



NEED FOR EMPOWERING ADOLESCENT GIRLS, THE TOMORROW MOTHERS THROUGH NUTRITION EDUCATION ON INDIGENOUS FOOD PROCESSING: A REVIEW

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ABSTRACT

Addressing the nutritional needs of adolescents could be an important step towards breaking the vicious cycle of intergenerational malnutrition, chronic diseases and poverty. Adolescents are future parents. Particularly women play a significant role in the development of their offspring so if they have better nutritional knowledge and awareness on nutrition they improve the nutritional status of all family members and good health can be maintained. Nutrition education on Indigenous food processing practices can be an effective strategy to achieve food and nutrition security as it includes the transfer of indigenous processing practices from generation to generation at the household level. It requires little effort and puts less economic burden on household thus ensuring safe and wholesome supply of nutrient rich foods, contributing to solve the problem of malnutrition and controlling non communicable diseases. Several indigenous household food-processing and preparation methods can be used to enhance the bioavailability of micronutrients in plant-based diets. These include thermal processing, mechanical processing, soaking, fermentation, and germination/malting. These strategies aim to increase the physicochemical accessibility of micronutrients, decrease the content of antinutrients, such as phytate, or increase the content of compounds that improve bioavailability. Nutrition education on indigenous food processing practices might be an effective strategy to ensure a positive and significant effect on micronutrient adequacy for present and future generations.

Keywords: Adolescent Girls, Nutrition Education, Indigenous Food Processing.

Introduction-

The word nutrition means 'the process of nourishing or being nourished,' especially the process by which a living organism assimilates food and uses it for growth and replacement of tissues. Optimum nutrition contributes to health, wellbeing, normal development, and high quality of life (Gibney et al. 2009). However, undernutrition, overnutrition, and malnutrition are linked to suboptimal health outcomes (Gibney et al. 2009). Such poor diets have been linked to the occurrence of chronic diseases, including cardiovascular disease, Type-2 diabetes, cancer, osteoporosis and anaemia (Lytle et al. 2002).

The word adolescent is derived from the Latin word 'Adolescere' which means 'to grow' or 'become mature'. Adolescent girls are very important section of our society as they are the potential mothers and homemakers in future. Moreover, they perform various other roles in the family and the community. Therefore it is need to train these vulnerable group regarding reproductive, health and nutritional awareness. Especially for the young girls it is essential to educate them as today's girls are the future mothers. To strengthen any nation there is need of healthy mothers. Only healthy mothers can produce healthy citizens [Elizabeth, 2000].

In most developing countries, nutrition initiatives have been focusing "on children and women, thus neglecting adolescents. Addressing the nutritional needs of adolescents could be an important step towards breaking the vicious cycle of intergenerational malnutrition, chronic diseases and poverty. Epidemiological evidence from

both the developed and developing countries indicates that there is a link between fetal under nutrition and increased risk of various chronic during adulthood. (WHO, 2006)

Nutritional knowledge can be gained by means of nutrition education. Nutrition education can be defined as "the process of persuading individuals to develop the knowledge, skills and motivation needed to make appropriate food choices throughout the life."

Adolescents are future parents. Particularly women play a significant role in the development of their offspring so if they have better nutritional knowledge and awareness on nutrition they improve the nutritional status of all family members and good health can be maintained. Women form a major segment of our society as home maker and nurtures, their knowledge awareness and efforts have a marked impact on growth development and nutritional status of their family members.

Before the advent of the modern era, women in India were generally confined to homes, within the four walls of house however in the past independence India, many new vitas have opened up and women have made themselves free of the fetters in an effort to establish their own identity. In the recent years many of them have had an access to education which has resulted in their intellectual awakening and broadened thinking. Education of women especially the nutrition and health related education should be our major thrust area.

Nutrition awareness for young women is extremely important because they, as nurturers, are engaged in

bringing up our future generation. The first education of child takes place within the periphery of family where he/she inherits a certain values, habits and come intern with his/her immediate environment, a women contribution in molding the child superior to that of any other member of the family and, therefore it is the mother who needs to be targeted and made nutritionally sound. The educational level, position, health, and nutritional status of the women is central to the quality of life and is a key determinant of the family healthy (jyotilakshmi 2004). Her food preferences are reflected in food purchases she makes and the meals she serves to the family. Thus the early years of life will affect the child's food habits which will rather be passes on to next generation when, today's young will become parents and will serve as role models for their children. As such special attention should be given for the improvement of nutritional awareness among the women which is also clear from the words of Dr. M. S SWAMINATHAN "good nutrition is a function of both economy and education." Women education is hypothesized to exert a major influence on health and nutritional status.

Indigenous food processing- Nutrition education on Indigenous food processing practices can be an effective strategy to achieve food and nutrition security as it includes the transfer of indigenous processing practices from generation to generation at the household level. It requires little effort and puts less economic burden on household thus ensuring safe and wholesome supply of nutrient rich foods, contributing to solve the problem of malnutrition and controlling non communicable diseases. Households are food secure when they have year-round access to the amount and variety of safe foods their members need to lead active and healthy lives. Indigenous processed food products contribute to promote nutrient content and nutrient diversity and hence improve health of vulnerable populations. indigenous food crops are less damaging to the environment and address cultural needs; they also preserve the cultural heritage of local communities. Indigenous food processing may contribute towards achieving food security through transfer of technology in a convenient and economic way to access PVMF (protein, vitamin, mineral, fibre) dietary component by the vulnerable populations. Thus it is the high time to identify and popularize indigenous food processing for household food and nutrition security.

Foods are processed to improve their digestibility and to enhance their appeal to the consumer. Processing also serves to extend the availability of foods beyond the area and season of production, thus stabilizing supplies and increasing food security at national and household levels. A particularly important aspect of food processing is that it permits great diet diversity, giving consumers access to a wider choice of products and hence to a better range of vitamins and minerals than they would otherwise consume. The most basic level of processing is food preservation, which in a variety of forms has been practiced by families in indigenous societies for

generations to provide food when sources of fresh food are scarce. In many societies, many people now have access to more convenient commercially processed foods, and many of the indigenous ways of contributing to household food security are dying out. It may have long term nutritional consequences.

Village-based processing includes basic transformation activities such as milling as well as processing of products for which there is a potential market. Such processing, which can be done on an individual or group basis, provides employment for millions of rural people and is often one of the sources of income for rural women.

Dietary quality is an important limiting factor to adequate nutrition in many resource-poor settings. One aspect of dietary quality with respect to adequacy of micronutrient intakes is bioavailability. Several indigenous household food-processing and preparation methods can be used to enhance the bioavailability of micronutrients in plant-based diets. These include

thermal processing, mechanical processing, soaking, fermentation, and germination/malting. These strategies aim to increase the physicochemical accessibility of micronutrients, decrease the content of antinutrients, such as phytate, or increase the content of compounds that improve bioavailability. A combination of strategies is probably required to ensure a positive and significant effect on micronutrient adequacy. A long-term participatory intervention in Malawi that used a range of these strategies plus promotion of the intake of other micronutrient-rich foods, including animal-source foods, resulted in improvements in both hemoglobin and lean body mass and a lower incidence of common infections among intervention compared with control children. The suitability of these strategies and their impact on nutritional status and

Functional health outcomes need to be more broadly assessed.

The low bioavailability of nutrients, arising from the presence of antinutrients such as phytate, polyphenols, and oxalate, is another factor that limits the quality of predominantly plant-based diets. Given the heavy reliance of low-income populations on cereals as a food source, the negative effects of low mineral bioavailability on mineral status and subsequent health are potentially quite substantial. A variety of interventions that are appropriate for the rural poor need to be considered to overcome these limitations. Several indigenous food-processing and preparation methods can be used at the household level to enhance the bioavailability of micronutrients in plant-based diets. These methods include thermal processing, mechanical processing, soaking, fermentation, and germination.

Critical reviews examining its effectiveness have demonstrated that nutrition education can make a significant contribution to improved dietary practices. Well-designed and effectively implemented nutrition education can motivate those participating to change

dietary behaviours and provide them with the knowledge and skills to make healthy food choices in the context of their lifestyles and economic resources. (Food and nutrition service, 2010).

Effective nutrition education and promotion includes multiple components: 1) skill building to facilitate positive behaviour change; 2) environmental and policy changes to make the healthy choice the easy choice, and 3) integrated initiatives and social marketing to build community and social support. It helps consumers select and consume healthy and enjoyable foods by improving awareness, skills, and motivation to take action at home, school, and work. It is ongoing, multifaceted, and disseminated through a variety of channels (outlets). It will vary based on target population, and take into consideration knowledge and social, health, and environmental influences. Successful interventions will use different approaches for different groups and situations. Key components that are associated with effective nutrition education and promotion initiatives are highlighted below.

Interventions focused on specific behaviors, like eating more fruits and vegetables, indigenous processed foods are more likely to be effective than those that focus solely on increasing knowledge about health and nutrition. This interrelationship between knowledge and behavior was highlighted in a study of salad bars in elementary schools. Researchers found that in schools providing six nutrition classes students selected more fruit from the salad bar than students in schools where the salad bar was provided without any nutrition education. Research indicates that in developing and implementing interventions, it is important to recognize the motivations of the target audience and to develop appropriate strategies based on those mediators. For elementary adolescents, preference and availability are primary motivators, meaning that nutrition education efforts should focus on helping children become familiar with and offering opportunities to taste healthy foods. As children become older, and in efforts aimed at adults, other mediators are important, like peer influences, behavioural choices, sense of competence and autonomy, and health outcomes. (Food and nutrition service, 2010).

Health benefits of indigenous foods:

Maintaining a diet of indigenous foods yields many benefits to first nation health and well-beings. From a first nation's perspective, the concept of health and well-being is viewed in a holistic approach including the social, physical, emotional, and spiritual aspects of one's life. All of these aspects are interrelated and continuously influence one another. Once harmony and balance is achieved among all aspect of one's life, then health and will-being is achieved. With respect to indigenous food systems of First Nations, there is a delicate balance among all living things in the natural environment. When shifted, it leads to changes in indigenous foods systems, as is occurring at present and impacts on the health of First Nation peoples and their communities.

In addition to nutritional health, the harvesting activities such as hunting, fishing, berry picking and plant harvests, contribute to increased physical activity and health. The consumption of indigenous foods may also contribute to the other aspects of well-being through economic and socio-cultural activities. A indigenous diet is not only relatively low in cost, but provides an economic base and livelihood for many First Nations, and leads to food security. It is also related to socio-cultural values and community closeness through feast, potlatches and ceremonies. This leads to good mental health in the development of one's cultural identity, self-esteem, and pride.

Impact on Health status:

According to the World Health Organization (WHO), of the 57 million global deaths in 2008, 36 million, or 63%, were due to non-communicable diseases (NCDs), principally cardiovascular diseases, diabetes, cancers and chronic respiratory diseases (WHO, 2011a). Nearly 80% of these deaths occur in low-and middle-income countries. Deaths from NCDs are projected to continue to rise worldwide, with the greatest increases expected in low- and middle-income regions. An unhealthy diet is one of the key risk factors for NCDs. For example, inadequate consumption of fruit and vegetables increases the risk for cardiovascular diseases and several cancers; high salt consumption is an important determinant of high blood pressure and cardiovascular risk and increases the risk of stomach cancer; high consumption of saturated fats and trans-fatty acids is linked to heart disease; a range of dietary factors have been linked with diabetes; red and processed meat consumption is linked with some cancers (WHO, 2003; Steyn et al., 2004; WCRF, 2007).

The preservation of indigenous food knowledge is not only important for human empowerment and nutrition, but also has implications for broad human ecological concerns such as biodiversity. In the past decade, there has been much interest in increasing bio cultural diversity, "the total variety exhibited by the world's natural and cultural systems." (Maffi 2001) Biodiversity is the cradle of raw materials for food and the "key to ecological integrity". (Nazarea 1998, p.2-3) Folke et al. (1996) explain that economic and human activity depends on biodiversity as insurance for ecosystems to function with resilience to changes. Protecting biodiversity as a basis for resilience protects human welfare. Biodiversity conservation should extend beyond protected parks to policies and reforms that defend sustainable human activity. For example, food production that works in tandem with ecological processes supports future activity. Indigenous food knowledge benefits emerge at all levels of healthy communities. It is a cultural expression that can manifest itself on every scale: from eating to the production of indigenous agricultural systems. In between these two levels are activities at the household and community-level which is where Indigenous food knowledge transmission to younger generations occurs.

Conclusion-

Indigenous food is important for the well being of adolescents. Ensuring that children are well nourished, healthy and able to learn is an essential component of effective nutrition knowledge. Nutrition education provides people with the knowledge, skills and motivation to make wise dietary and lifestyle choices, building a strong basis for a healthy and active life.

The successful implementation of the nutrition education programme was improving nutritional knowledge and thus enable them to improve the dietary intakes of children, not only by including the indigenous foods regularly, but also to improve the quality and quantity of food offered to the children. Therefore, encouraging parents to use indigenous food may improve household food security and reduce the rate of malnutrition among children. Good nutrition and health is important for the well being of adolescents. Ensuring that children are well nourished, healthy and able to learn is an essential component of effective nutrition knowledge. Nutrition education provides people with the knowledge, skills and motivation to dietary and lifestyle choices, building a strong basis for a healthy and active life.

REFERENCES

1. Whitney et al: *Understanding Nutrition, 10th edition, p 6. Thomson-Wadsworth. 2005*
2. David Sadava et al: *The Science of Biology. Macmillan. 2009*
3. David A : *Forest ecosystems. Baltimore: Johns Hopkins University Press 1994*
4. John Griffith Vaughan et al (2009): *The new Oxford book of food plants. Oxford University Press US. pp. 212-. ISBN 978-0-19-954946-7. Retrieved 13 October 2010*
5. Divya Shettigar et al: *Assessment of knowledge of mothers of under five children on nutritional problems a rural community based study*
6. Tarvinder Jeet Kaur et al: *Impact of Nutrition Education on Nutrient Adequacy of Adolescent Girl 2007*
7. *Journal of food and nutrition sciences vol. 3, No. 3, 2015*
8. *Cauvery research journal, volume 1, issue 1, july 2007*
9. Perlas L et al: *Use of soaking to enhance the bioavailability of iron and zinc from rice-based complementary foods used in the Philippines. J Sci Food Agric. 2002.*
10. Hotz C et al: *Assessment of home-based processing methods to reduce phytate content and phytate/zinc molar ratios of white maize. J Agric Food Chem. 2001.*
11. Teucher B et al: *Enhancers of iron absorption: ascorbic acid and other organic acids. Int J Vitam Nutr Res. 2004*
12. Camacho L et al: *Nutritional changes caused by germination of legumes commonly eaten in Chile. 1992*
13. Rosalind S. Gibson et al: *The Journal of Nutrition Symposium: Food-Based Approaches to Combating Micronutrient Deficiencies in Children of Developing Countries.*
14. B. Thanuja et al: *Assessment of nutritional knowledge among adolescent girls and impact of nutrition education. Department of food services management and dietetics. 2007*