

CHAPTER – 1

INTRODUCTION

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Human being is very different from another organism for their biological capability of adjustment with their environment as well as their cultural aspects through changing and modifying the nature with their favor. Anthropology is one type of discipline which discuss about human populations with holistic approach. It deals with different groups, communities and regional populations with any aspects which try to reach any problems to a specific population which is also applicable to human welfare, through field study i.e. very relevant tool in anthropology.

In 1946, The World Health Organization gave a definition of health, which today is still widely acceptable i.e. “health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 1946). During 20th century this three-dimensional side of health clearly illustrates a dramatic change in the way of thinking about health that has definitively abandoned the purely organic. View that in previous centuries health was so typical for the science of medicine. On the basis of definition health was no longer the exclusive area of medicine but had entered a much broader arena of scientific disciplines and multi-sectoral societal debate. Through the broad variety of research areas (social, political, economical, behavioral, etc.) scientists have provided valuable new insights regarding the relevance of social and economical conditions (De Henauw et al., 2003). Human growth and nutritional status are important aspects help to know physical condition of any individual. Human development and growth is mainly based on gene and environment. Malnutrition during childhood effect on growth and development, malnourished children are growing as malnourished adults who face high rate of disease and death (Haq, 1984; Roberts et al., 1986; Karim et al., 1985; Das Gupta, 1990). Nutritional status could be evaluated by various ways, like examining clinical signs by biochemical tests and using anthropometry.

1.1. Anthropometry:

The technique of anthropometry is with and most successful application to assessment of overall health and welfare of individuals as well as populations. Anthropometric measurements are valuable non-invasive indicators to detect nutritional status and assess the growth and development of children (Kuczmarski et al., 2000; Saxena et al., 1997; Sinha and Miti, 2012). Accurate anthropometric measurements of height, weight and BMI serve as reliable means for

evaluating the growth of a children and help detect gross abnormalities without manifesting of other clinical sings of illness (Khadavat et al., 1998; Kuperminc and Stevenson, 2008; Benfer et al., 2012). Current literature represents approach of anthropometry has its wide application to research related to the elderly to the sports, medicine, chronic disease like diabetes and coronary heart disease. Anthropometric measurements have provided the scientist lots of information relevant to various physiological genetics and other investigation. These measurements are the fundamental parts of studies of human adaptability, analysis of growth pattern. Anthropometric data for children reflect general health status, dietary adequacy and growth and development over time. Anthropometry is an important tool in geriatric nutritional assessment to evaluate underweight and obesity conditions which are both important risk factors for severe disease and disability in the elderly.

1.2. Nutritional status:

Nutritional status of an individual can be classified as normal and malnutrition. Malnutrition indicates under nutrition, over nutrition or specific nutrient deficiency. Both type of malnutrition have strongly associated with rate of mortality and morbidity. Under nutrition can be divided into deficiency of protein energy and micronutrient (Chakraborty and Bose. 2014; Josepha et al., 2015; UNICEF, 2019). Under nutrition and micronutrient deficiencies contribute to global burden of disease (Ezzati et al., 2002). Undernutrition helps to increase infectious disease because this is reduced immunological capacity, which is affected on linear growth of children and intellectual development (Black et al., 2000; WHO, 2008b). Among children, under nutrition is defined by following measurements Stunting (Low height for Age), under weight (Low weight for Age), Wasting (Low Weight for Height), Thinness (Low BMI for age) and Composite Index which is known as Composite Index of Anthropometric Failure (CIAF) (WHO, 1995). In early year 1972 the term wasting and stunting were introduced by John Waterlow described among underweight children and he determined that wasting children is more risk than stunting children who suffer with both type of malnutrition that is more highly at risk (Waterlow, 1972) The terms 'acute' and 'chronic' malnutrition are often used to describe wasting and stunting, respectively. Although it is generally true that wasting is a more transient form of malnutrition (Richard, 2012).

1.2.1. Stunting (ST):- Stunting indicates that failure to normal height. It is a vital aspect or indicator of assessment of child nutrition or health which indicates chronic malnutrition, gives a clear picture of past nutritional history and environmental conditions (Kazeem et al., 2011). Stunting is a major public health problem which is associated with high rate of mortality in childhood in low and middle income countries. School performance, other intellectual activities and school dropout are all these aspects closely related with stunted children. (WHO, 2000)

1.2.2. Under weight (UW):- Reflect that low body mass related to particular age. Under weight child is key indicator of low poverty and hunger. First aim of Millennium Development Goal (MDG) is reeducation of hunger low poverty between 1990 and 2015. Independent socio-economic, child mortality and other related development is significantly associated with weight of particular age. Long term effect of this condition which is closely related with school performance, reduce work capacity and reproductive health (Janghorbani et al., 2007; UNESCO, 1990; Haas et al., 1995; Faiz et al., 2012; Mahmud et al., 2013).

1.2.3. Wasting (WS):- This is use for a measurement of weight for height. WS is known as low weight for height. It is also an indicator of acute under nutrition result of more food deprivation or illness.

1.2.4. Thinness (Low BMI for age):- To assess the undernourished children, thinness is better indicator than the wasting (Cole et al., 2007). The chronic energy deficiency (CED) grades III, II and I of thinness refer to severe, moderate and mild under nutrition respectively. All these categories are defined low BMI value according to Cole et al., (2007).

1.2.5. Composite Index of Anthropometric Failure (CIAF):- It is a very important indicator to easily determine under nutrition among children (Nandy, 2005; Svedberg, 2000). There are seven categories which are based on single or multi anthropometric failure. It is better indicator than other three conventional indices (underweight, stunting and wasting) because it determine overall anthropometric failure at a time. Both type of undernutrition is closely related with high mortality rate (Briend et al., 2015).

1.3. Child Nutrition and Socio- Demographic factors:

Socio-economic and demographic statuses are influenced on public health. There are some conditions leading to social inequalities in health are undoubtedly acting partially through

nutrition – a lifestyle factors, this is not maintain in daily basis this may be influence through many surrounding factors (geographical, material, personal, social, psychological, etc) (De Henauw et al., 2003). Nutritional status and environmental conditions have fundamental role on health of the children. Undernutrition has many different causes working at different levels. Living status, water, sanitation and hygiene, income, education and quality of health services are all important for health of the children (Herrador et al., 2014; Global Nutrition Report, 2018; Global Nutrition, 2016-2017 and UNICEF, 2017). Child nutrition depends on dieting behavior and socio-economic status. This is also influenced by parent's 2014; Melaku et al., 2015; Degarege et al., 2015). Undernourished children of both areas rural and urban in India, still now indicate various type of risk factors of demographic and socio-economic (Mitra et al., 2007; Alazzeah et al., 2018; Makoka, 2013). Child undernutrition is also influenced by several socio-economic and demographic variables such as age, residence, family income, parental education, parental occupation and sanitation (Yadav et al., 2016; Pal et al., 2016; Pal et al., 2017; Gurzkowska et al., 2017; Debnath et al., 2018; Hasan et al., 2018).

1.4. Child Nutrition and illness:

School age is dynamic period of growth and development of any individual. During this period physical, mental, social developments of children take place a very important role (Singh and West, 2004). Poor health and malnutrition reflect on both the growth and cognitive development of school going children. School children are dramatically affected by anemia, vitamin A deficiency, and parasitic infections, with adverse impact on their nutritional status (Hasan et al., 2013; Brooker et al., 2006; Jukes et al., 2007; Pollitt, 1999; Opara et al., 2012). There is growing evidence indicate that morbidity and mortality due to infectious diseases and malnutrition in school children in developing countries. There is different studies in different countries indicate that primary school children affected by various type of disease such as, respiratory problems, diarrheal disease, nutritional disorders, anemia, parasitic infestations, pediculosis, caries teeth, refractive errors, skin diseases, ear and throat problems, tic disorders, sleeping disorders etc (Hasna et al., 2013).

1.5. Background

Undernutrition is the main cause of morbidity and mortality in infant, children and adolescent throughout the world (Global Nutrition Report, 2018; Meshram et al., 2012). It has

been estimated that approximately two-thirds of the world's undernourished children live in Asia, giving that region the highest concentration of worldwide childhood undernutrition (Ramachandran, 2013; UNICEF, 2016). Undernutrition is a main cause of children death aged under 5 years in developing countries. This is major effect on human health as well as social, economic and political development of population (Black et al., 2008; Global Nutrition Report, 2016). The health consequences of a prolonged state of undernutrition among children include delayed physical growth and impaired intellectual and lower resistances to infection and high risk of some chronic disease, which is hampered work capacity, reproductive performance and behavioral status (Singh et al., 2013; Masibo and Makoka, 2012). It is also recognized as the underlying cause of childhood disease such as measles, diarrhea, and acute respiratory infectious disease (Demissie and Work, 2013; Meshram et al., 2012). Undernutrition during childhood effect on growth and development, undernourished children are growing as an undernourished adult who face high rate of disease and death (Haq, 1984; Roberts et al., 1986; Karim et al., 1985; Das Gupta, 1990).

Nutritional aspect is very important for us which have been evaluated global development issue that have been committed for reducing undernutrition. The recent database incorporates the information collected in GNPR1(2009-2010), and will include the results collected through the second Global Nutrition Policy Review (GNPR2), which was conducted in 2016–2017 to compile current information on countries' progress in implementing actions to achieve the global nutrition targets for 2025 (Global report, 2016). Global nutrition target that was reduce and maintain childhood wasting to less than 5% (Global Nutrition Report, 2018). Although prevalence of child undernutrition remains persistently high, the 2018 GHI (Global Hunger Index) scores of South Asia and Africa south of the Sahara, at 30.5% and 29.4%, respectively, reflect serious levels of hunger index, based on four component indicators (undernourishment, child wasting, child stunting and child mortality). Taken together, the component indicators reflect deficiencies in calories as well as in micronutrients (Grebmer et al., 2018). Undernutrition explains around 45% of deaths among children under five, mainly in low and middle-income countries (Global Nutrition Report, 2018). Undernutrition is a major challenging problem in human development in India. Now enormous change observed in economic purpose in the past two to three decades (Pal et al., 2017). Although in India, there are app. 60 million children who are underweight. This prevalence is higher in rural areas compared to urban areas (Smith et al.,

2005; Herrador et al., 2014). There are several programs launched for control this situation, such as ICDS (launched in 1974) and “Mid-day meal Program.” ICDS provide care to the children less than six years and maternal health issues. India government started “Mid-day meal Program” for improvement of health status of school children aged 5-14 years old (Pramanik et al., 2015). Although in India 35.7%, 38.4% and 28.5% children are underweight, stunted and wasted respectively (NFHS-4). National Family Health Survey reported that (NFHS-4 of 2015-2016) 28% and 34.0% stunted, 16.7% and 21.6% wasted, 26.2% and 33.6% underweight among children aged under 5 years in urban and rural areas respectively, particularly in West Bengal. There are some external factors which are closely related with child nutrition such as income, house hold, literacy, food distribution, food availability, Govt. scheme (Christine et al., 1999). One out of three children in India suffer from stunting and one out of two children suffer from underweight. Conventional indicators of Nutritional status are high in India than USA and china still now (NFHS-3). Child nutrition positively influence by urbanization, female literacy, access of health care, safe water and sanitation this is very important for child development indicator. (NFHS – 3, 2005-2006, DLHS – RCH survey, 2002-2004). Undernutrition among school going children is an important public health problem of any country (Rana and Goli, 2017; Mansur et al., 2015; Teblich et al., 2017). Information on undernourished children of developing countries like India is very vital because a large number of people live in India and suffering from undernutrition (Singh and Mondal, 2013; Singh, 2014; Singh et al., 2014; Vaidya et al., 2015; Selvaraj et al., 2016; Bharati et al., 2017; Agarwal et al., 2018). Some studies already informed about undernutrition among children of West Bengal (Bisai et al., 2008; Mandal et al., 2009; Mondal and Sen, 2009; Banik and Chatterjee, 2010; Bisai and Mallick, 2011; Mandal et al., 2014; Giri et al., 2017, Biswas et al., 2018; Khanra et al., 2019). Little information available on nutritional status of children and measuring the possible association of socio-economic and demographic risk factors can be helpful to control undernutrition of both areas industrial and non industrial in West Bengal (Biswas et al., 2013; Bisai et al., 2014; Sarkar, 2016).

1.6. Objectives of the present study:

The present study thus focused on the following objectives:

- 1. To evaluate growth pattern of Bengalee School going children of two areas.**
- 2. To evaluate nutritional status of studied children of two areas.**
- 3. To study, the compare of socio- economic status of the family of two areas.**
- 4. To assess the relationship between socio economic status and nutritional status of school going children**