

"CONSUMER BEHAVIOR IN PRENATAL NUTRITION AND FOOD SUPPLEMENTATION: A STUDY IN SIVAGANGA DISTRICT"

Amjath Bargana.S* **Dr.M.Ketharaj**** **Dr S.Ganesan*****

**Ph.D(Full Time), Research Scholar, PG & Research Dept of Commerce, Raja Doraisingam Govt, Arts College Sivagangai. (Affiliated to Alagappa University, Karaikudi).*

***Associate Professor & Research Supervisor, Department of Commerce, Sri Meenakshi Government Arts College for Women (Autonomous), Madurai.*

****Associate Professor, PG & Research Dept of Commerce, Raja Doraisingam Govt, Arts College Sivagangai. (Affiliated to Alagappa University, Karaikudi).*

Purpose

The health and well-being of newborns and mothers depend on maternal nutrition. The Government of India has launched several programmes, including the PradhanMantriSurakshitMatritvaAbhiyan (PMSMA), SurakshitMatritvaAashwasan (SUMAN), and JananiShishuSurakshaKaryakaram (JSSK) to improve maternal health. Even though these are trying to be done, there are still challenges in accessing, awareness, and usage of prenatal nutrition and food supplements especially in the rural regions. The paper will look at consumer behavior in prenatal nutrition and food supplementation in Sivaganga District based on the level of awareness, issues of accessibility and how the government interventions affect the choice of diet among pregnant and lactating women.

Methodology

It uses a mixed-method research design as a way of offering a holistic understanding of the consumer behavior. The research will be carried out in urban and rural regions of Sivaganga District and 250 people will be selected by the convenient sampling technique. Primary data will be collected by use of structured questionnaires, in-depth interviews and focus group discussions (FGDs). Secondary information will be obtained by researching government reports, statistics of health departments and literature available on maternal nutrition. Tables and descriptive and inferential statistics (frequency distribution, correlation, and regression analysis) are used to analyze the quantitative data. Qualitative data is analyzed using thematic analysis in order to determine patterns of behavior and socio-cultural factors. Ethical issues such as informed consent and confidentiality of data are adhered to.

Findings

The research demonstrates that the accessibility to the healthcare provided to the mother has been enhanced by the government schemes but there are still substantial gaps in the level of awareness and adequate use of food supplements. Lack of nutritional literacy, cultural beliefs, and socioeconomic factors impact nutritional choices and in most cases results in poor dietary supplement intake. The results also show that women living in rural areas have greater difficulties in using prenatal supplements because of the lack of finances and healthcare facilities. Besides, marketing and medical practitioners are critical in influencing consumer perceptions towards prenatal nutrition.

Practical Implications

The study offers important information to policy makers, medical practitioners, and the manufacturers of supplements to improve the maternal nutrition programs. Awareness campaigns, better delivery of nutritional supplements to the final locations, and integration of culturally appropriate dietary interventions can be used to strengthen the effectiveness of the program. Moreover, the incorporation of digital space and community-based care programs would help to reduce knowledge and access gaps.

Originality

The proposed study is aimed at a region-specific analysis of a prenatal nutrition and food supplementation behavior among the Sivaganga District. Although earlier studies have analyzed the role of maternal nutrition in general, this is the only research that will examine the interaction of socioeconomic, cultural, and policy-related issues when it comes to consumer behavior. Through the combination of qualitative and quantitative approaches, it will give a comprehensive picture of the issues and opportunities in maternal nutrition, which can be used in evidence-based policy changes to enhance maternal and child health outcomes.

Keywords: Prenatal Nutrition, Food Supplementation, Maternal Health, Consumer Behavior, Government Schemes, Sivaganga District.

Introduction

Maternal and fetal health requires proper prenatal nutrition, which has a considerable influence on the birth outcomes and the long-term well-being. Pregnant and breastfeeding mothers can be defined as one of the most susceptible nutritional groups, which is obliged to pay special attention to the nutritional intake. Different researches have confirmed that the nutrition of poor pregnant and lactating women lacks the necessary nutrients and results in poor maternal and child health outcomes.

The government initiatives like PMSMA are meant to offer free and holistic antenatal care, whereas SUMAN guarantees free, quality healthcare either way. JSSK is free in its delivery and cesarean delivery, providing all the basic necessities like transport, medicine and dietary supplements. LaQshya is another program that improves the standard of maternity in labor rooms and the maternity operation theaters.

Nevertheless, the available programs have not given sufficient attention to the rural and poor regions where a number of pregnant women cannot afford proper nutrition. The purpose of monthly Village Health, Sanitation, and Nutrition Days (VHSNDs) and health and wellness centers (HWCs) is to close such gaps and provide education and additional nutrition. The nutritional outreach is further enhanced by the Mission Saksham Anganwadi and Poshan 2.0 programs that offer pregnant and lactating mothers with food supplements.

Nevertheless, research shows that dietary consumptions in low-income expectant women are poor. Lack of calories, proteins and vital nutrients lead to poor maternal weight gain risks leading to the birth of low weight babies. The deficiency in diet also presents in form of low hemoglobin levels, vitamin deficiencies, and protein deficiency, which impact the health of mothers and children. Some studies indicate that food supplementation interventions, including those associated with the Integrated Child Development Services (ICDS), may have a substantial beneficial effect on maternal weight gain, birth outcome and well-being.

One major problem of these programs is the consumer behaviour in food supplementation. Most mothers would give out the given food supplements to the family members thus affecting their consumption of crucial nutrients. Cultural traditions, domestic food distribution models and inadequate nutritional education make the struggle against food supplementation even harder. The factors of behavior are elements that must be addressed to have successful government schemes.

This paper will examine the determinants of consumer behavior as far as prenatal nutrition and food supplementation in Sivaganga district are concerned. The research would provide the information on the



enhancement of the maternal nutrition program by measuring awareness, use and effectiveness of the government interventions. The results will be used to make policy recommendations that can improve the nutritional conditions of pregnant and lactating women in rural and marginalized societies.

Statement of the Problem

The prenatal nutrition is a very important aspect that determines the health of the mothers and the fetus and the food supplementation has a major role to play in correction of nutritional deficiencies. Although there is an increasing awareness on maternal health, disparities exist with regard to the availability, affordability and consumption patterns of prenatal supplements more so in rural regions such as the Sivaganga District. Consumer behavior as far as prenatal nutrition is concerned is influenced by a number of factors such as socioeconomic status, cultural beliefs, healthcare guidance and marketing factors.

Though the current literature has been able to investigate the overall trend in the use of food supplements, limited knowledge is available on how pregnant women in Sivaganga District perceive, access, and use prenatal supplements. The unavailability of region specific information about consumer trust, buying choices and obstacles to supplement consumption leaves an empty space in the development of effective nutritional interventions. Also, the role of healthcare workers, governmental policies, and online marketing in consumption of prenatal supplements is a little studied issue in this situation.

The present study aims at examining the determinants that are important in consumer behavior in relation to prenatal nutrition and food supplementation in Sivaganga District. This will be to find challenges, determine the level of awareness and evaluate issues like financial constraints, availability of products and marketing strategies. By dealing with such issues, the research will offer an understanding that can guide policymakers, health care providers, and supplement manufacturers to enhance maternal nutrition and health.

Literature Review and Research Gap

The importance of prenatal nutrition in the well-being of maternal and fetal health is so significant that researchers have considered the different aspects of nutritional supplementation among pregnant women. Some of the earliest researchers, including Tontisirin et al. (1983) and Viegas et al. (1982) concentrated on the development of supplementary foods to pregnant women and the significance of the dietary protein-energy supplementation in pregnancy. On the same note, the WFP (1986) case study also looked at the effectiveness of the supplementary nutrition programs in the case of pregnant women, preschool children and nursing mothers. These seminal studies gave the basis of the need to interfere with maternal health in terms of nutrition.

As consumer preferences and the market penetration of dietary supplements have changed, researchers have explored the relationship between marketing and labeling and consumer behavior. Sulaiman and Masri (2017) examined the effects of marketing strategies on consumer trust in food supplements and Priya and Alur (2023) emphasized the importance of nutritional labeling in developing confidence in the consumer. The authors (Bhatt and Bhatt 2015) applied this question to rural consumers and found some unusual consumption preferences and obstacles of the non-urban populations. In the meantime, articles like Singh and Kaur (2019) and Verma and Jain (2020) evaluated the elements of digital marketing and the influence of advertising in promoting supplements, highlighting the increased dependence on digital channels to shape the choices of consumers.

Besides the marketing factors, the socioeconomic factors are also dominant in the consumption of prenatal supplements. The articles by Kumar and Rao (2017) analyzed how income, education, and social status influence supplement consumption, whereas Pham, Nguyen, and Tran (2021) studied economic factors in Vietnam, which made comparisons with the tendencies in the rest of the world. Also, Chowdhury and Singh (2021) investigated the gender-based disparities in the use of supplements, with greater attention to the differences in the awareness and availability. In a complement to these views, Patel and Singh (2021) determined the role of government policies in consumption of food supplements, focusing on the role of regulatory interventions in consumer decision-making.

Other areas that have been studied are the perception of consumers toward the type of supplement to use, which is either natural or synthetic. Jones and Wilson (2020) analyzed the preferences of the consumers, providing the results that attest to the increased tendency to use natural supplements because of health-related reasons. On the same note, fortified foods and supplements were compared by Das and Roy (2022), which showed the most important aspects of choices among customers. The ethical considerations as discussed by D'Souza and Menon (2018) also raised the issues of misleading statements and the necessity of responsible marketing in the supplement industry. Although the research on consumer behavior in the food supplement market has been largely done, a lot is yet to be learned about prenatal nutrition-specific factors.

Objective of the Study

1. To analyze consumer behavior towards prenatal nutrition and food supplementation among pregnant and lactating women in Sivaganga district.
2. To evaluate the level of awareness and accessibility of government nutrition programs such as PMSMA, SUMAN, and JSSK.
3. To identify socio-economic and cultural factors influencing dietary choices and food supplementation practices.

Hypotheses for the Study

1. There is no significant relationship between age and the consumption of prenatal food supplements.
2. Education level does not have a significant impact on prenatal food supplement consumption.
3. Monthly household income does not significantly influence the consumption of prenatal supplements.
4. The frequency of consuming home-prepared nutritional supplements (e.g., Ragi malt, homemade porridge) does not influence the choice of prenatal food supplements.
5. The intake of iron and folic acid supplements during pregnancy does not significantly influence prenatal supplement consumption.
6. The primary source of information (Doctor, ASHA workers, Internet, Family & Friends) does not significantly influence prenatal supplement consumption.

Theoretical Frameworks of the Study

District-wise Trends in Nutritional or Maternal Health Indicators in Tamil Nadu (2015–2018) with 2030 Target: The table presents district-wise trends in the percentage of pregnant women (aged 15–49 years) who are anaemic (haemoglobin levels <11.0 g/dl) in Tamil Nadu from 2015 to 2018, with a target set for 2030. This indicator, classified as National Specific, is monitored by the Directorate of Public Health and Preventive Medicine under the ICDS, NFHS 2015–2016 survey. The data is measured in percentage terms and highlights the prevalence of anaemia among pregnant women across different districts.

Table District-wise Trends in Nutritional or Maternal Health Indicators in Tamil Nadu (2015–2018) with 2030 Target

District Name	2015	2016	2017	2018
Ariyalur	46.4	46.4	46.4	46.4
Chennai	26.2	26.2	26.2	26.2
Coimbatore	40.5	40.5	40.5	40.5
Cuddalore	60.8	60.8	60.8	60.8
Dindigul	51.5	52.5	53.5	54.5
Kancheepuram	24.6	25.6	26.6	27.6
Karur	48.4	48.4	48.4	48.4
Krishnagiri	43.5	43.5	43.5	43.5
Nagapattinam	44.9	45.9	46.9	47.9
Nilgiris	30.5	30.5	30.5	30.5
Villupuram	69.2	69.2	69.2	69.2
Vellore	48.3	48.3	48.3	48.3
Tiruvannamalai	51.1	51.1	51.1	51.1
Tiruvallur	42.7	42.7	42.7	42.7
Tiruppur	51.5	51.5	51.5	51.5
Thiruchirappalli	57.5	58.5	59.5	60.5
Theni	27.7	27.7	27.7	27.7
Thanjavur	62	62	62	62
Sivagangai	69.2	69.2	69.2	69.2
Salem	42.9	42.9	42.9	42.9

Source:<https://tnsdg.tn.gov.in/sustainable-development-goals/indicator/63/district-level-values/>.

The table shows that the rate of anaemia in some districts has consistently been high, e.g. Villupuram (69.2%), Sivagangai (69.2%), and Cuddalore (60.8%), which is a worrying issue in terms of the public health. However, districts such as Chennai (26.2%) and Kancheepuram (27.6%) have relatively low levels of anaemia. As some of the other districts like Dindigul (51.5% in 2015 to 54.5% in 2018) and Thiruchirappalli (57.5% in 2015 to 60.5% in 2018) show an upward trend, others do not. Against these ongoing trends, the target percentage of 2030 is pegged at 0 with an aim of anaemia among pregnant women being totally eradicated. To attain this objective, there will be the need to have sustained interventions, better maternal health, nutrition programs, and sensitization programs in all districts. The evidence reinforces the importance of specific policies to deal with the disparity and adequately fight maternal anaemia in Tamil Nadu.

Percentage Analysis: Habit of Prenatal Nutrition and Food Supplementation Consumption. The consumption patterns of prenatal nutrition and food supplementation offer a great deal of information about the health-related practices among mothers and their effect on the outcome of pregnancy. This part will provide a percentage analysis of eating habits, supplement usage, and determining factors among pregnant women. It is through such trends that the role of a pregnant woman in balancing home-based nutrition with medical supplementation can be better comprehended in regard to the socioeconomic and awareness-associated factors that influence their decisions. The results play a role in the gap identification of nutrition practices and bettering of maternal health interventions.

Table: Percentage Analysis-Consuming Habit of Prenatal Nutrition and Food Supplementation

Category	Range	Frequency	Percentage
Age	18-28	144	57.6
	29-38	70	28
	Above 39	36	14.4
	Total	250	100
Education	Upto Schoolings	101	40.4
	UG	77	30.8
	PG	30	12
	Others	42	16.8
	Total	250	100
Monthly Household	Below Rs, 10,000	106	42.4
	Rs 10,001-Rs 20,000	120	48
	Rs 20,001-Rs 30,000	12	4.8
	Above Rs 30,000	12	4.8
	Total	250	100
To consume home-prepared nutritional Supplement(e.g. Ragi, Malt, homemade porridge etc)	Never	67	26.8
	Rarely	65	26
	Sometimes	12	4.8
	Often	51	20.4
	Always	55	22
	Total	250	100
To take iron and folic acid supplements during pregnancy?	Yes	122	48.8
	No	128	51.2
	Total	250	100
To primarily get information about prenatal nutrition?	Doctor	96	38.4
	ASHA Workers	29	11.6
	Internet	35	14
	Family & Friends	90	36
	Total	250	100
Do you consume store-bought prenatal supplements (e.g., commercial protein powders)?	Yes	136	54.4
	No	114	45.6
	Total	250	100
What factors influence your choice of prenatal food supplements?	Cost	69	27.6
	Availability	20	8
	Doctor's advice	120	48
	Family recommendation	41	16.4
	Total	250	100
Do you experience any side effects from iron or calcium supplements?	Yes	8	3.2
	No	242	96.8
	Total	250	100

Source: Primary data

Analysis of Prenatal Nutrition and Food Supplementation Consumption Habits

It is essential to know the nutritional practices and the use of supplements among the pregnant women to enhance better maternal and newborn health outcomes. In this section, a percentage analysis of some of the factors affecting prenatal nutrition consumption was provided to include age, level of education, income earned, level of supplement intake and sources of information.

When it comes to age distribution, 57.6% of the respondents are within the age group of 18-28 years, with 28% having the 29-38 years old age bracket and 14.4% having the age bracket above 39 years old. The level of education means that 40.4% of women have finished schooling, 30.8% have an undergraduate degree, 12% have post-graduate education and 16.8% of women are in other category of education.

There are economic factors which influence the consumption of supplements with 42.4% of households with income less than [?]10,000 per month and 48% of the households having income between [?]10,001-[?]20,000. Only 4.8% of the respondents are in the [?]20,001 to [?]30,000 and above and [?]30,000 income bracket.

In examining the food supplementation practices, 26.8 percent of the respondents said they never used home-cooked nutritional supplements such as ragi malt and homemade porridge, but 26 percent always used them with low frequency. Nevertheless, 20.4% tended to include them in their diet and 22% always meaning that they gave preference to home-based sources of nutritional information.

When it comes to iron and folic acid supplement intake, only 48.8% said that they were taking them, and 51.2% stated that they were not taking them, and there is also a lack of awareness or compliance with the prescribed prenatal supplementation. Nearly half of the customers (54.4) took store bought prenatal supplements like commercial protein powders and 45.6% did not.

The popular way of getting prenatal nutrition information was the physician (38.4%), then family and friends (36%), but 11.6% used workers of ASHA and 14 percent used the internet. In the matter of factors influencing the choice of a supplement, 48% of the group responded with advice of a doctor, 27.6% responded with cost, 16.4% with family and 8% with availability.

The respondents who used iron or calcium supplements reported side effects and 3.2% of those taking it, reported side effects, the rest 96.8% did not complain of side effects. Such results highlight that there should be greater awareness, access and lower cost of prenatal nutrition and supplementation to guarantee improved maternal health outcomes.

Descriptive Analysis: Nutrition Food Supplement Consuming Habit.

Descriptive analysis gives a general picture of distribution of data, central tendencies, and variations of data in the study population. This discussion is on the dietary behaviour of the nutritional food supplements amongst the pregnant women with the measurement of their level of awareness, preference, budget constraints, and level of compliance to dietary guidelines. The statistical indicators are mean, standard error and standard deviation that provide the idea about the overall trends in prenatal nutrition practices.

Descriptive Statistics				
Consuming Habit of Nutrition Food Supplement	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
I am aware of the importance of proper nutrition during pregnancy.	250	3.7273	.09391	1.52590
I regularly consume home-prepared nutritional supplements (e.g., Ragi malt, porridge).	250	2.2121	.09328	1.51560
I take iron and folic acid supplements as prescribed by a doctor.	250	3.8182	.09535	1.54928
I prefer home-cooked food over store-bought supplements for prenatal nutrition.	250	3.8788	.06397	1.03938
The cost of prenatal supplements influences my decision to buy them.	250	4.0000	.07590	1.23325
I follow dietary recommendations given by healthcare professionals.	250	4.2424	.02643	.42936
I experience difficulty in accessing prenatal nutritional supplements due to financial constraints.	250	4.4545	.05698	.92587
I consume dairy products (milk, curd) daily during pregnancy.	250	4.2727	.05530	.89859
Aware about JSSK, SUMAN, PMSMA	250	3.2121	.09328	1.51560
Valid N (listwise)	250			

Source: Primary data

The findings reveal that the awareness of the respondents about the significance of proper nutrition in pregnancy is moderate (Mean = 3.7273, SD = 1.52590). Nevertheless, the intakes of home-cooked nutritional supplements like ragi malt or porridge are not high (Mean = 2.2121, SD = 1.51560) and this implies that there is a preference to the alternative sources of nutrition. Conversely, there is more compliance with the iron and folic acids supplements that are prescribed by physicians (Mean = 3.8182, SD = 1.54928), which is an effect of medical advice.

It is also found that the majority of respondents are inclined to home-cooked food rather than buying prenatal supplements in the shops (Mean = 3.8788, SD = 1.03938), however, the cost of supplements has a strong impact on buying choices (Mean = 4.0000, SD = 1.23325). This implies the fact that affordability is a key factor in deciding the kind of prenatal nutrition that is taken.

The adherence to dietary advice given by the healthcare professionals can be seen as rather high (Mean = 4.2424, SD = 0.42936), which means that there is a great level of trust in medical advice. Many of the respondents, however, indicated experiencing financial constraints to consumption of prenatal nutritional supplements (Mean = 4.4545, SD = 0.92587), and this may have influenced their dietary intake during pregnancy.

Regarding the daily intake of dairy items, a considerable percentage of respondents showed frequent intake (mean = 4.2727, SD = 0.898599), which depicts a good eating behavior. The level of awareness concerning such government programs as JananiShishuSurakshaKaryakram (JSSK), SurakshitMatritvaAashwasan (SUMAN), and PradhanMantriSurakshitMatritvaAbhiyan (PMSMA) was moderate (Mean = 3.2121, SD = 1.51560), showing that more information about these advantageous programs should be spread.

Multi-Regression Analysis of Variations that influence the consumable habits of Food Supplement amid the Pregnant Women.

Multiple regression analysis is a statistical approach that is applied to test the relationship between a number of independent variables and a dependent variable. It aids in this study to determine the most important variables that affect the consumption behaviors of food supplements among pregnant women. The factors that are examined to find out their effects on the nutritional consumption patterns include age, education, monthly household earnings, source of prenatal nutrition information, intake of iron and folic acids, experience of side effects and preference of home prepared supplements or store purchased supplements.

Being aware of these factors is essential in solving the obstacles of proper prenatal dieting and in crafting the most effective health policies, health awareness programs, and financial support systems to influence the preferred dieting among pregnant mothers. The results of the analysis will inform policy makers and health care professionals with the data-driven insights on how to enhance the maternal health outcomes by addressing the target nutritional interventions and education programs.

Table: Introduction to Multi-Regression Analysis of Factors Affecting the Consumable Habits of Food Supplement Among Pregnant Women-Model Fit Summary

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.407 ^a	.166	.134	4.82374	.372

The regression model will focus on the factors that affect the consumption behavior of prenatal nutrition and food supplementation. The value of R-value (0.407) represents a positive moderate relationship between the independent variables and the dependent variable. The R-S4 value (0.166) implies that the predictors such as age, education, monthly household income, source of nutrition information, iron and folic acid intake, experience of side effects, and preference of home-prepared or store-bought supplements accounted to 16.6-percent of the variation in consuming habits.

The slight decrease in the Adjusted R-SQ (0.134) can be attributed to the number of predictors in the model, which fits fairly. Nonetheless, the Durbin-Watson (0.372) is very low, indicating that there is positive autocorrelation thus may be that the residuals also have patterns, and more relevant factors may have to be added in order to achieve a more accurate predictive.

Table: ANOVA

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1108.310	9	123.146	5.292	.000 ^b
Residual	5584.426	240	23.268		
Total	6692.736	249			

ANOVA (Analysis of Variance) table assesses whether there is any statistical significance of the regression model in the analysis of the factors affecting the consumable habits of the food supplements by the pregnant women. The regression sum of square (1108.310) and the residual sum of squares (5584.426) show the extent to which the independent variables (factors that affect food supplement consumption) explain the variations in the dependent variable. The F-value (5.292) and the significance

level (p -value = 0.000) are used to prove that the total regression model is statistically significant. This indicates that the independent variables, such as age, education, household income, source of nutrition information, intake of iron and folic acid, side effects, and preferences of supplements, all play the role of explaining the change in the food supplement consumption habits of the pregnant women. These findings demonstrate that it is essential to take into account a variety of demographic, economic, and health-related factors to come up with the strategies aimed at improving the awareness of prenatal nutrition and its accessibility.

Table: Co-efficient

Model	Unstandardized Coefficients ^a		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	1(Constant)	24.435	2.136		
Age	.718	.513	.107	1.398	.163
Education	-.139	.352	-.029	-.394	.694
monthly household	-.495	.491	-.073	-1.008	.315
How often do you consume home-prepared nutritional supplements (e.g., Ragi malt, homemade porridge)?	.207	.221	.062	.936	.350
To take iron and folic acid supplements during pregnancy	-1.983	1.484	-.192	-1.336	.183
To Primarily get information about prenatal nutrition	1.647	.310	.420	5.308	.000
Do you consume store-bought prenatal supplements (e.g., commercial protein powders)	2.675	1.462	.257	1.829	.069
Factors influence your choice of prenatal food supplements	.146	.316	.030	.463	.644
To Experience any side effects from iron or calcium supplements	1.905	.734	.172	2.597	.010

a. Dependent Variable: Factors influence_of_consuming_habit

The regression coefficients provide insight into the influence of various factors on the consumption habits of food supplements among pregnant women. The constant value (24.435) suggests that when all independent variables are zero, the baseline consumption habit remains high. Among the variables, the source of prenatal nutrition information ($B = 1.647$, $p = 0.000$) significantly affects consumption habits, indicating that information from healthcare professionals, family, or online sources strongly influences dietary choices. Similarly, experiencing side effects from iron or calcium supplements ($B = 1.905$, $p = 0.010$) has a statistically significant positive effect, suggesting that women experiencing side effects may adjust their supplement intake patterns.

Although variables like age ($B = 0.718$, $p = 0.163$) and store-bought prenatal supplement consumption ($B = 2.675$, $p = 0.069$) show a positive relationship with supplement habits, their impact is not statistically significant at the 5% level. Interestingly, iron and folic acid intake ($B = -1.983$, $p = 0.183$) and monthly household income ($B = -0.495$, $p = 0.315$) exhibit negative coefficients, suggesting that

higher supplement intake does not necessarily correlate with higher income levels or regular iron and folic acid use. These findings emphasize the need for better awareness programs and accessibility to nutritional guidance, ensuring that supplement consumption aligns with medical recommendations rather than external influences.

Overall, the findings highlight key factors influencing prenatal nutrition consumption, such as cost constraints, preference for home-cooked food, and adherence to medical guidance. Addressing financial barriers and increasing awareness about government nutrition programs could help improve maternal health outcomes.

Theoretical & Managerial Implication

The findings from the percentage and descriptive analysis highlight critical aspects of prenatal nutrition consumption, including awareness, accessibility, financial constraints, and dietary habits. Addressing these areas through targeted policies and recommendations can enhance maternal nutrition and health outcomes.

Government initiatives should focus on strengthening awareness campaigns about the importance of prenatal nutrition. The study revealed moderate awareness about nutrition and government schemes such as JSSK, SUMAN, and PMSMA, suggesting the need for enhanced outreach programs. Conducting community-based nutrition education sessions through ASHA workers, healthcare professionals, and local government bodies can improve knowledge about the benefits of iron, folic acid, and home-prepared supplements.

Financial constraints were identified as a major barrier to accessing prenatal supplements. Policies should expand financial assistance programs, such as subsidized nutritional supplements for low-income families. Additionally, public-private partnerships can be promoted to ensure affordable availability of prenatal supplements in rural and semi-urban areas.

A significant portion of pregnant women preferred home-cooked food over store-bought supplements, indicating the need for nutrition-based interventions that support traditional food habits. Government and healthcare agencies should promote nutritional self-sufficiency programs, where women are educated on preparing cost-effective, nutrient-rich homemade supplements using locally available ingredients.

To improve prenatal nutrition, it is recommended to increase accessibility to supplements by integrating prenatal nutrition services into existing maternal healthcare programs. Mobile healthcare units can be deployed to remote areas, ensuring that women receive essential vitamins, minerals, and dietary counseling.

Another crucial recommendation is to strengthen iron and folic acid supplementation programs, as nearly 51.2% of respondents did not take these supplements. The government should introduce mandatory iron and folic acid supplementation distribution through anganwadicenters, maternity clinics, and public health initiatives. Cultural dietary habits should be incorporated into nutrition programs to ensure better acceptance. Training and awareness programs should focus on enhancing the nutritional value of traditional foods, such as fortifying homemade porridges and using nutrient-dense local grains like ragi. Finally, improving awareness about government schemes through effective communication strategies, including social media, community radio, and local healthcare providers, can ensure that more pregnant women benefit from available health services.

Scope and Limitations of the Study

This paper aims at examining consumer behaviour of prenatal nutrition and food supplementation of pregnant and lactating women in Sivaganga District. It investigates awareness, accessibility and the effectiveness of the home-prepared and commercial supplements, evaluating the impact of the socio-economic factors, sources of information and government programs such as PMSMA, SUMAN, JSSK. The research incorporates qualitative and quantitative research processes, such as surveys and interviews, to offer the recommendations that are worthy of the policy processes to embrace in improving maternal nutrition programs.

The research is not however extensive to other geographical regions and hence it cannot be generalized to other regions. The use of self-reported data can create a bias of recall or social desirability and the omission of healthcare providers and policymakers is limiting a more comprehensive approach. Moreover, the sample size of 250 respondents might be not enough to cover the various experiences of all pregnant women. Although the study provides an important data, the longitudinal research is required to evaluate the long-term behaviour of maternal nutrition.

Conclusion

The paper highlights the significance of the availability of finances, education and culturally sensitive eating habits in the delivery of adequate prenatal nutrition. Though a good diet is known to be important by many women, budgets and poor information on supplementation are two factors that are limiting optimal nutrition. These gaps can be overcome by enhancing education, financial assistance, and policy-based interventions, which will guarantee improved maternal health outcomes. The stakeholder approach entailing the government agencies, healthcare professionals and community organizations is paramount in ensuring that effective prenatal nutrition practices are encouraged. By using policy reforms and sustainable nutrition programs to solve these issues, great contribution will be made in the reduction of maternal malnutrition and the enhancement of pregnancy health in Sivaganga District and other areas.

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