


Preconception nutrition: building advocacy and social movements to stimulate action

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Original Article

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Abstract

Action to improve preconception nutrition is a collective, societal responsibility. We believe that the Developmental Origins of Health and Disease (DOHaD) society is ideally placed to facilitate the development of a global agenda for preconception nutrition which recognises the societal importance of nutrition for young women and men, and supports them in optimising their nutritional status for the benefit of the next generation. In this paper, we outline four key actions that can be taken by the members of DOHaD's international society located across 67 countries, and nine regional societies, to demonstrate this leadership role. The recommended actions to place preconception nutrition at the top of national and regional agendas include (i) continuing to build the scientific evidence, (ii) monitoring of progress made by governments and commercial companies, (iii) developing advocacy coalitions that unite individuals and organisations around common policy options and (iv) working with partners to develop an emotive and empowering preconception nutrition awareness campaign. Collectively, these actions hold the potential to develop into a preconception nutrition social movement to invoke high-level government support and across-sector policy action, while raising public demand for action and engaging corporate actors.

Despite increased academic awareness, including publication of a Lancet Series that stressed the role of nutritional status before pregnancy in determining the health of the next generation,^{1–3} awareness of the importance of the preconception period and its lifelong influence on health outcomes remains low among health professionals and the wider public.¹ A new focus on the preconception period has arisen in part because the majority of interventions aimed at optimising maternal nutritional status in pregnancy have been disappointing in the magnitude of their effect. Additionally, there is mounting evidence from human and animal studies highlighting how the physiological status of parents prior to conception can shape the health outcomes of the next generation. Importantly, we now appreciate that poor reproductive health in both men and women is linked to suboptimal body composition, for example, excessive body fat.² Increasing evidence for the benefits of improving preconception health, plus the knowledge that pregnancy planning is more common than previously thought, suggests that the preconception period has underexploited potential as a point of intervention.¹ The low public health awareness of preconception nutrition as a strategy for disease prevention needs to be redressed at both individual and population levels.

The focus of this paper is to advance the agenda for preconception nutrition rather than preconception health as a whole. There is mounting biological evidence that a woman's, and a man's, nutritional status before pregnancy is a significant determinant of egg and sperm quality and determinant of their children's chances of later life disease.⁴ Additionally, embryos are exceptionally sensitive to their nutrition environments from the moment of conception. Thus, preconception nutritional status for both women and men is a necessary focal point for improving preconception health. We therefore propose that a new, positive message about preconception nutrition needs to be developed which encompasses not only the health benefits for parents and their children, but also the well-being of future families and society at large. This message will emphasise that preconception nutrition is not simply about changing individual behaviours. It is about recognising that the context (social, environmental, economic and political) in which potential parents live, and their motivations, shapes the kinds of dietary practices that they engage in. Learning from consumer marketing techniques suggests that generating a message which elicits an emotional response from the public towards the benefits of improved preconception nutrition could fuel wider changes in society that are beneficial to all regardless of age, ethnicity, socioeconomic position or reproductive health status. This response could form the basis of a social movement for preconception nutrition. Such a movement would provide a focused set of messages and goals. As is demonstrated below, adopting a broader focus, for

example, on preconception health rather than preconception nutrition could dilute the focus and likelihood of developing policy strategies that can be easily enacted and effectively evaluated. Furthermore, key policy issues related to preconception nutrition align well with existing research priorities, advocacy agendas and policy approaches aimed at addressing other health and societal issues such as obesity, climate emergency and poverty. A nutrition-focused preconception movement would thus be further supported by coordinated advocacy coalitions, made up of actors at local, national and international levels who share common policy ambitions, such as increasing consumption of plant-based foods and meals, to achieve a range of different outcomes.

This paper explores what might constitute advocacy coalitions and a social movement for preconception nutrition and recognises that diverse methods may be needed to direct this movement in different settings. We propose that the International Developmental Origins of Health and Disease (DOHaD) Society is ideally placed to campaign for preconception nutrition and can take four key actions to drive forward a social movement.

What is currently being done to address poor preconception nutrition?

At the national level, recognition of the need for targeted activities to improve preconception health and nutrition is increasing. In some countries, however, efforts remain inadequate. In the UK, the Chief Medical Officer's 2014 annual report (The health of the 51%: women) included a chapter dedicated to preconception health with a particular focus on reducing maternal obesity and encouraging healthy dietary behaviours using media campaigns.⁵ Public Health England have produced a number of educational resources for health service providers on preconception care.⁶ The National Health Service Long-Term Plan, published in January 2019, pledges an expansion of perinatal mental health services for women, spanning preconception through to 24 months after the birth of their baby.⁷ In the United States, the Action Plan for the National Initiative on Preconception Health and Health Care 2012–2014 was developed to improve the health of women of childbearing age to consequently improve pregnancy outcomes.⁸ This strategy involves using social marketing campaigns to promote preconception health to the public and raise women's awareness of healthcare services they can use. These examples from high-income countries incorporate preconception nutrition into a broader package of preconception health but have a heavy focus on educating women about the need to improve their dietary behaviours, often neglecting the need for supportive environments and adequate resources or the dietary changes required of their male partners. While the importance of targeting women in these strategies is understandable, we propose that framing the issue of preconception nutrition without including the important role of men or broader society is problematic. Implementing these types of strategies alone can act to individualise the problem, possibly increasing the burden of responsibility that women feel for the health of their offspring and/or increase inequalities as those with poorer health have fewer resources at their disposal.⁹ Initiatives in low- and middle-income countries, such as extending girls' education and providing women with cash and food transfers, highlight ways in which the broader society can promote preconception nutrition and share the responsibility. Globally, more needs to be done to highlight the need for improvements in men's

nutritional status during the preconception period alongside that of women.^{1,10}

Advocacy efforts for preconception nutrition at the transnational level have begun but a more coordinated effort is needed. In 2012, the World Health Organisation developed a global consensus on Preconception Care to Reduce Maternal and Childhood Mortality and Morbidity and released a strategy for member states to stimulate action.¹¹ The strategy highlights the transgenerational importance of preconception health interventions in improving the health and well-being of adolescents, women and men and describes evidence-based interventions that address 13 areas, with nutrition being the first. The importance of addressing malnutrition in all its forms for improved health is widely recognised. The United Nations General Assembly, for example, proclaimed a Decade on Nutrition 2016–2025.¹² It is therefore not surprising that preconception nutrition, with a particular focus on women of childbearing age and adolescent girls, has been integrated into a number of transnational initiatives including the Rome Declaration on Nutrition; Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition¹³ and associated six Global Nutrition Targets 2025; Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020;¹⁴ Commission on Ending Childhood Obesity,¹⁵ Global Strategy for Women's, Children's and Adolescent's Health (2016–2030)¹⁶ and United Nations Sustainable Development Goals.¹⁷ Intervention recommendations for preconception nutrition across these initiatives include nutrition counselling, social marketing campaigns, plus iron and folic acid supplementation focusing on adolescent girls and women. There is, however, little evidence that these recommendations or indeed guidelines of any other type are being implemented, and their impacts evaluated in more than a piecemeal fashion. In the UK, for example, there is no national strategy for delivering improved preconception healthcare.¹⁸ The other issue is that recommendations for action are almost all individually focused, burdening women with responsibility for improving their nutritional status and ignoring the roles of policy, society and commercial interests in creating an unsupportive food environment.¹⁹

Explicit advocacy efforts for preconception nutrition from other international non-government organisations (NGOs) are less apparent. UNICEF's Scaling Up Nutrition for mothers and their children has a primary focus on improving nutrition in the 1000 days from conception to 2 years of age although it does recognise the need to enhance the nutritional status of women of reproductive age and adolescent girls.²⁰ The World Obesity Federation and World Public Health Nutrition Association do not explicitly address the issue of preconception nutrition in their respective activities of preventing obesity and building workforce capacity in public health nutrition. Combining action with these organisations as part of a preconception nutrition social movement offers a potentially efficient method of achieving complementary health objectives. Partnering with these, and other, groups who have aligned policy options and are currently gaining traction with governments is necessary to build critical mass for a social movement.²¹

Advocacy coalitions are coordinated advocacy efforts involving an alliance of diverse organisations, groups and individuals at local, national and international levels that can harness societal support and political will to spur action on an issue.²² A core function of the International DOHaD society is to support the development of evidence and interventions to promote a healthy start to life. This includes understanding and promoting the improvement of the preconception nutritional status of women, men and adolescents.²³

The society is committed to engaging, at a high level, with civil society, government, non-government and other organisations on the healthy start agenda. It is therefore ideally placed to facilitate the development of advocacy coalitions that can define the agenda for preconception nutrition.

What makes for a successful advocacy coalition?

In order to place preconception nutrition firmly on the agenda of governments and incite policy action across the globe, strong advocacy coalitions within international, national and local policy subsystems (i.e., government agencies, research institutions, NGOs, the media, commercial interests and influential individuals) are required. These alliances are likely to be most influential if they are focused on a specific policy subsystem, defined by a territorial boundary, or substantive issues related to preconception nutrition.²⁴ They need to engage as many of the subsystem participants in the coalition as possible, good examples being those with aligned policy agendas for creating healthy food environments from the non-communicable disease and climate change communities. These groups also advocate for reducing the availability and advertising of ultra-processed foods and enhancing the availability and promotion of plant-based foods. Strong leadership, adequate resources and coordinated infrastructure are required to ensure that advocacy coalitions sustain engagement over the potentially lengthy period of time necessary to achieve high-level, coordinated policy activities.

Action to improve preconception nutrition in low- and middle-income countries has been observed through political support for the adoption of strategies to address social, environmental and economic determinants of malnutrition, coupled with active involvement and advocacy by civil society and community groups. In Brazil, strong leadership by central government on nutrition and food security led to significant advances in preconception nutrition for women and virtual eradication of undernutrition and wasting among children aged under five across the entire country between 1994 and 2006.^{25,26} Sustained and organised efforts by civil society organisations played a critical role in bringing food insecurity to the top of the national agenda. They framed the issue as a societal, rather than individual, responsibility and established a 'shadow social cabinet' to keep government engaged and accountable. Policy continuity and complementarity across multiple sectors, and all levels of government, resulted in increases in the minimum wage and financial support for poor families, as well as improved access to education, healthcare, water and sanitation.²⁷ We note with regret that these significant achievements are now under threat with President Bolsonaro extinguishing the National Council for Food and Nutrition Security when he took up office in January 2019. In Maharashtra, India, the government established a statewide Nutrition Mission in 2005 to reduce malnutrition, focusing on the first 1000 days and encompassing pre-pregnancy and adolescent nutrition.²⁸ A range of whole-of-government approaches were adopted including better access to clean water, markets, healthcare and reproductive services, nutritional supplementation programmes and enhanced education for girls. These evidence-based interventions were identified by scientific and civil society groups and managed by local communities to build grass roots demand and facilitate sustainability through normalising practices. The initiative resulted in halving of stunting rates among children aged under two between 2005 and 2012.²⁹

Evaluation of the driving factors responsible for these successes indicates that the use and framing of evidence of child mortality

and morbidity rates as a government responsibility by a strong advocacy coalition that attracted civil society and media support prompted a swift and concerted policy response.²⁸ In higher income countries, childhood obesity is one example of morbidity that is likely to provide a focal point for advocacy coalitions on preconception nutrition. Tackling broader socioenvironmental determinants in policy subsystems where opposing advocacy coalitions operate, like well-resourced food industry groups working to prevent taxes or marketing bans on unhealthy foods and beverages, can be challenging. In the midst of strong opposition from the tobacco industry, for example, initiatives to control tobacco smoking took approximately five decades to garner policy action and change public opinions on the issue.³⁰ Yet, the examples from India and Brazil suggest that public concern about a nutrition-related issue can rise quickly and can be harnessed to address the contextual determinants of poor diet.

How do we turn an advocacy coalition into a social movement?

A key factor in the success of the Brazilian example was the organised social movement that placed nutrition, and societal responsibility to transform the social and environmental conditions that create malnutrition, at the top of the national agenda.²⁵ This was achieved through the creation of collective demand. The 'National Campaign against Hunger' not only raised public awareness of the need to tackle malnutrition but also coordinated thousands of food donation committees, and provoked the government to review the issue and create a policy response. This account is consistent with the Advocacy Coalition Framework from political science, which describes how shifts in public opinion on an issue can invoke rapid policy action, particularly when coupled with advocacy coalitions who act with a clear voice for policy change.²⁴ Successful advocacy coalitions employ a variety of resources, including scientific information and public opinion, through a range of avenues, including traditional or social media, to place pressure for action on government and corporate stakeholders. In Brazil, proponents of the National Campaign against Hunger developed a coalition in the form of a think tank with political affinities that created a critical mass of activists, produced research evidence and monitored the government's progress in reducing malnutrition.²⁵ Hence, the important ingredients for this social movement can be summarised as including scientific evidence, public awareness and support, political engagement and independent monitoring of national progress on the issue. The DOHaD society can take a leading or facilitating role on each of these key actions in the development of a social movement for preconception nutrition.

The scientific evidence for the health benefits of preconception nutrition exists, but public awareness of this important life stage remains low.¹ We believe that raising awareness among civil society, alongside the activities of advocacy coalitions, is required for a social movement to achieve timely action that positions preconception nutrition into new, and existing, government and commercial policies. We propose that an awareness-raising campaign that forms part of a social movement differs from social marketing campaigns traditionally used by health activists. The premise of previous health-related social marketing campaigns has been to focus on changing an individual's behaviour by providing information about a health concern and offering instructions about how he/she can adopt alternative, healthier behaviours. While great resource has been directed towards social marketing campaigns

in an attempt to make them engaging to all, those targeting complex health behaviours, such as adhering to dietary recommendations, in unsupportive environments, have largely failed to help groups with the greatest need. They can even increase inequalities in the targeted health behaviours.³¹ In addition, such social marketing campaigns on their own are often ineffective at mobilising large-scale demand for change given their focus on individual responsibility.³²

Theories of social practice and the field of consumer marketing offer alternative approaches. Rather than focusing on behaviour, which assumes that individuals make rational choices about how they act, social practice theory emphasises that actions are largely based on shared social conventions. Shove *et al.*'s work on social practices highlights the importance of everyday actions as a central element of social transformation, and that policymakers should understand that these actions are historically and culturally situated.³³ Social practice theory recognises that individuals require not only knowledge or competence to engage in a practice but also the resources or environments to successfully enact that practice and a purpose or meaning that motivates the practice.³³ This theory provides some insight as to why information campaigns on their own are not enough to ensure changes in health behaviours and improvements to health outcomes, as knowledge forms only one element of enacting practices. If access to resources and/or a sense of meaning are missing, then it is unlikely that people will adopt a new practice or adapt an existing one. A campaign to improve preconception nutrition has an advantage over other health campaigns because it has inherent meaning and purpose; the desire to grow healthy, long-lived babies is intrinsically motivating to those wishing to be parents. Pregnancy is known to engage women and men in improving their health behaviours.^{34,35} There is currently untapped potential to extend the period of enhanced motivation for healthy dietary behaviours into the time before conception. Theories of social practice also emphasise, as others have,^{36,37} that social policy cannot impose change on societies from the 'outside'. Policy makers and politicians are a part of the social systems and arrangements that they govern, and their actions shape social practices in turn. In the Brazilian case, for example, the practical action taken by the advocacy coalition to improve access to nutritional and monetary resources will have dramatically shaped peoples' abilities to enact practices around diet and eating. DOHaD's role in facilitating advocacy coalitions on preconception nutrition would be part of a purposeful strategy to align the elements of practices that would serve to improve preconception nutrition, particularly the distribution of resources in order to promote supportive food environments across societies.

To transform social practices associated with preconception nutrition, increasing the availability of suitable resources needs to be coupled with an effectively communicated message that individuals and communities can connect with. Consumer marketing research shows that brands must develop an emotional and symbolic attachment with consumers if they are to succeed in the competitive marketplace.³⁸ Products are often purchased, or avoided, not for their functional qualities but for the symbols and feelings that the marketing materials arouse. To date, health-related social marketing campaigns, such as the '5-a-day' campaign which aims to increase fruit and vegetable consumption, have not attempted to stimulate an emotional connection to the '5-a-day' brand. The standard technique has been to inform people of the health benefits of adopting the target health behaviour (i.e., eating more fruit and vegetables), albeit in fun and appealing ways. A campaign that triggers deep feelings and promotes societal attachment to a

preconception nutrition 'brand', however, may have broad appeal and more success across diverse socioeconomic groups than traditional health campaigns. Such a campaign needs to be positive and aspirational, focusing on happy babies and contented families in order to trigger the emotional fulfilment that 'family' offers to all members of society.

To successfully create a social movement for preconception nutrition, the awareness campaign needs to move beyond motivating individual behaviour change. One component could act to stimulate societal demand for governments and commercial companies to create an environment that delivers the human right of adolescents, and men and women of childbearing age, across the socioeconomic spectrum, to eat a healthy diet.³⁹ The 'Stand Up to Cancer' charitable programme is an example of a novel health campaign that calls on individuals to unite in overcoming a common threat to health. The power of the campaign lies in its ability to make people feel universally connected through the experience and injustice of cancer. It invokes a sense of desire to be part of the movement to fight back and appeals to individuals to be part of a collective action. While the specific messaging of such awareness campaigns will need to differ across contexts and cultures to be effective, the role of DOHaD societies and members can be consistent, by instigating, advising and supporting the campaigns.

What is the future for preconception partnerships?

We propose four key actions that leaders, members and supporters of the International DOHaD society can take to support a social movement for improved preconception nutrition. Firstly, to lead the development of advocacy coalitions at the national and local level. Secondly, to hold government and commercial companies to account by monitoring and reporting on their progress, or lack of, on key indicators and determinants of preconception nutrition and health. Thirdly, to identify partners who can lead a preconception nutrition awareness campaign and advise on its content to stir emotion and create demand from civil society. Finally, to continue to build the scientific evidence-base for the crucial role of preconception nutrition in determining health status and for effective strategies to optimise preconception nutrition.

No one action alone is likely to invoke the necessary change for a social movement. All four actions will need to be implemented in a coordinated and timely manner for maximum benefit. Regional, national and local advocacy coalitions will ensure that differences in culture, resources, public health nutrition priorities and health-care provision are accounted for. Long-term commitment is required by these coalitions to monitor government and commercial progress overtime. Including scientists, government departments, non-government and professional organisations, health and social care professionals, political activists and families as advocacy coalition members will expand the resources, capabilities and reach of the coalition to better facilitate effective monitoring. Linking with partners who campaign for similar policy options could prove effective at instigating action, particularly when external events provide opportunities to shock change in government and commercial activity. For example, a recent research funding call from UK Research and Innovation aims to unite different disciplines and sectors to collectively drive transformations to the UK food system for the benefit of both human and climate health. Departmental, non-government or other partners may be well placed to deliver the preconception nutrition awareness campaign. The advocacy coalition will be able to provide the scientific rationale for the campaign and guide the key campaign messages. The

messages will be framed to tap into the emotional and aspirational appeal of healthy parents and babies and to engender a collective demand for physical and social environments that prioritise healthy eating at this important lifecourse phase. This message therefore stresses the need for greater societal responsibility to provide settings supportive of good preconception nutrition that does not place the burden entirely on women. Such regional activities will be supported by ongoing international scientific activity investigating the mechanisms underlying preconception nutrition and long-term health, and designing and evaluating effective interventions.

Monitoring key indicators of progress made by governments and commercial companies towards improvements in preconception nutrition is one function of the Preconception Partnership, an advocacy coalition established in the UK, in 2018. The alliance, whose membership spans health, education, science, policy and charitable sectors, is developing a new national narrative about improving preconception health and nutrition. In June 2019, the coalition published a paper setting out a monitoring framework that will be regularly updated to provide evidence to hold government and other agencies to account for improving the state of preconception health in England.¹⁸ The group is working to reorientate health services and introduce a preconception agenda into the education sector,⁴⁰ as well as pursuing alliances with individuals and organisations to place pressure on governments and corporate actors to create a healthy food system. Alongside these activities, the Preconception Partnership, with key partners, is in the early stages of influencing policy makers and developing a public awareness campaign, alongside continuing to draw from, and contribute to, the international scientific agenda on preconception nutrition. Alliances like the UK Preconception Partnership will need to be formed across the globe to achieve significant impact on the issue of preconception nutrition. Scientific evidence gaps also need to be addressed, in particular, knowledge of successful interventions to improve dietary habits before conception. Evidence from well-designed trials that take account of the social and environmental determinants of poor diet is needed to avoid exacerbating health and gender inequalities.³

This is a call to you, the DOHaD leaders, members and supporters, who are upholders of the scientific imperative, to actively seek out other interested parties to build advocacy coalitions, or Preconception Partnerships, across the globe. These partnerships will have a variety of skills and resources and the common vision of healthy nutritional status being the global norm for young women and men. The UK Preconception Partnership provides an example of how activity can be coordinated at a national level. The International DOHaD Society has shown that it can engage a wide variety of high-level stakeholders at international, national and local levels. By harnessing the capacity of DOHaD's nine regional societies and 67 member countries, we could realise the vision of a global social movement to promote preconception nutrition.

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