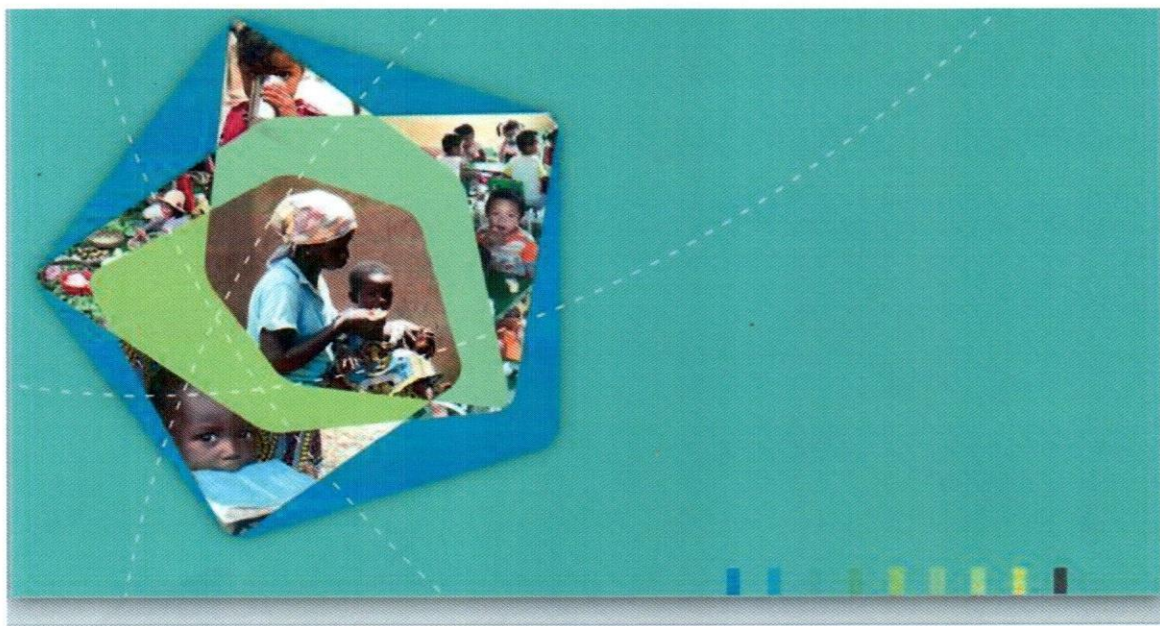




Policy Brief

Issue 03: Raising Nutritional Well-being: What Works and What Does Not



Bangladesh Bureau of Statistics(BBS)
Statistics and Informatics Division(SID)
Ministry of Planning





National Information Platforms for Nutrition (NIPN)

Policy Brief

Issue 03: Raising Nutritional Well-being: What Works and What Does Not

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Raising Nutritional Well-being: What Works and What Does Not

Many factors, bio-physical, socio-economic, cultural as-well-as institutional arrangement, particularly when interventions are made, together lead to observed nutritional outcomes. While stand-alone programmes appear to be the norm, only an integrated approach works best. Two issues are particularly important, women's agency and behavioural change communication

Good progress on nutrition with growth rising and poverty falling

Bangladesh, over the last quarter of a century, has made some good strides in certain aspects of raising nutritional well-being of its children. During this period, stunting has fallen from around 55% to 31% at present. Underweight had fallen more precipitously from just about 55% to slightly above 20%. Prevalence of wasting, however, has wobbled between 20 and 10% with little or no longer term tendency to fall. How have all these changes happened?

Over the last 25 years or so national income has risen and for quite a few years at rates above 6-7% and more recently before pandemic at about 8%. Poverty has fallen substantially while outputs of staple crops have registered major progress to the extent that the country is now basically self-sufficient in rice, the staple food. Aquaculture has flourished raising fish production and supply of animal protein. Poultry farming has become ubiquitous with far greater supplies of eggs and meat. All these raised both aggregate availability and access to food, not simply of staples but also of more nutrition-dense non-staples. Falls in stunting and underweight have much to do with these macro-level socio-economic development. As the side box indicates, these changes have coupled with a rise in per capita GDP, but this may not be enough or be possible now because of the still raging pandemic. Growth remains a necessary factor, but may no longer be sufficient for further improvement in nutritional status.

Going beyond growth

It is known that nutritional processes and their outcomes are influenced by biological, environmental and socio-economic factors. While income rise along with agricultural growth and diversification have to continue to allow people better availability of and access to different kinds of foods, attention needs to be given to these other factors. This policy brief provides a short

summary of a systematic review of such factors as to which of these are important, which seems to work better in practice and which not. As there are many nutritional final and intermediate outcomes, to keep the analysis tractable we have tried to examine only a few particularly those targets set by World Health Organization (WHO).

For every 1% rise in per capita income stunting tended to fall by 0.38% and underweight by 0.65% till now. But limits to improved nutrition through growth may have been reached – for stunting to fall by 1 percentage point each may require economy to grow around 9%, a hard slog, given the present pandemic necessitating better targeted and effective nutritional interventions in future.

WHO 2025 Global Targets on Nutrition

WHO has set certain nutrition related global targets for nutrition for countries to be achieved by 2025. These relate to: Stunting, Wasting, LBW, Childhood Obesity/Overweight, Exclusive Breastfeeding, Complementary Feeding, Women's Nutrition and Anemia of Women of Reproductive Age.

As these are global goals, a question arises as to how well these issues have been analysed in Bangladesh context and if there are interventions in these areas, how far have these been able to consider factors which are important determinants of the particular nutritional outcomes.

To find answers to these issues, a PRISMA based literature survey was made. From an initial list of 500 peer-reviewed papers it was possible to select a total of 85 for all the topics mentioned above after a rigorous criteria of filtering out those which did not meet the criterion for inclusion. Quite naturally, the literature was not equally extensive for all cases of nutritional outcomes or indicators. The numbers of articles for the topics that could be found varied from 18 (the highest) for stunting, closely followed by breastfeeding and women's nutrition (17 studies each) to only 6 for child obesity. On the other hand, quite a few of the articles have examined more than one nutritional issue at the same time.

Salient points observed from review

The major findings by nutritional issues under review are shown in the following table.

| Nutritional outcome/issue | Factors with positive impact | Factors with negative impact | Interventions targeted | Of which effective |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stunting | Mother Education Paternal Education Mother's height, Mother's high BMI, Mothers' age, Wealth/ asset. 4 or more ANC, WASH. Household dairy, animal source of food, cash and food transfer, complementary food, Lipid based nutrient foods supplements foods on CF / Plumpy'doz, EHFP | Having child 36-47 months, higher birth order, smaller birth interval Open defecation | BCC WASH with nutrition education, MDD, MAD; Cash/food transfer; Lipid based nutrient foods/supplements/ Plumpy'doz with BCC; EHFP model | Nutritional education, BCC combined with others more effective than standalone programs; Cash/food transfer, Lipid based nutrient foods /supplements/ Plumpy'doz EHFP |

| Nutritional outcome/issue | Factors with positive impact | Factors with negative impact | Interventions targeted | Of which effective |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| Wasting | Higher socio economic status, Higher age of mother Low BMI of mother Lipid based supplement foods with responsive feeding stimulation and BCC; MMF, MDD; Intensive nutrition education; Good WASH facility | | Supplementary foods; responsive feeding stimulation; BCC | Supplementary foods; responsive feeding stimulation; BCC |

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| Nutritional outcome/ issue | Factors with positive impact | Factors with negative impact | Interventions targeted | Of which effective |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------|
| LBW | Mother's education; socio-economic status; length of preceding birth interval; Women's deci- sion-making power; mother's knowledge of risk factors; Nutrition Education; Ca in cord blood | Gestational age, hemo- globin, mothers' low education, region, unplanned pregnancy, poor maternal wealth, Mothers' low BMI, short stature; Family violence during pregnancy; indoor air pollution | Nutrition education | Nutrition education with exclusive breast- feeding and kangaroo mother care in case of pre-term birth |

| Nutritional outcome/ issue | Factors with positive impact | Factors with negative impact | Interventions targeted | Of which effective |
|-------------------------------|---------------------------------------------------------|------------------------------------------------------------------------------|------------------------|---------------------------------------------------------|
| Childhood Obesity | Mother's higher level of education; Breastfeeding | Higher wealth/ occu- pation; parental obesity; physical inactivity; | Childhood obesity | Mother's higher level of education; Breastfeeding |

| Nutritional outcome/ issue | Factors with positive impact | Factors with negative impact | Interventions target- ed | Of which effective |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Breastfeeding | Mothers knowledge, higher role of mothers in household decision-mak- ing, maternal education, healthy mother, being a housewife, regional factors, Peer nutrition counselling, combined intensive inter- personal mobilization and BCC, delivery centre facility, | Risk of infection | Nutrition education through peer counsel- ling, intensive interpersonal counseling, community mobiliza- tion with BCC; | Combined indi- vidual and group counselling; Counseling with MNCH program. Peer counseling services along with family support; |

| Nutritional outcome/ issue | Factors with positive impact | Factors with negative impact | Interventions targeted | Of which effective |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Complementary feed- ing | Fortified complementary supplementation including Social Safety Net Transfers with BCC; Nutrition Education as BCC; Combined Intensive Inter- personal Counseling; Mass Media exposure; Community Mobilization; Dietary diversity; HFP; Mothers' nutritional knowl- edge | | Fortified supple- mentation including social safety net transfers; BCC; Combined intensive interpersonal coun- seling; Community Mobilization; EHFP | Responsive feeding stimulation with BCC; Social Safety Net Transfers – food or cash + BCC; Promotion of dietary diversity; HFP |

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| Nutritional outcome/ issue | Factors with positive impact | Factors with negative impact | Interventions targeted | Of which effective |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------|
| Women's nutrition | Dietary diversity at different reproductive stage for micronutrient deficiency and weight loss; Nutrition education in MNCH program; Group counseling; HFP and LIST; Gender equity; Women's decision-making power; Maternal height; Maternal education associated with higher breast milk fatty acid; At least 4 ANC visits | Higher socio-economic condition associated with breast milk fatty acid; Conservative families associated with women's higher obesity; Contraceptive use; adolescent pregnancy | Peer education in pregnancy; micronutrient supplementation, nutrition education; HFP model | Peer education; nutrition education in MNCH programme; HFP |

| Nutritional outcome/ issue | Factors with positive impact | Factors with negative impact | Interventions targeted | Of which effective |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------|
| Anemia | Drinking ground water and dietary intake of iron rich & vitamin C rich foods; Iron and Iron-folate supplementation HFP | Low iron intake from groundwater; Low socio-economic status leveraged by regional effects; food insecurity | Iron and Iron-folate supplementation; HFP | Iron and Iron-folate supplementation; HFP |

Summary of review

Quite a few points may be highlighted on the basis of the entries in the table. These may be summarized as follows:

First, much of the literature relates to nutrition-specific factors and interventions. There is a general dearth of nutrition-sensitive issues, factors and interventions, and not even of the role of general growth of the economy which as indicated in the beginning of this review had quite a role to play, at least till now. The larger picture therefore seems to be absent. Even where there are a few attempts at understanding broader issues, those of production of food has been discussed particularly in reference to homestead food production, but not so much those of access by the general public as measured directly by price although background economic factors such as wealth some time had been factored in.

Second, nutritional outcomes and thus indicators such as stunting, wasting and under-nutrition are quite inter-linked. Any intervention for improving one aspect impacts upon the other. Both synergy and possible trades-off may occur. Yet, most analyses are done on a single indicator and interventions are also for stand-alone outcomes.

Related to this second observation is the finding in this review that stand alone interventions may some time work but several related interventions combined work better which also means better cost-effectiveness of interventions; yet, this issue seems to have been overlooked.

Fourth, there seems to be a general dearth of analysis of nutritional issues in urban areas and also for adolescent women. Then again among economic factors the main thrust is on wealth status. While this may be important, the fact re-

mains that wealth is a stock and a flow variable like income probably provides better access to food in general and thus should be analysed in more detail.

Fifth, the effectiveness of the interventions seems to be hardly looked at, as already indicated above, in an integrated manner. On the other hand, it may be that even when several interventions are put together, the over-all improvement may not be substantial, which means that we probably have not yet understood what does the trick, either clinically, or socio-economic and behavior change-wise.

Sixth, among interventions, more often than not socio-economic factors, such as women's agency and its correlates have been found to be quite important, particularly when combined with BCC which may take several forms.

Seventh, in some cases, regional factors appear to be important; yet, one hardly finds more elaborate analysis of such factors which is a weakness of the intervention designs as these lack the regional specificity of any such programs. Even within a small country such as Bangladesh one size may not fit all.

Eighth, one limitation of the review is that the number of studies for understanding any particular nutritional problem is not large, the largest being for stunting. A question therefore naturally arises if grey literature should also be used. While this is not a common practice because judging the quality of such literature is very difficult without a rigorous review which is the practice for peer-reviewed journals. What perhaps can be done is that the conclusions based on peer-reviewed literature may be compared with those from grey literature and check if similar conclusions can be made.

Lastly, the effectiveness of any intervention depends on its design as well as management style and content, in one word, governance. Yet, there seems to be hardly any study on governance of programmes nor of cost effectiveness.

Recommendation

Given the above summary observations, future studies and interventions related to nutrition may need to fill up some of the gaps in understanding the issues as well as designing interventions accordingly. Particularly in case of the latter, a more integrated and multi-pronged approach along with a common thread of women's agency and behavioural change communication is necessary for sustained impact as well-as cost-effectiveness of interventions.

¹ A problem perhaps lies in the use of the word "significant". When used in a statistical sense, it means how systematic the effect is. When used in a policy sense, it means how substantial it is. The statistically significant result may in absolute sense be quite small.

² A global study has found that even when ten interventions are carried out at 90% coverage, the over-all fall in child mortality is 15% which (while every life counts) is a small improvement at best. See Bhutta, Z. A. et al, Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost?, Lancet 2013; 382:452-77.

³ For example, the recent MICS report shows that Sylhet, the wealthiest division, is nutrition indicator-wise the worst performer.

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