Assessment of Nutritional Status and Utilization of Government Welfare Schemes among Below-Income and Middle-Class Households in Dehra Block of Kangra District, Himachal Pradesh

Nok Singh[1], Prof. (Dr) Shashi Punam[2]

[1]Ph.D. Research Scholar, Department of Social Work, Central University of Himachal Pradesh

[2]Professor, Department of Social Work, Central University of Himachal Pradesh

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ABSTRACT

Malnutrition continues to be a significant societal issue in the country of India particularly among the vulnerable population groups, such as women and young children. The current research paper measures the nutrition of young children (0 to 6 years old) and women, and surveyed the awareness and uptake of the selected government nutrition and welfare programmes across the households of Below Poverty Line (BPL) and middle income in Dehra Block of Kangra District in Himachal Pradesh. A cross-sectional research design based on community was used. The 30 households that were used to provide primary data were selected through a structured questionnaire comprising socio-demographic factors, dietary habits, medical conditions, and awareness and use of welfare programs such as the Integrated Child Development Services (ICDS), POSHAN Abhiyaan and the Public Distribution System (PDS). The anthropometric indicators were height, weight and mid-upper arm circumference (MUAC), which are all measured under the standardized protocols and the outcomes were compared with child growth standards developed by the World Health Organization. The analyses performed were descriptive and comparative statistics to determine differences between the BPL and middle-income households. Findings reveal the gaps in knowledge and access to particular welfare programs, especially the POSHAN Abhiyaan, and permanent threats of anemia and malnutrition in children and women. Such results highlight the need to promote awareness initiatives, strengthen service provision through Anganwadi and ASHA employees, and interventions that would help to increase the impact of nutrition-related welfare programs at the community level.

Keywords: Nutritional Status, Malnutrition, Welfare Schemes, Child Health, Women's Health, POSHAN Abhiyaan, ICDS, Rural Nutrition

INTRODUCTION

India has become one of the rapidly expanding economies in the world with significant progress being made across various socio-economic and health indicators. However, malnutrition has remained a significant public health problem especially to vulnerable populations like children, women, and those with low incomes. According to the World Health Organization, malnutrition is the insufficiency, surplus, or lack of nutrients in the value of energy and essential nutrients in a person that affect the growth of the body, the development of intelligence, and immune system, and general health (WHO, 2021). Most often malnutrition is called a hidden hunger, as its consequences can hardly be seen at first glance, but it severely affects the formation of human capital and is one of the most important barriers to sustainable socio-economic growth. According to data of the National Family Health Survey (NFHS-5), a significant percentage of Indian children are still struggling with these conditions and there is more prevalence in rural and socio-economically poor areas (International Institute for Population Sciences & ICF, 2021).

In addition to child malnutrition, nutritional deficits, especially anemia among the pregnant and lactating mothers are still a common occurrence and significant threat to maternal wellbeing, infant survival and development. Indian malnutrition is tightly connected to the range of structural and socio-economic disparities, such as lack of poverty, food insecurity, low levels of education, insufficient access to medical services, poor sanitation, and the

lack of knowledge about healthy nutrition. The household factors: income, occupation, family size, educational level, housing status, the availability of safe drinking water, and sanitation facilities have a crucial impact on the diet, health-seeking behavior, and the use of government welfare (UNICEF, 2020). It has been pointed out that maternal education and household income progression contribute significantly to child malnutrition reducing it down to zero, but economic development is not enough on its own without proper nutrition and health service provision (Smith and Haddad, 2015).

The Government of India is aware of the gravity of the issue and has introduced the variety of nutrition- and health-related programs that can help change the situation with maternal and child nutrition. ICDS (The Integrated Child Development Services), the POSHAN Abhiyaan (National Nutrition Mission), the Mid-Day Meal Scheme, the Public Distribution System (PDS), and other programmes under the National Health Mission are some of the major programmes. These programs aim at improving nutrition consumption, improving maternal and child healthcare services, anaemia, and involvement of community in enhancing nutrition outcomes. The reviews of such programmes as ICDS show that they play a critical role in the delivery of additional nutrition, immunization, and health education via Anganwadi centres; however, various obstacles, such as unstable food provision, poor awareness, and lack of monitoring, tend to undermine their performance at the grassroots (Kapur, 2018). In a similar manner, the additional purpose of POSHAN Abhiyaan is to empower the results of nutrition by inter-ministerial convergence and technological monitoring systems, but the lapses in awareness and practice still exist in a number of regions.

In spite of the fact that Himachal Pradesh is commonly viewed as a moderately performing state in terms of health and social development indicators, as opposed to several other states in India, intra-state disparities, especially, in rural and semi-rural regions, still exist. This is one of the areas such as Dehra in Kangra District whose livelihoods are much reliant on agriculture, daily wage labour, livestock rearing, and informal jobs. The chronic food insecurity is often faced by households that live Below the Poverty Line (BPL) because of low and unstable income. Simultaneously, dietary imbalances and lack of nutrition knowledge, altered lifestyles, and increased food costs may contribute to the nutritional deficiencies in even middle-class families. In such communities, children under the age category of 0-6 years and women at the reproductive age are the most susceptible to the ill effects of poor nutrition.

Nutrition is vital in the growth, development and sustainability of humankind. Proper consumption of macronutrients (carbohydrates, proteins, and fats) and micronutrients (iron, iodine, zinc, vitamin A, and folic acid) plays a crucial role in the preservation of physiological processes, immune system, and cognitive growth, as well as productivity across all life stages (Gropper and Smith, 2018). Early nutrition is of particular concern in the period of pregnancy, infancy, and early childhood as it would help to prevent low birth weight, stunting, and long-term developmental impairments (Black et al., 2013). On the other hand, malnutrition makes one prone to infections, decreases the capacity to learn and work, and perpetuates the poverty-malnutrition cycle across generations. Malnutrition not only has an impact on individual health, but also on the wider social and economic progress. It indicates that developmental origins of health and disease can be attributed to early in life undernutrition that results in a higher risk of non-communicable diseases like diabetes, hypertension, and cardiovascular diseases later in life (Barker, 2007). Malnutrition at the macro-economic level is a cause of low labour productivity, high healthcare costs, and massive economic losses that can comprise a high rate of GDP in developing nations (World Bank, 2020).

Although a lot of research has been made on malnutrition in India, micro level research, with regard to particular areas has been minimal, especially those areas that include Dehra Block of Kangra District. Localised research needs to be done since the level of nutrition is determined by not just the economic status of the population, but also social practices of various societies, access services, and the level of awareness among the communities. In this regard, the given research will focus on the nutritional situation of children (06 years old) and women, as well as the use of government nutrition and health welfare programmes among the Below Poverty Line and middle-class households in Dehra Block, Kangra District, Himachal Pradesh. With the incorporation of the socio-economic, dietary, health, and institutional perspectives, this study would be able to give a holistic explanation of malnutrition at a household level and produce insights that could inform evidence-based policies and community-level intervention to work towards the realization of the vision of a Suposhit Bharat (Well-Nourished India).

Research Objectives

1. To determine the nutritional status of children under 6 years of age, women living in the households identified as Below Poverty Line (BPL) and middle-income in Dehra Block of Kangra District, Himachal Pradesh.

2. To determine the socio-economic and dietary factors that determine the nutrition practices in the household.

3. To examine the awareness and use of government nutrition and welfare programs by these groups of people, the health problems and service delivery gaps that influence maternal and child nutrition.

Significance of the Study

The research provides micro-data on the food conditions and incidence of malnutrition in Dehra Block, scarcely block-level data of which is available. The study, through its examination of the establishment and the use of nutrition-based government welfare programs at a grassroots level, provides the knowledgeable information about the coverage, the effectiveness, and the gaps still present in the eradication of nutrition issues. The expected results would help the policymakers, health officials, social workers, non-governmental organizations, and those working on the frontline to the health needs of the vulnerable groups, especially women and children, in form of need-based interventions. By pointing to local realities, the research would help to plan better and deliver nutrition programs in the rural areas. In addition, it contributes to the growing scholarly literature in the field of rural nutrition and the issue of malnutrition in India, on the one hand, and enhancing the community awareness and advocacy regarding nutritional health, on the other, supporting community-based health programs and malnutrition outcomes improvement efforts.

Research Gap

An analysis of available literature shows that there are some salient gaps that can be used to justify the current study. Though malnutrition and nutritional status are widely studied at national and state levels in India, there are only limited studies that need to be conducted at a micro-level or block level in Himachal Pradesh, which is within the Dehra Block of Kangra District. Such a lack of localized research limits the overall conception of the local socio-economic and health status amid the effects on household nutrition in the area. The other gap that is important is that related to the comparative study of nutritional differences between BPL and middle-income households in the same geographical locality; the majority of current research is focused on economically disadvantaged populations, resulting in an incomplete understanding of nutritional disparities between different income groups. In addition, the literature that is available tends to focus on the socio-economic status, nutritional habits, health care, and state welfare initiatives individually instead of focusing on them as a unit. Qualitative information on the experiences, perceptions, and barriers to access and utilization of government nutrition and health programs by beneficiaries is also lacking. By filling these gaps, the current research will use a holistic, regionalized approach to examine nutrition status, socio-economic status, food habits, health outcomes, and the use of nutrition-related government programs in Dehra Block. By contrasting the results between BPL and the middle-income households, and by taking both quantitative and contextual viewpoints into consideration, the study is attempting to give a more holistic explanation of the nutritional status at the grassroot level.

RESEARCH METHODOLOGY

The current study had a community based descriptive cross-sectional design that aimed at assessing the nutritional status of children age 0-6 years and women and also the awareness of the government nutrition and welfare schemes and its use by the household in Dehra Block, Kangra District, Himachal Pradesh. Dehra Block is a rural and semi-urban settlement and the population is heterogeneous in terms of socio-economic attributes. The target of the investigation included both the Below Poverty Line (BPL) and middle-income households and specifically the women of reproductive age and children aged 0-6 years because they are considered nutritionally vulnerable groups. The purposive sampling was done based on certain inclusion criteria: at least one year of residence in Dehra Block, children aged 06 years and/or women aged of reproductive age, and belonging to the BPL or middle-income group. To gather preliminary information on local nutrition situation and make use of government welfare programs, thirty households that fit these requirements were incorporated into the study. Data were collected as primary data through a structured household questionnaire, which was used to record

socio-demographic variables like income, education and family size, eating and food consumption patterns as well as nutritional behaviors among women and children as well as health statuses in the form of anemia and prevalent childhood diseases. It was also used to assess awareness and use of the key government welfare programmes to enhance nutrition and food security, i.e. Integrated Child Development Services (ICDS), POSHAN Abhiyaan, and the Public Distribution System (PDS). Data on the process of interaction of households with frontline health and nutrition service providers, including Anganwadi workers and Accredited Social Health Activists (ASHA) were also gathered. The anthropometrics measurements, such as height, weight, and mid-upper arm circumference (MUAC) were used to assess the nutritional status of children and women in accordance to the standard procedures. These were measured against the World Health Organization (WHO) child growth measures to find signs of undernourishment. The ethical issues were also complied with during the study; informed consent was received by all participants after explaining the purpose of the research, voluntary nature of participation, and the confidentiality of information provided. The information obtained was coded and tabulated and analyzed with the help of descriptive statistic methods, mainly, frequencies and percentages. To assess the relationships among the socio-economic category (BPL versus middle-income), the chi-square tests were used to investigate the relationships between scheme awareness, nutritional status of children, and health service utilization. Tables, pie charts, and bar diagrams were used to display findings in order to make them easy to interpret.

RESULTS AND DISCUSSION

The study findings will give a wide picture of the socio-demographic profile of sampled households, the nutritional status of children under the age of 6 years and the awareness and application of the major government welfare schemes to Below Poverty Line (BPL) and middle-income households in Dehra block of Kangra District in Himachal Pradesh. The socio-economic background of households should be considered in detail because age, education and occupation can have a strong impact on the nutritional habits, awareness of health and receipt of nutrition-related welfare programmes. The major findings are summarized in the following tables.

The socio-demographic characteristics of respondents were defined in table 1, which also highlights the age structure, level of education, and occupation of the surveyed households. Table 2 is an evaluation of the nutritional status of children according to the anthropometric measures. Table 3 assesses the degree of awareness among the commonly used government welfare programs, which are the Integrated Child Development Services (ICDS), POSHAN Abhiyaan, and the Public Distribution System (PDS). Lastly, Table 4 compares the knowledge of these schemes of both BPL and middle-income households using chi-square analysis to determine possible disparities between the two social-economic groups. Taken in totality, these results can provide useful information about the interaction between socio-economic factors, nutritional results, and the accessibility of government welfare programs at the community scale.

Table 1: Socio-Demographic Profile

Variable	Category	Frequency	Percentage
Age	18–30	12	40%
	31–45	11	36.7%
	Above 45	7	23.3%
Education	Illiterate	10	33.3%
	Primary	7	23.3%
	Higher Secondary	7	23.3%
	Graduate	6	20%
Occupation	Daily wage labour	18	60%
	Farming	7	23.3%
	Others	5	16.7%

Table 2: Nutritional Status of Children

Nutritional Indicator	Frequency	Percentage
Normal	**22**	**73.3%**
Underweight/Wasted	**8**	**26.7%**

Table 3: Awareness of Welfare Schemes

Scheme	Aware	Not Aware
ICDS	24(80%)	6(20%)
POSHAN Abhiyan	12(40%)	18(60%)
PDS	27(90%)	3(10%)

Table 4: Scheme Awareness (BPL vs Middle Income)

Scheme	BPL Awareness	Middle Income Awareness	Chi-Square
ICDS	90%	70%	0.84
POSHAN	35%	45%	0.32
PDS	95%	85%	0.21

The study of 30 households in the Dehra Block of the Kangra District, Himachal Pradesh, demonstrates a complicated structural interaction between socio-economic vulnerability, food habits, and the effectiveness of the government-level health interventions. Demographic profile shows the presence of a young and economically active population, with more than 76 percent of the respondents falling within the age group of 18 and 45 but the downside is the huge educational shortage as a third of the sample was illiterate. This state of having no formal education presents a long-term obstacle to absorbing health-related information, and stumbling through bureaucratic welfare systems. The community is economically very unstable; 60 per cent of families live on daily wage labor, and a whopping 60 per cent of families live on less than 10,000 per month; therefore, the financial ability to ensure nutritional security is fragile. Although there were certain improvements in the housing conditions, half of the population is living in pucca houses, but the fact that 26.7 do not have access to basic toilet facilities is constantly threatening the general health because of the elevated risk of waterborne diseases and infections.

The dietary patterns sound strong at first glance, as 86.7% of the families eat three meals per day and the reported intake of the high-protein group, such as eggs or meat, is high; however, a more in-depth examination reveals that only 70% are the ones that regularly have access to high-quality proteins (e.g., eggs or meat), and 80% often eat fried foods, which indicates an underlying hidden hunger in which caloric content would be adequate, but the nutrient density would be low. This is supported by the observation that although 83.3 percent of households said that they feed children separate nutritious food and 76.7 percent feed the pregnant women special diets, 26.7 percent of children were found to be malnourished (underweight or wasted).

These malnutrition rates have been also directly linked to a morbidity rate of 30 percent in children within the last six months that can be directly related to the malnutrition rates, and this indicates a cycle of sickness and nutrient loss. Moreover, the institutional support demonstrates an ambivalent face: on the one hand, ASHA and Anganwadi workers have high physical presence with 76.7 percent home-visit rate, although on the other hand, there are still systemic gaps because 36.7 percent of pregnant and lactating women receive no needed iron and calcium supplements, and most of them (60 percent) have no idea about the flagship Poshan Abhiyaan.

Finally, the data indicates that despite the fact that the mechanics of service delivery are partially present, a combination of low educational attainment, extreme income variability, and low awareness of national nutrition missions does not allow translating the daily meals into positive health outcomes and a more integrated approach to service delivery that goes beyond pure food distribution to a complex economic empowerment and the focus on national nutrition education is needed. The given data is a full picture of the nutritional status and the use of the government welfare schemes among the below-income and middle-class families in the Dehra Block, Kangra District, Himachal Pradesh.

The analysis is designed to support the research objectives by solving the socio-economic factors, dietary patterns, health problems, and program awareness. The demographics population of the households surveyed has shown that the population is mainly composed of young-middle aged adult population with 40% falling within the age bracket of 18-30 and 36.7% within the age bracket of 31-45. Incidentally, the number of

interviewees who are illiterate is very high (33.3%), and those who have attained higher secondary education and those who have attained primary education are 23.3% and 23.3% respectively. Such a diverse educational experience indicates that information dissemination may be difficult especially to government welfare schemes 1. Most of the families are small (3-4 members, 40%) and medium (5-6 members, 30%), which is something that can affect the utilization of resources on a per-capita basis. It is important to note that the surveyed households all belong to those having at least one child of the age 0-6 years, with 36.7% of them having three children in this age bracket, which is why the demographic target is concentrated on young families.

Most families (60 percent) engage in daily wage earners as their major source of income and this leads to instability in earnings, with forty percent of the families earning ₹5,000- ₹10,000 monthly and 20 percent earning less than ₹5,000 monthly. This economic weakness is also manifested in the housing conditions where half of them is in pucca houses, 30 in semi-pucca houses, and 20 in kutcha houses 3. Although 73.3 percent of them have toilet facilities, 26.7 percent of them do not have what is considered the most basic sanitation and this is important in matters of health outcomes.

Nutritional Analysis and Socio-Economic Analysis

Eating Patterns and Frequencies of Food Consumption

This paper shows that the meal frequency is rather constant, 86.7 percent of families have three meals a day and 13.3 percent have two meals a day. Although, the decreasing meal frequency of a minority might mean food insecurity or economic distress 89. The percentage consumption of the cereals/maize (100%), vegetables (96.7%), pulses (93.3%), fruits (83.3%), and milk products (83.3%) is high in the inclusion of food items in regular meals. Eggs/meat/fishs are known to be the proteins sources used among 70 percent of diet, as well as fried products, are also prominent in 80 percent of the diets. This implies a diverse diet, but a high rate of consumption of fried items is a nutritional behavior, which may be explored more 10.

The visual materials need to be referred to original research literature

An important result is the importance of nutrition in the household in favor of children: 83.3% of the households give children separate nutritious food such as pulses, milk, fruits, and eggs. In the same way, 76.7 percent of pregnant and lactating mothers are fed on special nutritious food. This shows the high household or communal level of awareness on the significance of maternal and child nutrition, which is comparable with the suggestion that interventions should be targeted at the first 1000 days of life. Nevertheless, there is a serious gap as one-fifth of pregnant and lactating women do not take these specialized nutritional supplements (23.3).

Malnutrition and Health Problems Prevalence

The research discovered that 73.3 percent of the respondents say that the children never feel hungry, another 16.7 percent say that they feel hungry rarely and 10 percent say they feel hungry occasionally. This indicates that 26.7 percent of the children experience some form of food inadequacy, thus areas can be improved by use of welfare programs. Moreover, weight and height of children are regularly checked (76.7%), which indicates proper awareness of health, which may be supported by the Anganwadi centres or the governmental programs. Nevertheless, only 23.3 percent of households engage in regular growth monitoring, and this would result in malnutrition being detected late.

On the child illness, a third of children had been ill with serious illnesses such as anemia, fever or weakness within the last six months and the remaining 70% had not. This 30 percent disease rate is equivalent to the 26.7 percent malnutrition of children (underweight, weak or wasted) in the households surveyed. The close relationship between malnutrition and illness supports the importance of combined health and nutrition interventions. Maternal anemia is an important population health concern in India as well, and iron and folic acid supplementation interventions are essential. Nevertheless, the proportion of pregnant and lactating women who do not take regular iron, folic acid, calcium tablets and polio drops is 36.7 percent which is a significant lapse in medical supplementation.

Knowledge and Consumption of Government Nutrition and Health Programmes

One of the most important observations is that Poshan Abhiyaan (National Nutrition Mission) is not widely known, and 60% of the respondents are not aware of the program. Only 40% reported awareness. As a Jan

Andolan-people movement in order to reduce and anemia, Poshan Abhiyaan is intended to be community-oriented. This ignorance implies that a stiff reinforcement of local communication and media advocacy practices is required to target households below-income and middle-class. Although the awareness of particular programs is low, contact on frontline health workers seems high. A large proportion (76.7) of the households indicated that they were visited by ASHA (Accredited Social Health Activist) workers or other health center workers on a regular basis. Such frequency of visits implies the dynamic control of the maternal and child health, which is essential to the success of the welfare schemes and the assessment of the nutritional status provided by governments in general.

Nevertheless, a significant proportion of households (23.3) lack regular visits, which means that there is an outreach gap that has to be bridged. Availability of ASHA workers as community health workers is essential in applying interventions such as, where an assess-classify-treat algorithm is systematic to deal with prevalent childhood diseases and malnutrition. Loopholes in the Service Provision and Problems encountered by the beneficiaries.

It is discussed that there are a number of gaps:

Awareness Gap: The high level of lack of awareness (60%) on Poshan Abhiyaan is one of the biggest obstacles to the successful use of the scheme 15. Such gap is very worrying especially considering the aim of the mission which is to decrease stunting and anemia.

Supplementation Gap: More than one-third (36.7) of pregnant and lactating women do not take the necessary medical supplements, such as iron, folic acid, calcium, and polio drop. This is a direct threat to maternal and child health outcomes.

Food Insecurity: Most people are food secure, however, 26.7% of children occasionally or rarely experience hunger implying that the current schemes may not effectively cover the vulnerable groups.

Sanitation: This insufficient provision of toilets among the 26.7% of households is a contributing factor to environmental health problems, which may raise the risks of malnutrition through environmental mechanisms such as Environmental Enteric Dysfunction (EED).

Health Worker Reach: Although this is quite high, the fact that a quarter (23.3) of the households do not have regularly visited ASHA workers implies that not all families are covered and thus may fail to receive important health and nutrition information and connections to schemes.

Limitations of the Study

There are certain constraints that should be recognized in regard to the study. The sample size was limited to 30 households; the purposive sampling method was used, which may limit the generalization of the findings to the rest of the population in Kangra District or other similar areas. Moreover, the use of self-reported data of the respondents presents a risk of recall bias and reporting errors. However, even within these limitations, the research provides the initial indicators of the nutritional condition among children and women, and the interest in and active participation in government welfare programs by the local community of Dehra Block.

Recommendations and Suggestions

Strengthening Localized Nutrition Awareness Campaigns for POSHAN Abhiyaan:

This analysis has shown that 60 percent of the respondents were unaware of the POSHAN Abhiyaan, which shows a major communication gap despite the implementation of frontline health workers. These should then be followed with specific, community-based awareness programs, using the local languages, visual means of communication and by conducting village participatory meetings. Since 33.3 per cent of the participants are illiterate, pictorial messages, demonstrations, and audio-visual media should be used in the communication strategy instead of written materials. Activities like community nutrition days, school-level education, and village level nutrition fairs can further enhance the level of participation by the population. To increase the involvement in the nutrition services and guarantee that households can enjoy the full effect of the government

interventions aimed at alleviating child malnutrition and maternal anemia, it is impossible to discuss the difference between enhanced awareness of the POSHAN Abhiyaan.

Expanding Maternal Micronutrient Supplementation Programs:

The statistics show that 36.7 0 -percent of expectant and lactating women do not take or use the necessary supplements like iron, folic acid and calcium, therefore significantly increasing the chances of mother-anemia and low deliveries. In this connection, it is essential to focus on the improvement of the distribution of micronutrient supplements and their monitoring. Adherence may be ensured with the help of regular tracking mechanisms that will include digital health records and home-based maternal health cards. In addition, the importance of micronutrients to the maternal wellbeing and fetus development should be emphasized during counselling sessions included in the antenatal visits. Follow-up visits should also be carried out by the community health workers to check the adherence hence alleviating the prevalence of anemia and enhancing the outcome of pregnancy among the vulnerable rural citizens.

Improving Nutritional Quality of Household Diets:

The ratio of households reporting three meals a day (86.7rpt) is in contrast with a disproportionate nutritional quality because only 70rpt continues to have regular access to high-protein food and 80rpt continues to eat fried food frequently. This trend is an indicator of the presence of the so-called hidden hunger, in which the level of caloric intake is sufficient and the intake of micronutrients is low. As a result, the nutrition education programs must promote balanced diets, variety in the diets, and healthier cooking. The households can be taught in demonstrative sessions held in Anganwadi centres on how to prepare nutrient-rich food using food available locally and affordably. The recommendation to include more pulses, green vegetables, eggs, and dairy products can address the nutrient shortages and improve the quality of the diet.

Enhancing Growth Monitoring and Early Detection of Malnutrition:

The results display that despite 76.7 0.001% of the children being under regular and systematic surveillance, 23.3 0.001% of them have occasional growth checking. The early diagnosis of malnutrition is key to the prevention of severe outcomes of the disease. In line with this, Anganwadi centres need to support periodic anthropometric surveillance by incorporating standardised tools like mid- upper arm circumference (MUAC) tapes, growth charts, and digital scales. The monthly monitoring sessions may then be used to detect children who are at risk of becoming stunted, underweight, or wasting. On detection, such children can be directed to nutrition rehabilitation centres or special feeding programmes. It is possible to improve growth monitoring systems that will help to minimize malnutrition in young children by ensuring timely interventions.

Strengthening Community-Based Child Health Surveillance:

The researchers found that 30 percent of children reported sickness in the last six months and this included diseases like anemia, fever, and weakness. This observation highlights the existence of a significant correlation between nutritional vulnerability and disease burden. Early detection and treatment of childhood diseases can also be improved by implementing community-based health surveillance systems that will involve ASHA workers, Anganwadi workers and primary health centres. Preventable health conditions could also be alleviated through regular health screening camps, immunisation campaigns and anemia tests programmes. The introduction of nutrition services within primary healthcare provision would break the cyclical nature of the illness-malnutrition relationship that plagues weak children.

Strengthening the Role of Frontline Health Workers:

Although 76.7 per cent of households noted that ASHA or Anganwadi workers visit the home, around 23.3 per cent of the households still reported that they lack regular outreach services. It, therefore, becomes a necessity to increase the capacity of core health workers. Additional training programmes need to focus on nutrition counselling, the early identification of malnutrition, maternal health education and mobilisation of the community. Incentives and logistical assistance can also be an additional step to encouraging workers to go to remote or underserved households. Increasing the presence of frontline health workers will help to deliver

nutrition and health services on the grassroots level and guarantee that the vulnerable populations are given enough guidance and assistance.

Implementation of Sanitation Deficiencies as a solution to improve Nutritional Results: According to the study, 26.7 0 -percent of households do not have toilet facilities, which heightens the chances of infections and waterborne diseases. Poor sanitation may promote Environmental Enteric Dysfunction (EED), which is a condition that compromises the uptake of nutrients and leads to stunting. On this basis, the rural sanitation facilities should be fortified to improve nutritional outcomes. The nutrition programmes should be incorporated with government programmes on increasing the supply of toilets to households in order to encourage healthy living conditions. More should also be done to propagate awareness campaigns on safe water use, the need to wash hands as well as waste disposal to reduce the spread of disease and enhance the general health condition of the population.

Promoting Household Kitchen Gardens:

The households should be advised to set-up kitchen gardens to reduce nutritional deficiencies and increase the nutritional variety of food. This type of garden can provide consistent supply of fresh vegetables, fruits and foods rich in micronutrients, and such reliance on market, reduces market purchases. The services provided to families can be supported by the agricultural extension services and local self-help groups who may provide families with seeds, technical advice, and training on sustainable gardening techniques. Kitchen gardens are particularly relevant in rural areas where land availability can be used to produce small-scale food. The approach is effective at strengthening the nutrition as well as the food security and the resiliency of the households against the economic instability.

Expanding Livelihood Diversification Programs:

The research shows that 60 percent of the interviewees rely on daily-wage labour and thus make the household incomes unstable and limit the ability to maintain a stable food security. This means that the economic empowerment efforts must focus on skill-building, vocational training and the establishment of microenterprises. Self-employment programs, small livestock farming or local entrepreneurship programs can be used to help create additional sources of income. The increase in economic stability will empower the families to spend more on food of adequate nutritional value, medical care, and education, which will improve the long-term health and nutrition.

Empowerment of Public Distribution System (PDS) Nutritional Value:

The level of awareness regarding the Public Distribution System is quite high (90 percent), but the programme mainly focuses on the distribution of cereals. An additional increase in the nutritional content of PDS to include the fortified foods, pulses, and edible oils would significantly change the quality of the diets of low-income households. The food distribution mechanisms should be incorporated with fortification projects addressing the deficiencies of iron, iodine, and vitamin. There would be the improvement of nutrient content of government food support programmes which would reduce the micronutrient deficiencies and reduce the level of malnutrition.

Integrating Health and Nutrition Programs:

The correlation between the illness of the children (30) and malnutrition (26.7) was observed, which means that health and nutrition services cannot be performed independently. Combined service delivery models are based on the integration of immunization, growth monitoring, nutrition and disease management as a way of offering more comprehensive care to the child and the mother. The effectiveness of the nutrition interventions and enhancement of the community health outcomes will be strengthened by the co-ordination of the actions of the health department, ICDS programme, and the local governance institutions.

Enhancing Community Engagement in nutrition Programmes:

Nutrition initiatives can only be sustained when there is a community involvement. The implementation of welfare schemes can be checked by the village-level nutrition committees that include local leaders, mother's

group and community volunteers. Such committees are also capable of arranging awareness programmes, monitoring records of child development and assisting of vulnerable families. The development of community ownership of nutrition programmes will increase accountability and increase the effectiveness of government interventions.

Increased Nutrition Education to Young Mothers:

In consideration of the large percentage of young mothers in the study population, it is urgent that specific maternity nutrition education programmes be trained. The educational activities ought to be based on breastfeeding, supplementary feeding, balanced meals and child health care. Healthier feeding habits among mothers can be promoted by offering practical demonstrations and counselling in the Anganwadi centres. Improved maternal education is a key factor in ensuring that malnutrition is prevented in the process of early childhood development.

Developing Data-Driven Nutrition Monitoring Systems:

Efficient policy interventions need proper and time sensitive data. Introduction of digital monitoring of nutrition at the block levels can help monitor important variables like child growth, prevalence of anemia and use of schemes. The information gathered by Anganwadi workers and health centres ought to be incorporated in centralised databases to be analysed in real time. This will enable policy makers to define high-risk communities and use focused interventions more effectively.

Encouraging Multi-Sectoral Solutions to the Nutrition Enhancement:

The results highlight that malnutrition is a multifactorial problem that depends on income fluctuations, education level, sanitary situation, and health care facilities. Hence, malnutrition requires a multi sector strategy comprising of health, education, agriculture and rural development sectors. Combined programmes involving nutrition education, livelihood development, sanitation improvement and healthcare services, can foster a more holistic approach of alleviating malnutrition and promoting well-being in the rural societies.

Policy Implications

The findings of the ongoing study have considerable implications on the process of governance of nutrition, rural health policy, and implementation of welfare schemes in the semi-rural regions of Himachal Pradesh. As much as some national nutrition and health programmes are in operation, the study indicates that structural socioeconomic vulnerabilities, gaps in awareness, and disparities in service delivery still limit its full implementation on the community level. The solutions to these problems require multi-sectoral policy in that nutrition, health, sanitation, education, and livelihood intervention are incorporated.

First, the fact that only 60 per cent of households are aware of the POSHAN Abhiyaan implies that the policy implementation should shift to a large-scale programme development to proper communication and behavioural change tools. Administrative outreach approaches are often critical to national nutrition missions, but the results indicate that community-based communication models that include village nutrition days, peer-education groups, and culturally contextualised information campaigns are critical in implementing policy projects into community engagement. In this regard, the policies ought to emphasize localised nutrition-communication models especially those whose populations possess low literacy levels.

Second, the 36.7% difference in maternal supplementation coverage is an important implementation challenge in maternal health services. Though iron, folic acid and calcium supplementation programmes are already well-established in Indian public health system, there are still gaps in uptake which implies that last-mile delivery and monitoring of compliance are still weak. Enhanced supply-chain management and the implementation of digital tracking systems of the maternal supplementation and the combination of supplying the supplements with regular antenatal care visits might improve the effectiveness of the programmes. Alternations in policy frameworks ought to also consider incentive based compliance strategies that encourage the pregnant women to go through the recommended rounds of supplement intake.

Third, a 26.75 percent Malnutrition of children (under-weight or wasted) shows that nutrition issues remain an issue, even though the proportion of households that have comparatively stable meal frequency Alleviation. This

implies that the issue is not just the availability of food but also the quality and variety of food. The policymakers must consequently work on enhancing the availability of foods rich in nutrients, such as protein-rich food, fruits, and micronutrient-enriched foods based on government nutrition programmes. Introducing enriched food to the Public Distribution System and increasing the number of supplementary nutrition programmes in the Anganwadi centres may significantly improve nutritional sufficiency of vulnerable households.

Fourth, the existence of sanitation problems in 26.7 percent of the households highlights the close connection between the environmental health and nutritional performance. Inadequate hygiene is one of the causes of recurrent infections and diseases like the dysfunction of the environmental enterics, which may impede the absorption of nutrients among children. This observation highlights the necessity of the combination of nutrition policy and sanitation campaigns, including rural and urban sanitation campaigns and community hygiene programmes. The combination of health, sanitation, and nutrition should be used to strengthen the coordination of their roles and achieve synergistic changes in child health.

Fifth, although ASHA and Anganwadi workers show high community outreach, it is found in the study that about 23.3 percent of households are not visited on a regular basis and thus outreach coverage is uneven. The success of nutrition interventions depends on the frontline health workers and policies have to guarantee capacity, training, and logistical support of the workforce. The efficiency of the front-line service delivery can be improved by expanding training modules on early malnutrition observation, community counselling and digital reporting systems.

Sixth, the research identifies the economic susceptibility of households that rely on daily-wage labour, and this has impact on their capacity to pursue consistent dietary variety as well as access to healthcare. As a result, nutrition policy is not something that can be taken out of context with the rest of socio-economic development. Household resilience can be enhanced with the help of incorporating nutrition-sensitive policy with livelihood programmes, rural employment schemes, and skill-development initiatives to alleviate food insecurity in the long term.

Finally, the strong association between child illness (30%) and malnutrition prevalence (26.7%) demonstrates the need for an integrated health–nutrition service delivery model. Policies should encourage closer coordination between primary healthcare services, Anganwadi centres, and community nutrition programs to ensure that children suffering from illness are simultaneously screened for malnutrition and provided appropriate interventions.

Overall, the findings suggest that while India's nutrition and welfare programs have established an important institutional framework, their effectiveness depends heavily on community-level awareness, consistent service delivery, and socio-economic empowerment. A more integrated and locally responsive policy approach—combining nutrition education, maternal healthcare, sanitation improvements, and livelihood development—will be essential for improving maternal and child nutrition outcomes in rural and semi-rural regions such as Dehra Block of Kangra District.

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