Where are we now with nutrition sensitive programming to reduce stunting and obesity in young children?

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Abstract

After a brief introduction to the study, the paper analyses changes in the nutrition architecture since the start of the NICK study in 2010. It revisits the conceptual frameworks that inform this research and questions the ability of a single framework to adequately address both under- and over-nutrition. It notes recent calls for more evidence for the effectiveness of ‘nutrition sensitive’ programming and explores how the findings from the NICK project and the linked doctoral study can make a contribution. It then reviews progress with the research making reference to the papers being presented at this workshop by other members of the research team. Finally, it notes the importance of creating and sustaining an effective administrative structure for multi-country projects such as NICK.

1 The NICK study is lead by researchers at the Institute of Education, University of London (Prof. Pat Pridmore (Director), Dr. Tristan McCowan, Prof. Roy Carr-Hill) who have been working in partnership with the International Centre for Reproductive Health (ICRH) Kenya (Dr. Mary Nyamongo, Mr. Daniel Lang’o (ICRH) and the University of Valparaiso, Chile, Department of Public Health (Prof. Gabriela Charnes, Dr. Beatriz Salgado).

The advisory group members are Dr. Sharif, Director of Public Health, Ministry of Public Health and Sanitation; Dr. Anisa Omar, Ag. County Health Coordinator, Kilifi County; Dr Amyn Lakhani, Director, Aha Khan Health Services, Prof. Oscar Arteaga, Dean, School of Public Health, University of Santiago, Chile; Dr. Seremi, Director, Regional Secretariat of Health of Valparaiso, Chile; Kenya; Anna Taylor, Senior Nutrition Adviser, Department for International Development, UK; Prof. Marleen Temmermans, Director, Department of Reproductive Health and Research, WHO, Geneva; Dr. Kirsten Haveman, Counsellor (Health), DANIDA, Mozambique.
1. Introduction

Since 2010, the NICK study has sought to help two project countries, Chile and Kenya, reduce malnutrition in young children. In Kenya the major concern is chronic undernutrition, particularly stunting, whilst in Chile it is overweight and obesity. The central research question guiding this study is: Can child malnutrition amongst families living in poverty in informal settlements and slums in Mombasa and Valparaíso be reduced through broadening community and stakeholder participation to change the social determinants of nutritional status?

The social determinants of child malnutrition are a broad range of social, economic and environmental factors operating at multiple levels of social organizations. They include education, income, working conditions, housing, neighbourhood and community conditions, and social inclusion. They operate through public policies that control the level of resources available to communities and households and are affected by the degree of social justice in society and by the status of women. When they are distributed unequally across the population they lead to inequities in the level and distribution of child nutrition.

The social determinants are largely controlled by sectors other than health, moving towards nutrition equity entails involving many sectors to address public policies that impact nutrition. The NICK study has therefore established a multisectoral nutrition working group in each of the two study cities and sought to build their capacity to work together to plan, act and evaluate small-scale multisectoral interventions through three, six-monthly cycles of participatory action research. The impact of this study on child nutrition is being evaluated using baseline and follow up anthropometric and household surveys within a controlled experimental design. The learning process in the nutrition working groups is being evaluated qualitatively.

The purpose of this briefing paper is to briefly recap on change and progress over the past three years. It is organised into the following sections:

- The changing nutrition architecture
- Revisiting the conceptual frameworks that inform actions to improve child nutrition
- The social determinants of child malnutrition in the two project countries
- Changing the social determinants through the NICK action research intervention
- Evaluating and explaining the impact of the NICK intervention on child malnutrition.
- The doctoral study in Kenya
- Issues of project administration

Throughout this paper references are made to the literature reviews and briefing papers written by other members of the NICK research team to address the question: Where are we now?

2. The changing nutrition architecture

At the start of the NICK study in 2010 political interest in taking action to reduce chronic child malnutrition had been heightened by the need to get the Millennium Development Goals (MDGs) back on track\(^2\) and by the report from the WHO Commission on the Social Determinants of Health (WHO, 2008). This report concluded that ‘Social inequities are killing people on a grand scale’ (p.248) and identified nutrition as a critical governance issue. In 2011, representatives from the WHO Member States expressed global political commitment to changing the social determinants of poor health and nutrition by adopting the Rio Political Declaration on Social Determinants of Health (WHO, 2011).

Interest in tackling malnutrition had also been raised by the findings from the 2008 Lancet Series on Maternal and Child Nutrition which concluded that undernutrition alone was responsible for 2.2 million deaths annually in under five year olds (Black et al., 2008) and that ten cost-effective

\(^2\) Adequate nutrition is a crucial input to the first six MDGs.
nutrition-specific interventions\(^3\) urgently needed to be implemented on a large scale (Bhutta et al., 2008). However, this Series was criticised for not addressing the underlying and basic causes of child undernutrition and led to calls for a review of the available evidence on how to address these causes (Ruel, 2008). A structured review, subsequently commissioned by the Danish Ministry of Foreign Affairs, concluded that the evidence base was strong enough to guide action on a range of indirect, nutrition-sensitive interventions. These interventions include women's empowerment, agriculture, education, child care and employment, social protection, and safety nets. But for all these interventions context was found to be all-important (Pridmore and Carr-Hill, 2010).

As we move towards the end of the NICK study, there are signs that the study findings are timely. If they are presented in accessible ways, they could help governments and other actors to be responsive to challenging circumstances, and help civil society organisations to hold them accountable. Nutrition, which is crucial to both individual and national development, features prominently in international debates in the run up to development goal setting after 2015 and is likely to be given the highest priority in the future goals. Furthermore, the government in both study countries have developed policies to support multisectoral collaborations and in Kenya the government has specifically called for the establishment of urban nutrition working groups. This call has increased support for the NICK study and helped to sustained the interest and commitment of the members of the Mombasa urban nutrition working group as they have participated in the NICK action research over the past 18 months. The policy environment in Kenya is explored further in the workshop paper: Nyamongo, M. “Policy environment in Kenya before 2010 and now-implications for child nutrition. This paper highlights the nutrition-specific policies, strategies and action plans that have that have been developed and positions them within the global health, equity and urbanisation contexts. The paper concludes that favourable policy environments increase the potential of successfully tackling the social determinants of child health and malnutrition.

Signs that the findings from the NICK study are coming at the right time to influence policy development also come from the second Lancet Series on Maternal and Child Nutrition, launched in July 2013. In this series Black et al. (2013) not only confirm that stunting continues to be a serious public health problem in sub-Saharan Africa and south Asia but also examine the growing problems of overweight and obesity for women and children in low-income and middle-income countries. They recognise the 'double burden' of malnutrition in many of these countries with continuing stunting of growth and deficiencies of essential nutrients along with obesity in national populations and within families. This broadening of the approach to include overweight- as well as under-nutrition is reflected in the new framework presented in the Series to guide actions to reduce malnutrition.

Further support for the approach taken in the NICK study also comes from 2013 Lancet Series by the inclusion of a paper by Marie Ruel which concludes that nutrition-sensitive programmes hold great promise for supporting nutrition improvements to change the social determinants. This conclusion is endorsed by Bhutta et al. (2013). Since 2010, both nutrition specific and nutrition sensitive approaches have also been actively promoted by the Global Movement for Scaling Up Nutrition (SUN), which is a coalition of governments, civil society, businesses and citizens in more than 20 countries working together to drive international commitment to end under-nutrition. Despite current support, Ruel et al. (2013) recognise the need for more rigorous evaluations of nutrition-sensitive programmes that assess impacts on a range of nutrition and child development outcomes and several household and gender outcomes along the impact pathway. The authors comment that the evidence generated will be of crucial importance to inform future investments to improve nutrition.

\(^3\) These interventions are: promotion and support of exclusive breastfeeding, complementary feeding, vitamin A and zinc supplementation for children and hygiene interventions; together with multiple micronutrient supplementation for pregnant women and universal iodization of salt.
3. Revisiting conceptual frameworks that inform actions to improve child nutrition

The NICK study has been guided by the three frameworks presented in Appendix 1 which identify the need for multisectoral actions and all levels to address up-stream as well as down-stream determinants. The first framework was developed by UNICEF in 1990 to increase understanding of the determinants of child nutrition, health and survival and the second focuses on social determinants. The third framework analyses the urban context indicating that interventions need to be located at the municipal level, which is where the NICK researchers have established and supported the multi-sectoral nutrition working groups to do action research in each study city.

Figure 1 Framework for actions to achieve optimum foetal and child nutrition and development (Lancet 2013 Series on Maternal and Child Nutrition, Executive Summary, p.2)

The new framework presented in the 2013 Lancet Series on Maternal and Child Nutrition (see figure 1) reflects aspects of the 1990 UNICEF framework but has been restructured to focus on the actions needed to achieve optimum foetal and child nutrition and development. This framework outlines the benefits of good nutrition during the life-course and attempts to address both under- and over-nutrition. However, the findings from the NICK study suggest that it does not yet do justice to the actions needed to reduce over-nutrition. This issue is discussed further in the workshop paper by Carr-Hill, R. ‘Can the Determinants of Undernutrition and of Obesity be Captured in the Same Model: Evidence from Mombasa, Kenya and Valparaiso, Chile?’. This paper concludes that evidence from the baseline surveys conducted in Mombasa and Valparaiso there is very little that is parallel between the processes generating undernutrition and obesity.

4. The social determinants of child malnutrition in the two project countries

Chile

The findings from reviewing the literature on the social determinants of child over-weight and obesity in Valparaiso are presented in the Pathways to Better Nutrition Series 1 by Pridmore and by Salgado (see http:\\nick.ioe.ac.uk).
The findings from data collected through semi-structured interviews are presented and in the workshop papers:

Charnes, G. ‘Setting up of a Participatory Action Reflexion Learning (PARL) Group The Chilean Experience’.

McCowan, T. ‘Qualitative data collection, analysis and finding’.

The findings illuminate the nature of the so-called obesogenic environment in the urban slum areas of Valparaiso, which encourages people to eat and drink more calories than they expend and in consequence become obese. This environment has physical, socio-cultural and policy/regulatory dimensions.

Some aspects of the physical dimension found in the study areas include lack of access to safe places for children to play, the steep climb up from the sea level where the main food markets and supermarkets are located, easy access to local traders selling poor quality, low-cost unhealthy foods especially high fat snacks and high calorie soft drinks; widespread ownership of cars, television sets and computer games.

Aspects of the obesogenic socio-cultural environment include social attitudes towards body fatness leading to parents of overweight or obese children failing to correctly perceive their children as overweight and therefore at risk of disease later in life. There is also widespread acceptance of children spending many hours watching TV/computer games and not taking regular exercise and a decline in families eating together and in home-cooking.

Aspects of the policy/regulatory environment include lack of self-regulation by the fast food and soft drinks industry, government permitting aggressive advertising of unhealthy foods such as soft-drinks outside pre-schools and junk food advertising during children’s television-viewing times.

Kenya

The findings from reviewing the literature on the social determinants of child undernutrition in Mombasa, are presented in the Pathways to Better Nutrition Series 1 by Pridmore and by Lang’o (see http://nick.ioe.ac.uk).

The findings from semi-structured interviews are presented in the workshop papers:

Lang’o, D. ‘Qualitative findings from Mombasa’.

Carr-Hill, D. ‘Comparative analysis of the baseline survey data collection, analysis and findings from Valparaiso and Mombasa’.

The findings show that the environment that leads to inadequate nutrient intake and poor health in young children also has physical, socio-cultural and policy/regulatory dimensions. The environment in the study areas is characterised by families living in poor material circumstances with greater dependence on cash income than in rural areas but with high levels of unemployment leading to poverty, food insecurity and lack of social safety nets. These families typically have inadequate access to health and social services or to safe water and sanitation. They commonly lack social cohesion forming weak and disjointed social networks to support the care-giving roles and relationships around children. Psychosocial factors including family breakdown, domestic violence and crime leading to stress and maternal depression.

5. Changing the social determinants through the NICK action research intervention

As mentioned above, in both study areas the members of the research team have broadened stakeholder participation by establishing urban nutrition working groups and supporting them to work through three, six-monthly cycles of action and reflection in order to design action plans, and to implement and improve on their small scale interventions. These multisectoral working groups have sought to create a more enabling environment for child nutrition through building a shared understanding of the causes of child malnutrition and strengthening their capacity to work together to achieve better horizontal co-ordination at the municipal level. They have developed advocacy
strategies and mobilised resources for nutrition-sensitive actions. The working group process and the challenges in each study site are documented and discussed in the following workshop papers:

Charnes, G. “Setting up of a Participatory Action Reflexion Learning (PARL) Group The Chilean Experience”. Nyamongo, M. and Lang’o, D. “Establishing and supporting the Mombasa urban nutrition working group (UNWG)”.

The experience in Valparaiso showed that a barrier to the working groups producing sustainable results was the need to learn to deal and navigate within political agendas in one way or another, interact with bureaucratic values and structures of power that dominate society and that can prove to be quite disempowering. One the most difficult challenges for the working Group was that of visualizing the health effects of most social factors and interventions, particularly those that were “upstream” health determinants. In developing the knowledge and pathways of the group there was a tendency to take decisions basically from intuitive knowledge of actions and mechanisms that were difficult to translate into effective, efficient interventions. The great institutional task was that sustainable change processes require municipalities, local and regional government teams with authority and commitment to implement public policies in local spaces. The experience in Mombasa showed that the success of the working group had been very much dependent on having a supportive policy environment, a space for individual and group growth and achievements and on community ownership. In addition, all three conditions needed to be situated at the appropriate level in national and local governance systems such as counties and municipalities.

6. Evaluating and explaining the impact of the NICK intervention on child malnutrition in the two study sites.

As mentioned above the NICK research team intervened to establish an urban nutrition working group in each study site and to support each group through three six, monthly cycles of participatory action and reflection. During this time each group developed successive action plans, implemented their small-scale actions and improved them after each cycle. In Kenya, the impact of this intervention is being measured through baseline and follow-up anthropometric and household surveys using a controlled design. The follow up surveys have been completed in Mombasa and preliminary analysis of these data is presented in the following workshop paper:

Carr-Hill, R. ‘Data collection, analysis and preliminary findings from Mombasa (quantitative findings)’

The findings show that for both moderate and severe stunting and for levels of domestic violence, rates have improved in both the intervention and control areas. However, the rates have improved more in the control area than in intervention area. For domestic violence, this may well be a reporting problem. More attention has been paid to domestic violence so respondents are more likely to report. For stunting these findings are not easy to explain – although there is evidence that poverty increased in Chaani more than Kongowea between 2011 and 2013 due to a sharp increase in unemployment.

Unfortunately it has not been possible to carry out the follow up surveys in Valparaiso due to the resignation of the field researcher from the University of Valparaiso on health grounds and the subsequent decision of the University to withdraw as partners in the study.

7. The doctoral study in Kenya

This research has developed a case study of child under-nutrition in families affected by domestic violence who are living in an informal settlement in the city of Mombasa to address the following research questions:
1. What are the key social determinants of child under-nutrition and domestic violence against mothers in urban informal settlements in Kenya?

2. What mechanisms (policies, initiatives and networks) are already in place to address domestic violence against these mothers?

3. How can participatory action research (PAR) be used to strengthen mechanisms aimed at addressing child nutrition in households experiencing domestic violence?

4. What is the impact of the strengthened mechanisms on the feeding practices/food patterns of children between 24 and 47 months of age from affected households?

This research is presented and discussed in the following workshop paper.

*Lango’ D. ‘The doctoral study - RQs; research design, data collection and analysis; findings; challenges; plan to completion’.*

**8. Issues of project administration**

Our experience on the NICK study shows that multi-country research projects involving teams of researchers in three countries are complex and challenging to administer. As we enter the final six months of the study, it is important to draw out the lessons that can be learned on effective project administration from this study. The process of setting up an effective administrative structure for communicating with and supporting researchers in different countries, for managing the finances, for disseminating the findings, for depositing the research data with the UK data archive and for addressing ongoing challenges are amongst the issues discussed in the following workshop paper: *Gougoulis, B. ‘Issues of Project administration’*

Key lessons learned are that there is a need for regular communication with the team. There is also a need to create, early on in the project, good online and manual filing systems and to maintain excellent finance records, a realistic timeline and record deadline and a logo and template. Continuity of admin support needs to be ensured for 6 months after the end of project to support end of project report and the deposition of data in the UK data archive where this is a requirement of the funding body.
References


Appendix 1: The three conceptual frameworks that informed the NICK project at the outset.

Figure 1: The 1990 UNICEF Conceptual framework for child nutrition, health and survival which guided the 2008 Lancet Series on Maternal and child Nutrition (Adapted by Ruel, 2008 p.22)

Figure 2: The conceptual framework that guided the work of the Commission on Social Determinants of health (Source: WHO, 2008, p.43)

Figure 3: A conceptual framework for urban health (KNUS, 2008 p.9)