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Nutritional awareness in Indian population

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ABSTRACT

Nutritional awareness is a critical determinant of public health and plays a pivotal role in addressing malnutrition and lifestyle-related diseases in India. The diverse demographic and socio-economic landscape of the country poses unique challenges in achieving equitable nutritional education and practices. This study examines the current state of nutritional awareness among various segments of the Indian population, highlighting the disparities based on urban-rural divide, gender, age, and education level. The findings reveal a growing awareness in urban areas due to increased access to information, health campaigns, and lifestyle shifts. However, rural populations, especially among women and marginalized communities, often exhibit limited knowledge due to socio-cultural barriers and inadequate healthcare infrastructure. Emerging trends, such as the adoption of fad diets and the impact of processed foods, further complicate public understanding of balanced nutrition. The study underscores the need for targeted interventions, including community-based education programs, integration of nutrition in school curriculums, and leveraging digital platforms to disseminate accurate information. By fostering a culture of informed dietary practices, India can address its dual burden of malnutrition and diet-related diseases, promoting a healthier and more sustainable future.

Keywords*: Nutritional awareness, Indian population, public health, malnutrition, lifestyle diseases*

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Introduction

Recent research suggests that nutritional counselling should shift from focusing solely on micro- and macronutrients to incorporating food-based education (Lichtenstein & Ludwig, 2010). Enhancing traditional nutrition guidance with practical skills such as shopping, meal preparation, and food storage can be beneficial (Soliah et al., 2012; Hartmann et al., 2013). In recent years, educational programs aimed at improving culinary skills, particularly those led by food handlers, have emerged as an effective method for encouraging adherence to nutritional guidelines (Reicks et al., 2014). Over the last 30 years, food prepared outside the home has become a staple in many diets, and this trend is expected to continue (Orfanos et al., 2009). Currently, food prepared away from home accounts for approximately 33% of food spending (MAPA, 2012) and 27% of total caloric intake (Vandevijvere et al., 2009).

Access to nutritious diets and education is essential not only for promoting physical and

cognitive health but also for achieving full potential, as these aspects are intertwined with the right to adequate food. Health claims on food labels describe the relationship between foods, their components, or dietary supplements, and the potential reduction of disease risk or health-related conditions. With the expansion of government-mandated food labelling, consumers now have access to more nutritional information. As defined by the Food Safety and Standards Authority of India (FSSAI), “Health claims” refer to any statement or implication of a relationship between a food or its component and health. These include nutrition claims that explain the role of nutrients in normal bodily functions and growth, as well as functional claims related to the potential beneficial effects of foods on health or disease prevention. Examples of authorized nutrition claims include “free of fat, saturated fat, cholesterol, sodium, salt, sugars, and calories,” “very low in sodium,” and “high in calcium” (Food Safety and Standard Regulations, 2011).

According to the FSSAI (2011), nutritional information, including product name, expiry date, manufacturing date, and ingredients, is mandatory on food labels. Some consumers pay attention to food labels due to health consciousness (Prathiraja & Ariyawadana, 2003). Research has shown that understanding and using food labels can lead to improved dietary quality, reducing the intake of unhealthy components like energy, fat, sugars, saturated fats, cholesterol, and sodium, while increasing the intake of beneficial nutrients such as fiber, iron, and vitamin C (Neuhouser et al., 1999; Ollberding et al., 2010; Temple & Fraser, 2013). Studies have also found that individuals with higher incomes, middle-aged consumers, and women are more likely to consult food labels when making purchasing decisions (Campos et al., 2011).

Food-based dietary guidelines are primarily designed to promote healthy, long-term food choices among consumers. However, issues such as the high prevalence of low birth weight, elevated morbidity and mortality rates in children, and poor maternal nutrition remain significant concerns in India. Nutrition plays a vital role in ensuring human rights, particularly for vulnerable groups such as children, girls, and women, who are often caught in an intergenerational cycle of deprivation. It is fundamental to human development by boosting resistance to infections. Preventing undernutrition early in life is essential to avoid irreversible growth and development deficits that negatively affect maternal and child health. High rates of infant mortality and childhood growth failure, even among survivors, further highlight the issue (Pojda & Kelley, 2000). Low birth weight (LBW) is associated with long-term risks, including higher rates of adult coronary heart disease and type II diabetes (Barker, 1998). Known as the "fetal origins of adult diseases" hypothesis, it posits that fetal undernutrition during critical developmental stages and infancy can cause permanent metabolic and structural changes, increasing susceptibility to adult

diseases. Given this context, nutrition education can serve both corrective and preventive purposes. It can improve nutritional knowledge, influence attitudes, and encourage the adoption of healthier dietary practices.

Despite the importance of nutrition education, there is limited research on its impact on behavior change within specific study groups. A comprehensive search did not reveal any reviews focused on the development of scientifically standardized nutrition education packages or their evaluation.

For the purpose of clarity review has been arranged in some sections:

2.1 Nutrition Education and awareness.

2.2 Research and conclusions of some workers

2.3 Programmes run by Government of India to deal with malnutrition

2.1 Nutrition Education and awareness

Education is a crucial foundation for acquiring knowledge in any field. Nutrition education enables individuals to make the best use of available nutritional resources, even when they are limited, and helps to maximize their potential. Various studies highlight different aspects of nutrition education.

Devdas et al. (1970) emphasized that nutrition education is the cornerstone of any program aimed at improving nutrition. Briggs (1969) argued that while there is sufficient knowledge to form a solid nutrition education program, more research is necessary to achieve greater success. Albanese (1971) defined nutrition education as the process of translating nutritional needs into food choices that meet nutritional, cultural, psychological, and economic requirements. The American Dietetic Association (1973) described it as the process by which beliefs, attitudes, environmental influences, and understanding of food lead to practices that are scientifically sound, practical, and consistent with individual needs and available food resources.

Obert (1978) viewed nutrition education as the application of nutritional science and behavioral sciences to influence individuals and groups to adopt food choices that promote health and social satisfaction. Sreelaxmi (1999) stated that nutrition education aims to promote behaviors that enhance individual health. Leverton (1974) suggested that nutrition education is a multi-disciplinary process involving information transfer, motivation development, and modification of food habits when necessary. White (1976) highlighted that knowledge of nutrition is essential for making informed food choices and achieving one’s genetic potential. Devdas (1979) stressed the importance of research in nutrition education in India, noting that factors such as poverty, unemployment, ignorance, and illiteracy often hinder people's willingness to change. The status of women is also crucial to the welfare of children, and improving their education is vital for development.

Devdas et al. (1980) stated that nutrition education programs aim to bring about positive changes in knowledge, attitudes, and practices concerning food and nutrition. Mohanram (1997) observed that the functioning of health personnel in primary health centers (PHCs) is often inadequate, and improvements are possible through appropriate training that includes a strong nutrition component. Kumari (2001) found that proper education and counseling on health and nutrition can prevent many nutritional deficiencies in pregnant women, with significant improvements in nutrition knowledge and health practices among rural pregnant women.

Joshi et al. (2001) recommended educational and counseling programs for parents of children with mental disabilities to address hygiene and health issues for better health outcomes. Premakumari et al. (1993) concluded that women play a key role in improving family nutrition, and integrating nutrition education into literacy programs can lead to significant improvements in family nutrition with minimal resource expenditure. Bambawale and Subbulakshmi (2001) noted that low knowledge, attitudes, and practices (K-A-P) regarding basic nutrition among mothers likely contribute to poor iron nutrition in children. They also observed that changing food-related behaviors is a slow process, as people often resist changes to their eating habits, particularly since the benefits of good nutrition are not always immediately apparent.

Gillespie (1981) identified poverty and ignorance as major contributors to malnutrition and emphasized that nutrition education is necessary to combat ignorance. Devdas (1971) called for an expansion of the ANP program, both in terms of quantity and quality, to improve nutrition education. The process of influencing nutrition knowledge, attitudes, and behaviors begins with providing nutrition information to participants. However, simply presenting information does not guarantee that it will be attended to, learned, retained, or applied (Watson & Johnson, 1972). Often, people disregard or modify information to justify their current behavior, rather than using it to instigate change (Hogarth, 1981; Kahneman & Tversky, 1979).

Sumana and Jhansi Rani (2001) found that a holistic, multidisciplinary approach to nutrition education significantly increased knowledge, attitude, and practice among participants. Chatterjee (1988) highlighted the importance of nutrition education for females, as nutritional stress often starts in childhood and persists into adulthood. Nutrition education for both rural and urban communities is essential to improve infant feeding and weaning practices (Uma, 1988; Pathania, 1992). Deshmukh et al. (2001) studied the nutritional problems of Banjara mothers and children, revealing widespread malnutrition, including underweight and vitamin deficiencies. The study emphasized the need for comprehensive nutrition strategies focused on mothers and children.

Kale et al. (2001) found that education had a positive correlation with the training needs in selected

areas. Similarly, Wadhera et al. (2001) studied lactating and pregnant women in Delhi and Haryana, revealing that women from Haryana had lower body mass index (BMI) and exhibited signs of protein, vitamin A, and iodine deficiencies. The Women's Health and Developmental Resource Centre (Chetna, 2000) reported that health awareness programs for village women showed encouraging results, suggesting that such strategies could be applied to other health initiatives.

Research and conclusions of some workers

Rao (2014) conducted a longitudinal growth study on rural preschool children, which showed negative Z-scores (the ratio of observed weight/height to the standard deviation of expected weight/height) for both weight and height at all ages, indicating poor growth throughout the preschool years.

Payghan et al. (2014) found that many rural mothers in their study were unaware of the impact of inadequate nutrition during pregnancy on both the mother and fetus, a contrast to the awareness seen among urban women.

Abraham et al. (2018) observed that about one-third of college students reported being overweight by 6 to 50+ pounds. Despite being knowledgeable about the risks of additives in food, the dangers of fast food, and the unhealthiness of processed foods and sodas, these students often chose processed and fast foods over fruits and salads due to taste preferences and convenience.

De Graff et al. (1997) noted that women generally showed greater awareness of nutrition than men. Similarly, Rao et al. (1998) and Kanade et al. (1999) studied adolescent growth in rural children from six villages near Pune between 1992 and 1998. The study found that children who were underweight or stunted early on had significantly lower weight and height measurements throughout adolescence compared to their peers who were of normal weight.

Programmes run by Government of India to deal with malnutrition

The Government of India has been actively working to reduce malnutrition across the country. Addressing poverty, unemployment, and malnutrition became a national priority with the onset of the Fifth Five-Year Plan (1974-78). In line with this, the Integrated Child Development Services (ICDS) scheme was launched in 1975, initially covering 33 community development blocks across urban, rural, and tribal areas. Over time, it expanded to more than 4000 blocks. In 1993, the National Health Policy (NHP) recognized nutrition as a critical issue and led to the formulation of the National Nutrition Policy. Furthermore, in 1995, the Government of India introduced the National Programme of Nutritional Support to Primary Education (NSPE) (United Nations, 1998). Although the primary aim of this program was to improve school attendance, it was expected to

significantly enhance the nutritional status of schoolchildren.

Jain and Paintal (2001) emphasized the importance of a proper diet for mothers to ensure optimal growth and development of the fetus. They suggested that a mother's diet should include an adequate amount of dark green leafy vegetables, yellow fruits and vegetables, milk, milk products, cereals, pulses, fats, as well as fish and meat, to provide the necessary nutrients in the right proportions. After birth, the infant continues to rely on the mother for nutrition. Breastfeeding, in addition to being nutritionally appropriate for the baby, contains various substances that promote growth and offer protection against gastrointestinal diseases.

Despite agricultural advances over the last decade making India self-sufficient in major food grains, undernutrition remains a significant issue, especially among rural populations. Although various national intervention programs have been running for over two decades, the situation has not improved significantly.

Integrated Child Development Services (ICDS)

The main objectives of this scheme are:

- To improve the nutrition and health status of children in the 0-6 year age group.
- To lay sound foundation of psychological, physical and social development of the child.
- To reduce mortality, morbidity, malnutrition and school drop out rates.
- To impart nutrition and health education to mothers for making them more competent in looking after the nutritional and health needs of their children.

Services such as supplementary food for children, pre-school programs, and nutrition education for women are provided by female workers, known as anganwadi workers, at the village level. The Integrated Child Development Services (ICDS) program currently covers over 50% of India's development blocks and continues to expand. Evaluation studies of the ICDS program have revealed that the components focused on women are often less prioritized than those for children. A special ICDS initiative conducted in Gujarat and Maharashtra found that after completing in-service training, anganwadi workers recognized that educating women was part of their responsibilities and gained confidence in their ability to serve as effective educators (Griffiths et al., 1991). As a result, the scope of the ICDS scheme was expanded to include adolescent girls. One such initiative began by offering iron supplements once a week to adolescent girls under the ICDS program (ICDS, 1995). This initiative targets school dropouts between the ages of 11 and 18. Currently, in 507 selected ICDS blocks, three girls are chosen to assist anganwadi workers for two days a week and receive a daily food supplement similar to that provided to pregnant and lactating women. This program aims to improve the future maternal health of these girls and harness their

potential as community leaders. Data collected through the National Nutrition Monitoring Bureau (NNMB) surveys revealed that girl children and adolescents have low intake levels of vitamin A and iron. It is becoming increasingly recognized that disparities in nutritional status contribute to gender differences in young child mortality (IIPS, 1995).

Nutrition Cell

The Nutrition Cell within the State Nutrition Division (SND) is responsible for conducting diet and nutrition surveys. It also organizes workshops aimed at raising awareness about the prevention, control, and elimination of protein-energy malnutrition and micronutrient deficiencies, with a particular focus on nutritional anemia. Nair (1999) highlighted that anemia is a significant public health issue in India and other developing nations, especially affecting women of reproductive age and young children. Devedas (1999) also noted that in India, two out of three women suffer from iron deficiency anemia. According to Barbin and Barbin (1992), adolescents are particularly susceptible to iron deficiency anemia due to rapid growth and the onset of menstruation.

Nutrition Health Clinic

The Nutrition Health Clinic, a pilot initiative launched at Safdarjang Hospital in New Delhi in 2002, offers counseling, nutritional support, immunization services, and clinical care to adolescents. A study conducted in 2002 among adolescent girls attending the clinic revealed that 35.5% of those from lower-middle-class families were undernourished (The World Bank Publication, 1996).

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