) and desk research capturing relevant information, available online and from sources referred to by stakeholders (see Appendix 2). Based on the major dimensions identified, we developed a framework (see Box 2) which we used to create an overview of the main learnings, facilitators, and barriers. In the next step, we selected the Dutch urban municipalities to include in this study. As the project aimed to inspire city governments in other countries, particularly in LMICs, we selected only the municipalities that could be considered a 'city' according to the 'Degree of Urbanisation'. Cities are municipalities that have at least a population of 50,000 inhabitants in contiguous dense grid cells (>1,500 inhabitants per km²). Following this definition, 33 Dutch municipalities can be considered a city, and these were included for further qualitative research (see Section 2.3).

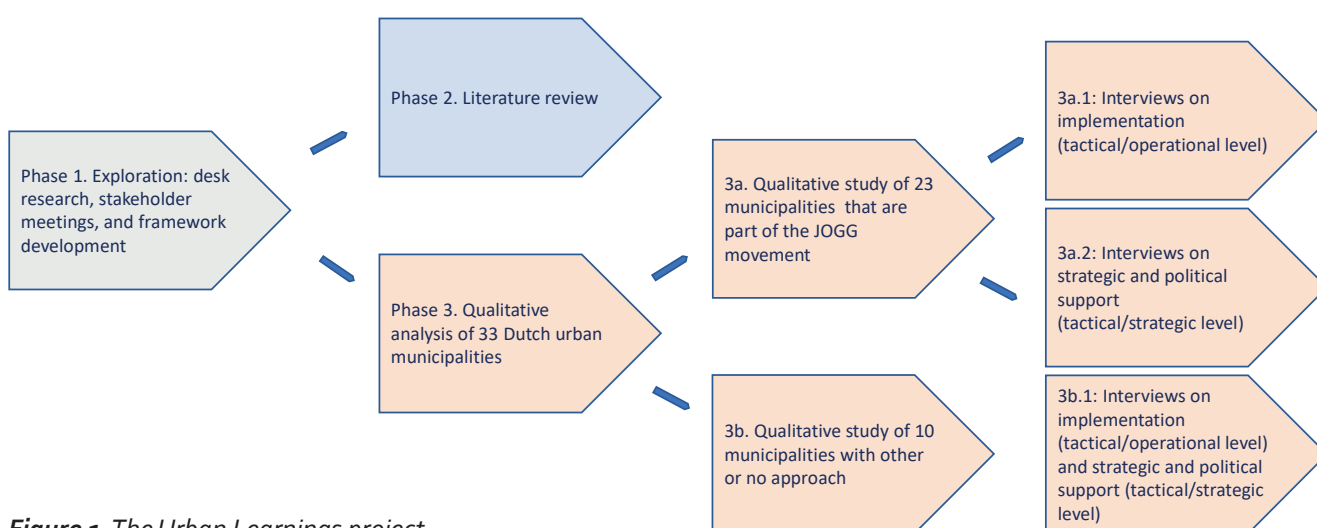


Figure 1. The Urban Learnings project

2.2. Phase 2: Literature review

We executed a scoping study, including a structured literature search from scientific and grey literature, to gain insight into the recurring elements of Dutch municipal approaches to combat childhood overweight and obesity.

Scoping reviews allow researchers to study broader questions and are more flexible compared to a systematic review because they include literature with diverse methodologies (Peterson et al., 2017; Levac et al., 2010). Due to the broad nature of the current study as no types of literature should be excluded to obtain a broad overview of the elements used in Dutch municipal approaches.

2.2.1. Identifying relevant studies

To conduct the structured literature search, we used the following databases: PUBMED (including MEDLINE), Web of Science, Embase, NARCIS and Google Scholar.

We used the PICO mnemonic (Problem, Interest and Context) approach to define the key search terms: the Problem being childhood overweight and obesity, the Interest referring to information on elements that may contribute to the outcomes of municipal integrated approaches and the Context is focused on Dutch municipalities. Resulting key search terms were 'childhood obesity', 'integrated approach' and 'Dutch'.

Box 2. Framework for the analysis of Dutch municipal approaches

Based on the included papers from the desk research (see Appendix 2 and 3), and on conversations with stakeholders from the national JOGG organization, from municipalities and from academia (see Appendix 1), we developed a framework to analyse the employed approaches of the urban municipalities. We aimed to capture recurring elements emerging from these sources into major themes that are relevant to the implementation of such integrated approaches. We identified five major themes:

Municipal organization and political support	This refers to the elements of political commitment, organisational structure, intersectoral collaboration, leadership, budget, time, and expertise in the team.
Collaborations with civil society, academia and private parties	This refers to all types of collaborations seen in integrated approaches, including collaborations with civil society, academia and commercial collaborations (i.e. publicprivate partnerships).
Activities on prevention and care	This refers to all activities, strategies and interventions implemented within the approach, on the level of prevention and care.
Communication	This refers to the communication means used internally in the organisation to communicate about output and outcome, and communication tools and means reaching the target group(s).
Monitoring and evaluation	This refers to learning approaches, how results are monitored and what evaluations are being done.

The framework was used to create an overview of the main findings, facilitators and barriers that can be found in literature (phase 2), were experienced by key stakeholders (phase 3) and are relevant for the translation of findings to other countries (Addendum 1).

The final search string contained the following Boolean terms:

- Obesity OR Overweight
- AND Child* OR Adolescent* OR Youth
- AND Integrated OR Integral OR System*
OR Community wide OR Community based
- AND Approach* OR Program*
- AND Netherlands[tiab] OR Dutch[tiab]

In combination with the truncation (*) of search terms, these terms ensured broad searches with relevant results. Only literature from 2009 onwards was included, because from this year an integrated approach for tackling childhood obesity was recommended by the Dutch Ministry of Health (Ministerie van Volksgezondheid, Welzijn en Sport & Ministerie van Jeugd en Gezin, 2009).

2.2.2. Selecting studies

The studies identified in the database search were narrowed down, after duplicates were removed to a subset using the selection criteria listed in Table 1. Only those articles that were eligible according to the inclusion criteria were selected to analyse in full text. The inclusion criterion 'Evaluation study' was defined as any study containing some form of evaluation on the components, process, implementation and/or outcomes of a municipal integrated approach.

Furthermore, additional sources were gathered from screening references of full-text articles.

After searching the academic literature, the search strategy was adapted to also include grey literature. Mulier Institute, the National Institute for Public Health and the Environment (RIVM) and Dutch Youth Institute (NJI) websites were searched using the key search terms in Dutch ('childhood obesity / overweight' and '(integrated) approach') as well as 'JOGG' to retrieve suitable evaluation reports. These institutes were chosen as they are the leading Dutch publishers and conductors of research in the field of childhood overweight and obesity in the Netherlands.

2.2.3. Data handling and analysis

The literature search resulted in 13 studies to be included for analysis (see Figure 2). Five studies were derived from searching academic literature databases and eight from the manual search for grey literature.

Recurring elements of Dutch municipal approaches were derived from the included literature, as well as any mentioned barriers, facilitators, and contextual factors to those. These were grouped under the five major themes as identified in our framework (see also Box 2):

1. municipal organisation and political support,
2. collaboration,
3. activities,
4. communication, and
5. monitoring and evaluation.

Criteria	Inclusion	Exclusion
Language	English or Dutch	
Year of publication	2009 or later	Any before 2009
Country of interest	The Netherlands	
Exposure of interest	Municipal integrated approaches	Nationwide or non-governmental approaches
Type of study	Evaluation study	Evaluation studies solely describing effects
Problem	Childhood obesity/overweight	

Table 1: Selection criteria for studies to be included in the literature review

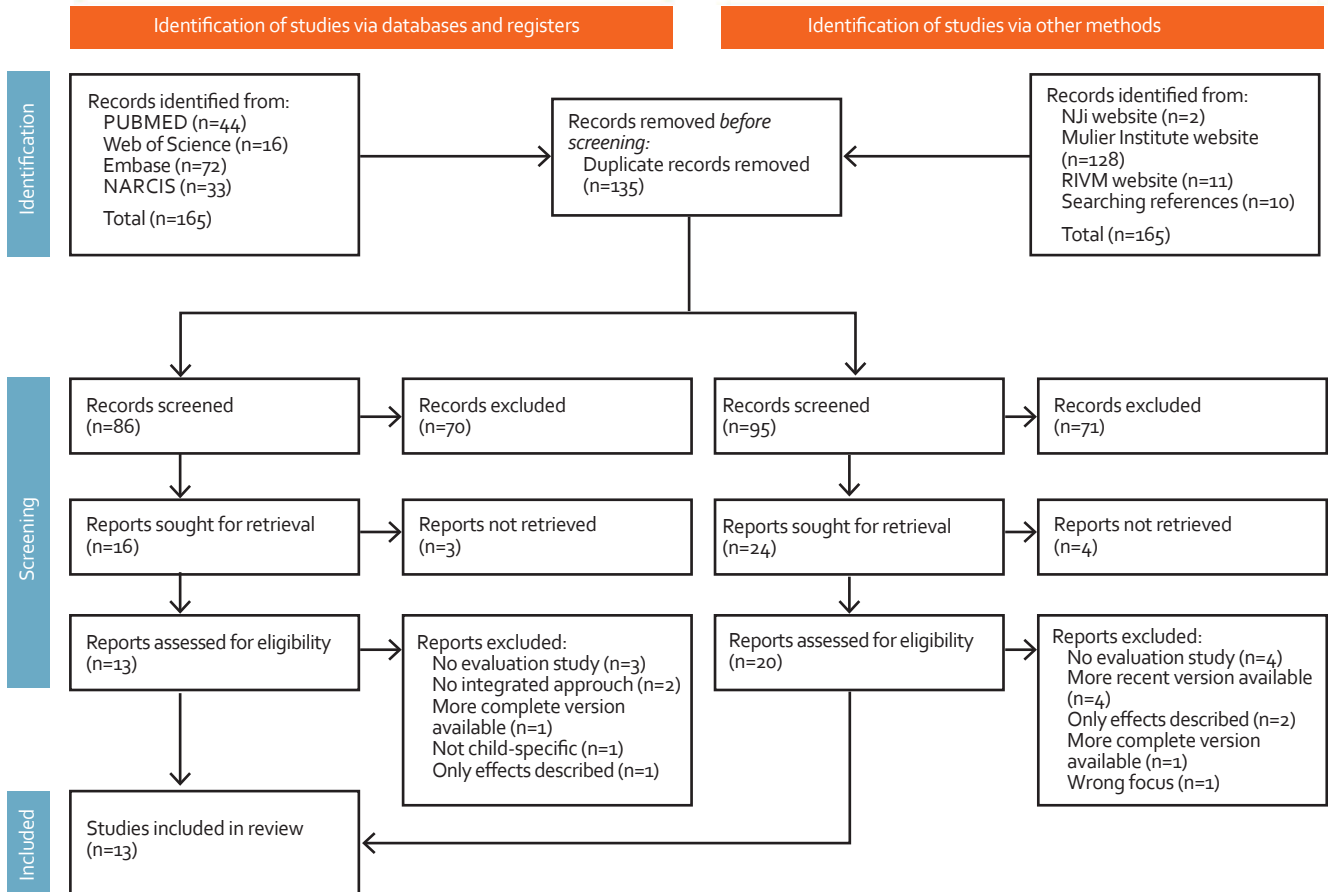


Figure 2. Flow chart for the selection of studies included in the literature review

2.3. Phase 3: Qualitative phase

Twenty-three of the 33 selected municipalities were part of the JOGG movement and have implemented an integrated approach for at least six years (see Box 3). The approach of the other 10 urban municipalities was subject to further investigation. Figure 3 shows the location of the municipalities across the Netherlands and the list of municipalities is presented in Appendix 4.

To successfully implement an integrated, community-based approach to tackling childhood overweight and obesity, collaboration between the strategic, tactical, and operational level is necessary (Hendriks et al., 2013). The strategic level concerns the persons responsible for agenda setting and policy formulation regarding children’s health (Hendriks et al., 2013). In a municipality, the strategic level is represented by the mayor, the alderman and the municipal council (Hendriks et al., 2012). The tactical level often refers to the management level of a specific



Figure 3. Map of the Netherlands, showing the municipalities included in the qualitative research (green are municipalities that are part of the JOGG movement, blue are non-JOGG municipalities) Source: Google Maps.

Box 3. The JOGG approach

Most municipalities part of the JOGG movement have implemented the 'classical' JOGG approach. This starts with the local government signing a three-year contract with the national organisation, which can be extended twice for additional three-year periods. Municipal governments were required to pay the national JOGG organisation an annual fee to join, but this annual fee was abolished in 2021. After signing the contract, the municipalities are expected to appoint a local JOGG coordinator for at least 16 hours per week. His or her task is to implement the program, which includes supporting local institutions with the implementation of activities and interventions, such as implementing nutrition policy at schools or organising sports competitions. The national JOGG organisation advises municipalities and supports them in implementing their local JOGG approach, including providing recommendations on how to create political support and define target groups (Collard et al., 2019; Kobes, Kretschmer & Timmerman, 2021). However, the local governments organise and finance the approach.

department in an organisation. The tactical level is responsible for adaptive management meaning that this level decides how x,y,z will be carried out, how to implement the policies.

The operational level, lastly, concerns the persons who implement the policies; they decide when activities to combat childhood overweight and obesity will be done and by who (Hendriks et al., 2013).

We interviewed key stakeholders operating at the interface of the tactical and operational level and stakeholders operating at the intersection of the strategic and tactical level. This gave us insight on how the topic of childhood overweight and obesity was set on the agenda and how approaches were initiated within urban municipalities. It also gave insight on the facilitating factors and barriers that were experienced at several levels (tactical/operational/strategic) while implementing an integrated approach. Due to the ongoing Covid-19 pandemic all interviews were executed online through teleconferencing.

2.3.1. Respondent selection and interview procedures

In total, 25 interviews were executed during the qualitative phase. We interviewed seven JOGG advisors, eight JOGG coordinators, 12 policy

officers of municipalities that were responsible for or involved in the JOGG movement and six policy officers of non-JOGG municipalities.

Municipalities involved in the JOGG movement Tactical and operational level

At the tactical and operational level we interviewed either the JOGG advisors, who work at the national JOGG organisation and advise the municipalities on a tactical level, or JOGG coordinators, who work for the municipality at either the tactical or operational level and are responsible for the implementation of the local approach. All interviewees were reached via the bureau of the national JOGG organisation, at their request. The bureaus preferred that we interview JOGG advisors because JOGG coordinators typically had limited time due to work demands. However, when deemed necessary, the JOGG advisor referred to the JOGG coordinator for the interview. We interviewed seven JOGG advisors, who in total advised on 16 of the municipalities, and eight JOGG coordinators, each working for one municipality. For Groningen, both the JOGG advisor and the JOGG coordinator were interviewed.

Interviewees were asked to fill out the framework (see Box 2) with respect to the ongoing processes in their municipalities, the

barriers, and facilitators they experienced and what they considered relevant contextual factors for their municipality beforehand (see Appendix 5). The framework was used as guideline in the interview and supplemented with a semi-structured interview guide (see Appendix 6).

Tactical and strategic level

Policy officers of all municipalities, excluding Amsterdam, were invited to represent the tactical and strategic level as they operate in between both levels, supporting the municipal council and the aldermen with policy decisions based on information from the tactical level. A semi-structured interview guide, focusing on the three main elements of health policy development at the strategic level, i.e., agenda setting, leadership and policy formulation (Hendriks et al., 2013), was developed and used for the interviews (Appendix 7). For Amsterdam, the available information was already collected through prior interviews with the scientific advisor and policy officer in the first phase of the study.

All policy officers were invited to participate by e-mail and received a friendly reminder after one week. If there was no response, the municipality was contacted by phone, to seek assistance in contacting the policy officer. In total 12 interviews with policy officers were conducted. The other 10 policy officers were either busy (n=7), not reachable (n=2) or gave no reason not to join (n=1).

Non-JOGG municipalities

The approaches taken by the municipalities that did not participate in the JOGG movement were unknown at the start of this study. However, they can give us insight into the arguments for not employing an integrated approach for

childhood overweight and obesity, may show integrated approaches in other themes or domains, or give insight into how interventions may be coordinated without a programmatic approach. We targeted policy officers working at the strategical / tactical level for interviews as they advise on the selection and decide on the implementation of an approach. Typical policy officers targeted were those with sports or health themes in their portfolios and were selected via an online Google search (search terms 'policy officer / policy manager sports' (in Dutch: *beleidsmedewerker / manager Sport*) or 'policy officer' / 'policy manager health' (in Dutch: *beleidsmedewerker / manager gezondheid*) and via municipal organograms and LinkedIn profiles. When possible, policy officers were invited directly by e-mail. When no e-mail address could be found, the municipality was contacted by calling the central reception to establish a connection.

For the interviews, two semi structured interview guides were developed, one for municipalities without an integrated approach and one for municipalities with an integrated approach (see Appendix 8).

Six policy officers accepted the invitation, three did not respond, and one policy officer did not want to take part due to time constraints.

2.3.2. Data handling and analysis

Detailed minutes were made of all interviews and shared on request with the interviewees for feedback. Key learnings, barriers and facilitators were identified and summarised.

A draft version of the report was sent to a selection of the interviewees and experts involved in the development of the framework to provide feedback on findings.

3. Results

Five main themes emerged from the exploratory desk research and interviews (phase 1) on Dutch approaches to combatting childhood overweight and obesity. These themes were captured in a framework (see section 2.1), which served as a basis to structure the findings from the literature search and the qualitative research. Below, we describe the findings from the literature review (section 3.1), followed by results from the qualitative study (section 3.2).

3.1. Findings from the literature

As described in section 2.2, we identified 13 relevant articles and reports in the scientific and grey literature. After analysing these 13 studies, we identified eleven recurring elements in Dutch municipal integrated approaches to combatting

childhood overweight and obesity within the five major themes of our framework (Figure 4). Each element is described in detail below and a summary table is provided in Appendix 9.

3.1.1. Municipal organisation and political support Leadership

Two studies marked 'strong leadership' (effective cross-departmental coordination and engagement by leaders) on multiple levels as highly valuable to effectively guide an approach to combat childhood overweight and obesity (European Commission, 2018; van Koperen et al., 2018). However, only the report on the Amsterdam Healthy Weight Approach by van Koperen et al. (2018) contained concise information on this pillar: leaders are action-oriented and seek improvement. Factors

Themes	Recurring elements
Municipal organization and political support	<ul style="list-style-type: none"> • Leadership: having effective coordination, guidance, and engagement by leaders • Integral collaboration: cross-departmental cooperation within the municipality • Support: political support and embeddedness of the approach and its activities within the local government and other involved organisations • Systematic approach: address the problem at hand systematically
Collaborations with civil society, academia and private parties	<ul style="list-style-type: none"> • Diverse partnerships: collaboration with and within a network of local organisations and/ or stakeholders across different sectors • Public-private collaboration: formalized partnerships with local private businesses to help achieve the goals of the approach
Activities on prevention and care	<ul style="list-style-type: none"> • Reach and setting of activities: activities, interventions or campaigns organised primarily for school-aged children to achieve the goals of the approach • Establishing community involvement: involving those affected by the approach to align to their wishes and needs and establish support for the approach • Connecting prevention and care: preventing the need for obesity management for children, but making sure that when they do, they swiftly receive adequate support
Communication	<ul style="list-style-type: none"> • Marketing: creating awareness and recognizability for the approach
Monitoring and evaluation	<ul style="list-style-type: none"> • Learning approach: continuously improving the approach based on new findings, through research, evaluation and / or monitoring

Figure 4. Overview of the eleven recurring elements found in the literature on Dutch municipal approaches to combatting childhood overweight and obesity

contributing to strong leadership were clear communication, enthusiasm, having close ties with other leadership levels and acquiring citizen support.

Integral collaboration

Three studies mentioned integral collaboration within the municipality as influential to the approach to combat childhood overweight and obesity (Ter Beek and Heinrich, 2018; European Commission, 2018; Slot-Heijs et al., 2020). Cross-departmental cooperation was identified in different facets of the municipal government. Roles of various departments in battling childhood overweight were recognised and partnerships were formed to integrate municipal departments, mostly of Health, Wellbeing and Education. Transparent cooperation was facilitated by setting up meetings with steering groups in which different municipal domains were represented. A HiAP approach and guidance at all levels facilitated integral collaboration. In contrast, long decision-making processes within the municipal government and its departments hindered the effectiveness of collaborations in combatting childhood overweight and obesity.

Support

Five out of the 13 studies reported on political and policy level support as a positive factor for the implementation of the approaches (ter Beek & Heinrich, 2018; Collard et al., 2019; Overtoom and Collard, 2017; Visscher et al., 2014; Wilderink et al., 2020). Steps were being taken towards multi-level support within municipalities for the approaches. For example, JOGG had a checklist to monitor support on various levels (Collard et al., 2019). Approaches were also being embedded on a policy level through inclusion in municipal policy documents and those of partner organisations. This was achieved through active lobbying (in a wide variety of policy sectors) and by giving one employee special responsibility for this topic. Fragmentation within the approach hindered achieving such support.

Systematic approach

Ter Beek and Heinrich (2018) and Van Koperen et al. (2018) explained the benefits of adopting a systematic approach to combatting childhood overweight and obesity. Compartmentalising the problem at hand and tackling each component individually were beneficial to guiding the approach and ensuring feasibility. Long-term goal setting for the different facets of the problem also facilitated effectiveness of the approach. Additionally, a neighbourhood focused approach, meaning not implemented in the whole community but in a specific area of a city was considered helpful.

3.1.2. Collaboration

Diverse partnerships

Studies by the European Commission (2018), Naul et al. (2012), van Koperen et al. (2018) and Wilderink et al. (2020) identified collaborations within the municipality as essential to successful integrated approaches. Networks were set up between complementary municipal programs and between local stakeholders in the fields of welfare, care, civil society, sports, and academics. A common goal was central to successful partnerships. Active engagement facilitated such integral collaboration and was achieved by setting up meetings with steering groups in which different stakeholders were represented. It was important to have clear cooperation agreements and guidance with stakeholders to avoid confusion on roles and tasks.

Public-private collaboration

Five studies made specific mention of this element (Collard et al., 2019; Overtoom & Collard, 2017; Slot-Heijs et al., 2020; Visscher et al., 2014; Wilderink et al., 2020). Overall a positive trend was seen in public and private collaborations. Collaborations were facilitated by clear visions, short ties with partners, and partnership rules and agreements. However, working together with organisations that facilitated unhealthy environments was difficult and hindered the effectiveness of the approach due to conflicting interests. Using a mutual gains approach in such situations can be helpful.

3.1.3. Activities

Reach and setting of activities

In 8 out of 13 studies analysed, interventions were detected as a core element to integrated municipal approaches (ter Beek & Heinrich, 2018; van Dee & Maan, 2014; Kloek & Oudkerk, 2012; van Koperen et al., 2018; Naul et al., 2012; Overtoom & Collard, 2017; Visscher et al., 2014; Wilderink et al., 2020). Most activities, interventions and campaigns were implemented in primary schools. Because of this, children of primary school age (4-12 years old) and their parents were predominantly targeted. Reaching children over the age of 12 was shown to be less successful as most activities were implemented in primary schools and less in higher education. Most activities focused on exercise, followed by nutrition (eating fruits and vegetables and drinking water) and then sleep. There was little mention of preventative interventions (0-2 years old) or interventions in the children's neighbourhoods. Involving parents was considered particularly beneficial for the effectiveness of activities or interventions and was largely focused on and achieved. Joining national activities or interventions and building on 'what is already there' where possible or deemed fitting in the context was also reported to be beneficial to the success of an integrated approach.

Establishing community involvement

Seven studies called for community involvement in an integrated approach to tackling childhood overweight and obesity (Collard et al., 2019; van Dee & Maan, 2014; European Commission, 2018; Fransen et al., 2012; Slot-Heijs et al., 2020; Visscher et al., 2014; Wilderink et al., 2020). There was no clear evidence to what extent community involvement was practiced throughout the approaches despite support from the community for a healthy lifestyle being considered essential for the success and acceptance of an approach. Such support is facilitated by citizen involvement in development and implementation of activities. To ensure that the approach is effective, it is

important to involve citizens in small steps, convert their input into action quickly and to not give them sole responsibility for tasks but have a professional taking a leading or facilitating role.

Connecting prevention and care

Linking prevention and care was detected as an element in 6 out of the 13 studies analysed (ter Beek & Heinrich, 2018; Collard et al., 2019; European Commission, 2018; Overtoom & Collard, 2017; Slot-Heijs et al., 2020; Visscher et al., 2014). Commitment to this link was initiated by 83% of JOGG municipalities (Collard et al., 2019). Establishing a chain approach was the most efficient way to do so, however only half of these municipalities reported using a chain approach. Many tools, instruments and programs were created to facilitate the link. Promoting the availability and stressing the use of these is crucial to ensure effectiveness. It is important to put the child and their parents central by gaining insights into their needs and wishes and by using shared decision making. No effect outcomes have been reported, therefore we are unable to determine to what extent linking prevention and care are of actual added value in the approaches.

3.1.4. Communication

Marketing

Raising awareness on the approach through marketing and branding was seen as beneficial by 5 out of the 13 studies analysed (Collard et al., 2019; van Koperen et al., 2018; Overtoom & Collard, 2017; Visscher et al., 2014; Wilderink et al., 2020). Communication was not only aimed at the target groups, but also at the corporate level to keep a healthy lifestyle and healthy environment on the agenda of politicians, social partners, businesses, policy, and the media. A variety of channels are being used (website, social media forms), but it seems that in the target groups only primary school children and their parents were properly reached. Children in secondary school (aged 12+) are particularly

hard to reach. Therefore, it is important to adapt campaigns to the interests of the target group, use various social media channels and to create a unique style for recognisability. Marketing the approach as a mission instead of a project increases effectiveness and support of the approach.

3.1.5. Monitoring and evaluation

Learning approach

In 8 out of 13 studies analysed, monitoring and evaluation was found to be an important element to integrated approaches (ter Beek & Heinrich, 2018; Collard et al., 2019; European Commission, 2018; van Koperen et al., 2018; Overtoom & Collard, 2017; Slot-Heijs et al., 2020; Visscher et al., 2014; Wilderink et al., 2020). A learning approach was deemed an essential and useful element to improve activities and keep partners committed. There was a higher focus on results than on process evaluation. Approaches were reported to repeatedly use online progress tools throughout the year (3-4 times annually). JOGG published more public evaluations (Collard et al., 2019), however it seems like monitoring and evaluation were often neglected in interventions. This is because visible results can take a long time and there is often no consensus on the importance of monitoring and evaluating. Therefore, it is important to stress the importance of monitoring and evaluation, make tools simple and less labour intensive and set concrete goals for both process and outcomes. Having a research group as a partner facilitates a learning approach.

3.2. Interview findings

An overview of the main findings based on the qualitative research is summarised in Figure 5 and expanded on in subsequent sections (3.2.1 – 3.2.5). Overall findings related to the role of the national JOGG organisation and the relevance of the Dutch political context are described in section 3.2.6 and 3.2.7, respectively.

3.2.1. Municipal organisation and political support

Finding: Without a clear priority to combat childhood overweight and obesity, there will be no incentive to look for avenues to tackle this in an integrated approach.

Facilitators to this prioritisation are:

- Reliable data on overweight and obesity rates of children in the municipality; these are essential to create awareness and urgency within the municipal council. Comparisons of local rates within neighbourhoods or against neighbouring municipalities, regional or national data can help in prioritisation.
- A bottom-up approach can generate priority when citizens are in strong favour of combatting childhood overweight and obesity. To facilitate a bottom-up approach, clear channels of communication are required. An example of a clear channel is the possibility of directly raising questions in the municipal council, for example via citizen surveys or consultation hours at the council.

“We call that co-creation. We think it is very important that organisations, companies, or residents also provide input, so they can participate in plans. Then they are more likely to actually participate in these plans, and this is becoming increasingly important”.

- Programs of local political parties, the coalition program and the dominant political philosophy in a municipality determine whether childhood overweight and obesity is seen as an individual responsibility (which does not stimulate an integrated approach) or as a responsibility of the wider society (which helps inducing an integrated approach). The public opinion in a municipality can influence whether childhood overweight and obesity is perceived as an innocent condition that is beyond your control, or as an outcome of an irresponsible lifestyle, inadequate parenting, or an unhealthy environment. When the latter opinion escalates in the media, it can create a sense of urgency to prioritise the topic on the agenda.

Themes	Main findings
Municipal organization and political support	<ul style="list-style-type: none"> • A clear priority to combat childhood overweight and obesity is needed to tackle this in an integrated approach. Reliable data on overweight and obesity rates of children helps to prioritise this. • An integrated approach requires a long-term vision for lasting change and a long-term mandate. Strong leaders, that are action-oriented and seek improvement can catalyse the process of implementing an integrated approach. • Collaboration between policy domains is essential to work towards a truly integrated, whole systems approach. Focus on 'healthy living' instead of 'weight' helps including other policy domains. This refers to learning approaches, how results are monitored and what evaluations are being done.
Collaborations with civil society, academia and private parties	<ul style="list-style-type: none"> • Building a network and securing engagements at all three management levels of the organizations involved (strategical, tactical and operational) is required. This demands clear communication between the three levels. • Public-private-partnerships are a means to an end and not a target by itself. A steering group with representatives of private partners at the strategic level helps setting up relevant partnerships. • A common goal is central to successful partnerships. Clear cooperation agreements and guidance with stakeholders can help avoid confusion between roles and tasks.
Activities on prevention and care	<ul style="list-style-type: none"> • Primary schools are a great starting point for integrated approaches, as most children can be found there. • Focusing all activities towards a structural programmatic approach can stimulate cooperation and recognition between different initiatives. • Community involvement is considered important for the success and acceptance of an approach. Involve citizens in small steps, convert their input into action quickly and have professionals taking a leading role. • Care for children with overweight/obesity and those at risk are an essential part of an approach. • Collaboration between healthcare professionals is essential in a so-called targeted chain-of-care with a central care provider. This puts the child and their parents central by gaining insights in their needs and wishes using shared decision-making.
Communication	<ul style="list-style-type: none"> • Positive branding helps in setting a new norm in the community. • Excellent professionals are instrumental in conveying the key messages. • Know the target group and their needs and wishes to really reach out to them.
Monitoring and evaluation	<ul style="list-style-type: none"> • Monitoring and evaluation are an essential part of integrated programs. • Focus on behavioral outcomes rather than BMI as a single outcome indicator. • Involve the Public Health Service and/or academic partners as they can provide epidemiological knowledge and help to set concrete goals. • Use simple tools that require little time to monitor activities and record output in a standardised way.

Supporting role of a national organisation

A national organisation:

- Can join forces with municipalities to **influence national policies**.
- May facilitate municipalities with setting up an approach, by providing a **well-defined implementation scenario**, that is flexible enough to accommodate the local context.
- Can help **setting up a network of municipalities**, that can learn from each other and share best practices.
- Would ideally **require municipalities to incorporate monitoring and evaluation** into their approach and empower them by stimulating cooperation with other municipalities or academic partners.

Relevance of political context

- **National laws impact local policies** as they overrule local initiatives for regulations. Conversely, when large cities join forces, they can push for national legislation to encourage the goals of a common integrated approach.
- **Decentralisation of preventive health care can impact execution** of the approach. For example, in the Netherlands the Public Health Service. plays an important role in implementation and monitoring and evaluation, but the extent to which depends on the local structures.
- **National and international regulations** can also **impact the environment** in which individual food choices are made. Taxes for example influence pricing, while lower pricing is a very simple stimulant for healthier choices.

Figure 5. Overview of the main findings of municipal approaches in the qualitative study

“The rates of overweight and obesity in children in our city were a real trigger. Our alderman really saw it as an epidemic. At the time, prevention was seen nationally as one’s “own responsibility”. Our alderman thought otherwise: it is not your own responsibility, there are groups of people that cannot take that responsibility. The government has a task there. He therefore chose to frame it – obesity as a form of child abuse – to put it on the agenda. This escalated in such way that he was able to convince the whole municipal council of their joint responsibility”.

Barriers are:

- A relatively lower burden of childhood overweight and obesity compared to other (health) issues within a municipality; this dictates how much priority is given to the topic.
- Prevention as a limited priority as a whole: prevention is an obligation by law for municipalities. However, because prevention is vaguely defined, efforts on this topic can easily be minimised. Especially when budget cuts emerge.

“We don’t have an integrated approach. Obesity is not really common in our city, and it simply has not been a priority until now.”

Finding: An integrated approach requires a long-term vision for lasting change; therefore, a long-term mandate is needed.

Facilitators are:

- Strong leadership to develop a long-term strategy, longer than the term of an alderman. The term of an alderman in the Netherlands is four years, but an integrated approach requires an adaptive program with a horizon up to 20 years, with intermediate evaluations.
- Highly motivated aldermen, who dare to envision long term targets that go beyond the short-term priorities of their own political parties.

“One moment you have an alderman who has a very strong affinity with the topic and the next period you have someone that has less affinity with it. And then of course you have every four years elections and things can change again.”

Barriers are:

- The regular replacement of policy officers and aldermen, which can inhibit the implantation of long-term visions.
- The necessity to have long-term structural funding for the program, including interventions and activities to realise a long-term programmatic approach, which is often difficult to achieve.

“Allocating budget is a political-administrative choice. It is the municipal council giving an order to one of their departments to ensure that it’s done – but as a consequence, other things cannot be done.”

“It’s not that difficult to get funding for the position of the JOGG coordinator, we have for example 30 hours and our contract has been extended for another three years. However, there is little budget for us to offer structural activities. For example, for the intervention [name] we must apply for grants every year and then simply hope that it can continue. Until now, the municipality has always awarded subsidy, but what will happen if they are going to focus on another essential topic?”

Finding: Collaboration between policy domains is essential to work towards a truly integrated, whole systems approach. The HiAP model has to be considered at the strategical level.²

Facilitators to successfully implementing an integrated approach across multiple domains are:

- A collaborative culture amongst aldermen and policy officers of different domains. This is especially true for larger municipalities when aldermen and policy officers have single domains in their portfolio – in contrast to smaller municipalities where these persons often have multiple domains in their portfolio.
- The formulation of a sufficiently focused long-term vision that at the same time is inclusive across multiple domains is a starting point. When this vision stimulates actors of multiple domains to get involved you should not have to convince them to join – they will be intrinsically motivated. For example, focusing on a healthy weight for children might be too narrow but focusing on growing up and living healthily may automatically include other domains beyond sports and health such as spatial planning and education. Such broad, long-term vision should be included in all policy documents and notes.

“To be able to collaborate with other policy domains you should not focus on overweight and obesity. It is about growing up healthy for the next generation. Being overweight and obese is a tangible part, but it is much more [than that]. If you broaden the focus, then you can include other policy areas, such as poverty, participation, education.”

A potential barrier to collaboration across domains is when collaboration for different policy domains depends on only a few people. For example, in smaller municipalities where aldermen and policy officers have multiple domains in their portfolio, there is more variability in success as it is more depending on personalities of individuals than when a larger team is involved.

3.2.2. Collaborations

Finding: Building a network and securing engagement at all three management levels of the organisations involved (strategical, tactical, and operational) is required. This demands clear communication between the three levels and gives impetus at the operational level by endorsement from the strategical and / or tactical level.

Facilitators to this process are:

- Having a steering committee at the strategic level from the start that includes the most important civil society partners, ensures a support base and capacity (expertise, manpower, funding). When composing a steering committee, immediate inclusion of engaged aldermen can stimulate participation of other high-level stakeholders like directors of relevant organisations.

² The WHO defines HiAP as “an approach to public policies across sectors that systematically takes into account the health implications of decisions, seeks synergies, and avoids harmful impact to improve population and healthy equity” (WHO, 2014).

“I think that as a municipality we should do it even more together with the partners in the city. So, in the beginning I think I would have focused more on a broader steering group with more partners from the city who want to determine the direction together and therefore also give care, education, childcare, but also the business community a place in it. That you jointly agree on the direction to go and determine the ‘why’ and the ‘how’ together. Then you could instruct a program coordinator to work out the ‘what’ in more detail. And then you can look for funding together”.

- Initiating an integrated approach in such a way that it can evolve towards a more society driven approach can help to keep collaborations going and ensure the durability and funding / capacity for the approach. Strategically choosing partners for the steering committee is a first step to facilitate this process.

“We did it in the past, the classical JOGG approach: JOGG pillars, JOGG coordinator. We do not do it anymore. We have [name program] that has four focus points. And we work together with the JOGG national organisation, who is now one of the 48 collaborating partners in our approach”.

- Careful consideration of the placement of the program coordinator, either at a more tactical or more operational level can make difference to a municipality. For example, when a program coordinator is placed at the municipal Sport Service, they can benefit from the operational network already present in the neighbourhood. When placed at the local Public Health Service, a program coordinator has easier access to monitoring data and can play a more tactical role.
- The initial network that a program coordinator has, based on past working experience or being from the municipality where they work, can greatly benefit the efficiency.

An important *barrier* to building a network and securing involvement of all three management levels, especially when it comes to the role

of the steering committee is ‘steering group fatigue’. When too many steering committees on other topics already operate within a municipality ‘steering group fatigue’ can hamper participation. Alternatively, one can attempt to bring in the topic in other relevant steering committees. However, this creates dependency and less empowerment and can reduce efficacy.

Learning: Public-private partnerships should not be targets in themselves but may be a means to an end.

Involvement of the steering committee is a facilitator for arriving at such public-private partnerships, although many municipalities struggle to design a lasting partnership that goes beyond ad hoc sponsoring of events.

On their collaboration with a large local foundation with an extensive network of businesses that want to contribute to society and health. This foundation supports societal development on three themes – healthy living, learning, and moving – and has a mascot wearing a cape and holding a glass of water: “In our steering committee we have a representative of that foundation. And that really helps. He can get other companies involved or helps with donations, which for example allows us to give children at school water bottles.”

Lacking insight or being unaware of good practices are barriers and hamper the integration of public-private partnerships into local approaches.

“I think there is still a lot to be gained from public-private partnerships. I think that as municipal officers we often find that complicated because we are less familiar with public-private partnerships.”

3.2.3. Activities

For an exemplary overview of activities, interventions and campaigns that are employed in municipal integrated approaches, see Table 2.

Governmental national programs, targeting a healthy environment	<ul style="list-style-type: none"> • Healthy School (Gezonde School) • Healthy Sports canteen (Gezonde Sportkantine) • Healthy Child Daycare (Gezonde Kinderopvang)
One topic campaigns provided by JOGG	<ul style="list-style-type: none"> • Drinking water • Free exercise, just do it! (Gratis bewegen Gewoon doen!) • Vegetables... sink your teeth into it! (Groente... Zet je tanden erin!)
Care for children with overweight or obesity	<ul style="list-style-type: none"> • Child to Healthier Weight (Kind naar Gezonder Gewicht) • Your Coach Next Door • Combined Lifestyle Intervention (Gecombineerde Leefstijl Interventie)
Interventions targeting a healthy environment	Construction of water taps, playgrounds, etc.
Interventions educating the target group	<ul style="list-style-type: none"> • Cooking lessons • Supermarket safaris • Food education programs • Baby vegetable bag
Educating professionals	Training 'Excellent professionals'

Table 2. Overview of activities, interventions and campaigns, used in the integrated approaches of the municipalities included in the study

Finding: Most, if not all, children can be reached via primary schools, although more avenues are needed to make impact.

An important *facilitator* for implementing activities at primary schools is:

- The existence of national school programs in the Netherlands, such as the 'Healthy School' (*Gezonde school*). These programs can help organise concrete actions in a uniform and easy-to-monitor method.

"I think schools are a good environment for JOGG activities and interventions. The primary environment of children is of course their home and parents, but directly followed by schools and day care centers. Work and sports settings are further away from children."

A *barrier* for school-based interventions is the risk of excluding children, when activities require a contribution from the target group(s). For example, when children have to bring their own fruit to school organised fruit and vegetable

days, they run the risk to be excluded when they can hardly afford this. This may predominantly play a role in target groups with a low economic status.

"When introducing fruit and vegetable days at schools, make sure everyone can participate. Parents that are dependent on a food deposit ('voedselbank' in Dutch) do not always have the opportunity to provide their children with fruit and vegetables. When these children bring a fruit alternative, like applesauce, it should be embraced. It is the small steps that count and it is always better than a packet of biscuits."

Finding: Taking inventory of the activities that already take place without the integrated approach and giving recognition for these activities and connecting them to the approach can be a great source of inspiration and create a boost to develop the approach further. However, this should be followed up by focusing all activities towards a structural programmatic approach.

Facilitators are:

- The presence of a clear mandate from the strategic level to work towards a long-term programmatic approach.
- So-called 'funding table conversations' organised by the municipality (negotiation with executing parties on who takes on which task, supported by municipal funding) can enhance cooperation and recognition between different initiatives with a comparable goal that might otherwise compete or overlap. This also serves to identify gaps in the implementation of the approach that require attention. For example, when different but comparable interventions are developed for school-aged children (4-12 years), but there are hardly any initiatives targeting the younger and older age groups.

"We have been organizing funding table conversations since 2019. 'Raising, educating and growing up' is one of the themes. These conversations facilitate cooperation between the different partners and activity providers and helps coordinating to reach all target groups."

- The program coordinator can greatly facilitate such an inventory when that person has a broadly established network within the municipality.

A *barrier* to developing a programmatic approach is the requirement of long-term structural funding, which is often lacking.

Finding: Care for children with overweight or obesity and those at risk is an essential part of the program. Collaboration between healthcare professionals is essential, preferably via the so-called chain-of-care with a designated care provider who serves as a focal point for the child and its family.

Facilitators of these processes are:

- Good cooperation with the Public Health Service: professionals from the Public Health Service that periodically monitor weight and growth of schoolchildren can play a vital

role in flagging individuals that require extra assistance to grow up healthily. Currently most children are weighted on primary school with five-year intervals, more frequent intervals would give the opportunity to flag children at risk even earlier.

- An enthusiastic paediatrician at a nearby hospital who can help set up this chain-of-care and organise the facilities to support these children outside the hospital. Many paediatricians feel that children suffering from overweight or obesity, but not from other health problems, should not be unnecessarily hospitalised.

A *barrier* to the chain-of-care approach is the diversity of roles of the different experts guiding these children and the experienced fear of care providers that their role will be taken over by someone else and that they will have less clients.

3.2.4 Communication

Finding: Positive branding helps set a new norm regarding healthy behaviour in the community. Positive branding can be reflected in a program name that does not focus on weight but on wellbeing (see Box 4).

Facilitators are:

- Having recognisable core values pertaining to a healthy food environment, physical activity, sleep, and screen time. The municipal government should show these core values in all activities and messages, as should all organisations involved in the approach as cooperating parties.
- Involving private partners: positive branding can be enhanced through public-private partnerships on the operational level, e.g., with the local supermarket sponsoring a fruit snack at sports event.
- Commitment to positive branding can be obtained by awarding recognition to the organisations and people involved in the program. These organisations and people are more easily recognised by local stakeholders and hence might be embraced by the community more quickly.

Box 4. Examples of program names that focus on wellbeing



Be Smart
Be more physically active, eat healthy
(Amersfoort)



Feeling fit! (Rotterdam)



Just act healthy! (Dordrecht)



Gouda Doing Well!



We are green, healthy and on the move, Nijmegen

Zo blijven wij gezond
This way we stay healthy (Amsterdam)

A *barrier* to this process is capacity, such as manpower and budget, for external communication. Only a few municipalities involve a communications advisor or have the option to get the expertise from the municipal communications department.

“We do not communicate with ‘Youth at a Healthy Weight’ anymore – the word ‘weight’ is killing all our relationships. It’s never positive.”

“When I started in this position, there was a lot of negative energy. The terms ‘health’ and ‘healthy’ sometimes trigger a negative response. In our organisation we think of sports as being fun, so fun must come first. We gave it a new look, new energy, and new name.”

Finding: Clear internal communication should keep involved parties up to date on concrete developments. This is needed to maintain commitment to the program when direct results – from, for example, stabilising or dropping the BMI rates of the target population, take longer to realise.

Facilitators to adequate internal communication are:

- Having a communications advisor specifically

for the program facilitates internal communication greatly.

- Examples of good practices regarding internal communication can help to set this up within a municipality.

Important *barriers* are capacity (see above) and the impression that internal communication is a time investment which takes time away from the core activities.

Finding: Skilled professionals that are active at the operational level are instrumental in conveying the key messages of the integrated approach in a uniform way.

A *facilitator* is sufficient training and education for professionals, to reinforce the message and ensure that all professionals speak the same language.

Finding: Know the target group and their needs and wishes to really reach out to them. Only then can communication efforts be tailored towards this group and recognised as relevant for them.

Facilitators to targeted communications are:

- The use of personas. Personas are detailed descriptions of fictional characters created to



An important *facilitator* is to have simple monitoring and evaluation tools that are not labour intensive but allow users to monitor activities and record output in a standardised and time-efficient way.

“Progress is monitored by the JOGG coordinator, using a logbook, provided by the national organisation. The logbook forms the basis for the half yearly evaluation report, reporting on the progress made on the objectives of the action plan. Outcomes are compared with outcomes of previous years, which helps us to learn from the approach. The logbook is also perceived as a useful tool to keep the alderman informed.”

A *barrier* to monitoring and evaluation is the amount of time it costs, time that cannot be spent on implementation which gives the feeling that valuable time is not well spent. However, adequate monitoring can help to secure long-term commitment to activities that are successful. For example, when all schools have implemented healthy food policies, continuous effort is needed to endorse and revise these policies to evolving standards.

represent different subgroups of the target group. This can be helpful to adapt messages to different target groups.

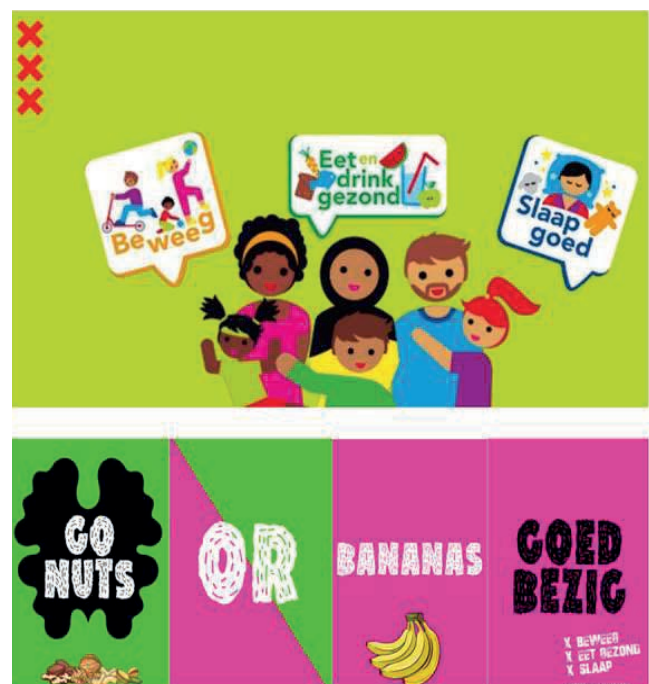
“Based on social marketing research, you look at the group’s motivations, attitude and behavior to connect with them. JOGG (national organisation) together with the four largest cities of the Netherlands (Amsterdam, Den Haag, Rotterdam, and Utrecht) executed a segmentation research of parents with children ranging from 2 to 12 years resulting in nine personas. This helps us to communicate with the different target groups.”

- The use of simple, understandable language with recognisable visualisations (see Box 5).

3.2.5. Monitoring and evaluation

Finding: Monitoring and evaluation are an essential part of integrated programs to make them adaptive and require a fair amount of resources. They can influence the way the program is perceived by parties not yet involved and can stimulate their participation.

Box 5. Amsterdam uses recognisable visualisations, targeted at different target groups



Finding: Do not focus on BMI as a single outcome indicator as data on BMI and the prevalence of obesity and overweight are sensitive to external factors such as migration. BMI is the result of a long behavioural trajectory, it is therefore advisable to use other health indicators, including behavioural outcomes such as healthy eating, drinking water and physical activity, for monitoring and evaluation.

“Monitoring and evaluation is the dilemma in which JOGG is involved nationally. [BMI] Figures are erratic and even if you have results, you do not yet know whether it is because of JOGG. You can easily undermine it.”

Facilitators are:

- The monitoring and evaluation of outcomes benefits from involvement of the Public Health Service or academic partners. They can provide epidemiological knowledge to evaluate health data.
- Parties at the operational level can assist in monitoring by employing objective, and relevant outcome measures. For example, at primary schools where ‘running a daily mile’ was introduced, improvements in shuttle run test results were observed. The shuttle run test is a test to measure the fitness of children by making the participants run a distance of 20 meters within a decreasing amount of time, forcing participants to increase their pace. This gives insight into changes in children’s fitness but does not necessarily result in decreasing BMI values.

Barriers are:

- Proper monitoring and evaluation require time and resources, which then cannot be spent on implementation of the integrated approach to combatting childhood overweight and obesity. This sometimes hampers the motivation to monitor and evaluate results.
- Data should match the activities employed in the integrated approach. For example, when the approach targets physical education at school, monitoring outcomes should be

related to physical activity at school rather than physical activity in general. Monitoring only general trends may obscure achievements and impede motivation.

3.2.6. The supporting role of a national organisation

Most municipalities implemented a classical JOGG approach, as described in Box 3 in section 2.3. These municipalities were guided by a JOGG advisor appointed by the national organisation in their implementation process. The advisor helped to set up the program for the approach and assisted with the selection of the target groups. The national JOGG organisation facilitated municipalities with knowledge on setting up a network, how to connect and implement existing and new interventions and activities and helped with monitoring and evaluation. The JOGG wiki, sharing best practices, was appreciated and seen as helpful. We derived the following findings from our interviews with JOGG advisors and coordinators:

- Most municipalities involved in the JOGG movement see the benefits of establishing a national organisation for support but also of the network of municipalities involved in the JOGG movement. This network helps cities with less capacity or resources to learn from the experiences gained in larger municipalities with more possibilities.
- A national organisation is considered important for agenda setting at national level and could leverage its position even more with regards to political influence. The national organisation can draw on knowledge and insights, collected directly from the field by JOGG coordinators. By being well informed about what is going on and where the bottlenecks are, they can influence politics in a very targeted manner.

“As far as I am concerned, their biggest mission is to set the agenda for structural funding”

- Being part of a national movement and employing their approach under the same name also helps municipalities to establish

collaborations with civil society organisations and health care professionals. At the same time, the initial, full name of JOGG – Jongeren op Gezond Gewicht (Youth at a Healthy Weight) is sometimes criticised for being too focused on weight and many prefer not to use it.

- Abolishing the fee for municipalities to join the JOGG movement and to be able to receive support from the national organisation, is seen as an improvement. The fee was perceived as a barrier for some non-JOGG municipalities, raising the question whether the added value of the national organisation is being made clear enough.
- The national JOGG organisation supports municipalities with the implementation of their approach via JOGG advisors. The implementation of local approaches may benefit even more from a well-defined implementation scenario that is at the same time flexible enough to accommodate the local context. Municipalities are currently at liberty to adapt the approach anyway they like and there is little guidance on establishing essential core values. In addition, core values are mostly limited to values related to nutrition and physical activity. It is essential to broaden these to also sleep and sedentary behaviour and include screen time as an important determinant of childhood overweight and obesity. A predefined national set of core values that is transferred to the local context may result in more impact.

“The JOGG national organisation does spread ideas from other municipalities, but they don’t prescribe what you should do at all – for example, which age group to focus on. Every municipality reinvents the wheel and that is a pity”.

- Most municipalities develop their own monitoring and evaluation plan. There are often limitations to its execution due to a variety of reasons (see 3.2.5). Joint initiatives for monitoring and evaluation for smaller cities, with the support of the national JOGG organisation can help compare achievements of different municipalities. The four largest

cities in the Netherlands (Amsterdam, Den Haag, Rotterdam, Utrecht) already have such initiatives.

“There are training courses, but it is still very much about describing the results of your process, your activities. We would also like to know if we are doing the right things – are we stabilising the obesity rates as decreasing the rates may be a utopia. It is so difficult to measure, how can we say that a healthy school canteen works?”

3.2.7. The relevance of the Dutch political context

Every municipal integrated approach is dependent on the national, regional, and local political context. Policies and initiatives at national level can have a positive or negative impact on policies at the regional level. The national Prevention agreement for example was presented in the Netherlands in 2018. This document includes policy agreements for the prevention of smoking, harmful use of alcohol and overweight. For the latter, a committee of 70 organisations representing a wide variety of stakeholders was established, to jointly formulate an ambition to decrease overweight and obesity rates and develop measures to achieve that ambition (Seidell & Halberstadt, 2020). This national initiative has had a positive impact on municipalities, who started formulating either local or regional prevention agreements, which in turn provide municipalities with funding to implement their local integrated approach.

“Nationwide, you see all kinds of subsidies becoming available to put prevention and health on the agenda and to be able to do something for the city. This is also visible in our municipality.”

Decentralisation of preventive health care on the other hand seems to have a negative impact. Public Health Services, for example, may work locally or regionally. They can play a key role in the local integrated approach, but how this works out in practice depends on

their organisational structure. For example, if the Public Health Service is a regional service, municipalities must budget the hours they need to use the Public Health Service's expertise on evaluation research. Often this budget is limited. National laws also impact policies at the local level. Sometimes national laws overrule local initiatives for regulations. For example, when a municipality plans to ban food trucks and fast-food restaurants in the direct vicinity of schools, national laws prohibit such a local regulation.

"Our Alderman for Health, Care, Elderly and Sport is very active on this issue, and he is also more broadly committed to combating the obesogenic environment. Because even though you can still set up so many interventions in schools in the field of healthy eating and drinking, efforts can be nullified from the moment the students leave the schoolyard and are confronted with fast food trucks, supermarkets and fast-food chains."

"We did research with the university: what are the legal options for the municipality to intervene in the food environment? We then sent it to the Ministry of Health to put it on the agenda with the State Secretary. That's something that we as municipalities can do together to achieve something, getting it on the national political agenda."

Conversely, when large cities join forces, they can push for national legislation to encourage the goals of a common integrated approach. For example, in the Netherlands there is an ongoing push for legislation to curb marketing directed at children. National and even international regulations such as European regulations on sugar taxes or lower VAT on fruit and vegetables can dictate to a certain extent what food is on offer and at which price. Lower pricing can be a very simple stimulant for healthy choices.

4. Reflections

In the Urban Learning study, we investigated the facilitators and barriers of integrated approaches to tackling childhood overweight and obesity as implemented by Dutch urban municipalities. We have learned that the implementation of integrated approaches in Dutch municipalities is an evolving process and that approaches are executed in various forms. We have identified several elements that can help make the implementation of an integrated approach more successful, as discussed below.

- First and foremost, childhood overweight and obesity needs to be recognised as an urgent problem which requires attention. Over half of all Dutch municipalities have joined the JOGG-movement (178 of the 347 municipalities) (JOGG, n.d.). For these municipalities, a clear priority to tackle childhood overweight and obesity was needed to initiate an integrated approach. We have learned that objective information on overweight and obesity rates can be a strong facilitator to prioritise this, especially when these rates can be compared within or between municipalities and at the national level. Sometimes, overweight and obesity are seen as an individual's responsibility. It is therefore important that childhood overweight and obesity are clearly presented as societal problems which needs structural addressing to avoid future health issues.
- As overweight and obesity are considered 'wicked problems' – the results of a system rather than individual action – an integrated approach with a systems perspective could be the most effective way to tackle the overweight and obesity epidemic. This requires a long-term vision for lasting change. It takes roughly a generation to secure lasting change. Therefore, a long-term mandate is needed with proper structural funding. We

found that in most municipalities, funding covered the coordinators' time, but not the actual implementation. Each year policy officers and program coordinators need to find and allocate new funding to continue interventions and activities. Most funding is based on governmental funding, which is not labelled specifically for this approach and its continuation is found to be insecure. This results in uncertainty in maintaining interventions and activities over longer periods and therefore uncertainty in commitment from partners. When funding is secured for the longer term, all time and effort spent on finding enough resources can be used to implement the approach. When setting up an approach this should be considered from the very beginning.

- Collaboration between governmental domains makes the realisation of a long-term integrated approach or even a whole systems approach more feasible because it then becomes a shared responsibility across a broader range of municipal domains. This can be established with a Health in All Policies (HiAP) approach (WHO, 2014). When a municipality employs a HiAP, all aldermen are responsible for a healthy environment, an environment that helps to prevent overweight and obesity. Health is included in decision making in all domains. For example, in Spatial Planning, the health consequences of a new fast-food restaurant would then be part of their decision to give the permit. In addition, the Department of Education would promote a healthy food environment and physical activity opportunities at schools.
- A network between municipalities facilitated by a national organisation – in the Netherlands funded by the Dutch government - helps to share experiences, knowledge, interventions and activities. Municipalities then have no

need to reinvent the wheel and can get help with translating the interventions and activities to their own context. A national organisation may propagate core values of the approach, for example by developing training programs to train skilled professionals and provide a roadmap for the implementation of an approach. Such a roadmap may lay out specific activities and actions but should also allow for adaptation to the local context. When specific activities or interventions are selected, approved and serviced by the national organisation it may require less resources from municipalities to implement those.

A learning approach is deemed an essential and useful element to improve activities and keep partners committed. A learning approach also enables program adaptation in response to changes to the system – i.e., the local socioeconomic, cultural and political environment. However, this requires reliable and consistent monitoring on the processes that take place within the approach, their output and their outcomes. Although monitoring can be of great value to the approach, most municipalities struggle with monitoring and evaluation, which is regarded as difficult and demanding. Academic partners at the national level can facilitate this learning approach and help smaller municipalities without a local university to implement a learning approach.

In addition, a national organisation such as JOGG can guide municipalities through the process of monitoring and evaluation by providing simple tools, training professionals on how to set concrete goals for processes, output and outcomes and facilitating training on how to execute monitoring and evaluation. These national organisations can enforce municipalities to employ a learning approach, making monitoring and evaluation not an optional activity, but an integrated part of the approach. However, it should be noted that monitoring an integral approach is complicated and requires considerable financial and human resources.

- Sharply defining the target group of the integrated approach can lead to more focused efforts. In the Netherlands most municipalities focus on children aged between 4 and 12. As going to school is compulsory, almost all children are reached via school programs. Programs that are carried out at day care and sport clubs do not reach all children and therefore maybe not the children that need the intervention the most which might even increase existing differences in health
- As an integrated approach matures, the target group can be broadened to younger and older children and even to adults. The focus on a healthy weight can – or perhaps should – be broadened to healthy inhabitants. When setting up the approach, it is sensible to take this potential maturation into account by choosing a name that can grow alongside the approach. Focusing mainly on children and weight (as was the case in the original name 'Youth at a Healthy Weight', which is now adapted to 'Healthy youth, Healthy future') is not always perceived to be sufficient and using the term 'weight' is sometimes perceived as negative. A positive broad name can be more useful here, such as 'Goed bezig' ('Doing well') or 'Lekker fit' ('Feeling fit').
- Commercial/private partners can have a considerable impact on the environment in which children grow up. Such partners can make structural contributions locally towards a healthier environment. Working together with commercial partners can help propagate the message and can increase capacity and resources, for example through funding. However, many municipalities struggle with public-private partnerships. Including strategic partners from the private sector in the steering committee directly from the beginning might enhance the outcome from public-private partnerships. Ideally, public-private partnerships would include partners with mutual interests. Private partners in the Netherlands include,

for example, companies that supply drinking water and that can help with implementing water taps. WHO's Framework of Engagement with Non-State actors may be a valuable resource for local and national governments to explore the collaboration with private partners (WHO, n.d.).

As municipalities are to some extent dependent on national legislation (e.g., with regards to land use, funding and legislation on marketing), a national organisation can join forces with municipalities to influence national policies. This has, for example, been done by the municipality of Amsterdam, together with Ede, Rotterdam and Utrecht and the Amsterdam Law School of the University of Amsterdam.

Together they have investigated the legal options for municipalities to intervene in the food environment (Van Kolfsschooten et al., 2020) And results were presented to the State Secretary. The Ministry of Health, Welfare and Sport is now exploring the legal possibilities, together with the municipalities and the Ministry of Interior and Kingdom Relations (Rijksoverheid, 2021).

Finally, the success of the implementation of an integrated approach is highly dependent on individuals, capacity and resources. Investing in intrinsically motivated, skilled individuals that already have or are willing to develop a broad network can really make a difference in the success of an approach.

5. Concluding remarks

Childhood overweight and obesity is one of the most pressing public health problems at present. An integrated municipal approach with a long-term vision to bring about systemic change is expected to bring major benefits to children's health. In the Netherlands, municipalities are increasingly working towards such a whole-systems approach. Amsterdam was the first city to implement the whole-systems perspective by working towards an adaptive responsive approach that addresses childhood overweight and obesity at all levels of council policies and policy actions, with interventions and strategies at the level of professionals, communities and individuals (Sawyer et al., 2021). But, as acknowledged by the whole of systems approach, public health is not only the responsibility of municipalities. Article 22 of the Dutch constitution states that the national government is committed to improve public health by implementing structural, universal and preventive measures that are aimed at the entire population (De Nederlandse Grondwet, n.d). The exploration of initiatives like the implementation of a healthy lunch at school, expected to reach 1.4 million children (RIVM, 2020) in the Netherlands,

shows that the Dutch national government increasingly recognises the importance of changing the system, and specifically the environment within that system.

With this research we aimed to assemble the lessons learnt in the Dutch municipal integrated approach to combatting childhood overweight and obesity. Using a mixed-methods approach, including a literature review and interviews with policy officers, JOGG advisors, and JOGG coordinators, we systematically analysed the Dutch findings on the development and implementation of an integrated approach. We asked ourselves how these insights could be relevant to the context of LMICs and conducted a first exploration through a literature review, expert interviews and a dialogue on the findings. We hope that this report will inspire and help other stakeholders as well.

It is clear that local, regional and national governments have an important role to play if they truly want to impact the health of future generations by changing the environment and tackling malnutrition problems. In the end, it takes not just a village to raise a child, but the whole country.

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Appendix I. Consulted stakeholders and experts

- **Lideke Middelbeek**, senior advisor, national JOGG organization
- **Bente Steenvoort**, senior advisor, national JOGG organization
- **Irma Huiberts**, PhD-student 'Evaluation of JOGG', Mulier instituut
- **Jasper Lok**, senior policy advisor, Amsterdam Healthy Weight Approach
- **Arnoud Verhoeff**, senior scientific advisor and member of steering committee, Amsterdam Healthy Weight Approach
- **Jaap Seidell**, professor, VU university
- **Coosje Dijkstra**, assistant professor, VU University
- **Marije van Koperen**, expert monitoring & evaluation integrated approaches, RIVM
- **Wilma Waterlander**, senior researcher Amsterdam UMC

Appendix 2. Overview of literature recommended by stakeholders or retrieved via desk research

Between October 2020 and December 2020, we visited the following websites and retrieved the following documents to obtain more insight in the Dutch municipal approaches to combatting childhood overweight and obesity:

General information on Dutch policies on childhood overweight and obesity

- Andersson Elffers Felix (2019). Ex-durante evaluatie ondersteuningsstructuur overgewicht jeugd.

Information of whole-systems approaches and integrated approaches in the Netherlands

- <https://jongerenopgezondgewicht.nl/jogg-aanpak> (in Dutch)
- Van Koperen e.a. [Amsterdamse Aanpak Gezond Gewicht: kansrijk? Een zoektocht naar de werkzame elementen](#). Utrecht: NJI, 2018 (in Dutch)
- Bagnall et al. [Whole systems approaches to obesity and other complex public health challenges: a systematic review](#). BMC Public Health 2019
- Van der Kleij e.a. [Welke factoren bepalen de implementatie van een lokale integrale aanpak van overgewicht bij kinderen?](#) Tijdschr gezondheidswet 2017;95:296-306 (in Dutch)
- Van Koperen et al. [Characterizing the EPODE logic model: unravelling the past and informing the future](#). Obes Rev 2013;14:162–170.
- Wilderink L. Bakker I, Schuit AJ, Seidell JC, Renders CM. [Key elements of a successful integrated community-based approach aimed at reducing socioeconomic health inequalities in the Netherlands: A qualitative study](#). Plos One 2020; 15(10):e0240757.

Information on Health in All Policies

- Storm et al. Measuring stages of health in all policies on a local level: The applicability of a maturity model. Health Policy 2014;114:183–191
- Van Vliet-Brown et al. Health in All Policies utilization by municipal governments: scoping review. Health Promotion International, 2018;33:713–722

Information on the CIAO (Consortium Integrated Approach of Overweight) research and evaluations (in Dutch)

- <https://www.zonmw.nl/nl/onderzoek-resultaten/preventie/consortium-integrale-aanpak-overgewicht-ciao/>
- [https://www.zonmw.nl/fileadmin/documenten/Preventieprogramma/Factsheet Resultaten CIAO versterken integrale aanpak overgewicht.pdf](https://www.zonmw.nl/fileadmin/documenten/Preventieprogramma/Factsheet_Resultaten_CIAO_versterken_integrale_aanpak_overgewicht.pdf)
- Hendriks e.a. [Van fictie naar actie: naar een politiek-bestuurlijk gedragen integrale aanpak van overgewicht](#). Tijdschr gezondheidswet (2017) 95:288–295
- Van der Kleij e.a. [Welke factoren bepalen de implementatie van een lokale integrale aanpak van overgewicht bij kinderen?](#) Tijdschr gezondheidswet 2017;95:296-306 (in Dutch)

- Van Koperen. [Verspreiding en implementatie van de kennis en eindproducten van het CIAO-onderzoek](#). Tijdschr gezondheidswet (2017) 95:335–339

Information on the Youth at a Healthy Weight (JOGG) movement in Dutch)

- [Ambitieakkoord JOGG 2020-2025](#)
- Meerjarenstrategie JOGG 2020-2025 (not publicly available)

Vision on public-private partnerships:

- <https://jongerenopgezondgewicht.nl/partners/samenwerking>

JOGG monitoring and evaluation (national level)

- <https://jongerenopgezondgewicht.nl/resultaten>
- RIVM: <https://www.rivm.nl/nieuws/daling-overgewicht-in-jogg-buurt>
- Kremers e.a. [Effect in zijn context Evaluatie van Jongeren op Gezond Gewicht \(JOGG\)](#). Tijdschr gezondheidswet 2018;96:128–131
- Mulier Instituut. [Jongeren Op Gezond Gewicht in beeld 2015 – 2019](#)
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JOGG municipalities (in Dutch)

- <https://jongerenopgezondgewicht.nl/jogg-aanpak/gemeentenoverzicht>
- Almere: <https://www.almere.nl/wonen/zorg-en-welzijn/aanpak-gezond-gewicht-almere>
- Amersfoort: <https://www.bslim.nu>
- Amsterdam -> see *Amsterdam Healthy Weight Approach*
- Arnhem: <https://www.go-nl.nl>
- Delft: <https://www.delft.nl/vrije-tijd/sport-en-bewegen/jogg>
- Den Haag: <https://www.ggdhaaglanden.nl/professionals/gezondgewicht/haagse-aanpak-gezond-gewicht-hagg.htm>
- Dordrecht: <https://www.doeffgezond.nl>
- Gouda: <https://www.sportpuntgouda.nl/bewegen-leefstijl/gouda-goed-bezig>
- Groningen: no website
- Haarlem: <https://www.sportsupport.nl/jogg>
- Helmond: <https://www.jibbplus.nl>
- Hilversum: <https://www.jouw.teamsportservice.nl/gooi/project/jogg-hilversum/>
- Katwijk: no website
- Leiden: no website
- Leidschendam-Voorburg: <https://www.senw-lv.nl/sport-cultuur/jongeren-op-gezond-gewicht/>
- Maastricht: <https://www.ggdzl.nl/jogg>
- Nijmegen: <https://www.wijzjngroengezondeninbewegingnijmegen.nl>
- Purmerend: <https://www.spurd.nl/jogg-purmerend>
- Rotterdam: <https://www.rotterdamlekkerfit.nl>
- Tilburg: <https://www.sportintilburg.nl/jogg>
- Utrecht: <https://www.utrecht.nl/zorg-en-onderwijs/voeding-en-beweging/gezond-gewicht/>
- Vlaardingen: <https://www.joggvlaardingen.nl>
- Zaanstad: <https://www.joggzaanstad.nl>

Information on the Amsterdam Healthy Weight Approach ('AAGG')

- Available at <https://www.amsterdam.nl/sociaaldomein/blijven-wij-gezond/>
 - Gemeente Amsterdam. Staat van gezond gewicht en leefstijl van Amsterdamse kinderen. Outcome monitor Amsterdamse Aanpak Gezond Gewicht 2017
 - Gemeente Amsterdam. Buurtenmonitor Zo blijven wij gezond. Outcome monitor 2017 deel 2 Amsterdamse Aanpak Gezond Gewicht
 - Gemeente Amsterdam. Hoe staat het met de gezonde leefstijl van de Amsterdamse jongeren? Factsheet, 2017
 - Gemeente Amsterdam. Gewicht en leefstijl van kinderen in Amsterdam. Factsheet, 2019
- Unicef, City of Amsterdam, EAT (2020) The Amsterdam Healthy Weight Approach: Investing in healthy urban childhoods: a case study on healthy diets for children. https://eatforum.org/content/uploads/2020/12/Case-study_Amsterdam-Healthy-Weight-Approach-EAT-UNICEF-AMSTERDAM.pdf

Appendix 3. Elements of integrated approaches to combatting childhood overweight and obesity listed in the literature

Van Koperen et al. Characterizing the EPODE logic model: unravelling the past and informing the future. *Obes Rev* 2013;14:162-170.

This paper presents the logic model of the EPODE approach, which has served as a basis for the Dutch Youth at a Healthy Weight approach. It describes the main pillars and elements that form that pillar. These are:

- Political commitment: this refers to the formal commitment of leaders of key organizations; the presence of an ambassador that advocates for the approach; agenda setting; and the pursuit of partnerships with local organizations.
- Public-private partnerships: this refers to the commitment of private partners, with both monetary and non-monetary resources, such as knowledge and expertise.
- Monitoring and evaluation: this refers to measurement of process, output and outcome.
- Social marketing: this refers to delivering the right message to the relevant target.

Seidell & Halberstadt. National and local strategies in the Netherlands for obesity prevention and management in children and adolescents. *Obes Facts* 2020;13:418-429.

This paper summarizes the various policies in the Netherlands aimed at the prevention and management of obesity in children and adolescents. It specifies the current components of the Youth at a Healthy Weight approach:

- Political and governmental support – including domains outside public health such as town planning, education, transportation, and the social domain.

- Cooperation between private and public sector – preferably involving local stores and supermarkets as well as small and medium enterprises in the food industry.
- Social marketing to promote healthier behavior.
- Scientific evaluation and dissemination – including the learning approach toward program evaluation, including evaluations of effectiveness and process evaluations.
- Linking prevention and care – thus preventing that children will need obesity management, and, when they do, make sure that they are adequately supported.

Wilderink et al. Key elements of a successful integrated community-based approach aimed at reducing socioeconomic health inequalities in the Netherlands: a qualitative study. *PlosOne* 2020;15(10):e0240757.

This study aimed to identify the key elements of the Zwolle Healthy City approach, by interviewing professional involved in the approach. The following perceived key elements were identified:

- Collaboration between a variety of local organizations that want to have impact on the health of citizens.
- Support for the approach on the strategic, tactical and operational level of involved organizations.
- Proper communication and coordination both for the network and within organizations
- Embeddedness in organizations policies and processes.
- Collaboration with private partners is of added value, but there is no 'one size fits all'.

- Collaboration with citizens.
- Profiling the approach like a brand.
- Moving along and taking advantage of opportunities.
- Continuous monitoring and evaluating goals and processes, and learning from the results.

Van Koperen et al. Amsterdamse Aanpak Gezond Gewicht: kansrijk? Een zoektocht naar de werkzame elementen [Amsterdam Healthy Weight Programme: promising? A search for the effective elements]. Utrecht: NJI, 2018.

This report describes a qualitative study into the effective elements of the Amsterdam Healthy Weight Program. Effective elements are elements regarded from various sources as important for the design and implementation of the integrated approach as a whole and not of specific interventions within that approach and that are assumed to contribute to the achievement of positive results. The study presents a 'yard stick' with 7 major components that each reflect a number of key elements:

- Programmatic approach: this includes the theoretical underpinning of the program; the systematic approach; participation of the target group in planning and implementation; specifying multiple target groups; working according to standards and guidelines; community-wide and cross-sectoral.
- Leadership: political administrative basis; integrated approach is explicit priority of policy; coordination of program components and the whole; central and local leadership; commitment to transformational leadership; deployment of employees with the right skills, expertise and knowledge; stimulating the commitment of employees, aimed at intrinsic motivation.
- Intervention development and implementation: preference for proven effective interventions but: interventions must fit within the context; are aimed at reducing social inequalities; are consistent with national and regional policies; are in line with existing methods and strategies; uses a mix of different strategies at different levels and setting, focusing on multiple behaviours.
- Integral cooperation with public and private stakeholders with: a common goal / interest; clear cooperation agreements; direction and coordination arranged at different levels; investment in common language, work processes and working conditions.
- Learning approach: use of knowledge; monitoring determinants and health outcomes; systematic reflection on outcomes; structured evaluation plan; evaluation and monitoring of processes and impacts; adapting interventions of the basis of evaluations; evaluation aimed at recognizing the contribution of an integrated approach to long-term objectives.
- Long term vision aimed at lasting change: multi-annual plan (mission >20 yr); solid administrative and policy base; those involved are encouraged to take ownership; changes in environment support desired behaviour; focus on health in all policies; budget earmarked for the approach; sufficient staff capacity; securing in good time.
- Communication and marketing: setting a standard; obtaining a sense of urgency; sending an unambiguous message; limited marketing of unhealthy foods; use behavioral insight to target communication; use the socio-ecological model for the prevention of overweight and obesity.

Appendix 4. List of municipalities included in the qualitative study

Municipality (JOGG)	Tactical/operational level	Tactical/strategic level
Almere	Advisor	Policy officer
Amersfoort	Advisor	Declined
Amsterdam	Advisor	(via expert interview)
Arnhem	Advisor	Policy officer
Delf	Advisor	Declined
Dordrecht	Advisor	No reaction
Gouda	Coordinator	Declined
Groningen	Advisor and coordinator	Policy officer
Haarlem	Advisor	Policy officer
Helmond	Advisor	Declined
Hilversum	Advisor	Declined
Katwijk	Advisor	Declined
Leiden	Advisor	Policy officer
Leidschendam-Voorburg	Coordinator	Policy officer
Maastricht	Coordinator	Policy officer
Nijmegen	Advisor	Declined
Purmerend	Coordinator	Policy officer
Rotterdam	Advisor	Policy officer
's-Gravenhage	Advisor	Declined
Tilburg	Coordinator	Policy officer
Utrecht	Advisor	Policy officer
Vlaardingen	Advisor	Policy officer
Zaanstad	Coordinator	No reaction

Municipality (no JOGG)	Approach	Tactical / strategic level
Amstelveen	No specific approach on childhood obesity	Policy officer
Capelle aan den IJssel		No reaction
Eindhoven	Planning to implement JOGG	Policy officer
Hoorn	No specific approach on childhood obesity	Policy officer
Nieuwegein		Declined
Rijswijk (ZH.)		Declined
Schiedam		No reaction
Veenendaal	No specific approach on childhood obesity	Policy officer
Velsen	No specific approach on childhood obesity	Policy officer
Zoetermeer	Planning to implement JOGG	Policy officer

Appendix 5. Framework with major themes for assembling learnings of Dutch municipal approaches to combatting childhood overweight and obesity

	Municipal organization and political	Collaborations			Activities		Communication	Monitoring & evaluation
		Civil society collaboration	Academia collaboration	Commercial collaboration	Prevention	Care		
What do they do (process)?								
What are the results (output/outcomes)?								
What are facilitators?								
What are barriers?								
Relevant contextual factors								

Appendix 6. Interview guide JOGG municipalities (tactical/operational level)

Introduction

- brief introduction of VJ (knowledge and communication agency about nutrition of children) + goal of research (gaining insight into the JOGG approach within the relevant municipalities. Which elements promote, which elements contribute less and why)
- no right or wrong answers
- what we are going to do with the information (input for focus groups with the municipalities, for analysis purposes for reporting). Interview recordings and elaborations will be deleted at the end of the study.
- permission to record the conversation

Opening

- Can you briefly introduce yourself, who are you, which municipality (s) do you have under your care and since when?
- What do you think is the JOGG approach for the municipality of XXX
- And in which phase is the relevant JOGG municipality?

JOGG results

- What has this JOGG approach delivered to the municipality?
- What is the greatest success of JOGG in this municipality and why do you think that is the case?

Focus on the approach

- Is there an action plan for JOGG in this municipality?
- Has a goal and target group been established for JOGG in this municipality?
 - If yes: how did you do that? (with or without which partners)
- How much budget has been released for JOGG?

Embedding JOGG within the municipality

- Can you tell us a bit more about the JOGG director within municipality XXX?
 - who is it, where is this person located (at the municipality or at another organization), how much time does this person have for JOGG?
- Is it a person who has been there for a long time, or is there a lot of change on this post?
- How is JOGG further organized within the municipality? Can you tell us more about that?
- In which policy sector / department within the municipality is JOGG and which policy sectors are involved?
- What do you think of the embedding within the municipality? What do you like about it, what could be better?

Collaborations

- Which parties does JOGG work with in municipality XXX?
- Can you tell us a bit more about how this collaboration arises and expires?
- What do you think are successful collaborations and why, and what are obstacles to collaboration?
- Continuing to ask questions on PPP if not spontaneously addressed: Is there PPP in this municipality, what kind of PPP? If yes: which PPP is successful and why?
- If no / little PPP: why is there little or no PPP in this municipality? What are obstacles.
- Are there goals with regard to cooperation, is it monitored?

Activities

- When it comes to prevention: what are the most important activities that JOGG organizes within the municipality and with which parties are these activities organized?

- And which of these activities (aimed at prevention) are successful, and why?
- When it comes to healthcare, what are the most important activities that JOGG organizes within the municipality and with which parties does JOGG do that?
- Which of those activities are successful, and why?

Internal and external communication

Internal communication:

- Can you describe how it is arranged within this municipality that parties know what is going on, what is being done and what the plans are?
- Is there specific attention for internal communication, for example that all professionals speak the same language?
- What is going well within this municipality when it comes to internal communication?
- And what are barriers or what is experienced as difficult (when it comes to internal communication)?

External communication:

- Which forms of external communication can you name that support the activities of this JOGG municipality? (So communication to the target audience of JOGG.)

Monitoring & evaluation

- What does this municipality do with regard to monitoring & evaluation?
- Can you tell us more about that? What is being done and with which parties and why?

- Was something of a zero measurement done before the start, for example?
- Are there pdfs / fact sheets / reports from this municipality available when it comes to monitoring & evaluation? Could you share these?
- If little is done on monitoring & evaluation, do you have any idea what could be the fault? Is this something that will be tackled in the long term? Is this something you as an advisor help the director with?
- If a lot is done on monitoring and evaluation: what makes this municipality so committed to this in your opinion? What are the benefits for the municipality?

Barriers and facilitators

- In your view, what have been the most important elements in the JOGG approach to achieve what they have already achieved, and why?
- And what do you think are the biggest obstacles in your municipality to properly implement the JOGG approach?
- Are there also things that make it easier within the municipality to implement the approach properly? (For example, what is more difficult / difficult in other municipalities than in your municipality?)

Wrap-up

Do you have an addition about the JOGG approach within your municipality that we should certainly include in our analysis?

Appendix 7. Interview guide JOGG municipalities (strategical/tactical level)

Introduction

- Introducing interviewer(s) proposals: name, study, intern at Voedingsjungle (knowledge and communication agency about nutrition for children).
- Aim of the study: to gain insight into the approach of municipalities with regard to overweight and obesity in children.
- What we will do with the information: the interview will only be used for research purposes. The municipalities can be mentioned as a case in the report, but there will be no names of the persons involved.
- There are no right or wrong answers.
- For the research we would like to record the interview so that we can work it out later. Do you give permission for this? The recording is handled with care and will be deleted after replay.
- The interview transcript will also be sent to you to check whether everything has been understood correctly or whether additions are needed.

Opening

When the recording has started, ask again for permission to record.

- Introducing interviewee: who are you, for which municipality do you work and in which domain, which function, since when?

We talk about the municipal approach on overweight and obesity in children.

- Do you call it that, or do you use a different term? (then use that)
 - Is it true that you started the JOGG approach in XXX? Were you already engaged in such an effort before then?

- What do you understand by an 'integrated municipal approach' and would you describe the approach of your municipality as such?
 - What makes why or not?

Deepening at policy level

Agenda setting

Policy can only be made if an issue is given enough attention and placed on the political agenda (Hendriks et al., 2013).

- How did overweight and obesity among children in your municipality come up on the agenda, what was the reason for this?
 - Keep asking! E.g. If figures from GGD are used: how does that work? How and by whom are the figures supplied? Who receives those figures (at what level) and how are those figures shared within the municipality?
 - When is it determined that action will be taken based on those figures and by whom? How does that work, can you describe it?
 - How important is childhood overweight and obesity as a theme within your municipality? And why is it important? (Who or what makes it clear that it is important?)
- Which persons or parties were involved in the agenda setting of overweight and obesity among children? How did that go back then, can you describe the process? Who took the lead in this?
 - Were all persons or parties on the same page regarding the sense of urgency of the matter? And who or what were those persons or parties? (job level for example?)
 - If so, what did this show? What is the reason for this shared sense of urgency?
 - If not, how has this been handled (to get everyone in the same direction)?

- How did support for the approach aimed at overweight and obesity among children come about within the college? Can you describe that? How does such a thing go?
 - What was important in this?
 - Did that go smoothly or were there any limiting factors?
- What contributed to the process of setting the agenda?
- What contributed converting this agenda setting into an approach aimed at overweight and obesity among children? Can you tell us more about that? (keep asking)
- What hindered the agenda setting?
- How does overweight and obesity in children remain on the agenda in your municipality? Is someone or a party responsible for this? How does that work? Can you describe that?
 - What is facilitating or hindering in this?

Leadership

Leadership is important when we consider complex issues such as overweight and obesity.

- Who is in charge of the development and implementation of the municipal approach on overweight and obesity in children?
 - Is this a central person in the entire approach or is it subdivided into multiple organizations or levels?
 - Why has (one person or more) been chosen?
- How is capacity made available for policy on overweight and obesity in children? (such as persons, hours, financing)
 - By whom, how does that work? Who decides that? For what period will capacity be made available?
 - Which factors promote or hinder this?
- Is there a steering committee with regard to the municipal approach on overweight and obesity in children?
 - If so, who are in the steering committee and are these also the parties that were intended for the establishment of the steering committee? Why was this steering committee chosen and what is the aim of the steering committee? What does the steering committee do?

- If not, why not?

Policy formulation

Health policy such as the approach on overweight and obesity in children can take different forms, where on the one hand the focus can be on the long-term approach, while on the other hand there is more focus on individual interventions and the connection between them.

- Which vision is central to the approach on overweight and obesity in children in your municipality?
 - Can you explain that?
- How would you describe the approach on overweight and obesity in children in your municipality and how was that choice made?
 - Why was that choice made? Was everyone in the college at peace with that too?
 - And what target group are we talking about? Is that also the same target group as in the approach of your municipality?
- Has this remained the same or has the type of approach changed over time?
 - What caused any change?
- Which factors play a role in the choice of the type of policy?
- Is there a focus on cooperation within the municipal organization?
 - Are multiple domains within the municipality involved in the approach?
 - Which domains are they?
 - Does this happen more often within the municipality or is it quite unique when it comes to how the municipality works?
 - What about collaborations outside the municipality, how does the municipality view public-private partnerships?
- Do you think that within your municipality much is done in the short term or long term for overweight and obesity among children?
 - Why was this chosen?
- How can the continuity of the approach on overweight and obesity in children be safeguarded within your municipality and which factors play a role at a strategic level?
 - Who is involved at a strategic level?

Wrap-up

- If you could go back in time to implement the approach on overweight and obesity in children again in your municipality, would you do the approach differently than now?
 - Why different or the same?
- How do you see the policy on overweight and obesity in children in your municipality in the future?
- Do you have an addition about the approach in your municipality that we should definitely include in our analysis?

Appendix 8. Interview guide non-JOGG municipalities

Interview guide for municipalities that do not employ a municipal approach

Introduction

- Introducing interviewer(s): name, study, intern at Voedingsjungle (knowledge and communication agency about nutrition for children).
- Aim of the study: to gain insight into the approach of municipalities with regard to overweight and obesity in children.
- What we will do with the information: the interview will only be used for research purposes. The municipalities can be mentioned as a case in the report, but there will be no names of the persons involved.
- There are no right or wrong answers.
- For the research we would like to record the interview so that we can work it out later. Do you give permission for this? The recording is handled with care and will be deleted after replay.
- The interview transcript will also be sent to you to check whether everything has been understood correctly or whether additions are needed.

Opening

When the recording has started, ask again for permission to record.

- Introducing interviewee: who are you, for which municipality do you work and in which domain, which function, since when?

Part I: focus on the approach

- Is there a municipal approach to combat childhood overweight and obesity in your municipality?
 - If no, this interview guide.
 - If yes, the other interview guide.

Within your municipality there is no specific municipal approach to combat childhood overweight and obesity.

- Is it a conscious choice?
 - If yes, why has it been decided?
- Are there other things that your municipality does / organizes that contribute to the prevention or reduction of childhood overweight and obesity?
 - If yes: what? Why has it been decided to do so? Who is responsible for it?
- Are there other policies aimed at, for example: general health or sports?
 - If yes, from which domain has it been established? What is the target group? Is it targeting the whole city or just particular neighborhoods? How was this policy established?
 - Are there multiple domains involved? If yes, what domains exactly?

Agenda setting

- Is childhood overweight and obesity – apart from the fact that there is no municipal approach – an issue that is receiving attention within the municipality?
 - Is there a sense of urgency?
 - If yes, why did this sense of urgency not lead to a municipal approach yet? How do you see this in the future?
 - If not, why not?
 - Are there other prioritized issues or issues with a higher sense of urgency?
- Is there any data available about childhood overweight and obesity from for example the health services (GGD).
 - If yes, is this data shared with the municipality? How? Does the municipality use the data?

Other organizations

- Are there interventions within your municipality that contribute to the prevention and reduction of childhood overweight and obesity? Examples are: B-Fit, B.Slim and The Healthy School.
 - If yes: which organization(s) and / or partie(s) organize(s) these interventions (GGD, school)? Does the municipality have any insight into the results of these interventions?
- Are there any activities organized within your municipality with the aim to contribute to the prevention and reduction of childhood overweight and obesity?
 - If yes: which organization(s) and or partie(s) organize(s) these activities?

Wrap-up

- When you think about the future, do you think your municipality will deal with childhood overweight and obesity in the same way?
 - If yes, why?
 - If not, why not? What will change in your opinion?
- Do you have an addition about the topic that we should definitely include in our analysis?

Interview guide for municipalities that employ a municipal approach other than JOGG

Introduction

- Introducing interviewer(s) proposals: name, study, intern at Voedingsjungle (knowledge and communication agency about nutrition for children).
- Aim of the study: to gain insight into the approach of municipalities with regard to overweight and obesity in children.
- What we will do with the information: the interview will only be used for research purposes. The municipalities can be mentioned as a case in the report, but there will be no names of the persons involved.
- There are no right or wrong answers.
- For the research we would like to record the interview so that we can work it out later. Do

you give permission for this? The recording is handled with care and will be deleted after replay.

- The interview transcript will also be sent to you to check whether everything has been understood correctly or whether additions are needed.

Opening

When the recording has started, ask again for permission to record.

- Introducing interviewee: who are you, for which municipality do you work and in which domain, which function, since when?

Part I: focus on the approach

- Is there a municipal approach to combat childhood overweight and obesity in your municipality?
 - If yes, this interview guide.
 - If no, the other interview guide.

Municipal organization & political support

- Why was this approach chosen?
 - What factors play a role by making a choice for an approach to combat childhood overweight and obesity?
 - Was everyone in the municipal council in favor of the approach?
- When was the program implemented?
 - Has the approach always been the same or has there been a different approach in the past? If changed: why?
- Which domains are involved in the approach to combat childhood overweight and obesity?
- Who is responsible for the implementation of the approach?
 - Is this a central person? If yes: where does this person work? (GGD, sport organization)
 - How many hours are available?
- Did your municipality identify a target group? For example, children between zero and four years, certain neighborhoods or environments (school, sport associations)
 - If yes: how was this decision made?
 - If not: why not? Conscious choice?
 - What is the budget?

Collaborations

- There are various parties with which partnerships may be concluded with regard to the policy on childhood overweight and obesity: (i) social partnerships, (ii) academic collaborations, and (iii) public-private partnerships (PPP).
 - With which organizations does your municipality collaborate regarding the municipal approach to combat childhood overweight and obesity?
 - Can you tell a bit more about how this collaboration arises and progresses?
- Are there goals regarding the collaborations?
 - Does the municipality monitor the goals?

Activities

A policy can help to carry out various activities with the aim to combat childhood overweight and obesity in a municipality. This concerns interventions and activities within the approach that focus on prevention or care of childhood overweight and obesity.

- When it comes to prevention: what does your municipality organize?
 - Why and how?
- When it comes to care: what does your municipality organize?
 - Why and how?

Communication

Municipalities use multiple ways of communication about the approach to combat childhood overweight and obesity, for example with a name. Examples are: B-Slim and Youth at a Healthy Weight (JOGG)

- How do you communicate within the approach towards the target group?
 - How do you communicate towards the parties that play a role in the approach?
 - How do they know what they need to know?
 - How do parties know from each other what is happening, what the plans are and what each party is doing?
- What is going well in this municipality when it comes to communication?
- What is experienced as difficult when it comes to communication?

Monitoring and evaluation

- What does your municipality do when it comes to monitoring and evaluation of the approach to combat childhood overweight and obesity?
 - Why, how and by who?
 - What are the benefits for the municipality?
- What do you know about the efficiency of the approach?
 - Are there any results? If yes: which results?
- How does the municipality ensure that the approach of childhood overweight and obesity stays efficient and appropriate?

Integrated municipal approach

- Would you say that the approach in your municipality is an integrated approach?
 - Why?

Part II: Deepening at policy level

Agenda setting

Policy can only be made if an issue is given enough attention and placed on the political agenda (Hendriks et al., 2013).

- How did overweight and obesity among children in your municipality come up on the agenda, what was the reason for this?
 - How does that work? How and by whom are the figures supplied? Who receives those figures (at what level) and how are those figures shared within the municipality?
 - When is it determined that action will be taken based on those figures and by whom? How does that work, can you describe it?
 - How important is childhood overweight and obesity as a theme within your municipality? And why is it important?
- Which persons or parties were involved in the agenda setting of overweight and obesity among children? How did that go back then, can you describe the process? Who took the lead in this?
 - Were all persons or parties on the same page regarding the sense of urgency of the matter? And who or what were those persons or parties? (job level for example?)

- If so, what did this show? What is the reason for this shared sense of urgency?
- If not, how has this been handled (to get everyone in the same direction)?
- How did support for the approach aimed at overweight and obesity among children come about within the college? Can you describe that? How does such a thing go?
 - What was important in this?
 - Did that go smoothly or were there any limiting factors?
- What contributed to the process of setting the agenda?
- What contributed converting this agenda setting into an approach aimed at overweight and obesity among children? Can you tell us more about that?
- What hindered the agenda setting?
- How does overweight and obesity in children remain on the agenda in your municipality? Is someone or a party responsible for this? How does that work? Can you describe that?
 - What is facilitating or hindering in this?

Leadership

- Who is in charge of the development and implementation of the municipal approach on overweight and obesity in children?
 - Is this a central person in the entire approach or is it subdivided into multiple organizations or levels?
 - Why has (one person or more) been chosen?
- How is capacity made available for policy on overweight and obesity in children? (such as persons, hours, financing)
 - By whom, how does that work? Who decides that? For what period will capacity be made available?
 - Which factors promote or hinder this?
- Is there a steering committee with regard to the municipal approach on overweight and obesity in children?
 - If so, who are in the steering committee and are these also the parties that were

- intended for the establishment of the steering committee? Why was this steering committee chosen and what is the aim of the steering committee? What does the steering committee do?
 - If not, why not?

Policy formulation

Health policy such as the approach on overweight and obesity in children can take different forms, where on the one hand the focus can be on the long-term approach, while on the other hand there is more focus on individual interventions and the connection between them.

- Which vision is central to the approach on overweight and obesity in children in your municipality?
 - Can you explain that?
 - Long term vs short term
- Which factors play a role in the choice of the type of policy?
- Is there a focus on cooperation within the municipal organization?
 - Which domains within the municipality are involved in the approach?
 - Does this happen more often within the municipality or is it quite unique when it comes to how the municipality works?
- How can the continuity of the approach on overweight and obesity in children be safeguarded within your municipality and which factors play a role at a strategic level?
 - Who is involved at a strategic level?

Wrap-up

- If you could go back in time to implement the approach on overweight and obesity in children again in your municipality, would you do the approach differently than now?
 - Why different or the same?
- Do you have an addition about the approach in your municipality that we should definitely include in our analysis?

Appendix 9. Summary table literature review on Dutch municipal approaches to combatting childhood overweight and obesity

Element	Studies	Description	Barriers	Facilitators
Activities	8 / 13: <ul style="list-style-type: none"> - ter Beek and Heinrich (2018); - van Dee and Maan (2014); - Kloek and Oudkerk (2012); - van Koperen et al. (2018); - Naul et al. (2012); - Overtoom and Collard (2017); - Visscher et al. (2014); - Wilderink et al. (2020) 	Activities are being organized locally and regionally. Most of those are focused on the theme of exercise, followed by nutrition (eating fruits and vegetables, drinking water) and then sleep. Some activities also connect both exercise and nutrition. Interventions are mostly implemented in collaboration with primary schools in the forms of physical/ nutritional activities, health-enhanced physical education and health and nutrition education (curricular, co-curricular, extracurricular). A single approach specifically mentioned interventions implemented in neighbourhoods and in the environment of children. Activities target both children, mostly aged 4–12-year-old, and parents (with or without their children).	Reaching children 0-4 years old and the age group of 12+.	<ul style="list-style-type: none"> - Emphasizing context-based and evidence-based interventions equally; - Joining national activities where possible or needed in the context; - Building on 'what is already there'; - Involving parents together with their childr(en); - Organizing sports activities for overweight children apart from children with normal weight to reduce shame; - Adjusting physical activities to abilities.
Community involvement	7 / 13: <ul style="list-style-type: none"> - Collard et al. (2019); - van Dee and Maan (2014); - European Commission (2018); - Fransen et al. (2012); - Slot-Heijs et al. (2020); - Visscher et al. (2014); - Wilderink et al. (2020) 	It is considered important to involve citizens from the start of organizing an event or project and if possible, throughout the whole process (design, organization, execution and evaluation). It is not clear to what extent this is practiced in the approaches. The Zwolle Healthy City approach states that they have involved citizens in the organization and execution of specific interventions. In the JOGG approaches, practical examples and locations are provided to employees on how and where to reach certain groups. In 2018 at least 83% of the JOGG municipalities have taken the first steps for citizen involvement. In certain approaches focus neighbourhoods are given specific actions and interventions suited to the locality. Involvement of parents is generally achieved. The social norms towards a healthy lifestyle are changing positively.	Processes taking to long; Citizens not desiring to fully organize and be responsible for projects.	<ul style="list-style-type: none"> - Involving citizens in small steps; - Converting citizen's input into action quickly; - Having a professional taking a leading or facilitating role for the community; - Having community support for a healthy

Element	Studies	Description	Barriers	Facilitators
Connecting prevention and care	6 / 13 - ter Beek and Heinrich (2018); - Collard et al. (2019); - European Commission (2018); - Overtoom and Collard (2017); - Slot-Heijs et al. (2020); - Visscher et al. (2014);	Many steps are being taken to implement a chain approach in municipalities to link prevention and care. 83% of JOGG-directors indicate that they have started with linking prevention and care and 45% of them are working on setting up a chain approach in the municipality. Networks are established where activities or methods (in the theme of overweight) of partners are coordinated and connected. Detection instruments and online referral tools are created to facilitate prevention, early signaling and efficient referral of overweight children and their parents to appropriate care. E-learning and mini conferences are organized to inform the municipality and local professionals about the chain approach.		lifestyle; - Taking schools as a primary partner. - Using a chain approach; Multidisciplinary collaboration; - Raising awareness on the available instruments; - Combining practice and research; - Focusing on the client and their perspective; - Making use of shared decision making.
Integral collaboration	6 / 13: - ter Beek and Heinrich (2018); - European Commission (2018); - Naul et al. (2012); - van Koperen et al. (2018); - Slot-Heijs et al. (2020); - Wilderink et al. (2020)	Within municipal government: Roles of various departments in battling childhood overweight are recognized and partnerships are formed to integrate municipal departments, mostly of Health, Wellbeing and Education. This is achieved through using different communication channels as well as setting up meetings with steering groups in which different municipal domains are represented. Diverse partnerships Links are made between complementary programs in municipalities. Robust partnership networks have been established between local stakeholders in the fields of welfare, care, civil society, sports, and academics. Transparent cooperation is facilitated through different communication channels as well as setting up meetings with steering groups in which different stakeholders are represented.	Within municipal government: Long decision-making processes within the municipality and its departments. Diverse partnerships: With a non-hierarchical structure, a sense of a clear task is sometimes lacking for the local stakeholders and there can be confusion about roles. This works in a paralyzing way and does not benefit collaboration.	- Having a common goal; - A health in all policies approach; - Clear cooperation agreements and guidance at different levels; - Active engagement with all stakeholders.

Element	Studies	Description	Barriers	Facilitators
Leadership	2 / 13 - European Commission (2018); - van Koperen et al. (2018)	There is mention of effective cross-departmental coordination and engagement by leaders at different levels: administrative, official and executive. AAGG leaders are action-oriented and seek improvement.		<ul style="list-style-type: none"> - Clear communication and vision; - Enthusiasm and passion for the cause; - Being critical; - Close ties (formal and informal) with other levels of leadership; - Adapting the leadership style to the current phase; - Celebrating and sharing successes; - Connecting with informal leaders/ key figures of a neighbourhood to acquire citizen support.
Learning approach	8 / 13: - ter Beek and Heinrich (2018); - Collard et al. (2019); - European Commission (2018); - van Koperen et al. (2018); - Overtoom and Collard (2017); - Slot-Heijs et al. (2020); - Visscher et al. (2014); - Wilderink et al. (2020)	Monitoring and evaluation are done locally and also regionally through meetings of shared evaluation of progress and experiences. Approaches repeatedly use (online) progress tools throughout the year (3-4 times annually). There is more focus on monitoring and evaluating results and less on the process. Significantly more public documents were published by JOGG on local evaluation (40% compared to 17%). The Zwolle Healthy City approach states that 10% of the budget for interventions should be spent on monitoring and evaluation, but this is not done for most interventions. Some approaches mention partnering with knowledge institutions for research purposes.	Visible results take long; No consensus on the importance of monitoring or evaluating; Questionnaires can be very labour intensive; Other factors can also contribute to effects that are measured, not solely the activities and interventions undertaken.	<ul style="list-style-type: none"> - Goal setting; - Developing simple tools for local monitoring and evaluation (process and results); - Researching the successful elements of the approach; - Transparency and circulation of research results; - Raising awareness on the importance of evaluation; - A research group as a partner.
Marketing	5 / 13: - Collard et al. (2019); - van Koperen et al. (2018); - Overtoom and Collard (2017); - Visscher et al. (2014); - Wilderink et al. (2020)	Marketing activities are aimed at both the target group as well as at the corporate level to keep a healthy lifestyle and a healthy environment on the agenda of politicians, social partners, business, policy and the media. Efforts have mainly been made to reach primary school children and few activities have been undertaken to market to children aged 0-4 years and children in secondary education. Campaigns to reach parents with low socio-economic status have not been successful. Various channels are being used (website, social media forms). Partners are informed on the basic principles of social marketing through workshops.	Children in secondary education are hard to reach; Citizens do not notice whether an activity is part of the approach or not.	<ul style="list-style-type: none"> - Use of varying (social) media channels; - Monitoring the effects of communication activities; - Adapting campaigns to the interests of the target group; - Creating a unique style using graphics and simple language for recognizability; - Communicating the approach as a mission instead of a project.

Element	Studies	Description	Barriers	Facilitators
Support	5 / 13: - ter Beek and Heinrich (2018); - Collard et al. (2019); - Overtoom and Collard (2017); - Visscher et al. (2014); - Wilderink et al. (2020)	A checklist has been created for JOGG directors to monitor support on different levels. However, there are no significant differences in progress on this subject between 2016 and 2018. Almost all directors have taken steps towards improvement. Approaches are being included in various policy documents of the municipalities and of participating organizations. During implementation municipal executive councillors from the public health domain and other domains (e.g., sports, urban planning and the social domain) help working towards a healthy city.	Lack of knowledge on levels of support by staff; Fragmentation in the approach.	<ul style="list-style-type: none"> - Giving someone special responsibility for this pillar; - Government involvement; - Enlarging parental involvement; - Lobbying actively and joining meetings in a wide variety of policy sectors;
Public-private collaboration	5 / 13: - Collard et al. (2019); - Overtoom and Collard (2017); - Slot-Heijs et al. (2020); - Visscher et al. (2014); - Wilderink et al. (2020)	5 regional meetings were organized for JOGG directors about furthering cooperation and forms of cooperation between public and private partners. A positive trend is visible in the proportion of municipalities that have taken their first steps for public-private collaboration. On average, JOGG directors indicate to work with 8 public or private partners but the percentage of JOGG municipalities that work together with public partners has remained equal between 2016-2019 (94%). Think tanks have been organised with partners.	Difficulty collaborating with organizations that facilitate an unhealthy environment (have different interests).	<ul style="list-style-type: none"> - Having a clear vision for collaborations; - Short ties with partners and clear rules for collaboration; - Giving organizations the freedom to articulate how they could contribute to the goals of the approach; - Adopting a mutual gains approach.
Systematic approach	2 / 13 - ter Beek and Heinrich (2018); - van Koperen et al. (2018)	Local working groups have been set up to tackle different parts of the problem and work is being done more systematically based on shared objectives. The AAGG approach divided its approach into 10 clusters and its target group into 4. There is commitment to health in all policies.		<ul style="list-style-type: none"> - Setting long-term programme goals for different facets of the problem; - Preserving management and cohesion of the whole approach; - Using a neighbourhood focused approach.

Exploring potential avenues for translation of findings to low- and middle-income countries (LMICs)

1. Introduction

The main findings from this analysis on the Dutch approach seem relevant not just to the Netherlands, but also to other countries. The NWGN's mission is to ensure Dutch stakeholders include nutrition in their policies and programs targeting the Sustainable Development Goals. As various organisations that are part of the NWGN focus their work on LMICs, we aimed to explore how the findings may provide first insights on a high-level context in LMICs. For this we compiled an additional desk research and interviewed eight international experts who are involved with nutrition programming in LMICs. More information on the experts interviewed can be found below under Methods. A first exploration, using desk research and interviews, was conducted into how the insights from the study on the Dutch approach may be relevant in the context of LMICs. While we think that high-level learnings from the Dutch approach are useful and relevant for other

countries and local contexts it should be noted that this addendum provides only exploratory insights. To gain a solid understanding of how the findings can be translated to LMICs, greater emphasis on contextual evidence-based adaptation in LMICs would be of critical importance.

In addition to this first exploration, in collaboration with GAIN and JOGG, the NWGN also organised an Independent Dialogue discussing the possibility to translate urban lessons to combat childhood overweight and obesity to a wider context, following the framework provided by the UN Food Systems Summit; the report of this dialogue can be found in Addendum 2.

2. Methods

This part of the Urban Learnings project focused on exploring avenues for translating and adapting the Dutch findings to the needs of LMICs and included a desk research and qualitative analysis (see figure 1).

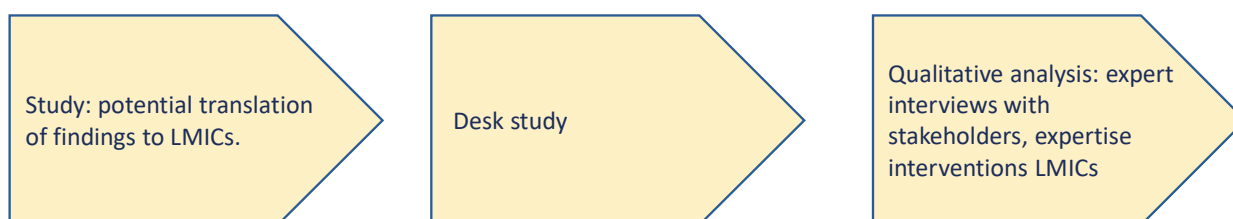


Figure 1. Urban learnings project, avenues for translation

Desk research

To gain insight in the major trends and social determinants of childhood overweight and obesity in LMICs, a literature review of academic publications and international reports was conducted. We used the Dahlgren-Whitehead model to demarcate social determinants of childhood overweight and obesity. This model visualises social determinants of health (SDH) as various layers around individuals (Dahlgren & Whitehead, 1991). With fixed demographic and biological factors placed at the centre, the model includes the following factors as SDH: i) individual lifestyle factors, ii) social and community networks, iii) living and working conditions, and iv) general socioeconomic, cultural, and environmental concerns. The focus of the desk research was on the second and third group of SDH (social and community networks, and living and working conditions), since integrated approaches usually consult and operate at these levels (Huang, Drewnowski,

Kumanyika, & Glass, 2009). While the Dahlgren and Whitehead model is slightly dated, it remains relevant as a conceptual model since it shares similar key characteristics with other models (Graham, 2004). While it has been used to inform and develop integrated municipal approaches to combat childhood overweight and obesity in the Netherlands, in particular the Amsterdam Healthy Weight Approach, its use is continued within various studies of childhood overweight and obesity in LMICs to identify SDH and develop programs. Figure 2 displays the model as adopted for the Amsterdam Healthy Weight Approach (UNICEF, City of Amsterdam, & EAT, 2020). Search terms included childhood overweight and obesity, integrated approaches, and terms relating to individual SDH. Examples of the latter include the food environment, physical activity, sedentariness, etc. Databases used were Google Scholar and PUBMED. Literature and reports were scanned for relevance and then synthesised.



Figure 2. The Dahlgren-Whitehead rainbow model, as adopted by the Amsterdam Healthy Weight Approach (UNICEF, City of Amsterdam & EAT, 2020)

Interviews with experts

To explore first ideas on relevant considerations for implementation of integrated approaches in LMICs, we conducted interviews with international experts who could share expertise working with malnutrition prevention programs in LMICs. An interview guide (Appendix A1) was derived based on findings from the desk research to structure the expert interviews. We aimed to include experts that could share expertise on working with childhood overweight and obesity in LMICs and help identify possible avenues relevant to an integrated approach to combat childhood overweight and obesity. A purposive sampling method was applied to recruit a pool of international experts from the NWGN network and from other non-governmental organisations. The following criteria were followed to find a study population:

- Experts who are familiar with creating, adapting, or recommending policies for malnutrition (and specifically childhood overweight and obesity) in LMICs.
- Experts who have a background on policies and interventions targeted towards undernutrition in LMICs.
- Experts who are familiar with childhood obesity, the nutrition transition, or double-duty actions in the context of LMICs.

We used a thematic analysis approach (Braun & Clarke, 2006) to identify and analyse the major themes and recommendations from the experts. Themes and recommendations were based on recurring patterns identified in the data set or their relevance to the research question.

A total of eight interviews were conducted, with five professionals from the NWGN network and three from outside the NWGN network. Interviewees came from a range of backgrounds, which can be found in Appendix 2. Interviewee backgrounds reflected experience in African, Asian, and Latin American contexts, and were therefore able to capture insights from different regions worldwide. Participants were mainly experts in nutrition, micronutrient deficiencies, food systems, food security and undernutrition.

3. Results

Translating findings from the Dutch context to LMIC contexts, first required to explore the differences in the context of childhood overweight and obesity between the different settings, to subsequently explore considerations for the implementation of integrated approaches. This section is therefore divided in two parts. Section 3.1 outlines the context, major prevalence trends, and social determinants of childhood overweight and obesity in LMICs as obtained from the literature. Section 3.2 presents the results of the interviews on the possibilities and considerations for implementing integrated approaches in LMICs.

3.1 Findings from the literature

The findings of social determinants of childhood overweight and obesity in LMICs are organised by the Dahlgren-Whitehead (1991) rainbow model and are summarized in Figure 3 below. While these are an overarching understanding of SDH in LMICs, they highlight the major contextual differences when considering translation of integrated approaches. Focus was given to the categories of 'familial, social and community networks' (yellow) and 'living and working conditions' (green). Figure 3 therefore demonstrates the environments children are raised in, and the determinants they are exposed to. Further, it informs program adaptation for the context of LMICs.

Familial, social and community influences

Individual choices are firstly influenced by the familial, social and community norms surrounding a child. They construct the immediate settings while also serving as sites of reproducing larger cultural ideals and representing the options and constraints of their socioeconomic status (SES).

- Reactions to being heavier can be indicative of whether actions are taken towards healthier lifestyle choices, and consequently, perception of not being overweight or obese is an important barrier for prevention programs to consider (Jaacks et al., 2017).

- In some communities, especially those with high food insecurity, being a heavier child is considered a sign of family wealth, abundance, and nourishment (Aveces-Martins et al., 2016; Gupta et al. 2012; Jaack et al., 2017).
- Further, in regions battling high HIV prevalence, thinness is often stigmatised and therefore being heavier is considered a sign of negative HIV status (Airhihenbuwa, Ford, & Iwelunmor, 2014; Swinburn et al., 2019).
- These norms are especially pressing when put in the context of changing social environments due to increased globalisation and urbanisation.
 - In some instances, processed foods have even been perceived as higher valued and better for children’s development due to higher food safety standards, making it a preferred option for those who can afford it. However, processed foods also tend to be very energy-dense (Daivadanam, Wahlström, Thankappan, & Ravindran, 2015).
- Due to such associations being made to processed foods, the marketing of breast-milk substitutes towards both mothers and children has been identified as an area of significant concern, as is the case in HICs (Jaacks et al., 2017).
- Familial settings, determined by the SES they belong to, encapsulate the lifestyles and living conditions at home. Factors at the family level influence both the dietary choices and sedentariness of children and are largely the same for LMICs and HICs:
 - The presence of television and technology at home is associated with increased childhood obesity, possibly due to the increased sedentary behaviour it accompanies (Jaacks et al., 2017).
 - With increasing households having two working parents, this may also confine children to indoor activities and resort to fast food options.
 - The use of private vehicles or public transport leads to less need for physical exertion when commuting.

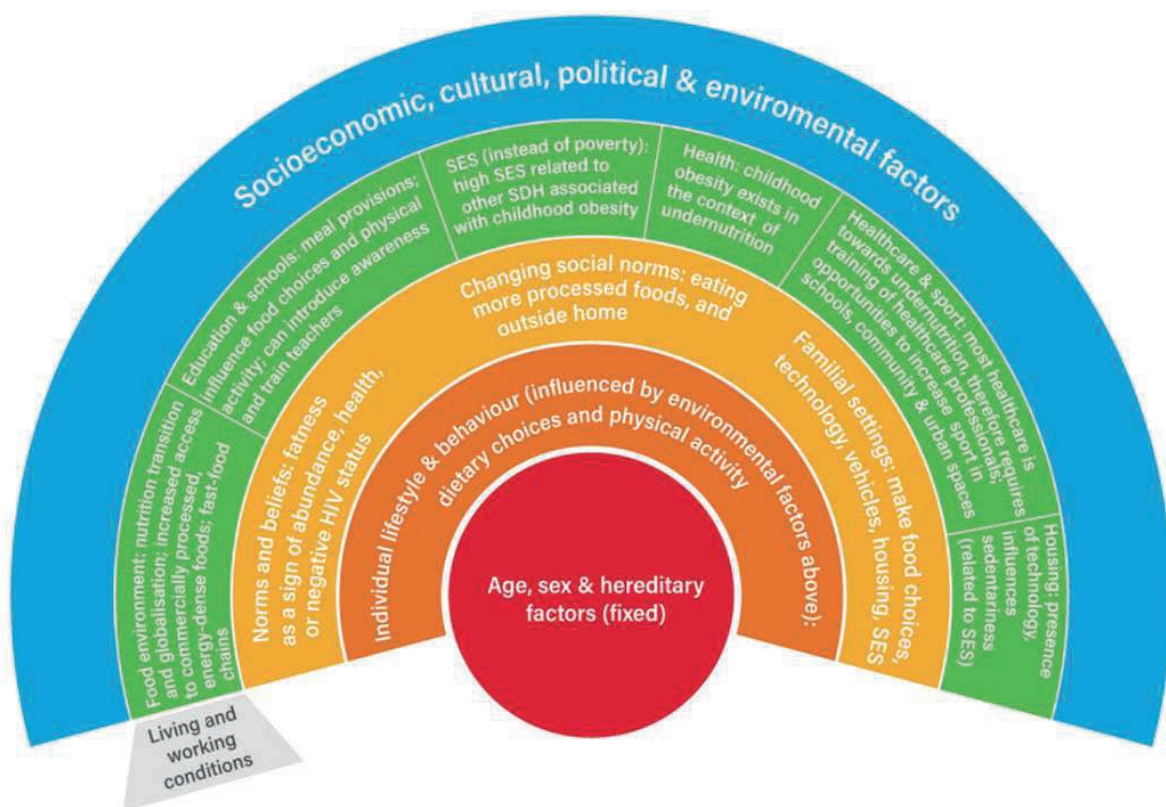


Figure 3. The social determinants of childhood overweight and obesity in LMICs (Dahlengren & Whitehead, 1991)
 SES: socioeconomic status; SDH: social determinants of health; LMIC: low- and middle-income country

Living and working conditions

Following the influence of familial, social and community factors, the surrounding layer details living and working conditions which can shape health.

- Agriculture, food production and the food environment: Transformation of the food landscape can be attributed to several complex changes, as is outlined by the nutrition transition, resulting in a shift in diets.
 - The last few decades have seen an aggregate shift towards more processed, energy-dense foods in LMICs (Popkin, 2015). These are characterised by their limited nutritional value and high calorie content.
 - Eating outside home and drinking more sugar-sweetened beverages has become more common. Hence, the expansion of fast-food chains into LMIC markets is concerning.
 - Addressing the increasing accessibility, convenience, and desirability in the urban landscape requires state regulation to demarcate possibilities vis-à-vis marketing, labelling and tax regulations (Turner et al., 2018).
 - Double duty actions: due to the double burden of malnutrition, research has also identified certain 'double-duty actions' – strategies which can simultaneously target both sides of malnutrition based on common drivers (Hawkes, Ruel, Salm, Sinclair, & Branca, 2020).
 - Emphasising adequate breastfeeding and weaning can not only provide sufficient nutrients to infants, but also reduce the likelihood of developing obesity later in life (Pradeilles, Baye, & Holdsworth, 2019). Here, regulating marketing of instant formula is a complementary strategy to achieve this goal.
 - A focus on promoting healthy, balanced diets would be beneficial for both forms of malnutrition, instead of simply focusing on consuming adequate calories.
 - This also holds for school meal and awareness programs, since accommodating for this small change would allow for larger reach to both forms of malnutrition.
 - Conscious changes to food systems can foster healthier environments and therefore choices for children. At the various levels within a food system, this includes encouragement of agriculture towards diverse and nutritious foods, but also extends to the creation of the urban food landscape and the available options (Hawkes, Ruel, Salm, Sinclair, & Branca, 2020).
- Education and school: schools serve not only as an important site for food choices and physical activity, but also as a channel for creating awareness regarding the same (Singhal, Herd, Adab, & Pallan, 2021, p. 30).
 - Currently, there are several school meal programs implemented in LMICs, but these are usually geared towards undernutrition.
 - School-based interventions targeting dietary and / or physical activity have also been deemed effective for childhood obesity prevention in LMICs.
- Healthcare and sport:
 - Apart from needing more motivation to play outdoors instead of using technology at home, spaces also need to include safe areas to play (Poskitt, 2014).
 - This includes incorporation of open spaces and parks to encourage outdoor activities, as well as cycling tracks to provide this as a commuting option.
 - Such recommendations of being more physically active and eating a balanced diet also need to be promoted by healthcare professionals.
 - Most healthcare efforts are directed towards the more predominant issues of undernutrition. Hence, healthcare workers also need to be trained to provide adequate guidance and information for childhood obesity prevention.
 - This would allow for an additional avenue to influence children (and parents) towards healthier options and for healthcare to be targeted towards all forms of malnutrition.
- Poverty and socioeconomic status (SES): This is an important determinant to consider because of its association with other determinants, and because it is often positively

correlated with childhood overweight obesity in LMICs. This positive correlation diametrically opposes what is often observed in HICs, making it a crucial point of difference for the sake of translation of integrated intervention approach recommendations. Hence, while the Dahlgren-Whitehead (1991) model adopted by Amsterdam Healthy Weight Approach mentions 'poverty' as one of the social determinants (figure. 2), the broader term SES is more appropriate for the case of LMICs (as per original Dahlgren-Whitehead (1991) model in figure 3).

- Higher affluence affects several aspects of life, some of which can be correlated to increased incidence of obesity in children. This association can be attributed to an overall shift in energy expenditure, which is composed of increased access to energy-dense foods and less need for physical activity (Poskitt, 2014).
- As mentioned previously, this entails resorting to convenient and desirable options of energy-rich processed food products and living a more sedentary life due to gadgets and modes of transport.
- Consequently, childhood obesity is more prevalent in private schools, although a double burden is more likely in public schools (Poskitt, 2014). Thus, implementation of integrated approaches in LMICs need to account for this difference in demographic and tailor to it appropriately.
- Based on this difference in SES, opting for energy-dense foods in LMICs may not be only because it is more affordable, but potentially because it has a better appeal for the reasons mentioned above (Daivadanam, Wahlström, Thankappan, & Ravindran, 2015). Hence, a considerable effort needs to be geared towards communicating and creating awareness of what less nutritious foods represent.

3.2 Findings from the interviews

The interviews were designed to explore the main considerations for translation of integrated approaches to combat childhood overweight and obesity to the context of LMICs. These are presented below.

Acknowledging the context of all forms of malnutrition

- Experts considered the context of malnutrition in LMICs as changing, due to increasing rates of childhood overweight and obesity in addition to existing high prevalence of undernutrition. This was described as the double or even triple burden of malnutrition, with coexisting undernutrition, overweight/obesity and micronutrient deficiencies.
- Due to this, experts emphasised the need for an integrated approach to acknowledge these coexisting forms of malnutrition. Moreover, it was explained that parallel strategies to address undernutrition and overweight should be avoided.
 - This was noted as a significant challenge in translation, since it is more complex to create such a program, and since learnings from HIC contexts need to adapt to account for the double or triple burden of malnutrition.
 - Possible strategies for this included double-duty actions, such as exclusive breastfeeding, complementary feeding, maternal health, and nutrition, etc.

The potential role of SES in influencing strategies

- A scant but relevant theme identified was the role of SES in influencing strategies. Interviewees mentioned both mechanisms: of childhood overweight/obesity being either negatively or positively associated with SES, depending on country context.
- Based on such contextual differences within the LMICs, an expert mentioned the importance of the association with SES and the need for adaptable integrated approaches.

Agenda setting: getting child overweight and obesity and an integrated approach on the political agenda

- The political setting in LMICs was described in the interviews as generally arranged in a top-down manner, with more centralised governments. Therefore, it was expressed

that local authorities may be accountable to central governments, and ministries may be accountable to local authorities. This should be taken into account when considering which level the integrated approach can be on the agenda. Government strengths and capacities may also need to be considered to see whether they are compatible with this approach. The following considerations were mentioned:

- Governments in LMICs may still be preoccupied with the unfinished agenda of undernutrition. In addition, governments may focus more on shorter term priorities instead of focusing on obesity prevalence which is increasing but still not the primary form of malnutrition.
- Getting an integrated approach on the agenda requires aligning with current priorities, therefore childhood overweight and obesity need to be illustrated as a problem which affects children's futures, increases future health care costs, and decreases future country productivity.
- The lack of childhood overweight and obesity prioritisation on the agenda may also be because it is seen as an individual's responsibility, therefore it needs to be presented as a societal problem which needs structural addressing.

It should be noted that the above considerations are only based on a small number of interviews and are not exhaustive.

- There is a lack of LMIC-specific data to illustrate these associations. Hence, overcoming these barriers requires tailored country and context studies. The role of academia thus becomes important here.

Public-private partnership and engagement

- Private actors within an integrated approach can provide resources, create availability or demand for nutritious foods and increase community awareness and education, for example through campaigns focused on nutritious foods. Hence, this was identified as an effective partnership for project implementation.

- The importance of looking beyond partnerships to fully engage the private sector was emphasised. This comes in the form of engagement of private partners who have the scope to improve and influence nutrition, such as workforce nutrition and awareness. Furthermore, looking beyond partnerships, setting regulations on food compositions, labelling, and marketing towards children were also identified as important aspects.
- It was noted that public-private partnership or engagement may look different in LMICs, since the business sector may be fragmented and unregulated, and businesses may each have less market share. This also poses issues for regulation, since food systems may be fragmented, and households may shop at a variety of shops and informal markets or vendors.
- In addition, an additional actor within the LMIC private sphere that could be identified were the multinational companies which directly and indirectly influence nutrition through supply chains. A few experts mentioned factories, supply chains, and global companies as potentially important places to regulate and engage with for better nutrition and implement double-duty actions.

Civil society and community involvement

- Civil society was identified as having an important role as a good representation of the community and its ability to increase the long-term sustainability of the program. Furthermore, its importance for community perception of the program and public-private partnerships was also noted.
- Another theme that came up was the need to involve children in the creation of the program, to ensure it is designed around their own needs and wishes and therefore will be more likely to succeed.
- Another consideration was that civil societies in LMICs may also be focused solely on undernutrition and low socioeconomic households. Hence, efforts may need to be put

to bring childhood overweight and obesity on their agenda as well.

- Finally, the role of national and international non-profit organisations was also deemed important in LMICs. This was attributed to their ability to not only have a large reach for targeting malnutrition, but also to having the potential to get childhood overweight and obesity on the agenda and lend resources to tackling it.

4. Reflections

While we assume that the findings from the Dutch approach can provide first, high-level insights for LMICs, a solid understanding and greater emphasis on the critical importance of contextual evidence would be needed to provide possibilities to adapt any approach in a LMICs context. In many LMICs, childhood overweight and obesity are rising alongside the already well-acknowledged occurrence of undernutrition, or malnutrition in general. Lessons from the Dutch context cannot be translated to such context without taking the double burden of malnutrition into consideration. When prioritising an integrated approach, care should be taken not to run parallel initiatives, but to instead tackle both issues in the same approach. To acknowledge the double-burden, approaches should integrate double-duty actions targeting both undernutrition, as well as overnutrition and including micro-nutrient deficiencies. These can be implemented through a variety of avenues. The experts interviewed here mentioned that schools are an important avenue as a large number of children can be reached. Also multinational corporations are important in influencing diets of children. Double duty actions entail a considerable challenge when translating lessons from HIC contexts but would allow for a more appropriate integrated approach for LMIC contexts.

Getting an integrated approach on the political agenda in LMIC, contexts may be especially challenging for several reasons. Adopting this long-term vision for childhood overweight and

obesity prevention is already challenging for HICs but may also be challenging for LMICs. There may be an additional barrier that political actors in LMICs may not recognise childhood overweight and obesity as an issue compared to other forms of malnutrition. In addition, childhood overweight and obesity may be seen as an individual's responsibility and therefore the societal need for structural and environmental changes may be overlooked. Overcoming these barriers in prioritisation requires LMIC- and country and context-specific data to illustrate how childhood overweight and obesity must also be addressed, how it poses issues for future generations and the economy, and how it can be tackled in an integrated manner with other forms of malnutrition. Beyond prioritisation, the political setting may be different from that of HICs and must therefore be considered for integrated approach implementation. Governments in LMICs may be arranged top-down with more centralised authorities. The strengths and competencies of local governments would also need to be considered for compatibility with an integrated approach. Lastly, getting structural funding and resources may pose a challenge in LMIC contexts.

In LMICs, public-private partnerships may be particularly important in providing resources if structural governmental funding is difficult to obtain. However, public-private partnership may be difficult to implement or may lack efficiency due to private sectors being more fragmented and unregulated. Ideally, public-private partnerships would include partners with mutual interests, for example partners that provide funding for agricultural activities around schools. Furthermore, involving civil society in an integrated approach would be important not only to provide a local context, but also to contribute to the long-term sustainability of the program. However, a possible barrier could be that civil societies in LMICs are more geared towards undernutrition prevention. Hence, childhood overweight and

obesity must also be introduced as an issue for civil societies to turn their attention to.

While findings illustrate the basic differences between HIC and LMIC contexts, it should be noted that the above findings are merely a first exploration and more thorough research is needed. In the translation of lessons, it is important to consider the specific context and location within LMIC regions which obviously affect the adaptability and appropriateness of Dutch lessons. A crucial consideration here is the association between SES and childhood overweight and obesity. Literature that was consulted for this exploration, provide pointers towards a higher occurrence of childhood overweight and obesity in higher SES groups in LMICs, due to urbanisation and changing food environments which calls for greater adaptations of Dutch lessons. However, integrated approaches from HIC contexts may be more adaptable for regions in LMICs where childhood overweight and obesity occur in a similar way, i.e., in low SES groups. The context and determinants of childhood overweight and obesity in some countries in Latin America may more closely reflect those of HIC contexts (Abarca-Gómez et al., 2017). These variations must therefore be considered in the process of translating findings.

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Appendix A1. Interview guide experts for translation of Dutch learning to LMICs

Introduction

- Introducing interviewer(s): name, study, intern at Voedingsjungle (knowledge and communication agency about nutrition for children).
- Aim of the study: to understand the context of childhood obesity in LMICs and explore possibilities for an integrated community-wide intervention approach (ICIAs), such as JOGG in the Netherlands.
- What we will do with the information: the interview will only be used for research purposes. All names and organization information will be anonymized.
- There are no right or wrong answers.
- For the research we would like to record the interview so that we can effectively transcribe and analyse it. Do you give permission for this? The recording is handled with care and will be deleted after replay.
- When the recording has started, ask again for permission to record.

Part I: background

- Introducing interviewee: could you please introduce yourself briefly and explain what your current profession and organization is?
- Could you give me a brief background about your experience working with LMICs?
 - What is your organization's focus with regards to LMICs?
 - Does your (organization's) experience pertain to specific countries within LMICs?
- How would you conceptualise the term LMICs?
- Could you briefly explain how you understand malnutrition in the context of LMICs?
 - Is this different from how you understand this in HIC's
- Could you elaborate on the prevalence of childhood obesity specifically in LMICs?
 - Is this different from what you see in HIC's?

- What factors would you attribute this to?
- What kind of interventions come to mind for childhood obesity prevention? Are you familiar with ICIAs to combat childhood obesity?
 - What is your understanding of this approach?
 - What do you think of their usefulness or appropriateness to combat childhood obesity?

Part II: Frameworks of implementing ICIAs in LMICs

- How do you understand the scope and appropriateness of ICIAs with regards to LMICs?
 - What do you think would be the main challenges or barriers to implement this approach?
 - What would be needed to get the topic of childhood obesity on the agenda of policy makers, if it is not currently
- What are the crucial steps or considerations to get an ICIA on the political agenda?
 - Have you experienced this process of getting such a topic on the agenda?
 - What were the most crucial aspects for that?
 - Which people with which roles were important for this process? What are the main learnings?
- How does civil society collaboration play a role for the implementation of an ICIA?
 - What collaborations are important at the civil society or municipality level?
- How important is collaboration with academia important for the implementation of an ICIA?
 - How can academia facilitate or contribute to ICIA implementation?
- How is public-private partnership in an ICIA perceived?
 - How does this operate in specific LMICs, if you have any examples?
 - What is the scope of commercial collaboration for ICIA implementation?

- What are the main considerations and challenges to keep in mind for monitoring and evaluation of an ICIA?

Part III: Adapting recommendations or ICIA's

- What would you say are important elements for an ICIA to be effective in LMICs? / How do you conceptualise an effective and successful ICIA against childhood obesity in LMICs?
- *What are potential avenues to reach out to target populations in communities?
 - JOGG is targetted towards primary schools since all Dutch children are obliged to attend; how is this comparable to LMICs?
 - Are there perhaps any other surroundings which would be appropriate avenues to use in an ICIA?
- *Are there any existing frameworks in place for undernutrition / malnutrition programs which could be relevant to introducing ICIA's for childhood obesity?
 - How can such existing frameworks be utilized for ICIA's specifically for childhood obesity?

- How can the people in a child's direct surroundings, such as their family and teachers, be encouraged to cooperate within an ICIA?
- Since ICIA's are developed for context-specific social determinants of childhood obesity, are there any particular avenues or social determinants of childhood obesity which would be more or less applicable to LMICs?

Part IV: Conclusions

- *What do you think are the key considerations when adapting ICIA's to the context in LMICs?
 - How can these elements be adequately adapted?
 - What do you think are the biggest challenges when adapting ICIA's to the context of LMICs?
 - How can these challenges be worked around?
- What would be your 'key advice' for anyone who wants to inspire a city of a LMIC to implement ICIA's on malnutrition / childhood obesity?
 - How can these results be effectively disseminated to the right audience?

Appendix A2. List of experts for translation of Dutch learnings to LMICs

1. (NWGN) Nutritional food security advisor at an international humanitarian and development organization
2. (NWGN) Research director at an independent organization which evaluates food manufacturers
3. (NWGN) Nutrition advisor at an international humanitarian organization
4. (NWGN) Lead fortification scientist at a multinational consumer goods company
5. (NWGN) Executive director at a micronutrient-focused organization
6. Nutrition specialist at an international social welfare organization
7. Head of nutrition and food safety office at an international public health agency
8. Director of health and wellness initiatives at an international network of retailers and manufacturers

UNFSS Official Feedback Form of the Independent FSS Dialogue

An independent dialogue was organized on 17 June 2021 to gather insights in how the lessons of employing urban systems approaches to combat childhood overweight and obesity can be translated to a wider context. This dialogue was part of the United Food System Summit process. The feedback form can be found on the UNFSS gateway on:

<https://summitdialogues.org/dialogue/20038/>.

