

## REVIEW ARTICLE

## MALNUTRITION IN YOUNG PAKISTANI CHILDREN

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**Background:** Pakistan is a developing country with the second highest infant and child mortality rate in South Asia. In this region, malnutrition underlies much of the high infant and under five child morbidity and mortality rates. Although struggle to tackle the issue of malnutrition among young Pakistani children has been going on since many decades, till yet a realistic solution for this growing problem has not been found. **Objective:** This paper aims at reviewing literature to analyse the biological, maternal, socio-cultural, environmental, and politico-economical determinants of malnutrition among young children in Pakistan so that need based interventions can be recommended to prevent and overcome this growing issue. **Methods:** A systematic search of national, regional, and international literature was undertaken from peer-reviewed databases for 1991–2011 including MEDLINE, CINAHL, and PubMed. The search was augmented by reviewing the literature from WHO and UNICEF websites, books, local newspapers, and reference lists of articles thought to be relevant. **Conclusion:** Determinants of malnutrition among Pakistani children are multiple and are prevalent at the level of individual, family, and community. An analysis of biological, maternal, socio-cultural, environmental, and politico-economical factors indicate that most of these factors are interrelated; therefore, to tackle this issue, there is a need to plan composite interventions at the level of malnourished children, their families, and the Pakistani community.

**Keywords:** Malnutrition, young children, Pakistan, determinants

## INTRODUCTION

Worldwide, malnutrition among children under five years of age is considered as the most prevalent public health issue of South Asian countries.<sup>1,2</sup> It is reported that over 50% children in South Asia are malnourished, and half of the world's malnourished children reside in Pakistan, India, and Bangladesh.<sup>2,3</sup> As the effects of malnutrition are highly visible on the physical, mental, social, and intellectual development of young children, therefore, importance of effective nutrition cannot be denied during early years.

Pakistan, as a developing country, has the second highest infant and child mortality rate in South Asia.<sup>4</sup> In this country, in 2005, the under-five child mortality rate has been reported as 101 per 1000 live births.<sup>5</sup> Here, malnutrition underlies much of the high infant and under five child morbidity and mortality.<sup>3</sup> As per the National Health Survey of Pakistan, one out of every three children is malnourished, 6.2–8.3 million Pakistani children (30–40%) have a low height for their age, i.e., stunting, and more than 2.9 million children (>14%) have low weight for their height, i.e., wasting.<sup>6</sup> Though struggle to tackle the issue of malnutrition among young Pakistani children has been going on since many decades, till yet the solution for this growing problem has not been found. While reviewing the National health surveys and the nutritional surveys of Pakistan from the period 1965–2001, it was found that over one decade (1990–2001) the proportion of underweight under five children had slightly decreased from 40.1–37.4%, however, the prevalence of wasting had increased from 11.8–14.9%, and the prevalence of

stunting had increased from 36.3–40%.<sup>3</sup> The above statistics indicate that if the trend of malnutrition among young Pakistani children continues to rise then the achievement of Millennium Development Goal # 4, to reduce child mortality by 2015, would become unlikely; also, the progress of the whole nation would be affected due to the short term and long term effects of malnutrition. Considering the seriousness of this issue, this report presents the key determinants of malnutrition among young Pakistani children.

## MATERIAL AND METHODS

A systematic search of national, regional, and international literature was undertaken from peer-reviewed databases for 1991–2011, including MEDLINE, CINAHL, and PubMed. The key words used for the search included: malnutrition, determinants, Pakistan, young children, stunting and wasting. The search was augmented by reviewing the literature from WHO and UNICEF websites, books, local newspapers, and reference lists of articles thought to be relevant.

## DISCUSSION

In Pakistan, where most of the children are partially immunized or not immunized through childhood vaccines, they are highly susceptible to infections.<sup>7</sup> The most common infections among young children are gastrointestinal infections (diarrhoea), respiratory infections, and communicable diseases, which severely affect the nutritional status of children and cause malnutrition among them.<sup>8–10</sup> Another biological factor that causes malnutrition is presence of birth defects<sup>8</sup> and organic diseases among young children<sup>11,12</sup>. Amongst

various such disorders congenital defect of the gastrointestinal tract severely impacts the nutritional status of young children by affecting swallowing, digestion, absorption, or metabolism of food. Some of the other common congenital abnormalities that cause malnutrition include: cleft lip/palate, trachea-oesophageal fistula, mal-absorption syndrome, lactose intolerance, etc. In Pakistan, many families do not opt to seek medical help for these conditions because of the fact that management of these conditions requires high tech care and financial resources; therefore, many such conditions are left unaddressed and, consequently, young children with these conditions end up with malnutrition.

In Pakistan, maternal malnutrition, iron deficiency anaemia, and micronutrient deficiencies are quite prevalent among women of childbearing age.<sup>3</sup> When these malnourished and anaemic mothers undergo repeated pregnancies the vicious cycle of malnutrition continues from generation to generation. National and regional literature reports that the poor nutritional status of mothers serves as a strong contributing factor towards childhood malnutrition.<sup>13-15</sup>

Another determinant of malnutrition among young Pakistani children was found to be early cessation of breastfeeding and initiation of formula feeding. No doubt, breastfeeding is an ideal diet for children up to two years of age and it accounts for optimum growth and development of young children<sup>16</sup> in Pakistan, the prevalence of early cessation of breastfeeding is gradually increasing. The Pakistan Health Education Survey reported that in 1991-92 less than 40% of Pakistani mothers were breastfeeding between 6-11 months as compared to 58% mothers in 1987.<sup>17</sup> Also, a report from Society for the Protection of the Rights of Child (2008) mentioned that in 1975-1983 around 96% mothers were breastfeeding at 6 months and 90% mothers were breastfeeding at 12 months, whereas, in 2008 only 31% Pakistani mothers were breastfeeding their babies between 6-9 months, along with the provision of complementary foods. Several Pakistani studies report that early cessation of breastfeeding and introduction of formula feeding are the most powerful contributors of childhood malnutrition.<sup>3,7-9</sup>

Among maternal factors, another prevalent determinant of malnutrition was found to be mother's illiteracy. Various Pakistani studies have reported a strong correlation between maternal illiteracy and prevalence of childhood malnutrition.<sup>1,6,18</sup> Illiterate mothers are more prone to end up into unhealthy child feeding practices. In Pakistan, where the trend of formula feeding via bottle is becoming a common practice day by day, many illiterate mothers who cannot read the instructions on the packet practices are more likely to practice improper technique of formula feed preparation. Anecdotal evidences at government hospitals and community settings also reveal that illiterate mothers

commonly use un-boiled water to prepare formula feed, use incorrect proportion of formula to prepare the formula milk, and do not sterilise the feeding bottle before and after each feed. Thus, maternal illiteracy compounds multiple problems and contributes towards malnutrition. Mothers' lack of knowledge about the nutritional requirements of children often results in unhealthy child feeding practices and causes malnutrition among young Pakistani children.<sup>7-9</sup> Moreover, mothers who are unaware of proper weaning practices are more likely to introduce weaning diet before or after the ideal time (before six months of the child's age) which could negatively affect the nutritional status of young babies.

Socio-cultural factors are prevalent at the level of family, community, and nation. One of the most common socio-cultural factors is gender inequality that leads to inequitable distribution of food at the household level. National and regional studies also report gender inequality as the main socio-cultural determinant that causes nutritional problems among children.<sup>7,15,19</sup> In many Pakistani families, the boy child is preferred over the girl child and, considering this gender bias, the male child is given sufficient food (in quality and quantity) as compared to the girl child. This determinant affects the nutritional status of girl children in two ways: one by depriving them from essential nutrients and, secondly, by provoking psychological affects due to ignorance. Thus, gender inequality provokes the vicious cycle of malnutrition by affecting the nutritional status of girl children.

Another determinant is restriction of food during illness.<sup>20</sup> In Pakistani culture, people believe that several food should be restricted during children's illness; like, during diarrhoea a child should not be given breast milk, during a chickenpox child should not be given chicken, during a fever child should not be given milk and rice, etc. Literature supports the view that foods containing essential nutrients are withheld during illness, which ends up with child having malnutrition.<sup>9</sup> This reveals that such cultural beliefs not only deprive sick children of essential nutrients but they also inhibit recovery by affecting their nutritional status.

In many Pakistani families taboos about breastfeeding further serve as the key determinant of malnutrition among young babies. Anecdotal experiences and literature support that soon after a child's birth most of the families prefer not to give colostrum (early breast milk) to the baby as they consider it to be stale milk;<sup>21</sup> so, during the initial days, the baby is given cultural food called *Ghutti* (a mixture of honey, butter mixed with sugar, and other liquids) and cow's milk.<sup>17,20</sup> In fact, this cultural practice not only deprives infants of colostrum that contains antibodies and essential nutrients but also exposes these children to formula feeds that are not suitable for young children's gastrointestinal system. Furthermore, another commonly

held food belief in the Pakistani communities is the concept of hot and cold foods.<sup>8,20</sup> Foods like egg, dates, etc. are considered as “hot foods”, whereas, foods like rice, banana, water melon, etc. are considered as “cold foods”.<sup>20</sup> In some communities of Pakistan it is believed that hot and cold foods should not be given to young babies in order to prevent infections. Also, it is believed that these foods should be avoided by pregnant mothers to preserve their foetuses.<sup>20</sup> In fact, these cultural beliefs deprive pregnant mothers and young babies from the rich sources of protein, iron, and minerals, and ultimately provoke the vicious cycle of malnutrition.

Among environmental factors, polluted water and poor sanitary conditions are the strongest determinants of malnutrition among children.<sup>13,22,23</sup> In many localities of Pakistan lack of access to clean water and proper sanitation facilities is a persistent issue that adversely affects the nutritional status of young children in many ways. The use of polluted water for washing, bathing, drinking, and food preparation increases the prevalence of infectious diseases and water borne diseases like diarrhoea, cholera etc; whereas, improper sanitation and open sewage systems spread unhygienic practices, worm infestation, malaria, etc. Literature shares that lack of toilets and hand washing facilities provoke repeated intestinal infections among children, cause intestinal villous atrophy, and end up with these children having malnutrition, by affecting the absorption of nutrients.<sup>23</sup> One of the Pakistani studies reports, ‘Families using open sewage systems had a higher proportion (53%) of malnourished children as compared to 45.1% in families with access to the flush system’.<sup>7</sup>

In Pakistan where a relatively small budget is allocated to health, the majority of the population lacks access to quality health services. As children are the most vulnerable group, who need adequate measures for their health promotion and disease preventions, therefore, lack of access to quality health care services affects the nutritional status of young children by depriving them of primary health care interventions like immunization, supplementation, etc. Also, lack of health services hinders prompt management of many childhood infections and diseases, thus severely affecting the nutritional status of young children.<sup>1</sup>

Another determinant of childhood malnutrition is overcrowding at the family, community, and country level. Effects of overcrowding on the nutritional status of young children are three fold. At the family level, where each individual has diverse nutritional needs, overcrowding is responsible for the compromised quality and quantity of food available for each individual, especially for young children. At the community level overcrowding exposes children to infectious diseases like Tuberculosis, Pneumonia, etc., and to parasitic infections like worm infestation, etc., which further affects the nutritional status of young children. At the country level,

overcrowding leads to food price inflation and food scarcity, and, consequently, it decreases the equitable distribution of nutritional foods to the poor households having young children.

Amongst other environmental factors one of the fast growing determinants of malnutrition among young Pakistani children is excessive marketing of formula milk. Media is playing a central role in capturing parental attention towards a variety of formula feeds. By depicting formula fed babies as being healthier than breastfeed babies, the marketing campaign of formula feed pursues parents of young babies to buy formula feed for their babies. This environmental factor not only pursues mothers to discontinue breastfeeding but also gives strength to the cultural practices that favour the early weaning of babies from breastfeeding. In 2002, an ordinance was passed to promote breastfeeding practices amongst Pakistani mothers and to limit marketing of formula milk;<sup>24</sup> however, lack of constant and collaborative efforts from the government and health care industry has strengthened this determinant and has negatively affected the nutritional status of young babies.

Another commonly noticed determinant that causes malnutrition among young children is the junk food culture in Pakistani society. Social role modelling of friends and the media make young children insist that their parents buy junk food items like chips, biscuits, sweets, juices, chocolates etc for them. Thus, children switch to unhealthy dietary habits and foods that hold less nutritional value. Besides that, the growing trends in rich families to spend weekends at junk food outlets further exposes young children to opt for meals that are costly and attractive but are insufficient to meet the nutritional requirements of growing children.

Since many decades, efforts are being made to resolve the issue of malnutrition among young Pakistani children; however, day by day, the deteriorating politico-economical situation of Pakistan is aggravating this issue. In this regard, inability to afford quality food is reported as the major determinant of malnutrition in Pakistan.<sup>3,8,9,25</sup> In this developing world, the rising economical recession and high inflation rates have led to many Pakistani families to live from hand to mouth. Unfortunately, at the household level the economical hardships are being compensated by adopting dietary practices that holds the potential to jeopardize nutritional status of people, especially of young children. Literature shares that in poor households the diet of young children (6 months to 2 years) is often compromised in quality and quantity.<sup>1</sup> Literature also reports that economic constraints often make the population opt for food items that consume less money, time, and cooking fuels.<sup>9</sup> Thus, economical constraints affect the nutritional status of children by pursuing child caretakers to save cost of fuel by adopting food preparation techniques which could affect the nutritional status of young children.

Internal displacement and refugee status due to humanitarian emergencies, i.e., manmade and natural disasters is another determinant of malnutrition among young Pakistani children.<sup>26</sup> Evidences from literature reveals that forced migration, within or outside the country, severely affects the nutritional status of vulnerable populations, especially children under five years of age.<sup>11,27,28</sup> The reasons for the compromised nutritional status, and the resultant mortality, due to migration has been attributed to lack of shelter, food, water, and proper sanitation for the migrant population.<sup>27,28</sup> One of the Pakistani newspaper articles highlights that internal displacement and refugee status has caused the death of young children due to effects of malnutrition.<sup>29</sup> In Pakistan, where the day by day rising political instability has increased the proportion of internally displaced people, it can be anticipated that this determinant may further aggravate the current prevalence of malnutrition among children under five years of age.

## CONCLUSION

Malnutrition among young Pakistani children is one of the serious public health issues as well as the most prevalent cause of morbidity and mortality among young children in Pakistan. The determinants of malnutrition among Pakistani children are multiple and are prevalent at the individual, family, community, and nation level. To reduce malnutrition among young Pakistani children, it seems vital to simultaneously address each of these factors through composite interventions at the level of malnourished children, their families and the community.

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