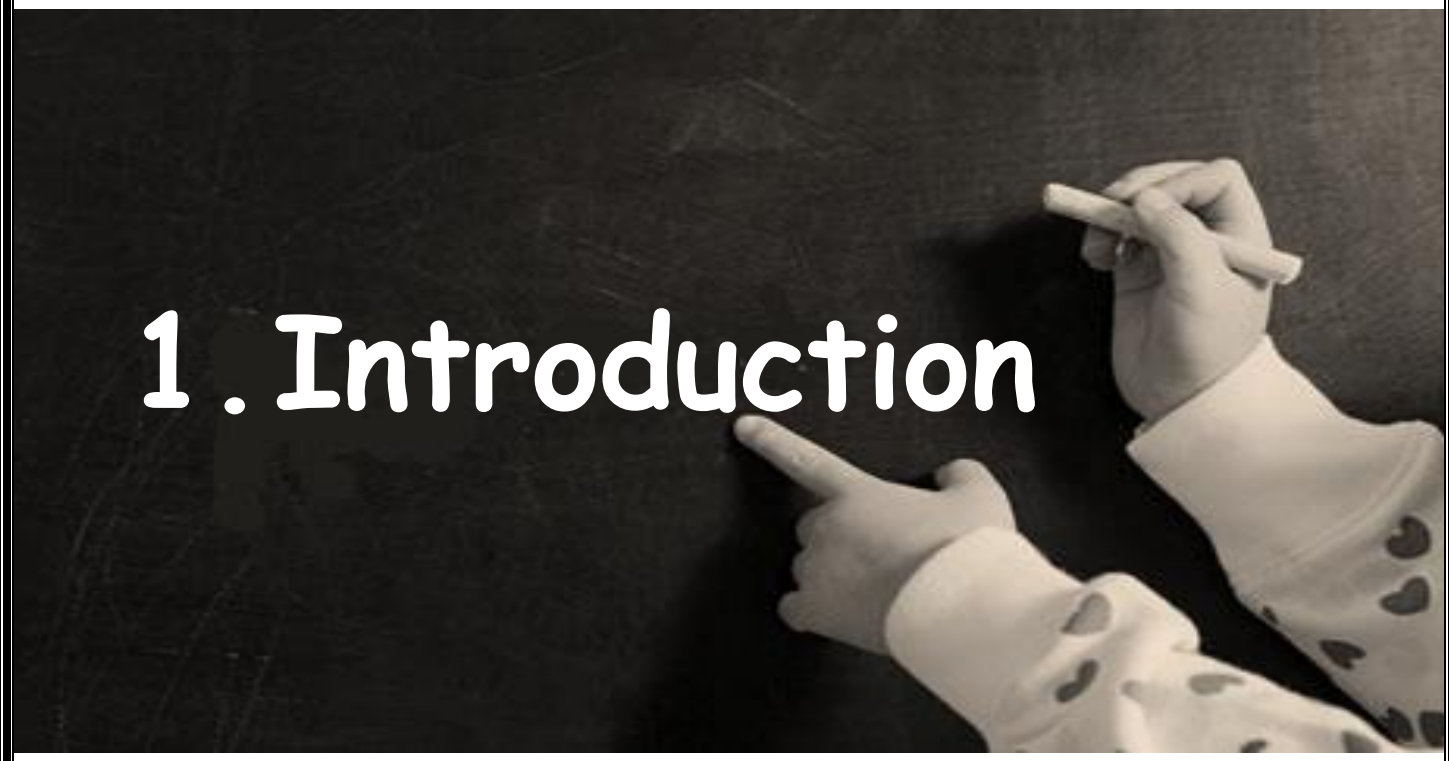

1. Introduction

CHAPTER 1
INTRODUCTION

Millennium Development Goal 4 (MDG 4) calls for reducing the under-five mortality rate by two thirds between 1990 and 2015. According to UNICEF (2013) report on child mortality globally there has been a substantial progress, where in the under-five mortality rate has reduced by 47 percent, from 90 deaths per 1,000 live births in 1990 to 48 in 2012 but with the current rate of progress, the target is at the risk of being missed at the global level. In India too the U5MR has declined from 125 per 1000 live births in 1990 to 52 in 2012 but as the scenario indicates, the MDG target to achieve 42 per thousand live births by 2015 will be missed by 7 percentage points and reach a figure of 49 by 2015 (Government of India 2014).

Amongst the various causes of U5MR, undernutrition claims 35% of the total lives. Pneumonia and diarrhoea together claims 2 million young lives each year accounting for 29% deaths (UNICEF 2013, Report 1).

Worldwide 52 million children under five that is one in twelve children suffer from acute malnutrition. Majority of the children affected (90%), are found in South and Southeast Asia and sub-Saharan Africa and is most common in countries like India, Kenya and Indonesia (Hobbs and Bush 2014). Undernutrition claims, lives of 3.5 million under 5 years old annually worldwide (Bantamen et al 2014).

Globally more than one quarter (26 per cent) children under 5 years of age were stunted in 2011 with Sub-Saharan Africa and South Asia being home to three fourths of the world's stunted children. India ranks number one among the top 14 countries which reside 80% of the stunted under five children contributing to 38% of the global burden (UNICEF 2013, Report 2).

Referring the data of the National Family Health Survey 2 and 3 it is indicated that there has been only a marginal reduction in percentage of children having

underweight and stunting (WAZ: 47% to 46%, HAZ: 46% to 44%). Gujarat despite being among the better developed states on the economic front also has markedly high prevalence of under nutrition with 47% children being underweight and 42% being stunted (Lahariya and Khandekar 2007). The National Nutrition Monitoring Bureau's figures for tribal population of Gujarat indicate that 47%, 54% children between 1-5 years are underweight and stunted respectively (NIN, ICMR 2009).

According to the report titled "Life free of hunger" published in 2012, at the most immediate level, malnutrition is caused by inadequate diet and by infection. These primary causes of malnutrition are influenced by food access and availability, healthcare, water and sanitation, and the way a child is cared for (for example, whether the infant is breastfed and whether basic hygiene practices are used, such as hand-washing). Underlying all of these primary and intermediate causes of malnutrition are poverty, lack of resources (eg, financial and human resources), and social, economic and political factors (eg, women's status).

Acute malnutrition often results in visible wasting which chronic undernutrition is accompanied by stunting. More often both acute and chronic malnutrition coexist with micronutrient deficiencies, which further weaken a child's resistance to infections and place them at a greater risk of a dying from preventable childhood ailments such as diarrhea, measles and pneumonia (UNICEF 2006). A child who is severely underweight is 9.5 times more likely to die of diarrhoea than a child who is not, and for a stunted child the risk of death is 4.6 times higher (UNICEF 2013, Report 2).

Diarrhoea, a common childhood infection is alone responsible for about 801,000 deaths among children younger than 5 years of age, mostly in developing countries (Liu L et al 2012). Reducing diarrheal deaths by more than 1.4 million per year would be a major contribution towards MDG4 (Walker et al 2011). India stood at number one position for global mortality rank for pneumonia and diarrhea deaths in under five, with 4,36,000 children dying annually being infected by these two easily preventable diseases (UNICEF 2013, Report 2).

Bryce et al 2003, mentioned that amongst all the preventive health and nutrition interventions, 'infant and young child feeding' – an umbrella term for the different activities involved in feeding a child from birth to the age of two – has the single greatest potential impact on child survival.

The globally endorsed definition of optimal infant and young child feeding from the World Health Organization and UNICEF states: (WHO/UNICEF 2012).
"Infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter, to meet their evolving nutritional needs, infants should receive safe and nutritionally adequate complementary foods while breastfeeding continues for up to two years of age or beyond."

Optimal IYCF is essential for child growth. The period during pregnancy and a child's first two years of life are considered a "critical window of opportunity" for prevention of growth faltering. Poor infant and young child feeding practices, coupled with high rates of infectious diseases, are the proximate causes of malnutrition during the first two years of life. The second half of an infant's first year is an especially vulnerable time, when breast milk alone is no longer sufficient to meet his or her nutritional requirements and complementary feeding should start by the age of 6 months. Many children suffer from under nutrition and growth faltering during this period, with consequences that persist throughout their life (Victoria et al 2010).

Victoria et al 2010, analysed growth-faltering patterns among children between 1-59 months from 54 countries. According to the study , weight for height z scores (WHZ) are slightly above the standard in children aged 1 to 2 months, then falters slightly until 9 months of age, and picks up after that, reaching the standard mean at ~24 months and remaining above the standard mean until ~48 months, when it starts to decline slightly. Weight for age z scores (WAZ) starts close to the standard and falters moderately until reaching approximately -1 *z* at 24 months and remaining reasonably stable after that. In contrast height

for age z scores (HAZ) starts below the standard and falters dramatically until 24 months, showing noticeable bumps just after 24, 36, and 48 months, but otherwise increasing slightly after 24 months.

Over the years international and national organisations have been working rigorously to tackle the problem of undernutrition in children. The Coalition for Sustainable Nutrition Security in India, 2008 in its report highlighted the most critical and effective actions to improve nutrition security in India. These include a). Optimal Infant and young child feeding practices (IYCF) which involves timely initiation of breastfeeding within one hour of birth, avoiding prelacteals, exclusive breastfeeding during the first six months of life, timely introduction of age appropriate complementary foods at six months (adequate in terms of quality, quantity and frequency) and hygienic child feeding practices. b). Integrated management of neonatal and childhood illnesses (IMNCI) involving appropriate and active feeding of children during and after illness. c). Promote hygiene in terms of personal hygiene, environmental sanitation, safe drinking water and food safety. d).Behaviour change communication (BCC) intervention which involves expanding and improving nutrition education and awareness at the community level.

Infant and young child feeding practices directly affect the nutritional status of children under two years of age and, ultimately, impact child survival. Improving infant and young child feeding practices in children 0 - 23.9 months of age is therefore critical to improved nutrition, health and development of children (http://www.who.int/nutrition/publications/iycf indicators for peer review.pdf).

The core intervention of IMNCI is integrated management of the five most important causes of childhood deaths-acute respiratory infections, diarrheal diseases, measles, malaria and malnutrition and aims to reduce death as well as the frequency and severity of illness and disability, thus contributing to improved growth and development. (Patwari and Raina 2002). Arifeen et al 2009, in their study conducted in Bangladesh reported reduction in stunting amongst children aged 24-59 months whose mothers followed IMCI practices.

According to the *Lancet Child Survival* Series: *BASICS* II, unhygienic and unsafe environments place children at risk. Ingestion of unsafe water, inadequate availability of water for hygiene, and lack of access to sanitation contributes to about 1.5 million child deaths and is a risk factor for 88% of diarrheal mortality. (http://www.basics.org/publications/Lancetseries_summary_BASICS_II_Sept_2003.pdf).

Children with poor nutritional status and overall health, as well as those exposed to poor environmental conditions, are more susceptible to severe diarrhoea and dehydration than healthy children. (Black et al 2003). Worldwide, of all child deaths from diarrhoea, 78% occur in the African and South-East Asian regions (Munos et al 2010 and Boschi et al 2008). Reducing childhood diarrhoeal rate is a priority of WHO for achieving the United Nations' Millennium Development Goal of reducing childhood mortality by two thirds between 1990 and 2015 (Black et al 2003). India stood at number one position for global mortality rank for pneumonia and diarrhea deaths in under five, with 4,36,000 children dying annually being infected by these two easily preventable diseases (UNICEF 2013, Report 2).

Researches have proved that contributing factors to diarrhoea among children aged under 3 years in India include non-use of soap for cleaning feeding containers, water stored in wide-mouth containers, use of pond water and indiscriminate disposal of children's feces, high initial contamination of foods, poor environment and personal hygiene , feeding overnight moist foods stored at ambient temperature (Sheth and Dwivedi 2000). Other studies have shown that the hand-washing practice of mothers before food preparation was also associated with a lower risk of diarrhoea among children (Gorter et al 1998; Alam et al 1989; Alam and Wai 199125-27).

The interventions include preventive approaches that may reduce exposure to the infection or condition or reduce likelihood of exposure that leads to disease, as well as preventive and treatment approaches that reduce the likelihood that the disease or condition will lead to death. Hence the need for today is spreading

awareness and educating the mothers about the importance of IYCF and IMNCI that will transform into a well nourished child.

The National Rural Health Mission was initiated in 2005 in order to strengthen the health systems in the country but still the health status of Indian children is grave. Paul et al 2011, in their article pointed out that the coverage of priority interventions remains insufficient, and the content and quality of existing interventions are suboptimum. Infants and young children do not get the health care they need; access to effective treatment for neonatal illness, diarrhoea, and pneumonia shows little improvement; and the coverage of nutrition programmes is inadequate.

Sanghvi et al 2013 in their efforts to improve IYCF practices in different countries concluded that exposure to mass media plays a critical role in rapidly reaching mothers, household members, community influentials, and health workers on a large scale. Combining face-to-face interventions for mothers with social mobilization and mass media was effective in improving IYCF practices. Researchers (Bhandari et al 2004, Kilaru et al 2005, Vir 2013) in the past have carried out interventions at community levels to educate mothers on importance of child health. Intervention to improve hygiene practices and diarrhoea management practices have also lead to adaption of desirable practices for preventing and managing diarrhoea. Interpersonal communication strategies used by Ray et al 2010, Datta and Boratne 2010 and Sheth and Obrah 2004 brought about significant changes in handwashing practices of the mothers.

As discussed above, the present state of undernutrition among children in the country needs immediate mobilization at the grass root levels. People from low socio economic communities need to be targeted as they reside in poor environmental conditions and have limited access to resources. Moreover the tribal population who have limited exposure to new technologies and resources needs to be targeted on priority. Mothers from the tribal community are required to be educated and made aware about the benefits of child health through constant one to one interaction which can actually transform into desirable

results in terms of improved nutritional status of the children. Hence in view of the above, the present study was undertaken to with the broad objective of improving the nutritional status of the children between 6-36 months of age by imparting nutrition, health and food safety education to the tribal mothers of Chikhli taluka.