Chapter 17

Framing DOHaD for Policy and Society

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17.1 Introduction

Developmental Origins of Health and Disease (DOHaD) research has shown that social, economic, and environmental experiences and exposures in early life greatly affect an individual's ability to develop, grow, and experience long-term health and well-being. Recently, the focus has moved from animal and biomedical studies on DOHaD mechanisms [1] to the translation of research findings into wider public health intervention and policy. The DOHaD concept has gained some international attention in the last 10 years, for example figuring prominently in reports from the World Health Organization (WHO), including the Commission on Ending Childhood Obesity [2]. At the same time, a lack of clear strategies to implement the concept has led to only partial translation into policies, public health interventions, and clinical practice [3].

When communicating with policy and other audiences, researchers usually engage in a practice known as 'framing'. Framing is a concept from communication studies, social psychology, and sociology that is based on the premise *'that an issue can be viewed from a variety of perspectives and be construed as having implications for multiple values or considerations'* [4, p. 104]. Framing is an act of communication that presents a specific view and thereby '*enables individuals to organize experience, to simplify and make sense of the world around them, and to justify and facilitate collective action*' [5, p. 183]. Frames can highlight specific aspects of an issue or solution and implicate particular moral judgements [6]. Frames are collectively shared and persistent, often developing over time, but can also be used strategically to champion specific interpretations of facts and to promote specific avenues for collective or policy action. The concept can be used as a tool to understand how scientific facts are ordered and presented, thus imbuing them with meaning and values when communicating findings to policy and society (see also Kenney and Müller in this volume).

In this chapter, we investigate how DOHaD researchers and interdisciplinary networks rooted in the DOHaD paradigm frame their research in attempts to translate it into policy, and we discuss the potential and challenges of these frames. We first provide a brief overview of prevalent forms of framing in DOHaD more generally before we discuss two empirical examples in which some of the authors have been involved.

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We conclude by highlighting opportunities to frame DOHaD messages in a social justice framework, and we propose directions for future research and advocacy.

17.2 Overview of Common DOHaD Frames

Other contributions to this handbook discuss at length how DOHaD science has been and continues to frame its findings. Hanson and Buklijas show how a social medicine frame was prominent in the formation of the early DOHaD field. David Barker's work, for instance, had a strong focus on how social and health inequalities are linked and perpetuated, and Barker was centrally involved in efforts to promote social policies aimed at reducing inequities in health. This frame, with its strong focus on social determinants of health, was increasingly replaced by a biomedical frame that foregrounded individual and somatic factors, particularly the maternal body. According to Hanson and Buklijas, this 'telescoping' [7], from social conditions to dietary components and molecular pathways, has been the result of broader socio-political contexts and a related restructuring of DOHaD as a firmly biomedical field.

The foregrounding of different causal factors within a DOHaD frame is tied to how responsibilities are distributed and to who is regarded as the most pertinent agent for action. Chiapperino et al., also in this handbook, highlight the 'paradox' that DOHaD research communication, while often rhetorically acknowledging social determinants, still in practice often focuses on individual responsibility for action, especially targeting women's dietary and other health behaviours [8, 9]. The frames used for communication to the general public about preventing non-communicable diseases (NCDs), for instance, through the media, largely emphasise individual behaviour change (particularly mothers' lifestyles, weight loss, and diet modification) and diminish the role of other agencies (e.g. food industries and marketing) [10]. Framing DOHaD findings in a way that emphasises women as primarily responsible for their offspring's healthy development has been criticised as promoting maternal blame and stigma. Richardson et al. (2014) in a critical article wrote that 'exaggerations and over-simplifications are making scapegoats of mothers, and could even increase surveillance and regulation of pregnant women' [11].

Many DOHaD researchers welcome this critique, and prominent figures have co-authored articles that call for a wider framing that moves away from maternal blame and individual attributions of responsibility. Such a *social justice framing* [12] instead emphasises the social, political, and economic dimensions that shape developmental outcomes and calls for policy translations of DOHaD that emphasise the need for action through social policy and health equity [9]. Yet, based on reviews of interventions using a DOHaD model [13] and a recent ethnographic study of researchers working in DOHaD-focused institutes [14], it is evident that the DOHaD and lifecourse fields largely still use a biomedical frame. More recently, some DOHaD scholars have begun to promote the formation of wider multidisciplinary coalitions and advocacy networks to improve messaging, framing, and ultimately policy impact. In the following, we explore two such coalitions and if and how their framing activities depart from and improve on the status quo in DOHaD.

17.3 Case Studies of Two Multidisciplinary Coalitions and Advocacy Networks

As Low and colleagues describe in this volume, there is a serious effort to translate DOHaD knowledge into policy and society through advocacy by collaborative networks.

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These have been based on a 'facilitational' model of advocacy [15] that emphasises the joint and participatory production and communication of knowledge by collaborations between scientists, civil society organisations, and policymakers, as seen for instance with climate change-related policies [16]. Several such multi-sectoral alliances have been formed in the last decade to advocate for collective action to translate DOHaD and lifecourse research into policy at national and international levels. Below, we discuss two such networks – the Venice Forum [17] and the UK Preconception Partnership [18].

In order to explore how DOHaD messages have been framed by these two networks, we consider two aspects proposed by global health policy experts [5]: problem definition (internal framing) and positioning (external framing). Problem definition is concerned with how actors internal to the network view or conceptualise the issue and its solutions. Within a network, there may be a common understanding of or disagreement on the primary rationale for why an issue is important. Positioning on the other hand deals with how the messages are communicated to an audience external to the network, with the goal of inspiring them to act. While an internal consensus on framing increases credibility when presented to external audiences (such as policymakers), the success of a frame can also depend on the legitimacy of the experts endorsing it. Positioning is often tailored to resonate with the target external actors such as policymakers or funding bodies [5].

As both the Venice Forum and the UK Preconception Partnership broadly focus on the translation of messages from DOHaD research, with common actors in membership for both groups, there has been overlap in frames used by them. We first present an overview of each network (Table 17.1)[1] and the frames they use in their collective advocacy before discussing the implications of the employed frames.

17.3.1 The Venice Forum (Global)

The Venice Forum was established in 2019 by a group of independent academics and healthcare professionals to explore the impact of economic and other crises (e.g. war and famine) on DOHaD outcomes globally. Based on evidence that crises such as the 2008 economic downturn have a disproportionate impact on women and children, the main goal of the Venice Forum is to advocate for an ethical imperative of supporting early childhood development, thus preventing the intergenerational passage of risk.

This agenda gained new urgency by the COVID-19 pandemic, which further exposed inequalities in health and well-being [14], but also inequalities in responses to the pandemic. For example, research during the early stages of the pandemic (for example on vaccine safety) often excluded children and pregnant or breastfeeding women [20]. Post-pandemic, the focus of the Venice Forum shifted from the impact of economic crises and natural disasters on MNCH to understanding factors that build resilient

[1] Both networks have partly overlapping membership. For example, the first and last authors of this chapter have been actively involved in both networks. The Partnership and the Forum have also collaborated to write joint statements, for example, providing input into the call for evidence for the UK Women's Health Strategy in 2021. This written input has focused on building a robust case for MNCH through measurement, monitoring, and better-quality data and implementation through a multi-sectoral approach, developing practical messages for the public and addressing ethnic and socio-economic disparities in women's health.

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Table 17.1 Overview of the two advocacy networks

	Venice Forum	Preconception Partnership
Aim/Key agenda	To make the case for increased investment in maternal, newborn, and child health (MNCH) for long-term benefits to the population and for inter-generational impact	To 'normalise' the concept of pregnancy preparation and improve population health through intervention in the preconception period
Focus	DOHaD-related outcomes, transgenerational health, and engagement with policymakers for advocacy	DOHaD-related outcomes, translation of evidence into policy, and co-production with public health authorities in the UK. Key target groups have been future parents, policymakers, and practitioners.
Origin	Established in 2019 as an informal think tank	Established in 2018 with the publication of the landmark *Lancet* series [19] on preconception health
Governance and membership	Led by a core team of six board members with a clinical and academic background in DOHaD. The annual international forums include an informal network of health-oriented professionals, academic and scientific societies (from obstetrics and gynaecology, neonatology and paediatrics, public health, health economics, social science, and education), clinical organisations, patients' rights groups, and NGOs predominantly from high-income and European contexts.	Led by two academic chairs with well-defined subgroups and roles. The remit of the group has expanded with membership predominantly from UK-based academics (from fields of nutrition, sexual reproductive health, public health, psychology, mental health, epidemiology, etc.), public health entities, NGOs, charities, and healthcare professionals (obstetrics and gynaecology, community health workers, and general practitioners).
Target audience	Global policymakers	Predominantly UK focused policymakers, the general public, and clinical organisations

societies, making an argument for embedding MNCH as core to research and policy-making aimed at developing healthier societies [21].

The Forum has often framed its policy messages in economic terms. It has developed key arguments from early-life interventions such as the Perry Preschool and Abecedarian programmes that show how such interventions can have long-term economic benefits, higher school completion rates, college attendance, lower rates of teenage pregnancy, dependency, and welfare [22, 23]. The rationale for employing an economic frame that emphasises long-term cost reductions and returns on investment has been the assumption that non-health outcomes are important issues from a policymaker's perspective. Ongoing projects by the Forum include specific recommendations for policy, for example introducing parental leave for the first six months of life. The assumption is that the economic

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frame is more likely to elicit a response from finance ministers and other governmental departments outside healthcare. In this context, the Forum has strategically tried to promote a 'technification'[24] of the issue – in this case conveying the economic costs of a lack of investment in early years and in parenthood and portraying the issue as one that can – and should – be addressed primarily through science and economics, and not necessarily on the individual level, thus developing an 'investment case' for MNCH.

At the same time, the Forum has also adopted a contrary approach, emphasising the need to reframe the way 'value' is conceptualised in policymaking and financing. While supporting the development of an investment case described above, the Venice forum has also challenged the dominant view that economic growth measured by GDP is an adequate measure of success, when it does not include unremunerated contributions to society such as childbearing, domestic work, and care – largely conducted by women in most societies [17]; see also Cohen in this volume. The Venice Forum has explored and promoted newer frames of a 'caring economy' [25] that include well-being as an indicator of economic success over GDP and employ alternative measures to include unremunerated work, such as the Human Capital Index or the Genuine Progress Indicator. The goal of these new frames is to shift the approach from mainstream economics that focuses predominantly on market relations towards feminist economics that values women's contributions. However, framing issues of health in terms of economic benefits always carries the risk of contributing to rather than resisting approaches in which health only matters in terms of its economic impact, rather than emphasising health and access to healthcare as human rights and values in themselves.

The Forum has also strategically engaged in linking MNCH to the climate crisis, recommending inter-sectoral actions required to address climate change – such as reducing air pollution and low-environmental impact diets – that are also beneficial for health. Such focus on policy framed in terms of human and planetary well-being might benefit from the existing momentum for the climate crisis agenda. The Forum perceives that climate is of high importance to younger people, thus providing an opportunity to disseminate messages by highlighting their concurrent benefits for health and the environment.

The Venice Forum has also strategically decided to emphasise the benefits of intergenerational health to prioritise investments in MNCH. While a focus on child/newborn health might have greater political traction, such a focus potentially competes with the maternal health agenda when the health of the fetus is emphasised at the expense of women's health for their own benefit [26]. A framing of MNCH in terms of long-term investments used by the forum can thus compete with an ethical frame that positions MNCH as a matter of women's rights and equity – a frame that was also utilised by the Forum, which called for urgent action in this area due to slow progress.

Overall, the Venice Forum has targeted policymakers and international health organisations using a variety of different framings – a social justice framing, economic framings, frames related to intergenerational health benefits, synergies with climate change, and ethical frames for women's rights.

17.3.2 The UK Preconception Partnership (United Kingdom)

The 2018 landmark *Lancet* series on preconception health [19] made a strong case that 'preconception' forms a key period for health interventions that have long-term benefits

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for subsequent maternal and child health. The Partnership that formed after this series meets regularly and has worked extensively with local authorities in the UK and stakeholders such as the Office for Health Inequalities and Disparities (OHID) (under the Department of Health and Social Care, UK). Targeted engagement, particularly in the local/national context, has been an advantage for the Partnership, facilitated by the inclusion of knowledge brokers (stakeholders facilitating knowledge transfer from research to policy) in the network.

While the Partnership is interdisciplinary in its membership, there is a higher representation from healthcare organisations and the biomedical sciences (see Table 17.1). The Partnership's stated goal is to 'normalise' the concept of preparation for pregnancy and parenthood, thus framing adolescence and early adulthood as a 'pre-conception period' where young people should be encouraged and empowered to engage in healthy activities both for the sake of their own health and also to prepare for (potential) pregnancies.

The Preconception Partnership has overall adopted a lifecourse approach to preconception care, focusing on adolescent health, inter-pregnancy health, and post-partum care as key periods to include in the definition of preconception health. The Partnership has positioned this approach within a reproductive justice framework that considers 'the human right to maintain personal bodily autonomy, have children, not have children, and parent the children we have in safe and sustainable communities' [27]. In supporting women's rights to make decisions related to fertility and contraception, the Preconception Partnership (among other global networks) has endorsed universal screening for pregnancy intention with clinical tools to discuss the desire to be pregnant or avoid pregnancy [28, 29]. This also relates to the reproductive justice framework that includes equitable access to a range of health services such as contraception, sexual health, and abortion (which women of colour and marginalised groups often have barriers accessing as a core component). However, an overemphasis on reproductive health could propagate a view of women as 'vessels of reproduction' [30], in which young women are primarily viewed and addressed as future mothers [31]. Ongoing work by members also has focused on the extension of health behaviours to adolescence, for example through school-based interventions to promote scientific and health literacy [32].

A recent study by Jacob [33] has shown different and partly competing ways of framing the internal discussions and external communications of the Partnership. On the one hand, the Partnership has framed preconception health as a systemic issue and promoted policies and public health campaigns aimed at addressing socio-economic inequalities in women's health. One prominent Partnership initiative has been to improve the evidence base for health policy focused on the preconception period and to hold policymakers accountable for issues in preconception care that show links with deprivation. To this end, the Partnership has focused on using routine data from maternity care programmes to develop a report card on preconception health status in the UK [34]. The analysis of national maternity services data (England) highlighted inequalities based on age (e.g. younger women were less likely to take folic acid supplements preconception), ethnicity, and deprivation and in turn provided outcomes and indicators for accountability. Members' publications have also emphasised the impact of wider determinants of health [35] and called on governments as key actors to address preconception health at the policy level.

At the same time, framings of risk factors like obesity as being linked to systemic problems influenced by the environment and deprivation contrasted with recommendations

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to change lifestyles with support from clinicians. The clinical setting, where clinicians often meet women with or without their partners, was often framed as an effective and easily accessible platform for the dissemination of preconception health messages. In this view, postnatal care presents a 'window of opportunity' for both the next pregnancy and early childhood development [29, 36]. However, such recommendations were also critically discussed within the Partnership, as it was argued that they could lead to individual attributions of responsibility and a stigmatised framing of behaviours deemed unhealthy, particularly among low-income populations. It was argued that focusing on influencing behaviours through the dissemination of health messages also assigns a set of values and moral implications, falling disproportionately on women and addressing them primarily as reproductive agents [33].

In order to address these issues, the Partnership has recently conducted several public engagement activities to investigate appropriate ways for developing and framing health messages that avoid unintended and harmful consequences. Unsurprisingly, using the term 'preconception' was not preferred by participants (women living in the UK) [37]. Additionally, participants also recommended gender-inclusive terms that could capture the interest of men, who often felt excluded from the conversation on health for their children [38]. While the area of male preconception health and its impact on long-term health has been increasingly discussed within the Partnership, messages related to men's health before pregnancy were often lacking in their outputs. Framing preconception health mainly around women's health and bodies could further alienate men and non-binary individuals from engaging in health messages and conversations around preconception care [38]. Studies from low- and middle-income settings have, however, shown that men were keen to be involved in engaging in such conversations [39]. The need to represent health findings without causing alarm is key for the public's engagement with preconception health messages, considering the probabilistic nature of the associations in DOHaD studies [9]. Framings related to 'unplanned pregnancies' as a risk factor for a negative outcome were often used by the Partnership. This may also need to be revisited as studies have shown that people may not perceive unplanned pregnancies to be a negative outcome, nor is pregnancy intentionality a straightforward idea [40, 41].

Another question that proved internally contentious within the Partnership was how to frame obesity. Though publications have acknowledged the wider determinants of obesity and the need to reduce stigma in clinical conversations, obesity is also framed as a condition in need of medical treatment or intervention [29, 36, 42], in accordance with recent World Obesity Federation campaigns (2018–19). However, internally members of both the Partnership and the Venice Forum have contested this medical framing, as over-medicalising the issue presents challenges in policy translation. One such challenge is that an increased focus on addressing obesity through healthcare and weight management services might lead to reduced investments in preventive policies that target systemic drivers of obesity, such as the marketing of foods or food composition. Framings of obesity as a medical condition also potentially conflict with a social justice framework. Feminist scholars and fat activists have argued that framing obesity in medical terms may contribute to weight stigma in which individuals are blamed for their body shape and ill health. Such frames in particular target women and minorities and lead to localising structural problems within individual bodies, thus potentially deflecting policy attention away from the systemic conditions that drive inequities in health. (See Lappé and Valdez in this handbook.) Additionally, conversations focusing

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only on weight can also lead to unintended consequences such as repeated cycles of weight gain and loss, eating disorders, weight stigmatisation, and mental health issues, thus calling for a person-centred approach [43].

From a social justice perspective, health interventions and policies based on individual behaviour change appear as particularly problematic. Such interventions were also debated internally within the Partnership, with one point of debate being how health messages related to preconception health should be framed. Preconception health interventions that target individual behaviour change predominantly focus on rational aspects of decision-making (e.g. providing information on food-based dietary guidelines and Eatwell plates), and overall DOHaD health messaging tends to focus on risks and potential negative outcomes. In contrast, the Preconception Partnership has recommended appealing to emotional aspects of the benefits of healthy growth and development [8]. This is especially relevant as health messages compete with framings by the private sector, which focus on selling comfort and happiness – for example with the use of infant formula. Framing preconception health messages in more positive terms has the goal of improving the public and policy uptake of these messages.

Thus the Preconception Partnership has used framings similar to the Venice Forum on intergenerational benefits and health across the lifecourse, social justice, and the reproductive justice framework. However, medicalised framings of obesity are still evident along with a focus on women's fertility and pregnancy planning.

17.3.2.1 Competing Framings in DOHaD Health Advocacy

Research findings from DOHaD can be framed in different ways, imbuing them with different meanings to link to different types of policy recommendations. Such frames may not incorporate all aspects of the issue in question and present a risk of oversimplification of a complex field, as seen in the above examples. Figure 17.1 is a conceptual figure summarising examples of framings used by the networks in publications and other

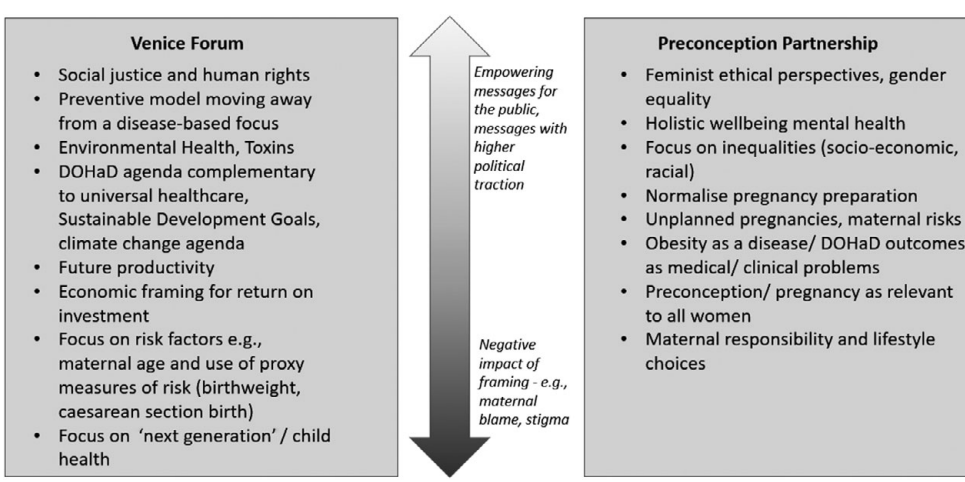

Figure 17.1 The framings used within groups and for communicating to an external audience are illustrated in the figure. Certain framings may have potentially negative consequences, while others have more positive effects as shown by the arrow.

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media, which we have listed by the potential impact it could have if applied in healthcare, policy, and interventions.

DOHaD frames may emerge in multiple ways, not limited to evidence generated from research but also as a response to the evidence demand from governments/policymakers, major societal events, and public opinion. Efforts to bring DOHaD insights into policy and health interventions are often driven by a sense of urgency and an understanding that it is an ethical imperative to act now to improve MNCH and to address persistent inequalities in health. This sense of urgency often translates into efforts to influence policy and the public 'effectively', for example through strategically framing DOHaD messages in ways that make them more palatable to policymakers and the public, and thus more likely to influence policies and health behaviours.

Such efforts and emphasis on urgency can also lead to unintended consequences that may be at odds with the goal of promoting health equity and social justice – especially when the potential negative impacts of employed framings are not given adequate consideration. For example, alarmist language – obesity as 'a ticking time bomb', or the 'war on obesity' – might be an adequate way to garner policy and media attention, but it also has the potential to increase weight stigma when fat people are implicitly framed as a threat to society, economic prosperity, and the welfare state's future [44]. This becomes particularly problematic when public health campaigns are aimed at marginalised parts of the population.

Similarly, an economic frame of 'returns on investment' might be well suited to attract policymakers' interests – but it carries the danger of propagating eugenic logics when women are targeted primarily in the name of the offspring's health, as discussed by Cohen in her contribution to this volume. And a framing that highlights individual agency in relation to factors that influence the development of health and disease may be well suited to inform individual action – but runs the risk of also increasing blame and of reinforcing health inequalities as not everybody has the necessary resources to act.

The analysis of our two case studies has shown contestations around how to frame DOHaD for policy and society. Individualising and potentially stigmatising frames were critiqued in internal discussions. At the same time, there are strong incentives for simplistic frames to 'effectively' translate DOHaD. While such framings might make strategic sense, DOHaD researchers should be aware of the trade-offs and potential costs of such framings. This shows the need for constant reflection and negotiation around appropriate ways of framing DOHaD messages – with interdisciplinary advocacy networks being well suited to facilitate such negotiations by bringing together different disciplinary, societal, and policy viewpoints.

17.4 Recommendations for Reframing DOHaD

Kenney and Müller in this volume provide a useful list of suggestions on how to engage in crafting and propagating health-related narratives. We highly encourage readers to consider these recommendations. Here, based on our discussion of our two case studies, we highlight a few points.

First, we want to highlight how important it is to be reflective about the framings employed in translating DOHaD messages into society and policy. In order to achieve societal and policy impact, there is a need to strategically employ specific framings. At the same time, scholars and practitioners should also be conscious of the potential

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negative impacts of the framings employed and about what trade-offs are involved when employing specific frames. However, this demand for 'targeted messaging' could also have led to competing or conflicting frames within the same network, as seen in the case studies. We advise DOHaD researchers to be particularly cautious when employing economic framings when talking about the value of health, when employing alarmist language, and when promoting interventions that target predominantly individual health behaviours.

Second, our discussion of the two case studies shows that finding and employing appropriate framings is a continuous process. As Chiapperino et al. in this volume discuss, DOHaD researchers often in principle subscribe to and are motivated by a social justice framing of DOHaD, which highlights the need to address inequities in health through social policy. Such a social justice framing is also fundamental to the Forum's and Partnership's work, but at the same time there are powerful institutional and policy incentives to frame health messages in ways that are antithetical to such a social justice framing (see also Penkler 2022). There are competing interests and factors at work that encourage perhaps more reductionist framings of DOHaD findings that imply more individual translations. Finding the adequate balance and engaging in DOHaD messaging that is both effective and avoids negative outcomes is a continuous process that DOHaD researchers should be reflective about. Such ongoing reflection can also help tackle the challenge of developing messages that account for both the individual-level and population-level actions required to address the health issues in consideration. An example of work towards this is the Preconception Partnership's multidisciplinary representation and ongoing study with the public on the appropriate inclusive language to be used in public health messaging related to preconception health [38]. We recommend a continued need for engagement and reflection on the frames used by both networks due to the conflicting frames discussed.

Thirdly, advocacy networks such as the case studies included here are particularly well suited for such negotiations. They offer ways of breaking the siloes of academic research groups and allow researchers to engage with the public, wider disciplines, and policymakers. They allow the inclusion of different disciplinary, societal, and policy viewpoints and a forum to engage and negotiate about appropriate framings. Diversity within networks (disciplinary and geographic) and links with a wider range of actors outside research (policy, communities, private sector, healthcare sector, charities, and activists) are needed to develop solutions that are sensitive to the available resources and environmental and socio-economic factors influencing health behaviours, cultural practices, and differences in behaviours based on ethnicity/income groups. Our recommendation in this context is to further broaden advocacy coalitions to also include more non-scientific, non-health, and non-policy actors, such as activists and community members. Co-creating frames is a way of making them more socially robust and aligned with values of social justice and equality, as work in the Preconception Partnership has shown when including civic society. In order to pursue co-creation effectively, it is important to include a wider range of stakeholders (including civic society) proactively and early on, including them in upstream discussions about what appropriate frames and goals are, and not only downstream. Such engagement can help ensure that the very goals of advocacy networks (such as 'improving health') should not be taken as given, but up for negotiation when engaging collectively in finding appropriate frames for translating DOHaD into policy and society.

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In conclusion, we argue that a return to 'business as usual' by adopting medical and individual framings for DOHaD translation would be inadequate to address the increasing disparities in MNCH, obesity, and NCD-related issues. Such a global outlook, which includes justice and addressing inequalities, will help in translating the DOHaD and lifecourse models into policy that integrates not only life stages from preconception but also all wider societal factors that shape human well-being.

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