Nutritional Status Of Teenage Mothers In Shivraj Municipality Of Kapilvastu District

A Thesis

Submitted to

Faculty of Humanities and social Science

Central Department of Rural Development, Tribhuvan University

In Partial Fulfillment of the Requirements for the Degree of the Master of Arts (MA)

In Rural Development

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July 2024

Declaration

I hereby declare that the thesis titled " **Nutritional Status Of Teenage Mothers In Shivraj Municipality Of Kapilvastu District**" submitted to the Central Department of Rural Development, Tribhuvan University, is an original work authored by me. This research was conducted under the guidance and supervision of my assigned supervisor. I have duly acknowledged all ideas and information sourced from various references during the preparation of previously this thesis. The findings presented in this thesis have not been presented or submitted elsewhere for the purpose of obtaining any degree or for any other objectives. I confirm that no part of the thesis content has been published in any form prior to this submission.

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Shisir Lamichhane

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Date: 6/17/2024 (AD)

2081/03/03 (BS)

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The thesis entitled "**Nutritional Status of Teenage Mothers in Shivraj Municipality of Kapilvastu District**" has been prepared by Mr. Shisir Lamichhane under my guidance and supervision. I hereby forward this thesis to the evaluation committee for final approval and acceptance.

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Approval Letter

We certify that this thesis entitled "**Nutritional Status of Teenage Mothers in Shivraj Municipality of Kapilvastu District** " prepared by Mr. Shisir Lamichhane has been found satisfactory in scope and quality as a Partial Fulfillment of the Requirements for the Degree of Master of Arts in Rural Development. Therefore, we accept this thesis as a part of the said degree.

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Acknowledgements

I would like to extend my sincere appreciation to Associate Prof. Umesh Acharya, of the Central Department of Rural Development, for his invaluable guidance, unwavering support, and insightful suggestions throughout the preparation of this thesis. His continuous inspiration and feedback played a pivotal role in shaping this study, and for that, I am truly grateful.

I would also like to express my gratitude to Associate Prof. Bishnu Bahadur Khatri, Head of the Department, and the esteemed teachers and staff at the Central Department of Rural Development for their cooperative assistance, which has left an indelible mark on this research.

I extend my heartfelt gratitude to Assistant Prof. Dr. Rajan Binayek Pasa, along with the distinguished faculty and staff of the Central Department of Rural Development, for their invaluable support and cooperation, which have significantly contributed to the success of this research.

Special thanks are due to Satya Raj Upadhayay, whose support in data coding, entry, and analysis was indispensable. I am equally thankful to all respondents for their support during the survey of the study area.

My heartfelt thanks go to my parents, parents Name for their unwavering love and encouragement throughout this thesis. Their constant support and inspiration were instrumental in reaching this milestone.

Lastly, I am indebted to my colleagues for their assistance, inspiration, and cooperation during the entire thesis preparation process. Without the collective support of these individuals and institutions, this research would not have been possible.

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Academic Level: Masters

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ABSTRACT

Adequate nourishment plays a critical role in promoting optimal health outcomes for both mothers and children during the lactation period. Despite the prevalence of food insecurity and dietary monotony—factors contributing to undernutrition—in rural Nepal, there remains a dearth of comprehensive examination and assessment regarding their impact on lactating mothers, a demographic with heightened nutritional requirements. This study seeks to investigate the socio-economic characteristics, food insecurity levels, dietary diversity, and agricultural practices among teenage mothers with children under the age of five, aiming to shed light on the risk factors associated with inadequate nutrition during this crucial life stage.

In the Shivaraj municipality of Kapilvastu district, a community-based cross-sectional study was undertaken. Utilizing a randomized sampling approach, a total of 160 lactating mothers were selected as participants. Food insecurity was assessed using the Household Food Insecurity Access Scale (HFIAS), while dietary diversity was measured using the "Minimum Dietary Diversity for Women" tool developed by the Food and Agriculture Organization. Furthermore, data regarding socio-demographic factors and potential risk elements were also gathered during the study.

The study uncovered a significant trend in household food security, with 76.3% of respondents experiencing food insecurity, while only 23.1% reported household food security. This disparity highlights the prevalent challenges encountered by a considerable portion of the surveyed population in maintaining consistent and reliable access to food resources. The study found that 3.1% of respondents smoked occasionally, and 1.9% consumed alcohol, contrasting with 96.9% and 98.1% abstaining, respectively. Rice and chapati were favored by 89.4% of respondents, with 8.8% being vegetarian. Vegetable consumption ranged from 10.6% eating them 1-3 days a week to 47.5% daily. Fruit consumption varied, with 87.5% consuming them 1-3 days a week, and junk food consumption was prevalent at 98.1%. These findings illuminate the diverse dietary habits among the surveyed population.The observed food insecurity and poor dietary diversity among lactating mothers, the correlates associated with these outcomes, may help local stakeholders to identify local health needs and subgroups for targeted interventions. Socioeconomically disadvantaged mothers should be specifically targeted for relevant programs and policies.

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ABBREVATION

AOR	: Adjusted Odd Ratio
BMI	: Body Mass Index
CGE	: Computable General Equilibrium
CI	: Confidence Interval
FGD	: Focus Group Discussion
HFIAS	: Household Food Insecurity Access Scale
IUGR	: Intrauterine Growth Retardation
WHO	: World Health Organization

Chapter I

Introduction

1.1 Background of the Study

Nutrition is crucial for good health, but achieving optimal nutrition can be difficult for individuals facing socioeconomic disadvantages. Food insecurity, influenced by education, living standards, and social status, remains a significant global issue. Under nutrition can lead to serious health consequences, while over nutrition can lead to chronic health conditions. Addressing these challenges requires a multi-pronged approach that prioritizes access to healthy foods, education, and healthcare and tackles the root causes of poverty and inequality. Poor nutrition can have broader societal and economic impacts, underscoring the urgency of tackling this issue (Mbow et al., 2019).

The prevalence of underweight, wasting, and stunting among under-five Muslim children exceeds the significant threshold of public health concern and is higher than the national average. This study emphasizes the need for collaborative and immediate action from governmental and non-governmental organizations involved in nutrition. Recommendations include providing informal learning opportunities, interventions to enhance parental support for children, promoting school enrollment at an appropriate age, prevention and treatment of chronic diseases, income-generating activities, and addressing household food insecurity among Muslim communities. Nutrition is a critical factor in optimal health, growth, cognitive development, academic performance, productivity, socioeconomic development of individuals, and national development. Hence, addressing poor nutrition-related problems is essential for the well-being of the entire population (Adhakari et al., 2023).

A study was conducted to evaluate the effect of climate change on food security in Iran using a computable general equilibrium (CGE) model, with wheat and rice serving as indicators of food security. To predict potential changes in climate variables, a stochastic model based on Monte Carlo simulation was employed to generate three scenarios (best, average, and worst). Unlike previous studies, the analysis included irrigated crops due to the depletion of groundwater resources and restrictions on aquifer extraction in Iran. The findings suggest that food security may face significant challenges, with food supplies and consumption declining in the

average and worst scenarios. Thus, policy reforms are necessary to address the negative impact of climate change on food security and people's livelihoods. Some proposed solutions include research and development to introduce drought-tolerant crop varieties and adaptation strategies to mitigate the impact of climate change. Furthermore, improving farmers' incomes may also prove to be an effective means of addressing the effects of climate change (Javadi et al., 2022).

The nourishment consumed by pregnant women is the primary source of nutrients for the developing fetus. Insufficient daily nutrient intake can result in malnutrition. This, in turn, can cause intrauterine growth retardation (IUGR), which increases the likelihood of low birth weight and length and may lead to illnesses such as diarrhea, pneumonia, measles, and malaria in newborns. Additionally, insufficient nutrition during pregnancy can have long-term consequences for fetal development, making children more vulnerable to hypertension, diabetes, and heart disease later in life. Conversely, overnutrition during pregnancy can lead to metabolic and labor complications for the mother, such as gestational diabetes, preeclampsia, hypertension, longer labor, induction of labor, and a significantly higher likelihood of birth defects and cesarean section (Killen et al., 2023).

In the last few decades, the Nepali government has implemented several nutritional policies, strategies, and guidelines. This review aims to identify gaps in the existing policies and provide insight into developing policies and programs to address Nepal's current and future nutritional needs. The study employed various methods, including searching government websites and approaching relevant government ministries, to identify policies relevant to nutrition and food security. Thematic analysis was conducted using framework methods under eight predetermined themes, and 30 policy documents were reviewed. The majority of policies focused on under nutrition, with limited attention given to over nutrition and diet-related no communicable diseases. The review identified policy gaps in several areas, including the quality and sustainability of nutrition programs, access to healthcare services, competent human resources for nutrition, intersect oral coordination and commitment, and support for monitoring, evaluation, and research activities. Policymakers can utilize these findings to address gaps in policy development and strategies focused on over nutrition and diet-related no communicable diseases (Adhakari et al., 2023).

1.2 Statement of the Problem

Teenage pregnancies should be considered high-risk and comprehensive prenatal care is crucial for both the mother and fetus. Efforts should be made by families, service providers, schools, policymakers, and youth to prevent teen pregnancies and educate teenagers on the risks associated with substance use during pregnancy. A functional and stable family, good parent-child relationships, and society's awareness are key elements in preventing unwanted teenage pregnancies (Diabelkova et al., 2023).

The study revealed independent predictors that increase the risk of being. underweight, wasting, and stunting among children under five years old. Children from nuclear families with more than four members, living with individuals other than their parents and having mothers with only primary education and illiterate fathers, and those not attending school or without agricultural land were at risk of being underweight. Illiterate mothers, fathers with only primary education, children not attending school or without agricultural land, families with income less than 10000 Nepalese rupees, and a history of chronic disease in children were found to be independent predictors of wasting. Male children in urban areas, from nuclear families with more than four members, living with individuals other than their parents, having illiterate fathers, and without agricultural land were at risk of stunting. To improve the nutritional status of underprivileged and unnerved Muslim communities, interventions promoting education, parental support, school enrollment, chronic disease prevention and treatment, income-generating activities, and addressing food insecurity should be implemented. Additionally, large-scale research using qualitative approaches should be conducted to gain a deeper understanding of the perceptions, cultural practices, beliefs, and value systems related to nutritional status among underprivileged and unnerved Muslim communities (Bhusal et al., 2023).

Children's health, growth, development, and academic performance depend greatly on their nutritional status. Although the rates of stunting, being underweight, and wasting in Nepalese children under five are 41%, 29%, and 11%, respectively, according to NDHS 2011, the extent of this problem in Nepal's hilly regions is not well-understood. The study revealed that chronic malnutrition was a more common issue than acute malnutrition in these districts, with stunting being more prevalent

than wasting. Therefore, concerned authorities must address the factors highlighted in the study to combat malnutrition in the hilly regions of Nepal (Dhungana, 2017).

Adequate nutrition is crucial for the development of children and pregnant women. Malnourished children may not be an asset to a country. The study aimed to evaluate the relationship between nutrition and anthropometry in under-five children. 100 mothers with under-five children were interviewed using a pretested questionnaire. The study found that 43% of children were malnourished. Most mothers reported proper hand hygiene during and after feeding their children. The WHO states that every child has the right to good nutrition, and globally, in 2012, 162 million children under five were stunted, and almost 100 million had low weight-for-height due to poor feeding and infections. Undernutrition is associated with 45% of child deaths. The study concluded that there is a significant positive correlation between feeding practices and anthropometry (Khadka et al., 2020).

1.3 Research Question

1. What is the socio-demographic status of households associated with food insecurity among the teen age mothers having children under-five ages of children?
2. What is the prevalence of household Food Insecurity among teen age mothers having under-five ages of children?
3. What is the household food intake patten and agriculture production?

1.4 Objective of the Study

1. To assess the socio-demographic figure of the teen age mothers having under-five years aged children in shivaraj municipality, Kapilvastu district.
2. To examine the household food intake patten and agriculture production
3. To analyze nutritional status of teenage mothers having children under five ages in the study area.

1.5 Significance of the Study

This study on food security among teenage mothers with children under five years old in Shivaraj Municipality, Kapilvastu District, Nepal, holds significant importance for several reasons:

Vulnerable Population Focus: Teenage mothers and their young children are among the most vulnerable groups when it comes to food insecurity. By focusing on this demographic, the study sheds light on specific challenges and needs that may otherwise be overlooked in broader analyses.

Nutritional Impact: Understanding the food security status of households with young children is crucial, as inadequate nutrition during the early years can lead to long-term developmental issues and health problems. This study can help identify key nutritional gaps and inform targeted interventions.

Policy Implications: The findings can provide valuable data for local and national policymakers to develop and implement strategies aimed at improving food security for young mothers and their children. This is particularly important in regions like Kapilvastu District, where socio-economic challenges are prevalent.

Health Outcomes: By examining the intersection of food security, maternal health, and child development, the study can contribute to better health outcomes. Ensuring food security in these households can lead to improved maternal and child health, reducing the burden on healthcare systems.

Socio-Economic Development: The study highlights the socio-economic factors contributing to food insecurity, such as education, employment, and household income. Addressing these issues can lead to broader socio-economic development and enhance the quality of life in the community.

Community Awareness and Engagement: The research can raise awareness within the community about the importance of food security and nutrition. It can also engage local stakeholders, including government agencies, non-governmental organizations, and community leaders, in collaborative efforts to address food insecurity.

Future Research Directions: The study's findings can pave the way for further research on food security in similar contexts. It can help identify gaps in the existing literature and suggest areas for future investigation, enhancing the overall understanding of food security issues in Nepal and beyond.

In summary, this study is significant because it addresses a critical issue affecting a highly vulnerable population, with implications for health, policy, socio-economic development, and future research. Its outcomes can lead to informed, effective actions to improve food security and the well-being of teenage mothers and their young children in Shivaraj Municipality and similar settings.

1.6 Delimitation of the Study

The study was confined to Shivaraj Municipality in Kapilvastu, which restricts the generalizability of the findings to the broader population of Nepal. The assessment solely targeted teenage mothers with children under five years old, potentially overlooking other demographic groups facing food insecurity. Teenage mothers of the Muslim community in this study could not participate in this research because the community teenage mothers refused to participate in the study. Due to the study's predetermined timeframe, there may be a lack of longitudinal data, hindering the exploration of changes in food security status over time. The study primarily focused on frequency distribution and prevalence of food security status among teenage mothers, omitting in-depth analysis of underlying factors and potential interventions.

1.7 Organization of the Study

This research was divided into five chapters. The introduction part will be the first chapter which deals with the background information, statement of the problems, objectives, Significance, delimitations, and organization of the study. The second chapter is a review of the relevant literature conceptual and empirical review. The third chapter is about the methodology of this research which deals with the different sub-topics, research design, the rationale for the selection of the study area's nature and sources of data, universal sample and sampling procedure, key informant interview, The fourth chapter is about techniques and tools of data collection and data analysis and at last chapter is summary, findings, conclusions, and references.

Chapter II

Literature Review

2.1 Theoretical Base

A literature review is a critical and in depth summary of research on topic of interest, often prepared to put a research problem in contact as the basis for an implementation project. A literature review surveys books, scholarly articles, and any other sources relevant to a particular issue, area of research, or theory, and by so doing, provides a description, summary, and critical evaluation of these works in relation to the research problem being investigated. Literature reviews are designed to provide an overview of sources you have explored while researching a particular topic and to demonstrate to your readers how your research fits within a larger field of study.

2.1.1 Pillars of Food Security

Food Availability. Household-level food availability pertains to the "supply side" of food security within a household, determined by the amount of food produced, the existing food stocks, and net acquisition through trade or purchase.

Food Accessibility. Household-level food accessibility refers to the ability of a household to obtain sufficient food through adequate incomes, manageable expenditures, effective market systems, and affordable prices, ensuring that national or international food supplies translate into food security at the household level.

Food Utilization. Household-level food utilization refers to how effectively the body uses the nutrients in the food consumed. This involves sufficient intake of energy and nutrients, which is influenced by proper care and feeding practices, food preparation methods, diet diversity, and the equitable distribution of food within the household. Along with efficient biological utilization of the consumed food, these factors collectively determine an individual's nutritional status.

Food Stability. Household-level food stability refers to the consistent access to adequate food over time. Even if a household's food intake is sufficient today, it is considered food insecure if it periodically experiences inadequate access to food, which can jeopardize nutritional status. Factors such as adverse weather conditions, political instability, and economic challenges like unemployment and rising food prices can impact the stability of food security.

2.1.2 Evolution of Nutritional Theory

Since the inception of life, nutrition has been a cornerstone of human growth and survival, deeply influencing nearly all bodily processes. The state of one's nutrition reflects their past, present, and future health, with true health being more than just the absence of disease—it involves physical, mental, and social well-being. Nutrition, in both quantity and quality, is fundamental to achieving optimal health and preventing diseases (Tanaka, 2017).

Historically, nutrition has been regarded as essential by philosophers and researchers. In ancient times, figures like Aristotle and Galen recognized its critical role in health, disease, performance, and healing. They believed that the body's strength depended on the nutrients in the blood, derived from consumed food. This view was also echoed in ancient Chinese medical texts like the Huangdi Neijing, which paralleled the Greek and Roman emphasis on a diet rich in grains, legumes, fruits, honey, fish, and milk, with moderate consumption of meat, wine, and sweets. It is fascinating how these ancient scholars devised dietary guidelines without a comprehensive understanding of human physiology (Tanaka, 2017).

The modern theory of nutrition has built upon these ancient concepts, significantly evolving since the early 20th century with the discovery of vitamins and minerals between 1910 and 1930. These discoveries, coupled with advancements in food production methods, have transformed nutritional science. Post-World War II, improvements in food distribution have alleviated some malnutrition issues in many regions, although severe malnourishment persists in parts of Africa and Southeast Asia. Before the 1940s, nutritional diseases primarily stemmed from undernourishment due to inadequate variety and caloric intake (Tanaka, 2017).

Today, however, there is a shift in nutritional concerns. Conditions like obesity, heart disease, diabetes, and metabolic syndrome have become prevalent in modern societies. Food is no longer viewed merely as fuel for survival but as a source of instant pleasure and gratification. The modern food industry has exploited human biological tendencies, such as our natural preferences for sweetness and fatty foods, leading to the mass production of sugary beverages and highly processed foods. The widespread availability of fast food has further exacerbated these issues, fostered unhealthy dietary habits and contributing to a rise in obesity rates and a decline in overall health (Tanaka, 2017).

The global obesity pandemic is now one of the most urgent healthcare challenges. The convenience of processed and fast foods has led to significant changes in body composition and an increase in obesity-related health problems. Addressing these issues requires a comprehensive understanding of both historical and modern nutritional theories, as well as the implementation of strategies that promote balanced, healthy eating habits in the face of contemporary dietary challenges (Tanaka, 2017).

2.1.3 Motivation- Facilitation Theory of Prenatal Care

Access to prenatal care is defined as the potential ability of a woman to begin and sustain care for herself and her fetus throughout the perinatal period. This concept encompasses a range of societal, maternal, structural, and medical components. However, these factors are often too complex to frame interventions effectively at the clinical level. Therefore, the dimensions of access have been distilled into two key concepts: motivation and facilitation (Phillippi & Roman, 2013).

Motivation includes all personal characteristics and is often cited as the primary reason women fail to initiate prenatal care. It involves a woman's internal drive to seek care, influenced by her cultural and personal beliefs about prenatal care, her acceptance of the pregnancy, and her immediate social network, including family and friends. Public health information and media campaigns also play a significant role in shaping a woman's motivation by highlighting the benefits of early prenatal care. These macro-level interventions, though valuable, are not typically feasible at the individual practice level (Phillippi & Roman, 2013).

Facilitation refers to the external factors that promote or optimize a woman's ability to access and continue prenatal care. This includes efforts by clinics to reduce barriers to care, such as providing convenient appointment times, offering transportation services, and ensuring a supportive and welcoming environment. By enhancing facilitation, clinics can improve a woman's motivation to seek and maintain prenatal care, thus addressing both internal and external barriers (Phillippi & Roman, 2013).

Access to prenatal care is a dynamic process that evolves as the woman interacts with clinic staff and manages her emotions about the pregnancy. The initial step in this process is motivation; a woman's drive for care must be present to initiate the access process. Once motivation is established, facilitation becomes crucial. The

goal of the clinic is to promote and enhance a woman's ability to obtain and maintain prenatal care. Effective facilitation can significantly impact a woman's motivation, making it more likely for her to overcome barriers and utilize the available care services (Phillippi & Roman, 2013).

The healthcare system, through various macro-level interventions, can also influence a woman's motivation positively or negatively. Media campaigns, for example, can shape public opinion about the importance of early prenatal care, thus encouraging women to seek care. Conversely, a lack of supportive public health messaging can reduce motivation, particularly among women with unplanned pregnancies who are already at higher risk for poor outcomes (Phillippi & Roman, 2013).

In summary, the concepts of motivation and facilitation are essential for understanding and improving access to prenatal care. By addressing these two key areas, healthcare providers can better support women in beginning and maintaining the care necessary for their health and that of their fetus during the perinatal period (Phillippi & Roman, 2013).

2.2 Empirical Literature Review

A cross-sectional study conducted in Pokhara Metropolitan's squatter settlement surveyed 426 reproductive-age women (15-49 years) using a multistage sampling method. The study employed the Household Food Insecurity Access Scale and BMI calculations to assess food insecurity and nutritional status, respectively. Results revealed high household food insecurity (65%), with 38.1% of women overweight and 13.6% underweight. Factors like education, occupation, and household food insecurity correlated significantly with BMI. Specifically, education and occupation showed a direct effect, while occupation and food insecurity had a mediating effect on BMI through education. The findings underscore the importance of nutrition and food security programs, emphasizing the role of women's education in enhancing household food security and maintaining healthy weight in slum areas (Paudel et al., 2023).

A community-based cross-sectional study in Kapilvastu district, Nepal, surveyed 336 Muslim children under five from December 2021 to May 2022. Using multistage probability random sampling, the study found levels of underweight (50%), overweight (0.9%), wasting (17.3%), and stunting (63.1%) among the

children. Factors such as family size, household structure, parental education, land ownership, school attendance, and history of chronic diseases were significantly associated with these nutritional issues. Compared to national averages, the prevalence of malnutrition was higher, indicating a critical public health concern. Urgent collaborative efforts from governmental and non-governmental organizations are recommended, focusing on education, parental support, school enrollment, chronic disease prevention and treatment, income generation, and addressing household food insecurity within Muslim communities (Bhusal, 2023).

Data from the 2016 Nepal Demographic Health Survey, encompassing 12,862 women aged 15-49, with 12% being Dalit, revealed significant levels of household food insecurity. Descriptive analysis highlighted that 56% of all women and 76% of Dalit women experienced food insecurity. Logistic regression indicated a strong association between ethnicity and food insecurity, with Dalit women being particularly vulnerable even after adjusting for various factors. Education emerged as a protective factor, with secondary education reducing the likelihood of food insecurity by 39%, and education beyond secondary level further enhancing food security. Marriage and household wealth also played protective roles, while residence in specific regions correlated with higher food insecurity. To address this issue, interventions should prioritize improving women's education and economic status, especially among Dalit communities and in the Far- and Mid-Western regions of Nepal (Pandey & Fusaro 2020).

A descriptive cross-sectional study of 226 mothers and their children aged 6–59 months in Panauti Municipality's wards 1, 2, and 4 utilized semi-structured questionnaires and anthropometric measurements to explore nutritional determinants. The study revealed low maternal underweight prevalence (2.7%), with high rates of overweight (36.7%) and obesity (13.7%). Children showed significant levels of severe stunting (27.9%), underweight (3.6%), wasting (3.5%), and overweight (22.1%). Malnutrition affected over half of both mothers and children. Ethnicity correlated significantly with maternal nutritional status, while factors such as pre-lacteal feeding, and cultural practices influenced children's nutritional status. The findings underline the widespread malnutrition among mothers and children, emphasizing the role of demographic and cultural factors in nutritional outcomes (Dahaletal, 2023).

A community-based cross-sectional study conducted from August to December 2018 involved 259 mothers with children aged 6–23 months, randomly

selected from 714 eligible mothers. Data were collected through face-to-face interviews using a structured questionnaire on a tablet phone-based platform. Analysis in SPSS version 21 and multivariable logistic regression identified factors associated with appropriate complementary feeding practices, which were found to be prevalent in only 25% of cases. Factors such as parental formal education, counseling on infant and young child feeding (IYCF), having a kitchen garden, and food security were associated with higher odds of appropriate complementary feeding. The study underscores the need for behavior change communication and promotion of kitchen gardens to improve complementary feeding practices among mothers (Gurung et al., 2024).

Micronutrient deficiencies continue to pose a significant public health challenge for non-pregnant women in developing nations like Nepal. This study utilized data from the 2016 Nepal National Micronutrient Status Survey (NNMSS) to investigate such deficiencies among Nepalese women aged 15-49. Analysis of ferritin, soluble transferrin receptor (sTfR), red blood cell (RBC) folate, and zinc levels from 2143 non-pregnant women revealed prevalence rates of 19%, 13%, 16%, and 21%, respectively. Factors such as regional ethnicity, BMI, age, and household wealth were significantly associated with different micronutrient deficiencies. Notably, women from the Janajati region showed lower susceptibility to ferritin deficiency, while older age groups had reduced risk of folate deficiency. Additionally, zinc deficiency was less prevalent among women from wealthier households. These findings underscore the importance of targeted screening and public health interventions to address micronutrient deficiencies among non-pregnant Nepalese women (Agho et al 2024).

A cross-sectional study conducted from September to December 2022 involved 424 adolescents from 14 schools in Jajarkot. Using a well-designed questionnaire, researchers assessed diet diversity, morbidity, academic performance, and anthropometric measurements. Analysis using SPSS version 21 and WHO Anthroplus software revealed that 40% of adolescents were stunted, with higher prevalence in girls (42.5%) than boys (37.2%). Boys had a higher prevalence of wasting (11.4%) compared to girls (18.4%), while overweight prevalence was more than double in girls (2.2%) compared to boys (1%). Nearly half of the adolescents had minimal dietary diversity, with variations between girls (43.4%) and boys (47%). Academic performance was distributed among three divisions: first (29.5%), second (63.9%), and third (6.6%). Statistical associations were found between morbidity, age

groups, stunting, gender, dietary practices, parental education, ethnicity, and academic performance. Most adolescents with less than five food groups in their diet exhibited poor academic performance. Undernutrition, compounded by inadequate dietary practices and morbidity, impacts cognitive achievement. Promoting diet diversity is crucial for improving nutritional status, height for age, and maintaining a normal BMI for adolescents, thereby reducing malnutrition prevalence (Pokhrel, 2024).

The study aimed to evaluate dietary diversity and nutritional status among reproductive-age females in Chichila Rural Municipality, Sankhuwasabha district. Through a cross-sectional descriptive study involving 196 participants, data on dietary habits and anthropometric measurements were collected and analyzed using WHO criteria. Significant differences in dietary diversity were observed based on factors such as address, meal skipping, fuel source, snack consumption, and water purification provision. Findings indicated low consumption of pulses, green leafy vegetables, and other vegetables, while regular intake of tea/coffee, cold drinks, and fast food was common. About 9.2% of females were underweight, 34.2% were overweight/obese, and 56.6% were classified as normal based on BMI. Central obesity and high waist-hip ratio were prevalent. Nutrition awareness emerged as a key factor influencing nutritional indicators. The study underscores the importance of tailored interventions to enhance food consumption and improve the nutritional status of this demographic (Niroula, 2024).

In a cross-sectional survey involving 391 women, data on demographics, socioeconomic status, anthropometry, and water, sanitation, and hygiene practices were gathered. Nutritional status was assessed using body mass index (BMI) classification. The mean BMI was 24.5±3.8, with 5.9% underweight, 49.4% normal weight, 35.3% overweight, and 9.5% obese. Regression analysis revealed that secondary education and handwashing practices were key determinants of maternal nutritional status. Women with secondary education were 4.2 times more likely to be adequately nourished, while those practicing handwashing with only water or water with ash or soil were more likely to be malnourished compared to those using soap and water. This study underscores the increasing rates of overweight and obesity among women in semi-urban Bangladesh and emphasizes the importance of education and handwashing practices in maternal health. Multifaceted interventions are necessary to address these challenges and enhance maternal well-being in this population (Mahbub, 2024).

A community-based cross-sectional study conducted on 523 randomly selected lactating mothers in Sankurra district from May 22 – June 20, 2021, aimed to determine predictors of dietary diversity. Data analysis using SPSS version 21 revealed a prevalence of minimum dietary diversity at 24.5%. Factors positively associated with achieving minimum dietary diversity included secondary and above educational levels, food-secured households, medium and rich household status, receiving nutritional education, and the availability of fruits and vegetables in the market. Conversely, selling home-produced food items in the market was negatively associated with achieving minimum dietary diversity. Despite existing public health interventions for lactating mothers, the study highlights a low prevalence of dietary diversity. Nutritional education during antenatal care and measures to ensure household food security are suggested to address this issue effectively (Zehara, 2024).

A cross-sectional study to determine the severity of and factors related to household food insecurity in Zahedan, Southeastern Iran. A survey was conducted on a total of 2,160 households between November 2014 and December 2015. Demographic and socioeconomic data were collected through interviewing the household mothers. The prevalence of food insecurity in 2160 households was 58.8%, with 31.7% of households experiencing food insecurity without hunger, 19.7% food insecurity with moderate hunger, and 7.4% food insecurity with severe hunger. There were significant statistical associations between household food insecurity and ethnicity; occupation; education and age of head of the household; occupation; education and age of household's mother; household size; having children under 18; and the socioeconomic status of the household. There was higher household food insecurity in households with illiterate or low-educational level mothers or heads of the household; in households with unemployed heads; and in households with low socioeconomic status; it is thus necessary to pay more attention to these households (Mortazavi Zet al., 2017).

One of the studies conducted in Nepal using a data from the Nepal Demographic and Health Survey 2011 shows that 1.5 (95% CI, 1.17 to 1.92) times as likely as married women in food-secure households to have a BMI below 18.5 kg/m^2. In this study we used body mass index (BMI) to assess the nutrition status of married women. Binary logistic regression and multinomial logistic regression were

performed to examine the significant associations between food insecurity and nutritional status among women in Nepal (Sing, 2014).

A cross-sectional study conducted in kailali district of Nepal shows that more than two-thirds (69%) of households were classified as food insecure (had insufficient access to adequate food). The prevalence rates of stunting, underweight, and wasting among children were 41%, 24%, and 9%, respectively. The prevalence of anemia was 58%. There were no significant associations between household food insecurity and stunting, underweight, or anemia. Stunting and underweight were associated with maternal height and household wealth ($p < .05$). Underweight was also associated with maternal education ($p < .05$). Anemia was associated with low maternal hemoglobin concentration ($p < .05$).(9).

This study was conducted on kavre District in rural area of Nepal. This novel intervention targeted five behaviors: cleanliness of serving utensils, hand washing with soap before feeding, proper storage of cooked food, and thorough reheating and water treatment. Based on formative research and a creative process using the Behavior-Centered Design approach, an innovative intervention package was designed and delivered over a period of 3 months. The intervention activities included local rallies, games, rewards, storytelling, drama, competitions linking with emotional drivers of behavior, and “kitchen makeovers” to disrupt behavior settings. The effect of the package on behavior was evaluated via a cluster-randomized before–after study in four villages with four villages serving as controls. The primary outcome was the difference in the mean cluster level proportions of mothers directly observed practicing all five food hygiene behaviors. The five targeted food hygiene behaviors were rare at baseline (composite performance of all five behaviors in intervention 1% [standard deviation (SD) = 2%] and in control groups 2% [SD = 2%]). Six weeks after the intervention, the target behaviors were more common in the intervention than in the control group (43% [SD = 14%] versus 2% [SD = 2%], P = 0.02) during follow-up. The intervention appeared to be equally effective in improving all five behaviors in all intervention clusters. This study shows that a theory-driven, systematic approach employing emotional motivators and modifying behavior settings was capable of substantially improving multiple food hygiene behaviors in Nepal (Gautam et al., 2017).

This is a case study of Dailekh district in the mid-western Development region. This study analyzed the relationship between household resource endowment and food security status, to find out the households coping strategies when they face food deficit condition. The head count method of food insecurity analysis indicates that majority of households (74%) are food insecure and are not capable to manage food demand even through the combination of different coping strategies. 22.7% households are chronically food insecure,51.5% households are potentially food insecure and 25.8% households are food secure. (Khatri et al 2017).

A cross-sectional study conducted on Rupandehi district. Two hundred ninety-two children were selected using proportionate random sampling technique. This study shows that 50% of the children born to illiterate mothers were found to be underweight. The majority of the children (65%) were found stunted according to Water low's classification. More than half the children (57.75%) were underweighting who were born by mother less than 18 years of age whereas 75% were underweight born by mother aged above 35 years of age. However, the association between the age of the mother at the birth of the child and nutritional status is not statistically significant. More than half of the children were found underweight and Nearly 2/3rd of the children was found stunted. To get better nutritional status of children, greater emphasis should be given to children under-five years children with communitybased awareness programs to mother and care givers (Acharyaetal., 2013).

A comprehensive national survey, involving 12,862 women aged between 15 to 49 years, with a representation of 12% Dalit participants, was conducted to examine household food insecurity prevalence using descriptive analysis and explore its association with women's ethnicity through logistic regression, controlling for various demographic, economic, cultural, and geo-ecological factors. Results indicated that 56% of all women surveyed experienced food insecurity, with an even higher prevalence observed among Dalit women, reaching 76%. Ethnicity emerged as a robust predictor of food insecurity, with Dalit women showing notably heightened vulnerability even after accounting for education and wealth disparities. Specifically, Dalit women were found to be 82%, 85%, 89%, and 92% more likely to experience food insecurity compared to Muslim, Brahmin/Chhetri, Terai Indigenous, and Hill

Indigenous populations, respectively. Additionally, education emerged as a protective factor against food insecurity, with women attaining secondary education demonstrating a 39% reduced risk compared to those without formal education. Moreover, higher household wealth levels were associated with lower food insecurity risk, while marriage appeared to provide a protective buffer. Furthermore, residence in specific development regions, such as the Mid-Western, Far Western, and Central regions, was correlated with heightened food insecurity levels, indicating regional disparities in access to food resources and socioeconomic vulnerabilities (Pandey, 2020).

The study employed the Household Food Insecurity Access Scale alongside body mass index (BMI) measurements for married women and various indicators such as stunting, wasting, and underweight for children under 5 years old, as methodologies to evaluate food insecurity and nutritional status. Utilizing binary logistic regression and multinomial logistic regression analyses, the study sought to elucidate the relationships between these variables. The findings unveiled significant correlations, particularly within severely food-insecure households, where 51% of children were found to be stunted, and 40% were underweight. Additionally, a notable 27% of married women exhibited a BMI below 18.5 kg/m2 in such households. Children residing in food-insecure households were 1.50 times more likely to experience stunting and 1.40 times more likely to endure underweight conditions compared to their counterparts in food-secure households. Similarly, married women in food-insecure households were 1.5 times more prone to having a BMI below 18.5 kg/m2 than those in food-secure households. However, intriguingly, no significant association was detected between household food insecurity and wasting among children, underscoring the complexity of nutritional challenges faced within food-insecure contexts (Singh, 2014).

A community-based cross-sectional investigation was conducted, encompassing 446 lactating mothers randomly selected during the period from June 1st to June 30th, 2020. Data collection was carried out through face-to-face interviews utilizing a structured and pre-tested questionnaire. Subsequently, the collected data were entered into EpiData version 3.1 and then exported to STATA version 14.2 for thorough cleaning and analysis. Bi-variable and multivariable binary logistic regression analyses were employed to examine the relationship between independent

variables and food insecurity, with statistical significance set at a p-value < 0.05. The findings revealed that a substantial proportion of lactating mothers experienced food insecurity, with a prevalence rate of 68.8% (95% CI: 64.4, 72.9), while 12.1% (95% CI: 9.4, 15.5) were classified as severely food insecure. Several factors were found to be significantly associated with food insecurity among lactating mothers, including residence in rural areas (AOR = 2.36, 95% CI: 1.21, 4.62), poor wealth indices (AOR = 4.68, 95% CI: 2.02, 10.8), ownership of farmland less than a hectare (AOR = 2.35, 95% CI: 1.06, 5.19), having less than three meals a day (AOR = 2.70, 95% CI: 1.33, 5.46), and lack of personal income (AOR = 2.32, 95% CI: 1.36, 3.96). These findings underscore the multifaceted nature of factors contributing to food insecurity among lactating mothers in the community (Minas, 2022).

This study investigates the prevalence and determinants of household food insecurity among women, with a specific focus on Dalit women of reproductive age in Nepal. Data were drawn from the 2016 Nepal Demographic Health Survey, a cross-sectional, nationally representative survey comprising 12,862 women aged 15 to 49, with 12% identifying as Dalit. Descriptive analysis was employed to evaluate the prevalence of household food insecurity, while logistic regression was utilized to assess the association between women's ethnicity and the risk of food insecurity, adjusting for demographic, economic, cultural, and geo-ecological factors. Findings revealed that 56% of all women and a striking 76% of Dalit women had encountered food insecurity. Importantly, ethnicity emerged as a significant determinant of food insecurity, with Dalit women exhibiting the highest vulnerability, even after controlling for variables such as education and wealth. Specifically, Dalit women were found to be 82%, 85%, 89%, and 92% more susceptible to food insecurity compared to Muslim, Brahmin/Chhetri, Terai Indigenous, and Hill Indigenous populations, respectively. These results underscore the profound impact of ethnicity on food security status, highlighting the heightened vulnerability of Dalit women within the Nepalese context (Pandey, 2020).

A Survey data from a cross-sectional study indicate that women in South Asia, including Nepal, exhibit some of the most concerning nutritional indicators globally, leading to adverse maternal and child health outcomes. Nepal, in particular, grapples with elevated levels of household food insecurity, with newly married women facing heightened risks. The dynamics of intra-household relationships may play a crucial

role in mediating the link between food insecurity and women's nutrition, especially among newly married women in Nepal. This study aims to elucidate how the dietary habits of newly married, preconception women change upon transitioning from their natal home to their husband's home. Additionally, it explores whether the quality of relationships with husbands and mothers-in-law acts as a mediator in the association between food insecurity and a reduction in the consumption of high-quality foods, employing structural equation modeling. Data were collected from a sample of 200 newly married, preconception women. The findings reveal that women exhibit poor diet quality, consuming fewer high-quality foods essential for pregnancy upon moving to their marital homes compared to their natal homes. Furthermore, it was observed that higher-quality relationships with mothers-in-law mediated the association between food insecurity and reduced consumption of high-quality foods in the marital home, while no significant association was found between relationship quality with husbands and changes in food consumption (Diamo, 2020)

In this qualitative inquiry, conducted through 10 Focus Group Discussions (FGDs) involving mothers with children under two years old in urban areas, specifically Damavand (7 FGDs; n=51) and Varamin (3 FGDs; n=29), the sessions were meticulously overseen by a moderator, accompanied by two note-takers and an observer to ensure thorough documentation. From these discussions, nine overarching themes emerged. Firstly, mothers emphasized the importance of adequate food for maintaining health, both in terms of quality and quantity. However, financial constraints posed significant challenges, limiting household access to sufficient food. During times of hardship, households employed various coping strategies, such as altering food types and quantities or resorting to cheaper options. Notably, mothers often prioritized their children's nutritional needs over their own; sacrificing their meals to ensure their children received enough food. The concept of complementary feeding was widely discussed, with mothers viewing it as essential, especially for infants. The recommended age for introducing complementary foods was generally agreed upon as six months. However, the absence of locally available complementary foods presented a significant barrier. Mothers reported preparing separate meals for infants, and despite the availability of commercial alternatives, they expressed a preference for homemade complementary foods. While mothers demonstrated awareness of the benefits of complementary feeding, the study revealed discrepancies

between knowledge and practice, underscoring the need for targeted interventions to bridge this gap and improve child nutrition outcomes (Nahid, 2014).

2.3 Summary of Literature Review

The theoretical literature review underscores the importance of a literature review in critically examining and summarizing research on a specific topic, placing it in context for an implementation project. It highlights the role of literature reviews in providing descriptions, summaries, and critical evaluations of relevant sources to demonstrate how the research fits within a broader field of study.

Nutrition has been essential for human health and survival, influencing almost all bodily functions. True health goes beyond the absence of disease to include physical, mental, and social well-being, with proper nutrition playing a central role. Historically, figures like Aristotle and Galen, as well as ancient Chinese texts, highlighted the importance of a balanced diet rich in grains, legumes, fruits, and moderate in meats and sweets. Modern nutritional science made significant strides with the discovery of vitamins and minerals in the early 20th century, improving global food distribution post-WWII. However, modern diets have led to an increase in obesity and related diseases, as the food industry exploits human preferences for sweet and fatty foods. This shift highlights the need for a balanced understanding of historical and modern nutritional practices to combat current health challenges and promote healthier eating habits.

Access to prenatal care, defined as a woman's ability to begin and maintain care during the perinatal period, involves complex societal, maternal, structural, and medical factors. To simplify, these are distilled into two key concepts: motivation and facilitation. Motivation encompasses personal characteristics and internal drives influenced by cultural beliefs, pregnancy acceptance, and social networks. Facilitation involves external factors that enhance access to care, such as clinic efforts to reduce barriers by offering convenient appointment times and a supportive environment. Effective facilitation improves motivation, helping women to seek and continue care. The healthcare system, through public health messaging and media campaigns, can also impact motivation positively or negatively. Addressing both motivation and

facilitation is crucial for improving access to prenatal care and ensuring better health outcomes for mothers and their babies.

The empirical literature reveals various studies on food insecurity and nutritional status. A cross-sectional study in Zahedan, Iran, found a 58.8% prevalence of food insecurity, with significant links to ethnicity, occupation, education, household size, and socioeconomic status. In Nepal, data from the 2011 Demographic and Health Survey showed that food-insecure married women were 1.5 times more likely to have a BMI below 18.5 kg/m². Similarly, a study in Kailali District reported that 69% of households were food insecure, with notable rates of stunting, underweight, and wasting among children, linked to maternal height and household wealth.

An intervention in Kavre District, Nepal, significantly improved food hygiene practices among mothers through creative and community-based activities. In Dailekh District, 74% of households were food insecure, necessitating better strategies for managing food demand. Research in Rupandehi District found high rates of underweight and stunted children, particularly among those born to illiterate mothers, stressing the need for awareness programs.

A national survey in Nepal highlighted the severe food insecurity faced by Dalit women, with 76% experiencing food insecurity compared to 56% of the general population. This study identified ethnicity, education, and household wealth as significant determinants of food insecurity. Another study focusing on lactating mothers found a 68.8% prevalence of food insecurity, associated with rural residence, poor wealth indices, and lack of personal income.

Research on newly married women in Nepal revealed poor diet quality post-marriage, with high-quality relationships with mothers-in-law mitigating the impact of food insecurity on diet. Lastly, focus group discussions in urban Iran emphasized financial constraints and coping strategies related to food security, highlighting mothers' preference for homemade complementary foods for their children despite financial hardships.

2.4 Research Gaps

The current study identifies several research gaps that need to be addressed to gain a comprehensive understanding of food insecurity and nutritional challenges among various populations.

Firstly, the study's scope is confined to teenage mothers in specific, limited geographic areas, which restricts the generalizability of the findings. Expanding the research to include a broader and more diverse population would provide a more comprehensive picture of the issues at hand.

Secondly, the study is constrained by limited resources and time for assessment. These limitations may impact the depth and breadth of the data collected, potentially overlooking critical factors that contribute to food insecurity and poor nutritional outcomes. Future research should seek to secure more extensive resources and allow for longer assessment periods to ensure a more thorough investigation.

Thirdly, the study operates within a restricted budget, which further limits its capacity to explore the issues in depth. Financial constraints can affect various aspects of the research, including the ability to recruit a larger sample size, employ advanced data collection methods, and conduct longitudinal studies. Securing additional funding would enable more robust research designs and more detailed analyses.

Addressing these gaps will enhance the understanding of food insecurity and nutritional challenges, leading to the development of more effective and comprehensive interventions. Expanding the scope, securing sufficient resources, and extending the duration of future studies are essential steps to ensure more reliable and generalizable findings.

2.5 Conceptual Framework of the Study

A conceptual framework of the factor leads the food insecurity that affect the teen-age mother and mother health, which is represented by following diagram.

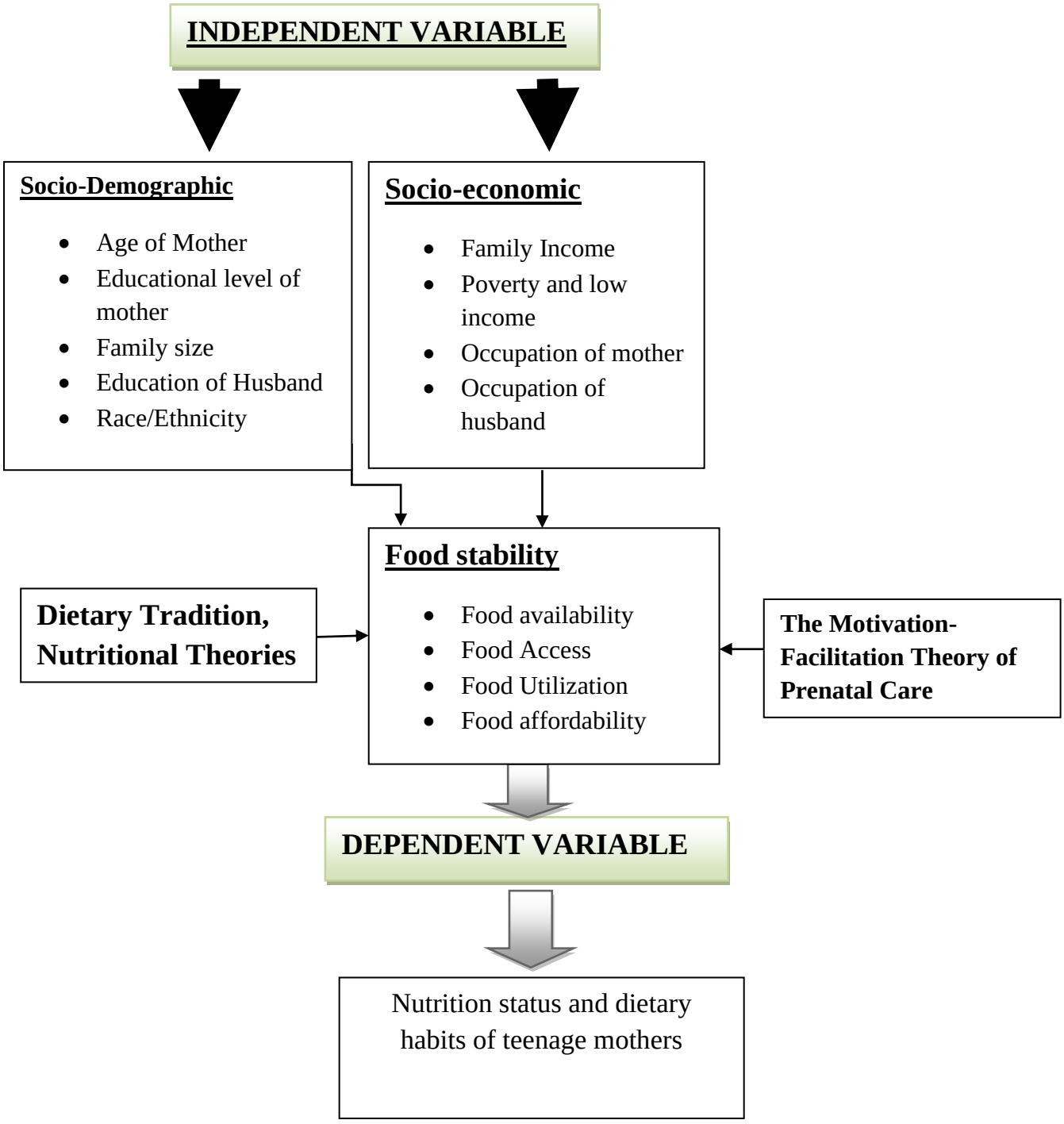

Figure 1: Conceptual Framework of the Study

Chapter III

Research Methodology

3.1 Research Design

This Study utilized a quantitative design, specifically adopting a descriptive study framework. The methodology section details the systematic approaches and procedures applied throughout the study, focusing particularly on data collection, processing, and analysis methods. By employing a cross-sectional quantitative design, the study collected data at a single point in time from a sample population, providing a snapshot of the variables of interest. This approach enabled the identification and analysis of relationships and patterns within the data, contributing to a comprehensive understanding of the research questions.

The cross-sectional nature of the design allowed the researchers to capture the current state of the studied phenomena without the influence of temporal changes. Detailed planning and execution were crucial, ensuring each step—from data gathering to data processing and analysis—was meticulously conducted. This rigorous methodology aimed to enhance the reliability and validity of the findings, offering valuable insights into the subject matter. By following a structured and systematic approach, the study aimed to produce robust and credible results that could inform future research and practice in the field.

3.2 Rationale for the Selection of the Study area

The Shivaraj municipality of Kapilvastu district served as the study area for this research. To fulfill the research objectives, the researcher selected a sample that is representative of the broader population.

Nepali women have been experiencing minimum levels of food intake and this issue is particularly pronounced within the Muslim community. The rationale for this study is to address these concerns by exploring and identifying effective and innovative interventions aimed at reducing poor nutritional status of teenage mothers.

By focusing on a community that is disproportionately affected, the study seeks to provide targeted insights and recommendations that could be applied to similar contexts both within Nepal and in other regions facing comparable challenges. This research is expected to contribute to the broader understanding of food insecurity and help inform policy decisions and community-based strategies aimed at alleviating this critical issue.

3.3 Nature and Source of Data

This study used both primary and secondary sources of data. Primary data was collected by using Standard structured questionnaire from the mothers having under-five year aged of children. Secondary data was collected through reviewing different journal, Article, thesis, books, websites, records and reports.

3.4 Universe, Sampling Procedure and Sample Size

The study population consisted of all teenage mothers enrolled in the Shivraj municipality Kapilvastu to achieve the research objective, a sample representing this population was selected by the researcher. This research thus identified total 250 teen age mothers residing in Shivaraj municipality (Municipal Profile, 2021. The study population consisted of teenage mothers with children under five years of age. From a total of 250 households, the sampling interval (K value) was calculated using the formula N/n = 250/160 = 1.6, resulting in a household interval of 2. Data collection commenced with a randomly selected household, and subsequent data were gathered at intervals of every second household. Multistage sampling such as purposive sampling, cluster sampling and simple random sampling methods were used to select sample respondents.

teen age mother population 250.

Rao soft software use this report, 95% of the population prevalence.

allowable error (5%)

total sample size is 160.

3.5 Data Collection Methods, Techniques and Tools

A structured questionnaire tools were used to access the variety of diet consumed by mother in the 24 hours prior to the interview and the face-to-face interview technique was used during the data collection from the respondents.

This research explained the purpose of the research to the participants and asked them to complete a questionnaire. After data collection, the questionnaire was collected. The research instruments were validated for use in the respondent population, and instrumental techniques were used for data. The household questionnaire served as the primary data collection technique which has highlighted following dimensions, areas of interventions and techniques:

Figure2: Data collection methods and Techniques

Dimension of inquiry	**Area of intervention**	**Techniques**
To assess the socio-economic demography with Food Insecurity among the teenage mothers having under-five ages of children.	Age Gender Cast Income Occupation Hygiene Situation	Field Survey Questioner Observation
To food intake food patten and agriculture production	Land size. Production Food Production Food Consumption Food Qualities Food Sufficiency Food Accessibility	Field Survey Questionnaire

3.6 Methods of Data Analysis and Interpretation

The data from this study underwent analysis using SPSS version 25 and Microsoft Excel 2007. The researcher employed statistical techniques to compute the frequency of food insecurity among teenage mothers, interpreting the resulting data comprehensively.

Visual representations such as bar graphs, tables, and pertinent images were utilized to effectively communicate the findings. These visuals not only enhanced the clarity of the results but also provided a detailed and nuanced presentation of the prevalence and implications of food insecurity within the teenage mother demographic. This methodological approach facilitated a thorough exploration of the research questions, ensuring that the outcomes were both accessible and informative for stakeholders and further research endeavors in the field.

3.7 Ethical Consideration

The ethical considerations were taken from the Central Department of Rural Development (CDRD). The approval letter was taken from the local authority before the Survey. Informed written consent was obtained from each participant prior to interview. Confidentiality was maintained of all participants and identity was revealed. The right to withdraw from the study at any time was ensured.

Chapter IV

Data Analysis and Presentation

4.1 Socio-Demographic Results

An analysis of the demographic characteristics among study participants reveals notable trends. The data showcases that a substantial majority, totaling 91.2%, fall within the age range of 15 to 19 years, indicating a predominant youth presence within the sample population. Moreover, 5.6% of participants are younger than 15 years old, underscoring the inclusion of individuals in their early adolescence. Conversely, 3.1% of participants surpass the age of 20, demonstrating a smaller yet noteworthy representation of individuals beyond the typical teenage bracket. This comprehensive breakdown illuminates the diverse age distribution within the study cohort, capturing the spectrum from adolescence to early adulthood.

Table 1: Age of Respondent

Categories	Frequency	Percentage
< 15 years	9	5.6%
15 – 19 years	146	91.3%
More than 20 years	5	3.1%
Total	160	100%

Source: Field survey, 2024

An examination of marital age reveals distinct patterns within the surveyed population. Notably, a significant majority, constituting 70.6%, embarked on marital unions during the formative years of 15 to 19. Furthermore, a substantial portion, accounting for 28.7%, entered marriage before attaining the age of 15, indicating early matrimonial commitments within the community. Conversely, a minor fraction, comprising only 0.6%, chose to marry after reaching the age of 20. This nuanced distribution underscores the prevalence of early marriages within the surveyed cohort, highlighting varied trajectories of marital initiation.

Table 2: Age of Marriage

Age of Marriage		
Categories	Frequency	Percentage
Below 15 Years	47	28.7%
15- 19 Years	112	70.6%
More than 20 years	1	0.6%
Total	160	100%

Source: Field survey, 2024

Regarding ethnic identification, the data portrays a diverse landscape. A majority, constituting 55% of respondents, identify themselves as Janajati. Additionally, 27.6% of respondents belong to the Brahmin and Chhetri communities, reflecting a significant portion. Moreover, 16.3% self-identify as Dalit, representing a notable segment within the surveyed population. Furthermore, a small fraction, accounting for 1.3%, categorize themselves under other ethnic groups. This distribution underscores the rich ethnic diversity present within the surveyed cohort, highlighting the multifaceted nature of identity within the community.

Table 3: Ethnicity of the Respondent

Ethnicity of the respondent		
Categories	**Frequency**	**Percentage**
Dalit	26	16.3%
Janjati	88	55%
Madesi	0	0
Muslim	0	0
Brahmin/Chhetri	44	27.6%
Others	2	1.3%
Total	160	100%

Source: Field survey, 2024

Within the religious composition, Hinduism stands as the predominant faith, encompassing a significant majority of 98.12% of the surveyed population. Meanwhile, a minority, comprising 1.88%, adhere to the tenets of Buddhism. This distribution highlights the predominance of Hinduism within the surveyed cohort, with a small yet distinct presence of Buddhist practitioners, indicating a diverse religious landscape.

Table 4: Religion of the Respondents

Religion of the respondents		
Categories	**Frequency**	**Percentage**
Hindu	157	98.12
Buddhist	3	1.88%
Muslim	0	0%
Christian	0	0%
Others	0	0%
Total	160	100%

Source: Field survey, 2024

A detailed analysis of the educational status among mothers reveals a rich tapestry of achievements. Notably, a significant majority, accounting for 57.5% of respondents, demonstrate literacy, reflecting a solid foundation in education. Furthermore, a substantial proportion, comprising 36.9% of mothers, have attained certifications equivalent to the School Leaving Certificate (SLC), signifying a notable educational milestone. Impressively, 5.6% of mothers are currently pursuing higher education, indicating a strong commitment to ongoing academic development. This diverse spectrum of educational accomplishments underscores the varied educational pathways and aspirations present among mothers within the surveyed population, portraying a blend of foundational literacy, formal certification, and aspirations for advanced learning.

Table 5: Educational status of mother or respondent

Educational status of mother		
Categories	**Frequency**	**Percentage**
Literate	92	57.5%
SLC	59	36.9%
Higher Education	9	5.6%
Total	160	100%

Source: Field survey, 2024

Examining the educational landscape among husbands reveals a multifaceted distribution. Notably, a majority, constituting 51.9%, demonstrate basic literacy skills. Additionally, a significant proportion, comprising 37.5%, possess certifications equivalent to the School Leaving Certificate (SLC), indicative of foundational

education. Impressively, 10.6% of husbands have pursued higher education, reflecting a dedication to advanced learning. This varied spectrum of educational attainment underscores the diverse academic backgrounds present among husbands within the surveyed cohort, showcasing a blend of foundational literacy, formal certification, and higher education achievements.

Table 6: Educational level of Husband

Education level of Husband		
Categories	**Frequency**	**Percentage**
Literate	83	51.9%
SLC	60	37.5%
Higher Education	17	10.6%
Total	160	100%

Source: Field survey, 2024

A comprehensive examination of family structures within the surveyed population reveals intriguing insights. The data illustrates that the prevailing model, embraced by 81.3% of households, is characterized by joint familial arrangements. Conversely, 13.8% of households opt for nuclear family setups, representing a notable but comparatively smaller portion. Additionally, 5% of households exhibit a mixed structure, indicating a blend of familial dynamics within a single household. This diversity underscores the complex nature of familial arrangements observed within the research cohort.

Table 7: Respondent type of Family

Type of Family of the respondent		
Categories	**Frequency**	**Percentage**
Joint	130	81.3%
Nuclear	22	13.8%
Mixed	8	5.0%
Total	160	100%

Source: Field survey, 2024

The study findings shed light on the diversity of family sizes within the surveyed population. Specifically, 11.3% of families are characterized by a smaller size, with less than 3 members. In contrast, 33.8% of families have a moderate size, ranging

between 3 to 5 members. Interestingly, a significant majority, comprising 55% of the families, have larger households with more than 5 members. This distribution underscores the varied family structures observed within the study cohort.

Table 8: Total Number of Family Member

Total No. of Family Member		
Categories	**Frequency**	**Percentage**
Below 3 members	18	11.3%
3-5 Members	54	33.8%
More than 5 members	88	55%
Total	160	100%

Source: Field survey, 2024

The analysis of mothers' ages at the birth of their first child demonstrates a notable trend, with a significant majority, comprising 84.4%, falling within the age range of 15 to 19 years. Meanwhile, a minority, constituting 15.6%, are reported to be below the age of 15 at the time of their first childbirth. This distribution highlights the prevalence of relatively young maternal ages within the surveyed population, suggesting a noteworthy demographic pattern.

Table 9: Age of mother at birth of first child

Age of mother at birth of first child		
Categories	**Frequency**	**Percentage**
Below 15 years	25	15.6%
15-19 Years	135	84.4%
Total	160	100%

Source: Field survey, 2024

Regarding occupation, the data illustrates that agriculture constitutes the primary engagement for a significant majority of respondents, with 90% involved in this sector. Furthermore, 4.4% are dedicated to various enterprises, while 3.8% pursue entrepreneurial endeavors. Additionally, a minor percentage, comprising 0.6%, is employed in the private sector, whereas 1.3% rely on remittance-based employment as their primary source of income.

Table 10: Occupation of mother (Respondent)

Occupation of mother (Respondent)		
Categories	**Frequency**	**Percentage**
Agriculture	144	90%
Enterprises	7	4.4%
Business	6	3.8%
Private Job	1	0.6%
Remittance	2	1.3%
Total	160	100%

Source: Field survey, 2024

The distribution of husbands' occupations presents a diverse spectrum, with a notable 38.8% engaged in agricultural activities, followed by 33.8% involved in remittance-based employment. Furthermore, 19.4% are employed within the private sector, while 3.1% pursue entrepreneurial ventures, and a minor 1.9% are employed in government services, reflecting the occupational diversity within the surveyed population.

Table 11: Occupation status of Husband

Occupation status of Husband		
Categories	**Frequency**	**Percentage**
Agriculture	62	38.8%
Enterprises	5	3.1%
Business	5	3.1%
Private Job	31	19.4%
Remittance	54	33.8%
Government Service	3	1.9%
Total	160	100%

Source: Field survey, 2024

The data elucidates that most households, accounting for 86.3%, maintain a monthly income below fifty thousand. Moreover, 11.2% of households are situated within the fifty to ninety thousand income brackets; while a mere 2.5% enjoy incomes surpassing ninety thousand, underscoring the distribution of income levels within the surveyed population.

Table 12: Average Family monthly income

Average Family monthly income		
Categories	**Frequency**	**Percentage**
<50,000	138	86.3%
50,000 – 90 ,000	18	11.2%
>90,000	4	2.5%
Total	160	100%

Source: Field survey, 2024

The findings reveal that a significant portion of participants, totaling 63.1%, possess land parcels ranging from 1 to 5 katta. Furthermore, 20% of respondents report ownership of land spanning 6 to 10 katta, while 11.3% indicate possession of 11 to 20 katta. Notably, a minority, comprising 5.6% of participants, claim ownership of plots exceeding 1 bigha.

Table 13: Own field Area of the Household

Own Filed Areas of Household		
Categories	**Frequency**	**Percentage**
1-5 Katta	101	63.1%
6-10 Katta	32	20%
11-20 Katta	18	11.3%
More than 1 Bigha	9	5.6%
Total	160	100%

Source: Field survey, 2024

4.2 Household Food Insecurity

The study findings shed light on a significant trend pertaining to household food security, revealing a substantial majority of respondents (76.3%) grappling with food insecurity. In stark contrast, only a relatively modest proportion of participants (23.7%) indicate the presence of household food security within their respective households. The significant difference highlights the prevalent challenges many surveyed individuals face in accessing essential food resources. This underscores the urgent need for comprehensive strategies to address food insecurity's root causes. Enhancing economic opportunities, improving access to nutritious food, and strengthening social safety nets are crucial steps to mitigate food insecurity's impact on household well-being and community resilience.

Table 14: **Total Household Food Insecurity Access Status**

Household Food Security Status	Frequency	Percentage
Food Security	38	23.7%
Food Insecurity	122	76.3%
Total	160	100%

Source: Field survey, 2024

A study showed that 3.1% of respondents admitted to occasional indulgence in cigarette smoking, while an overwhelming 96.9% abstained from this habit. Similarly, a modest 1.9% acknowledged consuming alcohol, contrasting sharply with the majority (98.1%) who abstained from alcohol consumption.

When it comes to dietary preferences, rice and chapati emerge as the culinary protagonists, jointly commanding the plates of 89.4% of respondents. Notably, 8.8% of participants identified as vegetarians. Delving into vegetable consumption patterns, 10.6% partake in vegetables 1-3 days a week, 41.9% opt for a 3–5-day schedule, and a health-conscious 47.5% include vegetables in their daily meals.

Fruit consumption paints a diverse picture, with 87.5% incorporating fruits 1-3 days a week, 12.5% favoring a 3–5-day frequency, and none committing to a daily fruit regimen. Among fruit consumers, the majority (93.8%) opt for a once-a-day serving, while 5% embrace two servings daily, and a minimal 1.3% indulge thrice a day.

The prevalence of junk or processed food consumption stands notably high at 98.1%, leaving only a fractional percentage abstaining from such dietary choices. Among those who indulge, 11.87% consume processed foods daily, 34.4% opt for an alternate-day approach, another 34.4% limit intake to once a week, 13.1% partake twice a week, and a health-conscious 4.4% reserve these indulgences for once a month. These findings shed light on the intricate tapestry of dietary habits among the surveyed respondents.

4.3 Dietary Habits

In the study's examination, it was revealed that a marginal 3.1% of respondents disclosed occasional participation in cigarette smoking, while an overwhelming majority of 96.9% refrained from such behavior. This substantial contrast underscores a prevalent adherence to non-smoking practices among the surveyed population. Such

findings illuminate a commendable commitment to maintaining healthy habits and underscore the potential success of anti-smoking campaigns and public health initiatives. Furthermore, they emphasize the importance of continued efforts to educate and promote healthier lifestyle choices within the community, ultimately contributing to enhanced well-being and reduced risks associated with tobacco use.

Table 15: Smoking habits

Dietary Variables	Frequency	Percentage
Have You Ever Smoke Cigarettes		
Yes	5	3.1%
No	155	96.9%
Total	160	100%

Source: Field survey, 2024

The study findings revealed a notable contrast in alcohol consumption patterns among the surveyed population, with a modest 1.9% of respondents admitting to consuming alcohol, while a substantial majority, constituting 98.1%, abstained from such behavior. This disparity underscores a prevailing trend of alcohol abstinence within the community, highlighting a strong adherence to non-drinking practices among most participants. Such insights underscore the importance of promoting and sustaining public health initiatives aimed at discouraging alcohol consumption and fostering healthier lifestyle choices. Additionally, they emphasize the need for continued efforts to raise awareness about the potential risks associated with alcohol use and to promote supportive environments conducive to making informed decisions regarding alcohol consumption.

Table 16: Alcohol Drinking Habits

Dietary Variables	Frequency	Percentage
Have you ever drunk Alcohol		
Yes	3	1.9%
No	157	98.1%
Total	160	100%

Source: Field survey, 2024

Regarding dietary preferences, table 17 indicates a prevalent culinary inclination towards rice and chapati, collectively dominating the dietary choices of 89.4% of respondents. This significant majority underscores the enduring popularity and widespread consumption of these staple food items within the surveyed population.

Such insights illuminate the central role that rice and chapati play in shaping dietary habits and preferences, reflecting cultural traditions and culinary preferences deeply rooted within the community. Additionally, they underscore the importance of understanding and catering to these dietary preferences in the context of promoting nutritional well-being and addressing food security concerns within the community.

Table 17: Regular diet at home

Dietary Variables	Frequency	Percentage
What is your Main Diet at home		
Rice	143	89.4%
Chapati	143	89.4%
Others	0	0

Source: Field survey, 2024

A noteworthy aspect of the table 18 findings highlights that 8.8% of participants self-identified as adhering to a vegetarian dietary preference. Further exploration into vegetable consumption patterns unveils that 10.6% of respondents incorporate vegetables into their meals on a weekly basis, specifically consuming them 1-3 days per week. Additionally, a significant proportion of 41.9% adopt a moderately frequent vegetable consumption regimen, incorporating them into their diet 3-5 days a week. Notably, a health-conscious majority of 47.5% prioritize vegetable intake by including them in their daily meals. These findings underscore a spectrum of dietary practices among the surveyed population, showcasing varying levels of commitment to vegetable consumption and reflecting individual preferences and health-conscious choices.

Table 18: Vegetarian status of the respondent

Dietary Variables	Frequency	Percentage
Vegetarian Status		
Yes	14	8.7%
No	146	91.3%
Total	160	100%
In a typical week, how many day days do you eat vegetables		
1-3 Days	17	10.6%
3-5 Days	67	41.9%
All 7 days	76	47.5%
Total	160	100%

Source: Field survey, 2024

The study findings offer a nuanced perspective on fruit consumption patterns, depicting a varied landscape within the surveyed population. Specifically, 87.5% of respondents incorporate fruits into their diet on a somewhat intermittent basis, consuming them 1-3 days per week. A smaller yet notable proportion, comprising 12.5% of participants, demonstrates a slightly higher frequency by including fruits in their diet 3-5 days a week. Interestingly, none of the participants adhered to a daily fruit consumption regimen, indicating a lack of consistent daily intake within the surveyed cohort.

Delving deeper into fruit consumption habits among participants, the data reveals a range of serving frequencies. Among fruit consumers, the majority, accounting for 93.8%, opt for a once-a-day serving, demonstrating a prevalent preference for incorporating fruits into one meal per day. In contrast, a minority of 5% of respondents embrace two servings of fruits daily, showcasing a commitment to a more frequent fruit intake routine. Additionally, a minimal 1.3% of participants indulge in fruit consumption thrice a day, reflecting a select few individuals who prioritize multiple fruit servings throughout the day. These findings underscore the diverse approaches to fruit consumption among the surveyed population, reflecting individual dietary preferences and habits regarding fruit intake.

Table 19: Fruits consumption status of the respondents

Dietary Variables	**Frequency**	**Percentage**
In a week, how many days do you eat Fruits		
1-3 Days	140	87.5%
3-5 Days	20	12.5%
All 7 days	0	0%
Total	160	100%
Times of Serving Fruits		
Once a day	150	93.8%
Twice a day	8	5.0%
Thrice a day	2	1.3%
Total	160	100%

Source: Field survey, 2024

The study findings reveal a strikingly high prevalence of junk or processed food consumption within the surveyed population, with a substantial 98.1% of respondents acknowledging indulgence in such dietary choices. This prevalence indicates a widespread acceptance and incorporation of processed foods into the dietary habits of

the majority of participants, leaving only a marginal percentage abstaining from such dietary choices.

Further examination into the consumption patterns among those who indulge in processed foods unveils a diverse range of frequencies. Notably, 11.87% of respondents adopt a daily consumption pattern, indicating a consistent inclusion of processed foods in their daily diet. Additionally, a significant portion, comprising 34.3% of participants, opt for an alternate-day approach, alternating between indulgence and moderation in their consumption of processed foods. Similarly, another 34.3% of respondents limit their intake to once a week, demonstrating a conscious effort to moderate their consumption of processed foods and maintain a balanced diet. Furthermore, 13.1% of participants partake in processed foods twice a week, suggesting a somewhat more frequent indulgence in such dietary choices. Notably, a health-conscious subset of 6.25% of respondents reserve their indulgences in processed foods for once a month, reflecting a deliberate effort to minimize their consumption of these less nutritious food options.

These findings provide valuable insights into the intricate tapestry of dietary habits prevalent among the surveyed respondents. They highlight the diverse array of choices and consumption patterns observed within the community, shedding light on the complex interplay of factors influencing dietary preferences and behaviors.

Table 20: Consumption of Processed foods

Dietary Variables	**Frequency**	**Percentage**
Consumption of Processed Food		
Yes	157	98.1
No	3	1.9
Total	160	100%
How often		
Daily	19	11.87%
Alternative day	55	34.3%
Once a Week	55	34.3%
Twice a week	21	13.1%
Once a Month	10	6.25%
Total	160	100%

Source: Field survey, 2024

Chapter V

Summary of Findings, Conclusion and Recommendations

5.1 Summary of the Findings

The study findings reveal significant trends in the demographic characteristics of the participants. A vast majority, 91.2%, are aged between 15 and 19, indicating a predominant youth presence. Additionally, 5.6% are under 15, and 3.1% are over 20, highlighting a diverse age range from early adolescence to early adulthood. Marital age trends show that 70.6% married between 15 and 19 years, 28.7% before 15, and only 0.6% after 20, indicating early marriage is common. The ethnic distribution is diverse, with 55% identifying as Janajati, 27.6% as Brahmin and Chhetri, 16.3% as Dalit, and 1.3% from other groups. Religion-wise, Hinduism is predominant at 98.12%, with Buddhism at 1.88%.

Educationally, 57.5% of mothers are literate, 36.9% have School Leaving Certificates, and 5.6% are pursuing higher education. For husbands, 51.9% are literate, 37.5% have SLCs, and 10.6% have higher education. Family structures show that 81.3% live in joint families, 13.8% in nuclear families, and 5% in mixed arrangements. Regarding family size, 11.3% have less than 3 members, 33.8% have 3-5 members, and 55% have more than 5 members. Most mothers (84.4%) had their first child between 15 and 19, with 15.6% below 15. Occupationally, 90% of mothers are in agriculture, 4.4% in enterprises, 3.8% in entrepreneurship, 0.6% in the private sector, and 1.3% rely on remittances. For husbands, 38.8% work in agriculture, 33.8% rely on remittances, 19.4% are in the private sector, 3.1% are entrepreneurs, and 1.9% are in government services.

Income distribution shows 86.3% of households earn below fifty thousand monthly, 11.2% earn fifty to ninety thousand, and 2.5% earn above ninety thousand. Land ownership varies, with 63.1% owning 1-5 katta, 20% owning 6-10 katta, 11.3% owning 11-20 katta, and 5.6% owning over 1 bigha. Food security analysis indicates that 76.3% of households face food insecurity, while 23.7% are food secure. Smoking and alcohol consumption are low, with 3.1% smoking and 1.9% consuming alcohol. Dietary habits show that 89.4% primarily consume rice and chapati, 8.8% are vegetarians, and vegetable consumption varies, with 10.6% eating vegetables 1-3 days a week, 41.9% eating them 3-5 days, and 47.5% daily. Fruit consumption is less

frequent, with 87.5% eating fruits 1-3 days a week and 12.5% eating them 3-5 days a week, with most having one serving a day. Junk food consumption is high, with 98.1% indulging, and varying frequencies from daily to once a month. These findings highlight diverse dietary habits and health behaviors within the community.

5.2 Discussion of the Findings

The study revealed a noteworthy trend in household food security, with a substantial majority of respondents (76.3%) grappling with food insecurity. In contrast, a relatively modest percentage of respondents (23.1%) report enjoying a state of household food security. This discrepancy underscores the prevalent challenges faced by a significant portion of the surveyed population in securing consistent and reliable access to food resources. However, previous study conducted in Bajhang Nepal, 54% of the households were food insecure, and over half (53%) of the mothers had low dietary diversity. Food insecurity status (mild food insecurity AOR = 10.12, 95% CI = 4.21–24.34; moderate food insecurity AOR = 8.17, 95% CI = 3.24–20.59, and severe food insecurity AOR = 10.56, 95% CI = 3.92–28.43) were associated with higher odds of dietary monotony. Likewise, participants with lower dietary diversity were 8.5 times more likely to be food insecure than those with higher dietary diversity (AOR = 8.48, 95% CI = 3.76–19.14) (Singh et al., 2020). Our estimates are comparable to the findings from the 2016 NDHS, a nationally representative survey, where 53.2% of households in hilly regions of Nepal were food insecure, and 58% of mothers with children aged 6–23 months had an unacceptable level of dietary diversity (Bista et al., (2020).

A comprehensive study conducted in Chichila Rural Municipality, Sankhuwasabha district, involving 196 participants, provided an in-depth analysis of dietary habits and anthropometric measurements, utilizing WHO criteria for assessment. This study uncovered significant variations in dietary diversity linked to factors such as geographical location, meal skipping, type of cooking fuel, snack consumption, and water purification practices. Notably, the findings highlighted a low intake of pulses, green leafy vegetables, and other vegetables among the participants, while there was a regular consumption of tea/coffee, cold drinks, and fast food. The anthropometric analysis revealed that 9.2% of females were underweight, 34.2% were overweight or obese, and 56.6% fell within the normal BMI range (Niroula, 2024).

In the current study, smoking and alcohol consumption were minimal, with only 3.1% and 1.9% of participants engaging in these behaviors, respectively. Dietary habits predominantly consisted of rice and chapati, consumed by 89.4% of respondents. Vegetarianism was reported by 8.8% of participants. Vegetable consumption varied, with 10.6% consuming vegetables 1-3 days a week, 41.9% eating those 3-5 days a week, and 47.5% incorporating them into their daily diet. Fruit consumption was less frequent, with 87.5% eating fruits 1-3 days a week and 12.5% 3-5 days a week, with most participants having one serving per day. Junk food consumption was notably high, with 98.1% indulging in it at varying frequencies, from daily to once a month.

Data from the 2016 Nepal Demographic Health Survey, which included 12,862 women aged 15-49, revealed significant household food insecurity, with 12% of the participants being Dalit. The analysis indicated that 56% of all women and 76% of Dalit women experienced food insecurity. Logistic regression showed a strong association between ethnicity and food insecurity, with Dalit women being particularly vulnerable even after adjusting for various factors (Pandey & Fusaro, 2020).

Another relevant study conducted in the squatter settlement of Pokhara Metropolitan surveyed 426 reproductive-age women (15-49 years) using a multistage sampling method. This study used the Household Food Insecurity Access Scale and BMI calculations to assess food insecurity and nutritional status. The results indicated a high prevalence of household food insecurity (65%), with 38.1% of women being overweight and 13.6% underweight. Significant correlations were found between factors such as education, occupation, and household food insecurity with BMI (Paudel et al., 2023).

Contrasting these findings with the current study, it is evident that food insecurity remains a critical issue, with 76.3% of households experiencing food insecurity and only 23.7% being food secure. This highlights the pervasive nature of food insecurity and its impact on nutritional status within various communities, underscoring the need for targeted interventions to address these disparities

Previous studies from India and Bangladesh also report high food insecurity and poor dietary diversity among lactating mothers and/or women of reproductive age (Chyne et al., 2017). In contrast, our findings are comparatively higher than the estimates from the 2016 Nepal National Micronutrient Status Survey, where only 38.6% of the households in the hilly region experienced food insecurity (MOHP, 2018).

The study paints a revealing portrait of dietary habits among the surveyed population. The low rates of cigarette smoking and alcohol consumption suggest a positive trend towards healthier lifestyles. The prevalence of rice and chapati as culinary staples reflects cultural norms, while the significant portion of vegetarians indicates evolving dietary preferences.

The inclusion of vegetables in daily meals showcases a commendable effort towards balanced nutrition. However, the lack of daily fruit consumption reveals a potential area for improvement in achieving a diverse diet.

The high prevalence of junk or processed food consumption underscores the need for targeted interventions to promote healthier eating habits. By addressing these dietary patterns, policymakers and health advocates can work towards fostering a culture of wellness and better nutrition within the community. The Previous study conducted in selected VDC of Nine district in Nepal show that most women in Mountain consumed pulses/legumes thrice a week. In Terai, most women consumed vegetables thrice a week. In all three ecological regions, most women consumed meat and meat products and fruits once a week. About thirty percent of women consumed milk and milk products once a day in all three ecological regions. The non-use of iodized salt by Terai women was the highest (5.3 %, n = 303). In all the ecological regions, cereals and vegetables were produced in the majority of the participants' households in comparison to fruits, poultry, and goat/sheep. (Bhandari et al., 2016).

5.2 Conclusion

The study effectively addressed its objectives, providing a comprehensive overview of the socio-demographic profile, household food intake patterns, and nutritional status of teenage mothers with children under five in the study area. The demographic analysis revealed that a significant majority (91.2%) of participants are aged 15-19, highlighting the prevalence of teenage mothers. Early marriage is notably common, with 70.6% marrying between 15-19 years and 28.7% before 15. The ethnic composition is diverse, with Janajati, Brahmin and Chhetri, and Dalit communities represented, and a predominant adherence to Hinduism.

Educationally, a majority of mothers (57.5%) are literate, with a substantial portion holding School Leaving Certificates (36.9%) and some pursuing higher education (5.6%). Husbands show similar educational trends. Most families (81.3%) live in joint households, and a significant number of mothers (84.4%) had their first child between the ages of 15-19.

In examining household food intake patterns, the study found a high prevalence of rice and chapati consumption (89.4%), moderate vegetable intake, and a high rate of junk food consumption (98.1%). Fruit consumption is less frequent, with most participants consuming fruits 1-3 days a week. The findings underscore the need for improved dietary diversity and healthier eating habits.

Nutritionally, the study highlighted that 76.3% of households face food insecurity, with low smoking (3.1%) and alcohol consumption (1.9%) rates. A significant portion of mothers work in agriculture (90%), while husbands have more varied occupations. Income levels are predominantly low, with 86.3% earning below fifty thousand monthly, and land ownership varies widely.

Overall, the study emphasizes the need for comprehensive strategies to address food insecurity, enhance educational opportunities, and promote healthier dietary practices among teenage mothers in the study area.

5.3 Recommendation

5.3.1 General Recommendation

To address the identified challenges of food insecurity and unhealthy dietary habits, it is recommended to implement comprehensive community-based interventions

focused on improving access to nutritious foods, enhancing economic opportunities, and raising awareness about healthy eating practices. Initiatives should include:

Develop and support local agricultural projects and small businesses to increase household income and food security. Conduct workshops and campaigns to educate the community about the importance of balanced diets, including the benefits of fruits and vegetables and the risks associated with junk food. Establish community gardens, farmers' markets, and affordable food distribution systems to ensure consistent availability of fresh produce. Advocate for policies that provide social safety nets, such as food assistance programs and subsidies for healthy foods.

5.3.2 Recommendation for further study

Further research should focus on exploring the underlying factors contributing to food insecurity and poor dietary habits in greater detail. Specific areas for further study include:

Conduct longitudinal studies to monitor changes in food security and dietary habits over time and evaluate the effectiveness of implemented interventions. Investigate the cultural factors that influence dietary preferences and food choices within the community. Study the impact of educational programs on improving dietary habits and food security among different demographic groups. Assess the impact of local food environments on dietary choices, including the availability and affordability of healthy food options. Examine the correlation between food insecurity, dietary habits, and health outcomes such as obesity, diabetes, and other nutrition-related diseases.

These studies will provide deeper insights and guide the development of more targeted and effective strategies to combat food insecurity and promote healthier lifestyles.

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ANNEX

Nutritional Status Of Teenage Mothers In Shivraj Municipality Of Kapilvastu District

TRIBHUVAN UNIVERSITY

Central Department of Rural Development (CDRD)

मिति २०८०/ /

नमस्कार,

मेरो नाम शिसिर लामिछाने हो । म त्रिभुवन विश्वविद्यालय अर्न्तगत ग्रामिण विकास केन्द्रीय विभाग विषयमा अध्ययन गर्दैछु । म यहा पाच वर्षमुनिका बच्चा भएका किशोरी आमाहरुको खानेकुराको ढाँचा र सुरक्षित खानाको शिर्षकमा आफ्नो अध्ययनमा आएको हु । यो अध्ययन (M.A) डिग्रीलाई आंशिक रुपमा पुरा गर्न गरिएको हो ।

यस अध्ययनमा तपाईहरुको सहभागिता स्वोच्छिक हुनेछ । यदि तपाईले प्रश्नावली भर्दा कुनै पनि समयमा सहभागि नहुने बिचार गर्नुभयो भने त्यहि टुङ्गयाउन सक्नुहुने छ । तपाईले दिनुभएको जानकारी गोप्य राखिनेछ साथै यो प्रश्नावली केवल अनुसन्धानको लागि मात्र हेरिनेछ र तथ्यांकीय प्रयोगको लागी मात्र दिनुभएको जानकारी प्रयोग गरिनेछ ।

यदि तपाई यो अध्ययनमा ईच्छुक हुनुहुन्छ भने तपाईलाई यो अध्ययनमा सहभागी हुन आमन्त्रण गर्छु र केहि खानेकुराको ढांचा र सुरक्षित खाना सम्बन्धि केहि प्रश्नहरु गर्नेछु । यदि तपाई कुनै प्रश्नको उत्तरदिन ईच्छुक नभएको खण्डमा म अर्को प्रश्न तर्फ लाग्ने छु । यो प्रश्नावली भर्दा करिब १५ मिनेट समय लाग्ने छ । यदि तपाईलाई कुनै जिज्ञासा भएमा म खुसिका साथ जिज्ञासा मेटाउने प्रयास गर्नेछु । के तपाई सहभागि हुन चाहानुहुन्छ ?

१, छु ( ) २, छैन ( )

A. Socio- demographic status among teenage mothers having under-five years aged of children's.

१, उत्तरदाता को नाम ? ……..,

Name of Respondent?.....,

२. location (ठाँउ).

Shivaraj Municipality (Word No……..,)

३ Cast / Ethnicity of Respondent (उत्तरदाताको जात)

(a) Brahmin (ब्राहमण)☐ (b) Chhetri (क्षेत्री)☐ (c) Janjati (जनजाति) ☐

(d) Dalit (दलित) ☐ (e) अन्य☐

४. Age (हालको उमेर)

(a) 13-15☐(b) 16-20 ☐(c) 21-25 ☐

५. Age of Marriage (बिहे गर्दाको उमेर)

१३☐ १४ ☐१५ ☐ १६☐ १७ ☐ १८☐ १९ ☐

६. Age of Mother at birth of child (बच्चा जन्माउदा आमाको उमेर)

१३☐ १४ ☐ १५☐ १६☐ १७ ☐ १८ ☐ १९ ☐२० ☐

७. Education level of mother (आमाको शिक्षा)

(a) Literate ☐ (b) SLC ☐ (c) Higher education ☐

८. Education al level of husband (श्रीमानको शिक्षा)

(a)Literate ☐ (b) SLC ☐ (c) Higher education ☐

९.Type of family (परिवारको किसिम)

(a)Joint (संयूक्त) ☐ (b) Nuc lear family (एकल) ☐

१०.Total NO of family members (जम्मा परिवारको सँख्या)

(a) ≤1 ☐ (b) 2-5 ☐ (c) ≥5 ☐

११. Occupation of mother (आमाको पेशा)

(a), Agriculture, (कृषि) ☐ (b),Enterprises, (उद्योमि) ☐ (c),Business, (व्यापारी) ☐ (D)Govt. job , (सरकारीजागिर) ☐ (e), Private job (प्राभेट जागिर,) ☐ (f) Remittance (रेमिटान्स) ☐

१२.Occupation of father(बुबाको पेशा)

(a) Agriculture (कृषि) ☐ (b) Enterprises, (उद्योमि) ☐ (c) Business, (व्यापारी) ☐ (D)Govt. job (सरकारी जागिर) ☐ (e) Private job (प्राभेट जागिर,) ☐ (f) Remittance (रेमिटान्स)

१३.Average monthly income of family (परिवारको मासिक औषत आय)

(a)≤50000 ☐ (b),50000-99000 ☐ (c),100000-199000 ☐ (d),200000-299000 ☐ (e) ≥300000. ☐

१४. तपाईको जग्गाको क्षेत्रफल कति छ ?

(a) १ देखि ५ कठ्ठा ☐ (b) ६देखि१० ☐ (c) ११ देखि २० ☐ (d)१ बिगाहा भन्दा बढि ☐

Food insecurity questionnaire

Standard structured tool

1. Did you worry that food at home would run out before your family got money to buy more? (तपाइको परिवारले खान खरिद गर्ने पैसा दिनु अघिनै खाना सिदिदा तपाइले कतिको चिन्ता गर्नु हुन्छ?)

   a. A Lot (धेरै) ☐ b. Sometime (कहिलेकाही) ☐ c. Never (कहिलेपनि गर्दिन) ☐

2. Did the food that your family bought run out, and you didn't have money to get more? (तपाइको परिवारमा खरिद गरेका खाद्ध्य वस्तुहरु सिदिएको छ तर धेरै किन्ने पैसा नभएको अवस्था कति आएको छ?)

   a. A Lot (धेरै) ☐ b. Sometime (कहिलेकाही) ☐ c. Never (छैन) ☐

3. Did your meals only include a few kinds of cheap foods because your family was running out of money to buy food? (यदि तपाइको परिवारमा खाना खरिद गर्ने पैसा सिद्धिएको हुदा तपाइको परिवारले कति सस्ता परिकारका खानेकुराहरु खाने गर्छन?)

   a. A Lot (धेरै) ☐ b. Sometime (ठिकठिकै) ☐ c. Never (छैन) ☐

4. How often were you not able to eat a balanced meal because your family didn't have enough money? (तपाइको परिवारमा अप्रर्याप्त पैसाका कारण तपाइले कति समयसम्म सन्तुलित भोजन खान सक्नु भएको छैन?)

   a. A Lot (धेरै) ☐ b. Sometime (कहिलेकाही) ☐ c. Never (छैन) ☐

5. Did you have to eat less because your family didn't have enough money to buy food? (तपाइको परिवारको आर्थिक अवस्था कमजोरका कारण तपाइले कत्तिको कम खाने गर्नुहुन्छ?)

   a. A Lot (धेरै) ☐ b. Sometime (ठिकठिकै) ☐ c. Never (छैन) ☐

6. Has the size of your meals been cut because your family didn't have enough money for food? (तपाइको परिवारको आर्थिक अवस्था कम्जोरका कारण तपाइले कति सम्म भोजनको आकार कटौती गर्नुहुन्छ?)

   a. A Lot (धेरै) ☐ b. Sometime (ठिकठिकै) ☐ c. Never (छैन)

7. Did you have to skip a meal because your family didn't have enough money for food? (तपाइको परिवारको आर्थिक अवस्था कम्जोरका कारण तपाइले कति खानको छाक छोड्नु भएको छ?)

   a. A Lot (धेरै)☐ b. Sometime (ठिकठिकै) ☐ c. Never (छैन) ☐

8. Were you hungry but didn't eat because your family didn't have enough food? (तपाइको परिवारमा खाना अप्रर्यप्त हुदा तपाइले कतिपटक भोकै भएर पनि खाना खानु भएको छैन?)

   a. A Lot (धेरै) ☐ b. Sometime (ठिकठिकै)☐ c. Never (छैन) ☐

9. Did you not eat for a whole day because your family didn't have enough money for food? (तपाइको परिवारमा अप्रर्यप्त पैसाका कारणले तपाई कतिपटक पूरा दिन भोकै वस्नु भएको छ?)

   a. A Lot (धेरै)☐ b. Sometime (कहिलेकाही)☐ c. Never (छैन) ☐

<u>Food habits</u>

1. What is your main diet at home (तपाईको घरको मुख्य खाना के हो)?

   a. Rice/Daal (दाल/ चावल) ☐ b. Wheat (गहुँ) ☐ c. Maize (मकै)☐

   d. Millet (कोदो) ☐ e. Buck wheat (बाग गहुँ)☐ f. Barley (जौ)☐

   g. Other (specific……)

2. Are you vegetarian/non vegetarian (के तपाई शाकाहारी/ मंन्शाहारी हुनुहुन्छ)?

   a. Vegetarian(भेज)☐ b. Eggitarian (अण्डा खाने) ☐ c. Non vegetarian (नोन भेज) ☐

3. If non vegetarian, how often do you eat meat (यदि तपाई मांशाहारीहो भने, कसरि मासु खानुहुन्छ)?

a. Daily (दैनिक) ☐ b. Alternately (बिराएर) ☐ c. Once a week (हप्तामा एक पटक ☐ d. Twice a week (हप्तामा दुइ पटक) ☐ e. Once a month(महिनामा एक पटक) ☐ f. twice a month (महिनामा दुइ पटक) ☐ g. Others (Specify…….)

4. In a typical week, on how many days do you eat vegetables (एक साधारण हप्तामा तपाईले कति दिन तरकारी खानुहुन्छ)? …… (Don't know)

5. How many servings of vegetables do you eat on one of those days (ती दिनहरु मध्ये, तपाईले कति भोजनमा तरकारी खानु भयो)?

a. Number of serving……. b. Don't know

6. In a typical week, on how many days do you eat fruits (एक साधारण हप्तामा तपाईले कति दिन फलफुल खानुहुन्छ)?

a. Days……. b. don't know

7. How many servings of fruits do you eat on one of those days (ति दिनहरु मध्येमा , तपाईले कति पटक फलफुल खानु भयको छ)?

a. Number of serving……. b. don't know

8. Do you consume junk food or processed food?(such as chips, kurkure, lays, noodles, salty cookies, biscuits, cakes)(के तपाईले जंक खाना वा प्रक्रिया खानाको उपभोग गर्नुहुन्छ जस्तै चाउचाउ, नूनिलो कुकीहरू, बिस्कुट, केक कुरकुरे, लेज आदि)?

a. Yes b.No ☐

9. If yes how often (यदि गर्नुहुन्छ भने, कति गर्नु हुन्छ)?

a. Daily (दैनिक) ☐ b. alternately (बिराएर) ☐ c. Once a week (हप्तामा एक पटक) ☐ d. Twice a week (हप्तामा दुइ पटक) ☐ e. Once a month (महिनामा एक पटक) ☐ f. twice a month (महिनामा दुइ पटक) ☐ g. Others (Specify…….)

10. Have you ever smoke cigarettes (के तपाईले कहिल्यै चुरोटको सेवन गर्नुभएको छ)? (If no go to 13)

a. Yes ☐ b.No ☐

11. Do you smoke cigarette within 30 days (के तपाईले ३० दिनभित्रमा चुरोटको सेवन गर्नुभएको छ)?

a. Yes ☐ b.No ☐

12. Do you smoke cigarette daily (के तपाईले प्रत्यक दिन चुरोट सेवन गर्नुहुन्छ)?

a. Yes ☐ b.No ☐

13. Have you ever drink alcohol (के तपाईले कहिल्यै मदिरा सेवन गर्नुहुन्छ)? (If no go to Dietary diversity)

a. Yes ☐ b.No ☐

14. Do you drink alcohol within 30 days (के तपाईले ३० दिन भित्रमा मदिरापान गर्नुभएको छ)?

a. Yes ☐ b.No ☐

15. Do you drink alcohol daily (के तपाईले प्रत्यक दिन मदिरापान गर्नुहुन्छ)?

a. Yes ☐ b.No ☐

समाप्त