MATERNAL BEHAVIOUR CHANGE FOR CHILD HEALTH AND NUTRITION

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Introduction

This paper is an attempt to understand the complex multidimensional nature of and interrelationships among various determinants of maternal behaviours for child health and nutrition, and the need for interventions directed towards behaviour change to focus on these complexities – perceiving the mother as an active participant – rather than on didactic dissemination of information to a passive receiver. The paper traces the importance of maternal health behaviours in determining child health and nutrition outcomes and proceeds to explore the identification of variables influencing health behaviour, the mechanisms whereby that influence is achieved, and the implications for interventions directed towards achieving health behaviour change.

Out of the various causes of morbidities and mortalities prevalent among children and reflected in the poor child health indicators, more than half are preventable. Moreover, besides clinical preventive measures such as immunisation and treatment of childhood illnesses, health behaviours of the primary caregiver, in this case considered to be the mother, play a significant role in alleviating these conditions leading to disease and death in children. Here, it needs to be clarified that child health denotes the health and nutrition indicators of the child between 0-3 years of age – the most formative years of life, and the age during which the child is most vulnerable, and the period in which the mother's role in determining the child's health and nutrition is the most significant. Caregiving is a complex set of behaviors that range from child feeding practices, to responses that promote a safe and healthy environment for the child and provide adequate health care, to psychosocial interactions and emotional support. In conceptualising child nutrition, these caregiving behaviors of the mother are included as underlying factors to the direct determinants of child nutrition that impact on child growth.[1]

These caregiving behaviours of the mother are influenced by her individual characteristics, the demographic characteristics of the household and support that she receives from her family and the community, as well as the larger policy environment that determine the availability of and her access to health services. Therefore, the determinants of maternal caregiving or health behaviours that impact child health and nutrition outcomes are multidimensional, with different factors, belonging to different levels of the environment, exerting its influence through specific pathways. This paper recognises the complex multifactoriality of the determinants of maternal health behaviours and analyses them and their pathways of influence – delineating the determinants at multiple levels (individual, household, community and systemic), of the environment within which the mother and the child exist.

Finally, the paper highlights the need for comprehensive interventions for behaviour change, addressing determinants at each systemic level, and then details out behaviour change communication – the most commonly implemented behaviour change intervention – introduced through different platforms. It illustrates effective behaviour change communication interventions in varied contexts and then, draws out the implications for such interventions to effectively bring about maternal behaviour change for achieving better child health and nutrition outcomes.

1 Engle, P.L. 1992. *Care and child nutrition: Theme paper for the International Nutrition Conference.* New York: Nutrition Section, United Nations Children's Fund.

In conclusion, the aim of this paper is to place health behaviour as a complex variable, influenced not only by maternal knowledge and education, but various multilevel factors. The interventions for changing maternal health behaviours, therefore need to broaden their focus beyond health and nutrition education and behaviour change communication programmes, to include factors such as maternal autonomy within the household, the perceptions and attitudes of the family and the community towards health and nutrition, the support systems and the enabling environment available to the mother, and the availability and accessibility to health services.

1. Child Health and Nutrition: the importance of maternal health behaviours

All children, but especially those born into poor families are exposed to a range of vulnerabilities during the earliest phases of their life – in utero, at the time of delivery and as neonates, and in the developmentally critical first three years. These early exposures – to inadequate nutrition, frequent infection, and inappropriate caring practices – are the proximate causes of child mortality and morbidities and are themselves the outcomes of a range of socio-economic, environmental and systemic determinants, including food security, knowledge-levels and household support structures, access to clean water and sanitation, information asymmetries, workload and time constraints of caregivers, and availability of health services. With an infant mortality rate of 67.9 and an under five mortality rate of 94.9.[2] India is extremely poor on child survival and the quality of survival as indicated by low birth weight, malnutrition and stunting are abysmal. The first month and within that the first week are especially vulnerable periods. Beyond the neonatal period, diarrhoea malaria, pneumonia, and measles claim the largest numbers of lives under the age of five, causing more than 30 percent of child deaths. Mildly underweight children under age five are twice as likely as their nourished peers to die; moderately underweight children are five times as likely to die, and severely undernourished children are eight times as likely to do so.[3] Overall, malnutrition is an underlying cause in over 52.5 percent of these deaths. Poor child feeding and caring practices are reflected in only around 16 percent of all babies start breastfeeding within the first hour and rates of exclusive breastfeeding fall dramatically from 72 percent at one month to only 20 percent at six months. Complementary feeding practices are also very poor with only 33 percent of infants between six to nine months given solid, mushy foods. In many cases it is during this critical stage (between 6-24 months) that children slip into malnutrition. In poor households, the nutritional value, the appropriateness and intake of the supplementary food that is being given is also questionable, as is shown in the high prevalence of anaemia among children at 74.3 percent, vitamin A deficiency, 47 percent children underweight and 45.5 percent stunted. Other infections owing to unhealthy living conditions resulting from poverty and exacerbated by the vicious cycle of infection and undernutrition make healthy child development almost impossible.

Inquiry and analysis into the aetiology of these child health problems indicate that preventable diseases contribute to more than half of these poor health outcomes. Simple, cost effective interventions of changing child caring practices have been proved to be efficacious. Immediate initiation and exclusive breastfeeding for six months and the introduction of weaning and complementary foods in addition to breast milk after this period are critical for child survival and optimum development, building immunity against infections and preventing upto 20

2 National Family Health Survey II, International Institute of Population Sciences, 1998-99.

3 Pelletier, D.L., Frongillo, E.D., & Habicht, J.P. 1993. "Epidemiologic Evidence for a Potentiating Effect of Malnutrition on Child Mortality." *American Journal of Public Health* 83 (8): 1130-33.

percent of childhood deaths.[4] Health education interventions aimed at improving health behaviors of mothers and other primary caregivers to recognise the early signs of potentially fatal illnesses and where to seek care for them is also essential. Education about child health and nutrition to mothers, appears to be the crucial skill in improving children's nutritional and health status, indicating a reduction in the incidence of childhood morbidities and undernutrition by 13 to 43 percent.[5],[6],[7]. Ensuring adequate nutrition of children under five could prevent more than 2.5 million deaths from infections and severe undernutrition.[8] Certain factors that have been identified as indicators associated with health and nutritional status of children such as child feeding practices, a safe and healthy environment for the child and provision of adequate health care, to psychosocial interactions and emotional support are closely related to the roles played by primary caregivers, in most cases mothers. Research evidences indicate that child nutritional status, childhood morbidities and health outcomes are determined most importantly by maternal roles of caregiving and feeding. Mothers spend a greater amount of time per day in child care and household activities than that of other members of the household and their role as the primary caregiver is of utmost significance in determining child health and nutrition outcomes.[9] The decisions made by mothers depending on her individual characteristics, knowledge, prior experiences, and external environmental conditions, that manifest in her behaviour towards ensuring her child's health and nutrition are indicated as important factors for the prevention of child morbidities and mortality.

Maternal health and caregiving behaviors that underlie and create the environment within which children are raised are increasingly seen as central to child nutrition outcomes, and policy attention to them has been recommended by various national and international organisations and task forces. Child care is a complex set of behaviors that range from child feeding practices, to responses that promote a safe and healthy environment for the child and provide adequate health care, to psychosocial interactions and emotional support. In UNICEF's conceptual model for child nutrition, the care behaviors for both the child and mother are included as underlying factors to the direct determinants of child nutrition and also directly impact on child growth.[10]

Based on these evidences, the need for interventions in the behavioural dimensions of health, with focus on the mother, to reduce preventable child morbidities and mortality is evident. These include breastfeeding, appropriate weaning and use of complementary foods, immunization and appropriate ante and post natal care and the successful management of childhood illnesses.[11] These interventions that are of proven effectiveness can be implemented

4 Jones, G., Steketee, R., Black, R., Bhutta, Z.A., Morris, S., & The Bellagio Child Survival Study Group. 2003. "How Many Child Deaths Can We Prevent This Year?" *The Lancet* 362 (9377): 65-71.

5 Christaensen, L. & Alderman, H. 2001. Child Malnutrition in Ethiopia: Can Maternal Knowledge Augment The Role of Income? in *Africa Region Working Paper Series* . No. 22.

6 Penny, M.E., Creed-Kanashiro, H.M., Robert, R.C., Narro, M.R., Caulfield, L.E., Black, R.E. 2005. Effectiveness of an educational intervention delivered through the health services to improve nutrition in young children: a cluster-randomised controlled trial" in *Lancet* 2005; 365: 1863–72

7 Block, S. & Webb, P. 2003. "Nutrition Information and Formal Schooling as Inputs to Child Nutrition", *Working Papers in Food Policy and Applied Nutrition*, Tufts University.

8 Caulfield, L.E., Onis, M. de, Blossner, M., & Black, R.E. 2004. "Undernutrition as an Underlying Cause of Child Deaths Associated with Diarrhoea, Pneumonia, Malaria, and Measles." *American Journal of Clinical Nutrition* 80:193-98.

9 Ekanayake, S., Weerahewa, J. & Ariyawardana, A. 2003. Role of Mothers in Alleviating Child Malnutrition: Evidence from Sri Lanka.

10 Engle, P.L. 1992. *Care and child nutrition: Theme paper for the International Nutrition Conference.* New York: Nutrition Section, United Nations Children's Fund.

11 UN Millennium Project 2005. *Who's Got the Power? Transforming Health Systems for Women and*

at the household and community levels and depend largely on the knowledge, attitudes, practices and behaviours of mothers and families.[12] These findings indicate the necessity of interventions aimed at modifying critical health and nutrition behaviours, especially of the mother, who is the primary caregiver of the child.

Although variables related to behavioural aspects of health are complex, as is demonstrated by the recent data from the above cited research, they are of great importance in explaining child health and nutrition outcomes. Health behaviours have the potential for contributing as much as medical intervention or economic development toward the achievement of desired child health outcomes.[13] However, to bring about successful and sustainable behaviour change among mothers to achieve desired child health and nutrition practices, it is imperative to understand the determinants that drive health related behaviours among mothers, thus leading to their adoption of certain child caring and feeding practices, undertaking preventive health behaviours to protect her child from disease, and seeking healthcare in case of childhood illnesses. The next section attempts to identify the determinants of maternal health behaviours and to trace the complex pathways of influence that these factors exert on child health and nutrition.

2. Determinants of health behaviours

Although the significance of behaviours in contributing to health and nutrition outcomes is fairly universally established by numerous research evidences over a period of time, knowledge about the determinants of these health behaviours has remained in the realms of theoretical disciplines. The most prominent reason behind this has been the complexity of these determinants. Each of the health behaviors are influenced by a wide range of individual, social, cultural, political and economic conditions. The behaviors themselves are inter-related in ways that have not been measured or studied in detail. This section attempts to develop an understanding of the determinants of maternal health behaviours that impact child health and nutrition outcomes.

Given the complex interplay of factors determining health behaviours, these determinants need to be analysed with a multidimensional approach to understand these complexities and intricate interrelationships.

An individual's behaviour is contingent on a complex system of relationships affected by multiple levels of the surrounding environment. The environment can be envisioned as a series of nested structures that includes the individual characteristics, immediate settings of the household and the community to broader socioeconomic, political and cultural factors, that includes the activities and interaction patterns in the individual's immediate environment; the connections among the individual's immediate settings; the social settings which do not contain the individual but affects her experiences in the immediate system; and the values, customs, laws, socio-cultural and economic and political factors that influence experiences and interactions at lower levels of the environment.

Children. Task Force on Child Health and Maternal Health.

12 Victoria, C.G.A. Wagstaff, J.A. Schellenberg, D.R. Gwatkin, M. Claeson & Habicht, J.P. 2003. "Applying an Equity Lens to Child Health and Mortality: More of the Same is Not Enough." *The Lancet* 362 (9387): 233 - 41.

13 Underwood and Gray (1990:607)

In the context of health behaviours the determinants at each of these systemic levels include various factors and conditions pertaining directly or indirectly to health production.

2.1. Determinants at the Individual Level

The innermost level of the environment refers to the individual characteristics that determine the health outcome of the mother and her child. Drawing from research evidences, the determinants of maternal and child health at this microsystemic level include maternal education, perceptions, subjective norms and attitudes about health, self perception, aspirations, self efficacy, autonomy. The individual level factors of health behaviour grow out of a value expectancy orientation and relates action to the health oriented cognitions that people hold. The pathways through which each of these variables have been found to determine health behaviour of mothers in relation to their child's health and nutrition can be discussed in detail.

2.1.1. Maternal Education and Knowledge: Maternal education regularly emerges as a key element of an overall strategy to address malnutrition, having been documented, for example, in studies based in India which showed a strong positive correlation between maternal schooling and her health seeking behaviour and health practices for her child like immunisation and management of childhood illnesses;[14] in Pakistan which found that raising maternal education upto the primary level can reduce child stunting by 16.5 percent, which is approximately 10 times more than increasing per capita income by 10 percent;[15] in Bangladesh, which showed that maternal schooling led to more appropriate child caring practices, and resulted in a decrease in child malnutrition by 22 percent.[16] Another large scale study in Bolivia indicate that maternal education accounts for almost 60 percent of the behaviours determining child health and nutritional status, with each additional level of schooling decreasing the likelihood of child stunting by approximately 44 percent.[17] Nevertheless, the mechanisms behind the association between mother's schooling and health behaviours for child health are still poorly understood. Three pathways through which schooling may influence child health are, first, formal education may directly transfer health knowledge to future mothers regarding desired health and nutrition practices; second, the literacy and numeracy skills acquired in school may enhance the mothers' capability to diagnose and treat child health problems, therefore increasing health seeking behaviours; third, increased familiarity with modern society through schooling may make women more receptive to modern medicine. These are not mutually exclusive and are additional to the impact of schooling on household income.[18] Another analysis of this pathway deduced from an analysis of the Bolivia Demographic and Health Survey indicate that maternal education operates through its influence on various characteristics like socioeconomic status of the household, by increasing maternal autonomy, and by forming more positive than fatalistic

14 Govindsamy, P. & Ramesh, B.M. Maternal education and utilisation of maternal and child health services in India. *National Family Health Survey Subject Reports.* Number 5, December, 1997. The analysis found that health seeking behaviour by the mother for child health care increases by 62 percent with each level of maternal schooling.

15 Alderman, H., and M., Garcia, 1994, Food Security and Health Security: Explaining the Levels of Nutritional Status in Pakistan, *Economic Development and Cultural-Change,* 42-3, p. 485-507.

16 Chaudhuri, A. 2003. Programme Impact on Health and Nutritional Status of Children: Evidences from Rural Bangladesh. www.depts.washington.edu

17 Frost, M.B., Forste, R. & Haas, D.W. Maternal education and child nutritional status in Bolivia: Finding the links, *Social Science and Medicine*, 60 (2), January 2005. 395-407.

18 Glewwe, P. 1999. Why does mother's schooling raise child health in developing countries: Evidence from Morocco. *The Journal of Human Resources* 34 1, pp. 124–136.

attitudes towards child health and thus, seeking modern healthcare.

Besides maternal education, maternal knowledge about child health and nutrition, often acquired outside the classroom, appears to be the crucial skill in improving children's nutritional status. Various research studies imply that maternal knowledge imparted through health and nutrition education programmes can reduce the incidence of childhood malnutrition by 13 to 43 percent.[19],[20],[21]. The differential impact of maternal education and maternal knowledge on her health and nutrition behaviours for child health has been studied for important policy implications to indicate that even in communities where formal education is limited, it may be possible to impact child health and malnutrition through specific health education programs. While certain studies have found maternal knowledge to be more effective in changing health related behaviours than maternal education (showing a significant difference of almost 20 percent),[22] other studies based on a large household survey in rural Indonesia have qualified this differential impact by explaining that formal schooling exerts a stronger influence on child anthropometric outcomes in the longer run (height-for age), while maternal knowledge contributes to shorter-run child outcomes (weight for age). Besides this, the study also found that although most health and nutrition education programmes focus on very specific information related to child micronutrient deficiencies, they improved the general quality of diet in the sample population, indicating a multiplier effect.[23]

2.1.2. Self Perception: Self perception of an individual has been found to be an important determinant of health behaviour. Self perception can be defined as the value that the individual attaches to the self. The parameters of evaluating the self differs among individuals depending on the priorities that they attach to different outcomes or contributions and the relative value addition to these made by the self. Self perception is closely associated with an individual's experience in the family and interactions with significant others, and the standards set by the community and society at large. Women in poverty, deprived of essential opportunities and positive experiences in the family and the society, often have a negative self perception, devaluing themselves and attaching less significance to her contribution, productivity and life than that of her other family members. Research has indicated towards the correlation between negative self perception and lower rates of health seeking behaviour. A longitudinal study in Mexico, of studying illness episodes and healthcare seeking among adult women, found that negative self perceptions among women led to lower health seeking behaviour during illness episodes. Indepth interviews with the concerned women indicated the reasons as perceiving the potential health expenditure as a "wastage" when spent on themselves.[24] Besides this, self perception also denotes one's perception of one's body and changes in its functioning in order to seek health care. Illness, therefore, must be perceived as a discrete occurrence rather than an undifferentiated and constant state of being. An illustration of this phenomenon is the fact that a significant number of women in India suffer from anaemia which results in physical weakness, exhaustion, lower productivity and cognitive capacities. However, the onset of anaemia in early childhood or since birth makes it a constant experience of the

19 Christaensen, L. & Alderman, H. 2001. Child Malnutrition in Ethiopia: Can Maternal Knowledge Augment The Role of Income? in *Africa Region Working Paper Series* . No. 22.

20 Penny, M.E., Creed-Kanashiro, H.M., Robert, R.C., Narro, M.R., Caulfield, L.E., Black, R.E. 2005. Effectiveness of an educational intervention delivered through the health services to improve nutrition in young children: a cluster-randomised controlled trial" in *Lancet* 2005; 365: 1863–72

21 Block, S. & Webb, P. 2003. "Nutrition Information and Formal Schooling as Inputs to Child Nutrition", *Working Papers in Food Policy and Applied Nutrition*, Tufts University.

22 Ibid.

23 Ibid.

24 Becker, M.H. & Maiman, L.A. 1992. Models of Health Related Behaviour.

women, becoming an integral part of her self perception, and therefore they often do not perceive their condition as an "illness" to seek treatment for its cure. Negative self perception among women affects their health seeking behaviour for antenatal and postnatal care, for nutritional deficiencies like iron deficiency anaemia, and for other health conditions, thus leading to poor health and nutrition outcomes for themselves and their children.

2.1.3. Self Efficacy: Self efficacy is the level of confidence in one's ability to engage in a specific behaviour to achieve a certain goal. This is directly related to one's self perception, as a more positive self perception will lead to a greater sense of agency and self efficacy. Mothers who feel that they lack the resources or opportunities to engage in a given behaviour are unlikely to generate a strong intention to engage in it even when they may hold a favourable attitude and may have the knowledge about the advantages of that behaviour for her child.[25] In India, where the status of women is extremely low and her access to and control over resources and decision making is negligible, self efficacy among women is generally low and impedes a range of behaviours, including those related to health outcomes. Moreover, it can be highlighted here that self efficacy is behaviour specific. For instance, the confidence or self efficacy of a mother that she can breastfeed her child does not necessarily imply that she feels self efficacious to seek healthcare for her sick child from a healthcare delivery centre. Mothers with lower sense of self efficacy usually have an external locus of control, that is attribution of illnesses to factors beyond one's control. This extends to their perception of their behaviours, therefore, not having the potential to impact their children's health outcome in anyway.

2.1.4. Autonomy: Women generally are the primary care givers in their home, spending more time to the protection and care of their children than men.[26] Therefore, her ability and freedom in decision making, especially regarding the diet of their children and to access healthcare for herself and her sick child are particularly important. The empirical evidence supporting maternal autonomy as a determinant of behaviour for child health is indicated by various studies investigating the topic. One study concluded that an increase in mother's control over family income is associated with improved nutritional status for female infants as the mothers were able to buy more nutritionally rich foods and allocate these to their girl children.[27] Other studies demonstrated that the survival of a woman's children is positively associated with her level of autonomy, particularly her autonomy to feed nutritious food to her children, eat better and be healthier herself and therefore able to care adequately for her children and her freedom to seek healthcare in case of illness without deferring the decision to traditional authority structures.[28] [29] [30]

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25 Bandura, A. (1991). Self-efficacy mechanism in physiological activation and health-promotion behavior. In J. Madden (Ed.), *Neurobiology of learning, emotion, and affect* (pp. 229-269). New York: Raven.

26 Caldwell, J & Caldwell, P., 1993. Roles of women, families, and communities in preventing Illness and providing health services in developing countries. In: Gribble, J. and Preston, S., Editors, 1993. *The epidemiological transition: Policy and planning implications for developing countries; Workshop proceedings*, National Academy Press, Washington, DC, pp. 252–271.

27 Saraswathi, T.S., 1992. Child survival and health and their linkages with psycho-social factors in the home and community. *Psychology and Developing Societies* 4 1, pp. 73–87.

28 Kishor, S. (1995). *Autonomy and Egyptian women: Findings from the 1988 Egyptian demographic and health survey.* Demographic and Health Surveys Occasional Papers No.2. Calverton, MD: Macro International, Inc.

29 Jejeebhoy, S.J., 1995. Women's education autonomy, and reproductive behavior: experience from developing countries. , Clarendon Press, Oxford.

30 Mason, K.O. (1984). *The status of women: A review of its relationships to fertility and mortality*. Paper prepared for the Population Science Division of the Rockefeller Foundation. New York, NY.

2.1.5. Attitudes: Research in Social Psychology has indicated that attitudes and beliefs manifest in behaviours of an individual. In the arena of child health, the attitude of the mother towards the specific behaviour under consideration is a significant factor. The translation of the mother's attitude to a health behaviour, in turn, is mediated by the belief that the specific behaviour will lead to certain outcomes and her evaluation of these outcomes is positive.[31] This can be illustrated by taking the example of breastfeeding. If breastfeeding is considered to be a health behaviour of the mother, her attitude towards breastfeeding regarding its expected positive outcome for the child like immunity to infections, appropriate nutrition, attachment between the her and the child, will determine whether the she breastfeeds her child. Research studies have indicated that attitudes account for almost 80 percent of health behaviours.[32] Attitudes influence health behavior by producing a shift away from fatalistic perceptions about health beliefs and practices, leading to a greater receptivity to novel ideas and practices, and a more frequent acceptance of rational explanations of disease and modern medicine.[33] [34] [35] [36]. Thus, mothers with more accepting attitude towards modern medicine and a less fatalistic attitude towards health and disease, will be more likely to use preventive health services like immunisation for their children, be more willing to take their children to a healthcare facility, and less likely to attribute the future health of their child to fate.[37] Research findings in nutrition support attitudes as a link between education and child health outcomes, including nutritional status.[38] One study found that optimistic and enterprising mothers were successful in maintaining good nutritional status of their children in spite of impoverished surroundings. In contrast, children whose mothers have fatalistic outlooks were more likely to suffer from malnutrition.[39]

2.2. Determinants at the Household Level

The household level includes the interconnections among the components in the immediate setting of an individual. These include socioeconomic status of the household, the characteristics of the family, familial and social support available to the individual to practice certain health behaviours. These factors are detailed below:

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31 Ajzen, I. & Fishbein, M. 1977, 1980. Theory of Reasoned Action in *Understanding Attitudes and Predicting Social Behaviour.*

32 See for instance, Jaccard & Davidson. 1972. correlating attitudes to variance in the behaviour of women to use oral contraceptive pills; Fishbein et al., 1980, showing the impact of attitudes on family planning behaviour among couples; Reid & Christensen, 1988, applying the impact of attitudes to medication adherance.

33 Barrett, H. & Brown, A., 1996. Health, hygiene, and maternal education: Evidence from Gambia. *Social Science & Medicine* 43 11, pp. 1579–1590.

34 Caldwell, J. & Caldwell, P., 1993. Roles of women, families, and communities in preventing Illness and providing health services in developing countries. In: Gribble, J. and Preston, S., Editors, 1993. *The epidemiological transition: Policy and planning implications for developing countries; Workshop proceedings*, National Academy Press, Washington, DC, pp. 252–271.

35 Cleland, J.G. & Van Ginneken, J.V., 1988. Maternal education and child survival in developing countries: The search for pathways of influence. *Social Science & Medicine* 27 12, pp. 1357–1368.

36 Defo, B.K., 1997. Effects of socioeconomic disadvantage and women's status on women's health in Cameroon. *Social Science & Medicine* 44 7, pp. 1023–1042

37 Bicego, G.T. & Boerma, J.T., 1993. Maternal education and child survival: A comparative study of survey data from 17 countries. *Social Science & Medicine* 36 9, pp. 1207–1227.

38 Zeitlin, M., Ghassemi, H., & Mansour, M. (1990). Positive deviance in child nutrition—with emphasis on psychosocial and behavioural aspects and implications for development. Tokyo, Japan: The United Nations University.

39 Ibid.

2.2.1. Socioeconomic Status: One of the most commonly researched links between maternal health behaviours and child health is socioeconomic status. Its association with child mortality and health has largely been explained by the increased ability to buy goods and services linked with health outcomes and therefore facilitating health seeking behaviour, as well as adherence to medical advice.[40] [41] [42] The influence of socioeconomic status on maternal health behavior is also fairly evident. Higher levels of income are correlated with better housing conditions; thus, households with sanitation facilities, piped water, and electricity generally have lower contaminant levels than households without such amenities.[43] [44] Additionally, more money can be spent on nutritional food, warm clothing, medicine, and health care services that can directly impact children's health.[45] Comparative studies have found that paternal occupation is strongly correlated with neonatal, infant, and child mortality, with agricultural and blue collar workers having the highest childhood mortality levels and professional/white collar workers the lowest. Declining levels of child mortality have also been associated with piped water, flush toilets, non-dirt floors, as these help the hygienic practices that are closely associated with the prevention of childhood diseases like diarrhoea.[46] [47] [48] Besides the ability to buy health and nutrition related goods, a higher socioeconomic status of the household, especially paternal occupation and asset ownership, frees the mother of compulsions to work for supplementing the household income and spend greater time in child caring and feeding practices. Often among low-income households, women need to work in low paying, strenuous and hazardous jobs. These factors leave them with little energy and time to attend to child care needs, and result in early weaning, inadequate and inappropriate feeding, usually by older siblings of the child, as well as exposure of the child to hazardous conditions when she accompanies the mother to her work place.[49] The empirical evidence, thus, demonstrates that socioeconomic status has a strong influence on maternal behaviours that influence child health outcomes.

2.2.2. Family Characteristics: For the purpose of this paper, the broad variable of family characteristics has been restricted to health beliefs and attitudes held by the family, the family size and the relationships among the family members – characteristics which have been found to have a significant influence on health behaviours. Analysis of variance among households in healthcare utilisation reported by several surveys conducted in America and Europe resulted in the Behavioural Model of Health Service Utilisation (Andersen, 1968; Andersen and Newman,

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40 Cleland, J.G. & Van Ginneken, J.V., 1988. Maternal education and child survival in developing countries: The search for pathways of influence. *Social Science & Medicine* 27 12, pp. 1357–1368.

41 Defo, B.K., 1997. Effects of socioeconomic disadvantage and women's status on women's health in Cameroon. *Social Science & Medicine* 44 7, pp. 1023–1042

42 Victoria, C.G., Smith, P.G. & Vaughan, J.P., 1986. Social and environmental influences on child mortality in Brazil: Logistic regression analysis of data from census files. *Journal of Biosocial Science* 18 1, pp. 87–101.

43 Barrett, H. & Brown, A., 1996. Health, hygiene, and maternal education: Evidence from Gambia. *Social Science & Medicine* 43 11, pp. 1579–1590.

44 Martin, L.G., Trussell, J., Salvail, F.R. & Shah, N.M., 1983. Co-variates of child mortality in the Philippines, Indonesia, and Pakistan: An analysis based on hazard models. *Population Studies* 37 3, pp. 417–432.

45 Ibid.

46 Bicego, G.T., Ahmad, O.C. (1996). *Infant and child mortality. Demographic and health surveys comparative studies No. 20*. Calverton, MD: Macro International Inc.

47 United Nations. 1985. *Socioeconomic Differentials in Child Mortality in Developing Countries.* New York. NY: UN Department of International Economic and Social Affairs.

48 Sullivan, J.M., Rutstein, S.O., & Bicego, G.T. (1994). *Infant and child mortality. Demographic and health surveys comparative studies no. 15*. Calverton, MD: Macro International, Inc.

49 Moorehouse, M.J. 1991. Linking Maternal Employment Patterns to mother-child activities and children's school competence. *Developmental Psychology,* 27, 295-303.

1973; Andersen et al., 1975). This model indicated that beliefs and attitudes about healthcare and disease held by the family and past incidences or frequency of use of healthcare services by the family determine a mother's health seeking behaviour for her child to the extent of 16 to 23 percent. Further, it was found that smaller the family size, that is fewer the number of children, the higher was the predisposition of the mother to seek healthcare for her child. This was explained by the value that the family attaches to a child when they have fewer children. Besides, in poor households, a larger number of children leads to a strain on expenses and healthcare may be attributed lesser priority; decreased maternal involvement, parental stress and crowded living conditions are other impediments in a large family to desired maternal behaviour for child health and nutrition.[50] [51]

Family size also denotes joint or extended family structures. Research evidences indicate the positive correlation between such family structures to maternal behaviours for her child. The presence of other adults, especially women, in the household to take up her other domestic duties leaves the mother with time and strong support structures to undertake behaviours like frequent feeding, greater positive interaction with the child, and taking the child to healthcare facilities for immunisations and medical care, which lead to better child health and nutrition outcomes.[52] [53]

The relationships among family members, especially between the parents, determines maternal caregiving and health behaviours towards the children. Marital conflicts and domestic violence have been found to be strong obstacles to a mother's physical and psychological capacity to be nurturant towards her child and attend to her health and nutrition needs.[54]

2.3. Determinants at the Community Level

The community includes formal organisations and informal social networks. The traditional health related beliefs, values and practices of the community, that the mother and her child belongs constitute the primary determinants at the exosystemic level that directly determine maternal behaviours for child health and nutrition outcomes. Evidences of such influence are discussed below in detail.

2.3.1. Community Perceptions of Health: The determinants in the exosystem relate closely to health sociology and anthropology, primarily emphasising that health is a culturally defined concept. Much of child care behaviors and practices are endogenous to cultures. Cultures and ethnic groups often have prescribed behaviors that are based on local knowledge systems and are practiced and taught to successive generations. Mothers learn these practices from their observations or are specifically instructed in them by their peers and elders in the community. Differences in rates of healthcare utilisation and reporting of illness by the mother depends to a large extent on the perceptions of health and the traditional beliefs, attitudes and practices related to this perception that her community holds. A longitudinal study of self reported illness episodes and health care seeking behaviour by women of two distinct social-ethnic communities in Mexico revealed that starting from a woman's recognition and evaluation of illness symptoms to her decision to seek medical care, as well as the choice of the type of healthcare service or facility was determined by the perceptions of health prevalent in their respective communities.[55]

50 Andersen, R.M. Revisiting the Behavioral Model and Access to Medical Care: Does it Matter? *Journal of Health and Social Behavior*, Vol. 36, No. 1 (Mar., 1995) , pp. 1-10.

51 Rutter & Madge. 1976.

52 Harrison et al. 1990.

53 Pearson. 1990.

54 Sri Lanka study. Global Forum for Health Research, 2005.

55 Fabrega, H. (1973). Toward a model of illness behavior. *Medical Care*, 11, 470-484.

Among efforts to adopt a sociological perspective in understanding individual's decisions with respect to health services utilisation, Suchman's examination of health behaviours within their surrounding social and cultural contexts was seminal and involved hypothesised links between specified health behaviours and social relationships or group structures. Social structure of the group in which the individual holds membership and social cohesion are two significant factors in determining the impact of the community on the individual's health behaviours. Suchman concluded that higher the sense of identification and in-group feeling of the individual with a particular group or community, the higher is the predisposition to adopt the community's beliefs, attitudes and practices about health.[56] Narrations of traditional practices in certain communities related to child health and nutrition like discarding the colostrum considering it harmful for the neonate, offering colostrum to the Gods, not feeding the child certain foods for fear of illness, not seeking medical care for childhood diseases like measles and attributing supernatural causality to such diseases are significant detriments to desired maternal health behaviours. While in certain instances mothers do not have the correct information regarding child health and nutrition, often the imparting of this information is not sufficiently strong to overcome the traditional practices. The mother, despite keen to adopt newer health behaviours may feel pressured to follow the traditional practices due to allegiance to her community or may consciously reject such information due to her own beliefs and perceptions which are similar to those of the community. This is especially true for cohesive homogeneous communities to which the mother has a high sense of identification and in-group feeling.

Social support structures available for the mother have been found to be facilitative for successful child rearing practices. Formal structures like women's groups, community networks, mothers' committees or informal networks of friends and family members motivate mothers to adopt desired health behaviours, provide psychological support to overcome familial constraints that impede certain practices, help in caring for her child, accompany her to health facilities to seek care, and transfer knowledge about appropriate child caring practices. The advantages of social support structures are, however, qualified by the prevalence of appropriate health related beliefs and practices in those structures, and their openness to accept new information about health and nutrition.

2.4. Determinants at the Systemic Level

Determinants at the systemic level that influence maternal behaviour for child health and nutrition primarily include the policy and programmatic initiatives towards ensuring maternal and child health, the physical infrastructure, quality of care and access to healthcare facilities of the public health system.

2.4.1. Availability of and Access to Health Services: The presence of ubiquitous and quality healthcare services and a household's access to these services have been unanimously established as an imperative for ensuring desired child health outcomes. Although the availability of a strong public health system that is mandated to provide primary and curative care has been directly related to prevention and management of childhood illnesses, its relationship to health and nutrition behaviours of the mother is more indirect and complex. Certain research studies in the field of health behaviours have indicated the influence of the availability and access to healthcare services on health and nutrition behaviours, although they may not be directly related to utilisation of healthcare. A study in Indonesia of a large scale

56 Suchman, E.A., Stages of Illness and Medical Care, *Journal of Health and Human Behavior*, 1965 6:114-128

programme that focused on increasing the intake of Vitamin A rich foods among communities and children in particular through various methods of communication to impart the nutrition information, found that village access to the public health system is critical and strengthens the role of maternal knowledge about nutrition in having a significant impact on health and nutrition related behaviours, including feeding of locally available nutritious food and sustaining these maternal behaviours over time, even in situations of deprivation and crises.[57] In his behavioural model of health service utilisation, Andersen states that even though individuals and families may be predisposed to practice desired health and nutrition behaviours and manifest high levels of compliance to healthcare advice, enabling conditions for access and utilisation of health services is the most important mediating factor. The availability of health services and health personnel, travel times to access these services, perceived quality of care and interactions with the health personnel were found to determine individual level behaviours like perception and attitudes towards health, recognition of illness symptoms and adherence to desired health behaviours.[58] In a study aimed at discovering the determinants of preventive health behaviours like intake of appropriate diet and hygienic practices, Langlie found that attitudes towards health service providers based on the individuals appraisal of the adequacy of health services and her prior experiences with the health system were significant determinants, although these variables were not directly related to the studied preventive health behaviours.[59] A functioning and accessible public health system and health policies including healthcare financing, human resources, and health programmes are therefore, considered to play an important role in defining a mother's differential health behaviour towards her child's health and nutrition.[60]

3. Implications for intervention

Given the complexity of the determinants of maternal health behaviours related to child health and nutrition practices, it is evident that to bring about sustainable behavioural change, factors at each of the systemic levels need to be addressed. While interventions towards changing individual characteristics are more prevalent, their impact will only be limited and short-lived in the absence of an enabling environment including the presence of favourable variables at each of the external systems – the household characteristics, the community, and the public health facilities.

Experience over the past decade has shown that no single intervention is by itself sufficient to improve maternal and child health and reduce morbidity and mortality. What is needed is a continuum of care throughout pregnancy, childbirth and the postnatal period. To be effective, the continuum should extend from care in the household, to care provided by skilled attendants at a primary care level, and finally referral facility. The development of this continuum requires commitment, cooperation and interaction between different levels of care and between care providers. Efforts should focus on building capacities at the individual, household and community level to assure appropriate self care, prevention and care seeking behaviour. Concurrently, efforts should focus on building the capacity of health care delivery to

57 Block, S. & Webb, P. 2003. "Nutrition Information and Formal Schooling as Inputs to Child Nutrition", *Working Papers in Food Policy and Applied Nutrition*, Tufts University.

58 Andersen, R.M. Revisiting the Behavioral Model and Access to Medical Care: Does it Matter? *Journal of Health and Social Behavior*, Vol. 36, No. 1 (Mar., 1995) , pp. 1-10

59 Langlie, J.K. Social networks, health beliefs, and preventive health behavior. *Journal of Health and Social Behaviour.* 1977 Sept;18(3):244-60.

60 Anderson, J.G. & Bartkus, D.E. Choice of medical care: a behavioral model of health and illness behavior, *Journal of Health and Social Behaviour.*1973 Dec;14(4):348-62.

define and adapt the needed interventions and services and assure that they are available, accessible and of high quality, particularly for the poor and the most vulnerable.

From the discussion in the previous section about the complex and multilevel determinants of maternal health behaviours, it is evident that interventions towards changing these behaviours are predicted to be more effective and sustainable in a context of higher levels of women's education, greater autonomy of women within the household and the society at large, access to resources by households and communities, and political commitment and intersectoral collaboration at the level of public health policy and systems.

Promoting positive change in maternal behaviour therefore, is a complex process requiring an understanding of contextual realities, familial dynamics, sociocultural variables, and eco-political institutions. Interventions need to recognise that presenting facts alone does not ensure behaviour change. The strategies require to be designed to accommodate the stage of behaviour adoption of the mother and to cultivate skills and a support system integrally enabling and sustaining the change. Considering the diversity and complexity of health behaviour determination, it is clear that for sustainable changes they have to be addressed at each systemic level. The elements of the intervention and the agents and platforms facilitating such change are therefore of prime importance in addressing the comprehensiveness of the effort. Although the sustainability of most of these health behavioural changes are indeterminate, programmes in this area using different strategies, platforms and agents to facilitate these changes can be mentioned to exemplify interventions that have addressed health behaviour determinants at various systemic levels.

However, although a continuum of comprehensive interventions such as education, autonomy and decision making powers for women, access to resources and provision of quality health services, are required for changing maternal behaviours, certain interventions like behaviour change communication has been implemented and has been shown to achieve varied levels of success. Comprehensive and innovative behaviour change communication has been implemented in various programmes, in different contexts and aiming to change specific maternal behaviours related to child feeding and caring practices, as well as seeking healthcare for prevention and cure of childhood illnesses. The efficacy of such communication based interventions for changing maternal health behaviours have shown varied levels of success, however, very few have been evaluated for the sustainability of impact, diffusion and multiplier effects on other health behaviours, changing attitudes and perceptions towards health, and in translating knowledge into practice. The following sections attempt to draw out certain components and characteristics of communication based interventions at different levels – mothers and families, communities and health personnel – that are required to have a sustained impact on maternal health behaviours.

3.1. Behaviour Change Communication

Communication is a central aspect of directed behaviour change, and communication has been a major strategy to impact such change. Behaviour change communication can be broadly defined as a process of understanding people's situations and influences, developing messages that respond to the concerns within those situations, and using communication processes and media to persuade people to increase their knowledge and change the behaviours and practices that place them at risk. Communications strategies have evolved to focus more on the receiver—rather than the sender—as the center of communications, and the new terminology, behavior change communication (BCC) reflects this shift. Unlike the didactic programs, which

are set to “sell” a particular message or idea, BCC recognizes individuals within the intended audience as active, rather than passive, receivers of information and messages, who act on messages only if they are seen as advantageous or useful. BCC appreciates that the audience may need new skills and social support to make and maintain behavior change. BCC is one component of Behaviour Change Interventions (BCI), which acknowledges that sustained behavior change is effective only when combined with changes in the broader environments. The communication in BCC involves information dissemination and awareness raising to address motivation to change and ability to assess benefits of practicing and sustaining new behaviors. It has to be remembered that BCC is only one component of behaviour change interventions. The expectations, therefore, of what a BCC programme can achieve needs to be realistic. Human behaviours, including those related to health have complex, multifactorial and interrelated determinants that cannot be addressed by BCC alone, and need social, economic and systemic changes.

3.1.1. The process of designing behaviour change communication interventions: From the above sections detailing out maternal health behaviours and its multifactorial determinants, it is clear that identifying and understanding the concerned behaviours and their determinants is of utmost importance. BCC plans formulated in the absence of such an understanding have the risk of being contextually irrelevant or even insensitive in certain cases. Before deciding on the BCC messages and channels, it is essential to carry out a process of understanding the health behaviours of the community, and their overall sociocultural and economic realities. While behaviours of individuals, groups and communities are important determinants of their health, the factors that influence behaviours frequently lie outside the individual's control and are influenced by economic, social, and political factors operating at the district and national levels. It is important to understand these determinants at the level of the individual woman, her household, the community and the systemic levels, as they would influence the design of the intervention programme to address the problem.

After understanding the determinants of the specific behaviour that we are attempting to change through health communication, it is important to identify the intended audience – which is not restricted to the mother, but the people who influence her behaviours. In most health behaviours related to child health and nutrition, the intended audience may include the mother, the father, and the grandmother of the child. Identification and segmentation of audience for a particular behaviour change necessitates sensitivity to the varying needs of different sections of the community and the different needs of groups even within the larger identified audience. Here, an indepth understanding of the determinants of behaviours can help identify who is the primary audience, and who are the significant influencers of these behaviours. Audience characteristics are very important in designing BCC messages. Age of the audience, literacy levels, socio-economic status, geographical location, and other such demographic profiles need to be considered.

The next step in designing the BCC intervention is to identify the key message points and formulate the message brief. This exercise is closely dictated by not just the behaviour identified to be changed and the objectives of the programme, but also by the understanding about the determinants of the concerned behaviours and the needs and characteristics of the identified audience.

A tool or channel of BCC is the way a message is disseminated. It is important to know which tools can most effectively reach particular intended populations. Identifying the range of available tools should be part of every formative BCC assessment. It is important to think about how particular tools can help achieve particular goals. Each medium has its own advantages and disadvantages, so that each may be best suited to a particular circumstance. Messages

can be delivered through mass media. Television or radio spots, films and newspapers are the most commonly used mass media channels used for BCC in health. Mass media can raise awareness of specific facts, because the mass media are assumed to carry a certain authority and reliability. Mass media can also model behaviors and positive attitudes in the person of respected members of the target community. Later on in the process, however, target populations appear less interested in media authority than they are in the opinions and behaviors of people to whom they feel close. Interpersonal communication becomes primary, while the mass media play a supporting role. In largely resource poor settings, in rural contexts where access to mass media is limited and rates of literacy are low, BCC messages can be communicated in-person, by health workers, peer educators, or other trained personnel. Health workers can help reach specific groups, model desired behaviors, stimulate community discussions and provide referrals to health services. In many contexts training local individuals, in most cases women, as agents of BCC and health and nutrition educators has been shown to yield significant impact. The advantages of this strategy are manifold – these local workers are familiar with and sensitive to the contextual realities and can therefore, impart culturally appropriate messages. Besides, the participants can identify with these local workers more than they can with healthcare professionals in health facilities. The local workers are present in the community, and are not subject to transfers and changes on the basis of human resource policies of the health system. The sense of permanency and rapport with the community increases the probability of affecting sustainable behaviour change. In rural communities, where various forms of folk media such as songs and stories in local dialects, dances and theatre are popular means of entertainment, BCC can be delivered through such tools. Musical or dramatic performances and community events can deliver messages and influence behaviours in a culturally relevant and acceptable manner.

3.1.2. Intervention Evidences for Behaviour Change Communication: Programmes to change maternal behaviours to impact child health and nutrition have used different platforms to introduce BCC interventions. The choice of the context in which the intervention is initiated has been affected by the focus of the programme – what is also sometimes referred to as the target group/audience, the analysis of the determinants of maternal health behaviours by the programme, as well as challenges and opportunities presented by the context in which the programme is introduced. Programmes relevant to the specific focal area of this paper have introduced BCC interventions through platforms ranging from counselling individual mothers, households, mothers' groups and committees formed as a part of the intervention, existing community based structures for integrating the interventions and reaching to the larger community than restricting the focus to mothers.

- Interventions with individual mothers: Interventions towards changing health behaviours to impact child health and nutrition outcomes have largely focused on increasing knowledge through information and health education programmes among mothers. Experiences of interventions for such behaviour change through communication have been documented in various countries, with significant degrees of impact on maternal behaviours towards ensuring child health and nutrition. In Peru, nutrition education for mothers in a poor peri-urban area, about child feeding practices delivered through health services showed a decrease in the prevalence of stunted growth in childhood in areas where access to food is not a limiting factor;[61] In Indonesia, nutrition education for mothers about the need for vitamin A in their

61 Penny, M.E., Creed-Kanashiro, H.M., Robert, R.C., Narro, M.R., Caulfield, L.E., Black, R.E. 2005. Effectiveness of an educational intervention delivered through the health services to improve nutrition in young children: a cluster-randomised controlled trial" in *Lancet* 2005; 365: 1863–72

children's diets brought about a change in the child feeding practices of mothers, who included more nutrition rich foods than cereals even in resource constraints. This intervention also showed a multiplier effect – although the information was specific to vitamin A rich diets, there was improvement in the quality of diets in the sampled population accompanied by an increase in health seeking behaviours of mothers for their children.[62]

- **Focusing on Families:** The mother cannot be isolated from the context of the family or the household. From the discussion about determinants of maternal health behaviours, it is evident that other family members, especially the husband and the mother-in-law exert a significant influence on the mother's behaviour in relation to child feeding practices, as well as to seek health care in case of illness. Working with families or households as a unit is therefore, important to change perceptions and attitudes about health and create an enabling environment for the mother to translate her knowledge about appropriate child care into practice. This involvement is aimed to sensitise the entire family to appropriate health and nutrition behaviours, and create an enabling environment for the mother to practice these behaviours without opposition from other elders and decision makers in the family. Given the complex multilevel determinants of maternal health behaviours, interventions need to ensure such involvement of the family, since in most instances, the attitudes and beliefs of the family, and the level of autonomy of the mother vis-a-vis others in the household, may act as barriers to the practice of appropriate behaviours, despite readiness on part of the mother.
  BCC interventions that have successfully focused on households to achieve child health and nutrition outcomes include the programmes initiated by the Child In Need Institute (CINI) in West Bengal. The community health workers in rural areas act as the agents of BCC, providing knowledge about child health and nutrition, counselling mothers and families, involving the husbands and the mothers-in-law in such sessions for sensitisation and support to the desired maternal health behaviours. Done through home visits and counselling, the health workers not only provide essential information, but also guide the families to allocate resources to nutritious food, encourage early initiation and exclusive breastfeeding by the mother and adequate complementary feeding, motivate families for immunisation and seek regular health care for their children. The involvement of the other family members facilitate the mother to undertake these activities, with their support. Evaluation of the interventions show a decrease by one third in low birth weight, malnutrition and childhood stunting, as well as a significant rise in healthcare seeking behaviour and in rates of immunisation for children.[63]

- **Interventions with Groups:** Informal groups to which individuals belong, as well as individual members of the intended audience have been used to initiate BCC interventions. The similarity of situations experienced by the individual members of the group helps them to identify with each other and create a social support structure that is imperative for sustainable behaviour change. In most cases, the group that is formed as a platform for BCC themselves become an intervention. The synergistic mode prevalent in a group situation facilitates the group to create knowledge that all members endorse, that all members had a part in creating, and that all members can explain in their own words from the perspective of their individual and the group's experience.

62 Block, S. & Webb, P. 2003. "Nutrition Information and Formal Schooling as Inputs to Child Nutrition", *Working Papers in Food Policy and Applied Nutrition*, Tufts University.

63 Kasl, E. 2000. *Groups that learn and how they do it.*

When a group operates synergistically, it creates a mutually held knowledge base from which actions can be agreed upon and taken. When small groups learn about new concepts they provide a catalyst for community learning and transformative change because numbers of individuals share a knowledge base that they may infuse into environments outside the learning group, creating the possibility for greater community learning.

Illustration of BCC for child health and nutrition, introduced through mothers' groups, formed specifically for this purpose is provided by two prominent programmes in Bolivia and Nepal. The Warmi project in Bolivia was implemented in a poor rural population of 15,000 people with little health-system infrastructure. The project worked with mothers' groups to encourage participatory planning for mother and infant care, and showed a fall in perinatal mortality rate from 117 to 44 per 1000 births over 3 years.[64] The MIRA Makwanpur trial was a cluster-randomised controlled trial of a BCC intervention in a rural mountainous area of Nepal. The trial tested a large-scale intervention, using facilitators to work with mothers' groups in a population of 170,000. In each intervention cluster (average population 7000), a female facilitator convened nine mothers' group meetings every month. The facilitator supported groups through an action-learning cycle in which they identified local perinatal problems and formulated strategies to address them. The intervention monitored birth outcomes in a cohort of 28,931 women, of whom 8 percent joined the groups. The primary outcome was neonatal mortality rate. Other outcomes included stillbirths and maternal deaths, uptake of antenatal and delivery services, home care practices, infant morbidity, and health-care seeking. From 2001 to 2003, the neonatal mortality rate was 26·2 per 1000 live births in intervention clusters compared with 36·9 per 1000 live births in controls. The maternal mortality ratio was 69 per 100 000 live births in intervention clusters compared with 341 per 100 000 live births in control clusters. The study also found that mothers in intervention clusters were more likely to seek antenatal care, institutional delivery, trained birth attendance, and hygienic care than were controls.

In both these interventions, the impact of the BCC in terms of diffusion and multiplicity of effect and in sustainability of the changed behaviours, were found to be significant. This indicates that the groups that were formed especially for introducing BCC, acted as interventions themselves. The groups are support structures for the poor mothers in a predominantly patriarchal society, as they inculcated a sense of belongingness, a purpose towards achieving the same goals, and an increased sense of social capital and efficacy of the collective to change traditional perceptions and behaviours related to health, even in the possible opposition from other members of the community.

- **Integration with Community Based Structures:** The significance of working with communities to change child health and nutrition outcomes cannot be undermined. Programmatic experiences emphasise the role and effectiveness of communication based interventions with communities and community based structures to change maternal health behaviours. Communities not only influence maternal behaviours, on the basis of prevalent socio-cultural beliefs and practices among them, but also by creating an environment that can enable mothers to practice appropriate behaviours.

64 Howard-Grabman L. "Planning together": a methodology to facilitate the development of strategies and actions to address priority maternal and neonatal health problems in rural Bolivian communities, working paper 16B. Virginia: MotherCare, John Snow International, 1993.

Programmes have introduced communication based interventions at the community level through pre existing community based structures, such as Gram Panchayats, Mahila Mandals, Yuva Mandals, Village Health Committees and self help groups.

BCC with communities have largely and effectively been initiated through community based structures that include not only mothers, but members of the larger community, such as village health committees, local self government institutions like village panchayats, self help groups, women's groups, and youth groups. While some interventions have integrated BCC with existing community based structures, for example in the initiatives of Freedom From Hunger that integrated behaviour change communication for child health and nutrition with self help groups formed for microfinancial activities;[65] the programmes of the Child in Need Institute in rural West Bengal in which BCC interventions were integrated with village panchayats, and existing women's and youth groups to increase knowledge and change perceptions and practices of communities to enable maternal behavioural change and impact child health and nutrition outcomes. Evaluation of child health and nutrition outcomes in both instances have shown significant improvements. These BCC interventions initiated through community based structures therefore, offer an effective strategy for changing maternal behaviours to achieve desired child health goals.

- **Interventions with the Larger Community:** Very large scale, statewide interventions have focused on the entire community as a platform to initiate BCC, although in most cases such an approach supplements more specific interventions, such as counselling of mothers or formation of groups. Interventions in rural Bangladesh initiated through the National Nutrition Programme (erstwhile Bangladesh Integrated Nutrition Programme) had a strong component of behaviour change communication and counselling of mothers. The interventions targeted towards pregnant women and mothers of children under 2 years of age involve health education, about hygienic practices for child care, caregiving and feeding practices and awareness about major childhood illnesses, imparted to mothers showed significant decrease in childhood stunting from 36 percent to 21 percent and severe underweight among children from 30 percent to 18 percent;[66] the Quality of Life Programme in Thailand is another illustration of large scale behaviour change communication to modify food habits and beliefs, food selection and processing practices, as well as maternal and child nutritional behaviours. The interventions in this programme was initiated with community members – a top down support and coordination and a bottom up planning and implementation – and nutrition communication was imparted through various forms and media, as was appropriate in a specific context. The evaluations showed a significant impact on changing food and nutrition practices and in reducing undernutrition among children of the mothers in intervention areas to 3-5 percent.[67]

4. Learnings from Behaviour Change Communication Interventions

The various initiatives mentioned in the previous section, despite being operational at different levels, and using different platforms for introducing communication based interventions to

65 Information available on www.freedomfromhunger.org

66 Government/UNICEF/IDA. 1999. Bangladesh Integrated Nutrition Project Mid-term Review, Dhaka. Bangladesh: Government/UNICEF/IDA, 33.

67 Winichagoon, P., Kachondham, Y., Attig, G.A., & Tontisirin, K (eds). 1992. *Integrating Food and Nutrition into Development: Thailand's Experiences and Future Visions,* Bangkok: Institute of Nutrition, Mahidol University and UNICEF East Asia and the Pacific Regional Office.

change maternal health behaviours, also highlight certain learnings and implications for BCC interventions in general. Based on these successful programmes focusing on communication for changing maternal health behaviours to achieve better child health and nutrition outcomes, certain implications can be drawn for conceptualising and implementing BCC interventions in varied contexts:

- **Contextualisation of the intervention:** Contextualisation of the intervention strategies to the local sociocultural realities has been seen to be a prerequisite for successful behaviour change communication. This includes adapting messages for child feeding and caregiving practices to local cultural beliefs, available foods and accessible healthcare. Identifying appropriate analogies, linking a new idea with one that is already present in the culture, makes new information more understandable and potentially actionable. The development of messages suited to the target audience, and the selection of media based on their appropriateness in terms of accessibility and acceptability of the audience are important in behaviour change programmes.

  Towards this end, community participation in formative research, conceptualisation, planning and implementation of the BCC intervention is imperative. To gain an understanding of the local beliefs, perceptions and practices to formulate culturally sensitive and relevant BCC messages, to operationalise an effective implementation of the BCC intervention with a sense of ownership and efficacy on part of the community members in adopting appropriate health behaviours and creating an enabling environment for the mother to care for her child's health and nutrition, the importance of community participation as the sole mechanism cannot be underestimated.

- **Use of multiple channels:** A consistency observed among successful programmes, such as those mentioned above, is the use of multiple forms of media to transmit the message for behaviour change. An evaluation research study comparing various health education programmes for mothers found that the use of multiple channels of media – mass media (TV, radio, newspapers), posters, folk media (theatre, songs), facilitators or health providers (community level health workers, clinical personnel, community group facilitators/leaders) – significantly more effective than use of only one channel.[68]

  In many resource poor contexts where there is an acute shortage of clinical personnel and healthcare professionals for delivering care and counselling families for behaviour change, training local individuals, in most cases women, as agents of behaviour change communication and health and nutrition educators has been shown to yield significant impact. The advantages of this strategy are manifold – these local workers are familiar with and sensitive to the contextual realities and can therefore, impart culturally appropriate messages. Besides, the mothers and families can identify with these local workers more than they can with healthcare professionals in health facilities. The local workers are present in the community, and are not subject to transfers and changes on the basis of human resource policies of the health system. The sense of permanency and rapport with the community increases the probability of affecting sustainable behaviour change.

- **Comprehensive nature of the intervention:** The focus of the behaviour change communication intervention needs to extend beyond merely imparting information and improving knowledge about appropriate health and nutrition behaviours among

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mothers and families through a health education or an information-education-communication approach, to include attempts to impact attitudes, beliefs and perceptions towards health and related behaviours. Understanding the determinants of maternal health behaviours indicate that increase in health and nutrition knowledge is not always predictive of health and nutrition outcomes. The translation of knowledge to practice and health behaviours is mediated by attitudes, beliefs and perceptions towards health. An in-depth understanding of household and community attitudes, beliefs and perceptions related to maternal and child health and nutrition need to be gained through formative research to guide the development of communication messages. Behaviour change communication towards health seeking, illness and medicine, women's status and autonomy within the household, and self perceptions and sense of self efficacy of women need to be addressed by interventions for their impact to be sustainable. Additionally, due to the influence of the availability and accessibility of essential health services on health behaviours of mothers, communication based interventions are more effective in changing behaviours when undertaken with adequate and accessible health service delivery by a ubiquitous health system.

Conclusion

Behavioural aspects of child health and nutrition outcomes are complex and are determined by interrelated, multilevel factors present in the environment of the mother. Due to the significance of maternal health behaviours in affecting her child's health and nutritional status, programmatic interventions have attempted to modify these behaviours in varied contexts and through various platforms. However, most of these programmes have focused, often narrowly, on merely the maternal knowledge and information related barriers to behaviour change, therefore limiting the interventions to a didactic health education or information dissemination targeted at the mother. The discussions in this paper highlight the need for this approach to change, to broaden to include other determinants of maternal health behaviour and to perceive the mother not as a passive receiver in the communication loop but as an active participant, an agent in this process of change. To ensure the sustainability of maternal health behaviour change it is essential that the individuals and communities most affected own the process and content of communication. Communication for behaviour change needs to be empowering, horizontal (versus top-down), empowering, and be biased towards local content and ownership. Emphasis needs to shift from persuasion and the transmission of information from outside technical experts to dialogue, debate and negotiation on issues that resonate with members of the community. Emphasis on outcomes needs to go beyond individual behaviors of mothers to households, social norms, policies, culture and the supporting environment.

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