

Food and Nutrition Literacy among Muslim Women in Bhairabi Rural Municipality of Dailekh

Received 05 August 2026

Dille Prasad Acharya

Acceptance 13 September 2026

acharyadilli2022@gmail.com

Published October 2026

Abstract

This research entitled Food and Nutrition Literacy among Muslim Women in Bhairabi Rural Municipality of Dailekh was carried out with the main objective to find out the knowledge of the Muslim women on food and nutritional health literacy. The study followed descriptive type of research design and the nature of the study was quantitative. All the Muslim women of Bhairabi Rural Municipality of Dailekh district were the population of the study among which 115 Muslim women of age 15-45 years were selected by census method. Structured interview schedule was the tool used to collect data.

The study found the respondents with five members in their families had inadequate food and nutritional health literacy. Respondents with four and more children had inadequate and 9.86 percent had adequate food and nutritional health literacy. Among the respondents who were illiterate, 56.34 percent have inadequate. Among the respondents who were literate, 43.66 percent have inadequate and 23.94 percent had adequate food and nutritional health literacy. The study found that 42.25 percent of the respondents who were laborers had inadequate food and nutritional health literacy.

Key Words : Medical, Association, Functional, Nutrition, Literacy Status

Introduction

Nutrition is the intake of food, considered in relation to the body dietary needs. Good nutrition an adequate, well balanced diet combined with regular physical activity is a cornerstone of good health. Poor nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity. Nutrition includes food intake, absorption, assimilation, biosynthesis, catabolism, and excretion. The diet of an organism is what it eat which is largely determined by the availability and palatability of foods. For humans, a healthy diet includes preparation of food and storage methods that preserve nutrients from oxidation, heat leaching, and that reduce risk of food-borne illness. In humans, an unhealthy diet can cause deficiency-related diseases such as blindness, anemia, scurvy, preterm birth, stillbirth and cretinism, or nutrient excess health-threatening conditions such as obesity and metabolic syndrome; and such common chronic systemic diseases as cardiovascular disease, diabetes, and osteoporosis. Under-nutrition can lead to wasting in acute cases, and the stunting of Marasmus in chronic cases of malnutrition (Whitney and Rolfes, 2013).

Health literacy is defined as the degree to which individuals obtain, process, and understand basic health information and services to make informed health decisions. Health literacy is a stronger predictor of health than age, income, employment, education, and race. Although the field has grown during the past decade, most health literacy research does not explicitly focus on food or nutrition, and dietetics practitioners often remain unaware of patients' health literacy level (Abbot, 1997).

The nutritional health literacy are of three types (Nutbeam, 2000):

Basic/functional literacy: Sufficient basic skills in reading and writing to be able to function effectively in everyday situations most common type that is used in public health studies and intervention programmes. Interactive health literacy: More advanced cognitive and literacy skills which, together with social skills, can be used to actively participate in everyday activities, to extract information and derive meaning from different forms of communication, and to apply new information to changing circumstances.

Critical health literacy: The ability to critically analyze information and use this information to influence, inspire and take action to create change in the community. The major problem of nutritional health is illiteracy. General literacy though significant is not sufficient to address the health related challenges of both the developed and developing world. And health, nutrition illiteracy may be contributing to the disease burden of poor communities and countries and reinforcing the already existing health and economic inequalities. Another factor contributing to nutritional health problem is lack of awareness which is caused due to illiteracy.

Nutrition literacy can be defined as the degree to which individuals have the capacity to obtain, process and understand basic nutrition information. Nutrition literacy can be classified into three levels of functional, interactive and critical nutrition literacy. Functional nutrition literacy (FNL) can be defined as the extent to which an individual experiences difficulty in understanding and comprehending nutrition messages. Interactive nutrition literacy (INL) can be defined as the cognitive and interpersonal skills needed to manage nutrition issues in partnership with professionals. Critical nutrition literacy (CNL) can be defined as ability to analyze nutrition information critically, increase awareness, and participate in action to address barriers (Addis, 2003).

Understanding the importance of nutrition and healthful dietary behaviors is critical to the prevention and management of each of these global health concerns. Data suggest that literacy is a key factor accounting for differences in dietary habits, with more-healthful eating practices positively associated with higher nutrition literacy skills. Consequently, the construct of nutrition literacy has been introduced to identify the degree to which individuals can obtain, process, and understand the basic nutrition information and services they need to make appropriate nutrition decisions. Although it has grown rapidly, the field of health literacy is still relatively new and discussions are ongoing about the construct and its measurement. No comprehensive measure exist that captures the full spectrum of skills and knowledge associated with health literacy. In addition, most health literacy research does not explicitly focus on food or nutrition, and dietetics practitioners often remain unaware of patients' health literacy level. It is therefore not surprising that non-validated measures of nutrition literacy exist (Carbone, and Zoellner, 2012).

Nutrition Sensitive Literacy (NSL) is a pilot project that focuses on the development a nutrition sensitive literacy package to foster the literacy skills of children and provide a platform to increase knowledge of nutrition and health. The project will be piloted in 21 schools in Sindhapalchowk and 9 schools in Bardiya districts in partnership with WFP, Ministry of Education (MoE) and its line agencies including Department of Education (DoE), Curriculum Development Center (CDC), National Center for Educational Development (NCED), and Food for Education Project (FFEP). The schools have already been identified by WFP with the help of the respective District Education Offices

(DEO). Open Learning Exchange (OLE) Nepal has entered into a new partnership with World Food Programme (WFP) Nepal office. The NSL pilot project implementation will be guided by the Technical Working Committee (TWC) and the test package built on the inception report, the pre and post-test drafts, the student workbook and teacher guide, and the training program. Orientation meeting for NSL TWC was held on November 15, 2016, for discussions about the progress of nutrition sensitive literacy program and the observation and data collection strategy (OLE, 2016).

Nepalese Muslims or Miyan people are people residing in Nepal who follow the religion of Islam. Their ancestors arrived in Nepal from different parts of South Asia and Tibet during different periods, and have since lived among the numerically dominant Hindus. About 97% of the Muslim community lives in the Terai region, while the other 3% are found mainly in the city of Kathmandu and the western hills. The community numbers 971,056, about 3.7% of the total population of Nepal. Districts with large Muslim population include Sarlahi 9.9%, Rautahat 17.2%, Bara 11.9%, and Parsa 17.3% in the central Terai bordering the state of Bihar, Kapilbastu 16.8% and Banke 16% in the western Terai and Siraha 7% and Sunsari 10% and Saptari 10% eastern Terai (Dastider, 2012).

Muslims have lived in Nepal for long period of time and have shared common historical experiences with the Hindu majority, and as such have developed a stronger identification with the Nepali state. However, the Terai Muslims, on the other hand, like other Terai communities, also continue to have strong ties across the border and receive cultural sustenance from the larger Muslim population of Uttar Pradesh and Bihar (Dastider, 2012).

Nutritional literacy measures the knowledge of the people on nutrition. The proper knowledge on nutrition literacy leads to proper nutritional habits. People who have adequate nutrition literacy can take up proper food habits which lead to good health. This study will be undertaken in Muslim community of Dailekh. The knowledge of the Muslim women on nutrition literacy will show their habit of food intake and the food behaviours used in Muslim community. Therefore, the topic of this study is stated as "Food and nutrition literacy among Muslim women in Bhairabi Rural Municipality of Dailekh district."

Objective

The main objective of this study is to assess the nutritional health literacy among Muslim women. However, the specific objectives of this study are to find out the situation of food and nutrition literacy among the Muslim women and to identify the food and nutrition consuming behaviour of the Muslim Women on the basis of literary status.

Review of Related Literature

Nutrition literacy refers to the set of abilities needed to understand the importance of good nutrition in maintaining health. The first purpose of nutrition literacy is to understand food so that people improve their ability to make informed decisions concerning which foods, and in what quantities, are required to maintain health. This also includes an awareness of which foods to avoid and why. Today's consumers benefit from an unprecedented diversity of food products. Information about food is also widely available to help ensure that diets are nutritious. Nutrition literacy is accordingly based on being informed on several issues that include (Aihara and Minai, 2011):

Food and health: People require energy and certain essential nutrients. Energy is provided by food that contains macronutrients, required in large amounts (protein, carbohydrate, fats). Essential nutrients are essential because the body cannot make them on its own and must obtain them from food. They include micro-nutrients such as vitamins, minerals, required in small amounts and certain amino acids and fatty acids. Foods also contain fiber and other components that are important for health. Nutrition literacy provides an understanding of the basic nutrient classes and explains their respective roles in maintaining health as well as their dietary sources. This is often commonly referred to as the “Food Pyramid” (Aihara and Minai, 2011).

Food and disease: Good food choices can help to prevent diseases, such as heart disease, certain cancers, diabetes, stroke and osteoporosis that are leading causes of death and disability in the United States. Many genetic, environmental, behavioral and cultural factors can affect health. Understanding the family history of disease and risk factors, such as body weight and fat distribution, blood pressure and blood cholesterol, can help people make more informed decisions about how to improve health. Nutrition literacy promotes good food choices and diets that lead to improving health while also reducing major risk factors for chronic diseases, such as obesity, high blood pressure and high blood cholesterol. By explaining how food is chemically converted into nutrients that can be absorbed and used by the body (digestion), it also promotes digestive system health (Aihara and Minai, 2011).

Understanding fast foods: Today’s lifestyles are very different from those of the past. The fast pace of modern lifestyles and the increase of single-parent households or families where both parents work have significantly changed food consumption habits. This has led to the emergence of convenient foods and important advances in food technology. There are more than 300,000 fast food outlets in the United States and fast food has now become common in the busy American lifestyle. A negative consequence has also been a significant increase in ready-to-eat foods of low nutritional value (junk food), because it is often high in calories, sodium, fat and cholesterol. Nutritional literacy provides information on fast foods and how they can be part of a balanced, healthy diet in small quantities (Aihara and Minai, 2011).

Understanding food supplements: Nutrition literacy also provides information on food supplements, such as vitamins, minerals, fiber and phytonutrients that may be required in some instances to meet nutritional needs. However, supplements do not supply the balance of important nutrients present in whole foods, and they can be harmful if taken regularly in excessive amounts. Daily vitamin and mineral supplements at or below the Recommended Dietary Allowances are considered safe but are rarely needed by people who eat the variety of foods recommended for example by the Food Pyramid. Supplements are usually needed only to meet specific nutrient requirements. For example, older people with little exposure to sunlight may need a vitamin D supplement. And pregnant women may benefit from folic acid and iron supplements (Aihara and Minai, 2011).

Eating disorders awareness: Nutrition literacy also includes providing information on eating disorders that include anorexia nervosa, bulimia, and binge eating disorder. They are illnesses with a biological basis that are influenced by emotional and cultural factors (Aihara and Minai, 2011). Nutrition literacy extends beyond the basic skills of reading, writing, speaking and listening to include skills required by a person to understand and interpret the often complex information about foods and

their nutrients. Nowadays, these skills must necessarily include information-processing literacy because nutrition information is now widely and increasingly distributed on the Internet (Hock, 2007).

The social and technological developments of the past decades have also significantly influenced the variety of food available and also our understanding of how food provides nutrients to the body. It is now agreed that one of the most fundamental principles of healthy nutrition is variety: the need to consume a wide range of different foods on a regular basis. Provided that a person is eating normal quantities of food, it is now recognized that a varied diet is likely to provide enough of all nutrients required by the body. In the last decades of the twentieth century, nutrition literacy was highly focused on concerns about dietary excesses of macronutrients such as fats and on the relationship between diet and specific diseases such as heart disease and cancer. This resulted in an overall perception that nutrition was the most effective way of maintaining health. However, many of the diseases associated with dietary excess are now understood to also have a major genetic component. Additionally, non-dietary lifestyle factors have been shown to be very important, leading to a realization that diets which may be helpful to some people may only be part of the solution for others. The prevailing view of good nutrition is now that each person should consume the most appropriate balance of nutrients for maintenance of individual good health, and this requires a higher level of literacy than in the past (Baker, 2006).

Gibbs and Novakofski (2012) Exploring nutrition literacy: Attention to assessment and the skills clients need conducted a study & this exploratory study examines nutrition literacy in two parts: 1) the level of attention to health literacy among nutrition professionals, and 2) the nutrition professional's perspective of skills/ knowledge needed to understand nutrition education. Part 1 included an online survey in which RD 206 participants recruited from three dietetic practice groups, identified use of health literacy assessments during client education. Most participants (79%) did not use a validated health literacy assessment. Part 2 utilized key informant interviews, administered by telephone. Content analysis revealed a significant theme among answers that the skills required for understanding diet education is dependent on the type of diet instruction provided, with diabetes frequently noted as a disease requiring greater knowledge and skills. Nutrition educators need an instrument to assess client nutrition literacy. Potential instruments should assess skills related to portion size estimation, macronutrient knowledge, interpretation of food labels, and food grouping.

Qamar (2013) conducted a study "Dietary behaviours and nutrition knowledge among South Asians." South Asians have 2-4 times higher risk of heart disease than Caucasians, African Americans, and Hispanics and India has the highest number of individuals with type 2 diabetes. National studies on South Asians chronic disease prevalence, nutrition knowledge, and dietary patterns are limited in the U.S. since all Asian subgroups are aggregated into the "Asian" category. These are particularly important for South Asians because their genetic predisposition and acculturation into the westernized lifestyle after immigration increases their risk for chronic diseases. The objectives of the study were to focus on various factors that influence dietary patterns and changes that increase the risk of diet-related diseases and general nutrition knowledge of South Asians living in the U.S. The data were collected using a survey questionnaire on dietary habits, nutrition knowledge and health of 105 South Asians (men=58, women=47). The mean age and Body Mass Index (BMI) of the participants was about 24

years and 22-25 kg/m² respectively. On average, respondents scored moderately on dietary habits scale. Participants reported an increase in weight after coming to the U.S. The top 3 barriers to eating healthy were “not a priority”, “busy lifestyle” and “healthy foods not tasting as good”. The top 3 motivators for healthy eating were “losing weight”, “prevention of diseases”, and “ability to find quick healthy recipes”. The nutrition knowledge was assessed by qualitative and quantitative measures. Approximately half of the participants reported avoiding junk, incorporating low fat, low sugar, more vegetables, fruits and increased intake of water. Furthermore, obese individuals scored better on dietary behavior scale as compared to their peers. The multivariate regression model was significant for Nutrition Behaviors of South Asians and 35.6% of the variance in nutrition behavior was explained by the variables in the model. Nutrition Behavior was significantly and positively related to use of food labels and BMI. With the current emphasis on cultural competency and providing culturally appropriate health services, results from this study can help to develop strategies to prevent diseases using nutritional strategies and to promote a general healthy life style among this educated South Asian group.

Sakhile and Shu-Jan (2014) conducted a study "Nutritional Knowledge, Attitude, and Practices among Pregnant and Lactating Women Living with HIV in the Manzini Region of Swaziland." The main objective of the study was to find out the nutritional knowledge, attitude and practice among pregnant and lactating women living with HIV in the Manzini Region of Swaziland. Interviews were conducted using a structured questionnaire to collect data from 324 subjects seeking healthcare from selected regional hospitals, health centres, and clinics in Manzini region. The results showed mean percentage scores of nutritional knowledge (67%), attitude (67%), and practices (51%) whereby educational level (2 percent), employment status (9 percent), income (8 percent), religion (7 percent), type of accommodation (6 percent), type of transport used when going for shopping (1 percent), and BMI (15 percent) were significantly associated with nutritional practices. Educational level was identified as a common predictor of nutritional knowledge, attitude, and practices, suggesting that both formal and informal education systems are potential factors influencing dietary practices among pregnant and lactating women living with HIV in Swaziland.

Shafiee and Mesgarani (2015) conducted a study "Assessment of Nutritional Status Among Adolescent Boys in an Urban Population of South India." This study investigates the mean intake of nutrient by 1083 adolescent males, age 10-19 years, in comparison to the RDA values suggested by ICMR for Indians. Food intakes, social class and knowledge about health education were obtained by questionnaires. According to the study, deficiency of calories and certain micronutrients is known to cause growth faltering in children and adolescents. The results of the study show that mean intake of calories varied from 2000 for pre-adolescent to 2300 for post-adolescence, the differences in intake between pre-adolescence to adolescence was statistically significant. Intake of calcium by boys during pre-adolescence and adolescence stage were lower by 20-30% as compared to the RDA, whereas the post-adolescent boys were found to consume a fair amount and met their RDAs. Intakes of iron and β -carotene were highly variable, the majority of the selected boys consumed much less than the RDAs. The differences in the intakes were statistically not significant. The study concluded that mean intakes of nutrients indicate that the majority of the selected boys consumed protein, calories, iron, calcium and

β carotene in three stages of adolescent markedly lower than the respective RDAs. Family type, birth order and SES correlated with nutrient intake among selected adolescent boys.

Sneve (2017) conducted a study “Public Health Nutrition.” The main aim study is first to investigate the coverage of the international standards on marketing of foods and non-alcoholic beverages towards children, and see if there are coherence with laws and regulations in Norway. Secondly, the aim is to investigate the Code on Marketing of Food and Non-Alcoholic Beverages to children, and to see if it covers the selected human rights principles; Participation, Accountability, Non-discrimination, Transparency and Rule of law. The study combines document analysis with qualitative interviews. Document analysis has been used to analyze the content of the human rights instruments, the Norwegian legislation and the Norwegian Code. Five interviews were conducted with key informants of three sectors of society; Authorities, Civil Society and Business sector. The business sector proved to be more protective in the interpretation of the guidelines. The authorities and civil society had resembling views and often a different view than the business sector. The results highlight the need for a more involving government in the regulation of the marketing of FNAB to children. In addition, an increased focus on children’s fundamental rights and the use of a human rights based approach, would be of great value, in developing future Codes and Guidelines.

Method

This study was descriptive and followed cross-sectional study design. The nature of the study is quantitative. Survey method was used to collect the data from the Muslim women. In Bhairabi Rural Municipality, there are about 61 Muslim households. The population of Muslim is 366 among which 162 are males and 204 are females (CBS, 2011). Among these, females of age 15-45 years were selected for the study. The number of women of age 15-45 year is 115 which were selected for this study by census method. If there were more than one woman of age 15-45 years of age in a single household, only one woman was selected who was first met. If the number of respondents didn’t reach 115, two women from a single household were selected. In this way, 115 women of age 15-45 years were selected for the study from 61 households.

Structured interview schedule was the main tool for data collection. The interview schedule was divided into two parts. The first part of the interview schedule was related to socio-demographic and economic features. The second part was related to nutrition consume behaviours of Muslim women. To make the questionnaire valid, it was administered as a trial test among 10 Muslim households in Birendranagar municipality of Surkhet district. On the basis of the feedback from the trial test and the suggestions obtained from the supervisor, the tools were restructured and were finalized. The food and nutritional health literacy of the Muslim women was tested by a set of questions on food and nutrition literacy status which consisted of 36 questions. The food and nutrition literacy was rated as inadequate literacy (0-16 score), marginal (17-22 score) and adequate (23-36 score).

After collecting the data through interview schedule, they were tabulated systematically in different tables using tally count. Then, the data were put in tables and figures and were analyzed using mathematical numerical. Finally, the data were interpreted comparing them with national and international data.

Analysis and Interpretation

Analysis and interpretation are important parts of the research process. Data analysis involves organizing, classifying, summarizing, and examining the collected data to identify meaningful patterns and findings

Food and Nutritional Health Literacy

For food and nutritional health literacy checkup of the respondents, 36 questions were administered among the Muslim Women. They were made to tick the correct answer of each question. The food and nutritional health literacy of the Muslim women was tested by a set of questionnaire on food and nutrition literacy status which consisted of 36 questions. The food and nutrition literacy was rated as inadequate literacy (0-16 score), marginal (17-22 score) and adequate (23-36 score). The result of the test is shown in the following table:

Table 1

Results of Food and Nutritional Literacy Level Situation

Questions	No. of Respondents	Literacy
0-16	71	Inadequate
17-22	23	Marginal
23-36	21	Adequate
Total	115	

Source : Field Survey, 2026

Table 1 shows that 71 Muslim women were able to answer 0-16 questions correctly whereas 23 Muslim women were able to answer 17-22 questions and 21 Muslim women were able to answer 23-36 questions correctly. The results show that the nutritional literacy among Muslim women was inadequate. There is need of more nutritional health and food literacy among the Muslim Women.

Age, Food and Nutritional Health Literacy

The food and the nutritional health literacy of the respondents on the basis of age is shown in the following table:

Table 2

Age and Food and Nutritional Health Literacy

Age Group	Food and Nutritional Health Literacy							
	Inadequate		Marginal		Adequate		Total	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
15-24 years	13	11.30	8	6.96	8	6.96	29	25.22
25-34 years	36	31.30	7	6.09	6	5.22	49	42.61
35-44 years	11	9.57	5	4.35	5	4.35	21	18.26
45 years and above	11	9.57	3	2.61	2	1.74	16	13.91
Total	71	61.74	23	20.00	21	18.26	115	100.00

Source : Field Survey, 2026

Table 2 shows that among the respondents of age 15-24 years, 11.3 percent have inadequate, 6.96 percent have marginal and 6.96 percent of the respondents had adequate food and nutritional health literacy. Similarly, among the respondents of age 25-34 years, 31.3 percent have inadequate,

6.09 percent have marginal and 5.22 percent of the respondents had adequate food and nutritional health literacy. Likewise, among the respondents of age 35-44 years, 9.57 percent have inadequate, 4.35 percent have marginal and 4.35 percent of the respondents had adequate food and nutritional health literacy. Finally, among the respondents of age 45 years and above of age, 9.57 percent have inadequate, 2.61 percent have marginal and 1.74 percent of the respondents had adequate food and nutritional health literacy.

It can be concluded from the above data that most of the respondents of age group 25-34 years have adequate knowledge on food and nutritional health literacy and the respondents of age group 45 years and above have inadequate food and nutritional health literacy.

Marital Status and Nutritional Health Literacy of the Women

The food and the nutritional health literacy of the respondents on the basis of marital status is shown in the following table:

Table 3

Marital Status and Food and Nutritional Health Literacy

Marital Status	Nutritional Health Literacy							
	Inadequate		Marginal		Adequate		Total	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Unmarried	13	11.30	10	8.70	11	9.57	34	29.57
Married	54	46.96	7	6.09	7	6.09	68	59.13
Single/Divorced	4	3.48	6	5.22	3	2.61	13	11.30
Total	71	61.74	23	20.00	21	18.26	115	100.00

Source : Field Survey, 2026

Table 3 shows that among the unmarried respondents, 11.3 percent have inadequate, 8.7 percent have marginal and 9.57 percent of the respondents had adequate food and nutritional health literacy. Similarly, among the married respondents, 46.96 percent have inadequate, 6.09 percent have marginal and the same 6.09 percent of the respondents had adequate food and nutritional health literacy. Finally, among the single/divorced respondents, 3.48 percent have inadequate, 5.22 percent have marginal and 2.61 percent of the respondents had adequate food and nutritional health literacy.

It can be concluded from the above data that most of the married respondents have adequate knowledge on food and nutritional health literacy and the respondents who are single/divorced have inadequate food and nutritional health literacy.

Food and Nutrition Consumer Behaviour

The various aspects of food and nutrition consumer behavior of the Muslim respondents in the study area are presented in different sub-sections below:

Breakfast

Breakfast is the first meal of a day, most often eaten in the early morning before undertaking the day's work. The word in English refers to breaking the fasting period of the prior night. There is a strong tendency for one or more "typical", or "traditional", breakfast menus to exist in most places, but the composition of this varies widely from place to place, and has varied over time, so that globally a very wide range of preparations and ingredients are now associated with breakfast.

The respondents in the study area were asked about the situation of their breakfast and the responses obtained from them are shown in the following table:

Table 4

Situation of Breakfast

Taking Breakfast	Inadequate		Marginal		Adequate		Total	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Every day	26	22.61	9	7.83	8	6.96	43	37.39
1-2 days a week	17	14.78	5	4.35	6	5.22	28	24.35
3-4 days a week	11	9.57	3	2.61	3	2.61	17	14.78
5-6 days a week	9	7.83	5	4.35	2	1.74	16	13.91
Never	8	6.96	1	0.87	2	1.74	11	9.57
Total	71	61.74	23	20.00	21	18.26	115	100.00

Source : Field Survey, 2026

Table 4 shows that among the respondents who had inadequate food and nutritional health literacy, 22.61 percent took breakfast daily, 14.78 percent took breakfast 1-2 days a week, 9.57 percent took breakfast 3-4 days a week, 7.83 percent took breakfast 5-6 days a week and 6.96 percent never took breakfast. Among the respondents who had marginal food and nutritional health literacy, 7.83 percent took breakfast daily, 4.35 percent took breakfast 1-2 days a week, 2.61 percent took breakfast 3-4 days a week, 4.35 percent took breakfast 5-6 days a week and 0.87 percent never took breakfast. Finally, among the respondents who had adequate food and nutritional health literacy, 6.96 percent took breakfast daily, 5.22 percent took breakfast 1-2 days a week, 2.61 percent took breakfast took breakfast 3-4 days a week, 1.74 percent took breakfast 5-6 days a week and the same 1.74 percent never took breakfast.

Breakfast is usually taken in the morning in almost all communities and all people in the world. In the study area too, most of the Muslim women took breakfast daily in the morning. Although more than half of the women were illiterate, their habit of taking breakfast was found to be appropriate. In the study area, mostly the women who had adequate and inadequate literacy took breakfast daily.

Consumption of Yogurt or Cheese

Milk and foods made from milk are the best sources of the mineral calcium. They also provide vitamin A, protein and phosphorus. Fortified milk has vitamin D added to it. The foods in this group are important because all of the nutrients work together to keep bones strong and healthy. It may be difficult to get enough calcium unless yogurt and cheese are included in diets. Some milk products like ice cream, cheese, whole milk and foods made from whole milk are high in fat. Low-fat or skim milk products, like low-fat yogurt, skim milk and low-fat cheeses are to be taken to keep the fat in diets down. Some people who have problems digesting milk products because of lactose (sugar) in milk. Today there are many lactose-free products to try.

The yogurt or cheese consumption behavior of the respondents in the study area is shown in the following table:

Table 5

Consumption of Yogurt or Cheese

Taking Yogurt or Cheese	Inadequate		Marginal		Adequate		Total	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Every day	3	2.61	2	1.74	6	5.22	11	9.57
1-2 days a week	10	8.70	2	1.74	5	4.35	17	14.78
3-4 days a week	7	6.09	4	3.48	5	4.35	16	13.91
5-6 days a week	14	12.17	5	4.35	3	2.61	22	19.13
Never	37	32.17	10	8.70	2	1.74	49	42.61
Total	71	61.74	23	20.00	21	18.26	115	100.00

Source : Field Survey, 2026

Table 5 shows that among the respondents who had inadequate food and nutritional health literacy, 2.61 percent took yogurt and cheese everyday, 8.7 percent took yogurt and cheese 1-2 days a week, 6.09 percent took yogurt and cheese 3-4 days a week, 12.17 percent took yogurt and cheese 5-6 days a week and 32.17 percent never took yogurt and cheese. Among the respondents who had marginal food and nutritional health literacy, 1.74 percent took yogurt and cheese daily, 1.74 percent took yogurt and cheese 1-2 days a week, 3.48 percent took yogurt and cheese 3-4 days a week, 4.35 percent took yogurt and cheese 5-6 days a week and 8.7 percent never took yogurt and cheese. Finally, among the respondents who had adequate food and nutritional health literacy, 5.22 percent took yogurt and cheese daily, 4.35 percent took yogurt and cheese 1-2 days a week, 4.35 percent took yogurt and cheese 3-4 days a week, 2.61 percent took yogurt and cheese 5-6 days a week and 1.74 percent never took yogurt and cheese. It can be concluded from the above data that a few of the women took yogurt or cheese daily. The yogurt or cheese consumption pattern of the Muslim women was found to be poor in the study area.

Consumption of Meat or Chicken

Meat can be part of a balanced diet contributing valuable nutrients that are beneficial to health. Meat and meat products contain important levels of protein, vitamins, minerals and micronutrients which are essential for growth and development. The meat or chicken consumption pattern of the respondents is presented in the table given below:

Table 6

Consumption of Meat or Chicken

Eating Meat or Chicken	Inadequate		Marginal		Adequate		Total	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Every day	1	0.87	1	0.87	1	0.87	3	2.61
1-2 days a week	31	26.96	11	9.57	7	6.09	49	42.61
3-4 days a week	23	20.00	4	3.48	5	4.35	32	27.83
5-6 days a week	10	8.70	5	4.35	6	5.22	21	18.26
Rarely	6	5.22	2	1.74	2	1.74	10	8.70
Total	71	61.74	23	20.00	21	18.26	115	100.00

Source : Field Survey, 2026

Table 6 shows that among the respondents who had inadequate food and nutritional health literacy, 0.87 percent took meat or chicken everyday, 26.96 percent took meat or chicken 1-2 days a week, 20 percent took meat or chicken 3-4 days a week, 8.7 percent took meat or chicken 5-6 days a week and 5.22 percent never took meat or chicken. Among the respondents who had marginal food and nutritional health literacy, 0.87 percent took meat or chicken daily, 9.57 percent took meat or chicken 1-2 days a week, 3.48 percent took meat or chicken 3-4 days a week, 4.35 percent took meat or chicken 5-6 days a week and 1.74 percent never took meat or chicken. Finally, among the respondents who had adequate food and nutritional health literacy, 0.87 percent took meat or chicken daily, 6.09 percent took meat or chicken 1-2 days a week, 4.35 percent took meat or chicken 3-4 days a week, 5.22 percent took meat or chicken 5-6 days a week and 1.74 percent never took meat or chicken.

It can be concluded from the above data that only a few of the Muslim women took meat or chicken daily. The meat and the chicken consumption pattern of the Muslim women was found to be satisfactory as most of the women took meat or chicken 1-2 days a week. The meat taking habit of the women was not so satisfactory. This is due to lack of nutritional literacy. Most of the women who had inadequate as well as adequate knowledge on food and nutritional health literacy took meat or chicken 1-2 days a week.

Storage of Foods

Food storage is the process in which both cooked and raw materials are stored in appropriate conditions for future use without any entry or multiplication of microorganisms. The food storage system of the respondents is presented in the following table:

Table 7

Storage of Foods

Storage of Foods	Inadequate		Marginal		Adequate		Total	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Refrigerator	3	2.61	4	3.48	12	10.43	19	16.52
Keep in the shelf	68	59.13	19	16.52	9	7.83	96	83.48
Total	71	61.74	23	20.00	21	18.26	115	100.00

Source : Field Survey, 2026

Table 7 shows that among the respondents who had inadequate food and nutritional health literacy, 2.61 percent stored the food in the refrigerator whereas 59.13 percent of the respondents stored food in the shelf. Likewise, among the respondents who had marginal food and nutritional health literacy, 3.48 percent stored the food in the refrigerator whereas 16.52 percent of the respondents stored food in the shelf. Finally, among the respondents who had adequate food and nutritional health literacy, 10.43 percent stored the food in the refrigerator whereas 7.83 percent of the respondents stored food in the shelf.

Food should be stored in a place where the foods are secure and safe from decay and diseases. The Muslim women were found to keep the foods in the safe place. Most of the women stored the foods in the shelves. They do not have enough knowledge on storing the foods in the refrigerator. This is due to lack of knowledge on nutritional literacy. Mostly the women who had adequate food and

nutritional health literacy stored food in the refrigerator whereas the women who ad inadequate food and nutritional health literacy stored food in the shelf.

Most Important Meal

Meal is very important for each and every people. Meals provide energy to the body and keeps the body healthy. All of the meals we take daily are important for in one way or the other. The most important meals for the respondents in the study area are shown in the table given below:

Table 8

Most Important Meal

Most Important Meal	Nutritional Health Literacy							
	Inadequate		Marginal		Adequate		Total	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Breakfast	2	1.74	6	5.56	5	4.35	13	11.30
Lunch	13	11.30	7	6.48	5	4.35	25	21.74
Dinner	22	19.13	5	4.63	6	5.22	33	28.70
Afternoon tea	10	8.70	3	2.78	3	2.61	16	13.91
All of the above	24	20.87	2	1.85	2	1.74	28	24.35
Total	71	61.74	23	21.30	21	18.26	115	100.00

Source : Field Survey, 2026

Table 8 shows that among the respondents who had inadequate food and nutritional health literacy, 1.74 percent said that the most important meal is breakfast, 11.3 percent said lunch, 19.13 percent said dinner, 8.7 percent said afternoon tea and 20.87 percent said breakfast, lunch, dinner and afternoon tea as most important meal. Similarly, among the respondents who had marginal food and nutritional health literacy, 5.56 percent said that the most important meal is breakfast, 6.48 percent said lunch, 4.63 percent said dinner, 2.78 percent said afternoon tea and 1.85 percent said breakfast, lunch, dinner and afternoon tea as most important meal. Finally, among the respondents who had adequate food and nutritional health literacy, 4.35 percent said that the most important meals are breakfast and lunch, 5.22 percent said dinner, 2.61 percent said afternoon tea and 1.74 percent said breakfast, lunch, dinner and afternoon tea as most important meal. It can be concluded from the above data that the most important meals for the Muslim women were dinner and lunch.

Conclusion

Nutrition-specific health literacy encompasses the skills and knowledge related to maintaining balanced, sustainable, and health promoting nutrition. The present study aims to ensure these competencies can be comprehensively measured so that their influence on eating behavior can be assessed. The results of this survey show the nutrition literacy of the Muslim women in Bhairabi Rural Municipality of Dailekh District. Nutritional knowledge is a predisposing factor for eating behaviors, even though voluntary behavior improvement requires motivation, ability as well as the opportunity to improve one's own behavior.

Muslim women begin to assume responsibility for their own food habits, health-related attitudes and behaviors. Planning an incisive nutritional intervention on a selected sample of the population requires identification of its nutritional problems and primary needs. Muslim women simultaneously experience a need for a personal sense of control over food choices, the desire to be accepted by peers,

and the desire to eat with the family to maintain family relationships. At present, nutrition information is increasingly distributed in different media sources. This necessitates the consumer needs for writing, speaking and listening skills to understand and interpret the complex information about nutrition, nutrients and alimentation. In the context of increasing nutrition literacy, individuals would likely have acquired preferences for how they would like nutrition information communicated to them. In the study, the Muslim women were found to have inadequate nutritional literacy as most of the respondents were not able to answer more than 16 questions correctly on nutritional literacy. In general, Muslim women were not able to value health more.

This study highlights important factors that researchers and practitioners need to consider in a nutrition literacy context. Health organizations, government and non-government organizations are working in the field of increasing nutritional health literacy among people of all age and all genders in different parts of the country. Still the Muslim women were found to have inadequate nutritional literacy. In conclusion, it is determined that Muslim women included in the study generally had a limited knowledge and consciousness about nutrition literacy.

References

- Abbott, R. (1997). Food and nutrition information: a study of sources, uses, and understanding. *British Food Journal*, vol. 99, no. 2, pp. 43-49. Retrieved from <http://www.emeraldinsight.com/doi/abs/10.1108/00070709710141414> on February 12, 2018.
- Addis, M. E. (2003). Men, masculinity, and the contexts of help seeking. *American Psychologist*, vol. 58, no. 1, pp. 5-14. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/12511111> on February 1, 2018.
- Aihara, Y., & Minai, J. (2011b). Barriers and catalysts of nutrition literacy among elderly Japanese people. *Health Promotion International*, vol. 26, no. 4, pp. 421-431. Retrieved from <https://academic.oup.com/heapro/article/26/4/421/1511111> on January 26, 2018.
- American Medical Association [AMA] (2012). *Health literacy program*. Retrieved from <http://www.ama-assn.org/ama/about-ama/ama-foundation/our-programs/public-health/health-literacy-program/partnerships.page> on February 2, 2018.
- Appleton, A. A. (2010). Promoting health literacy through the school nutrition environment. *Graduate Theses and Dissertations*. Retrieved from <http://lib.dr.iastate.edu/etd/11301> on February 2, 2018.
- Baker, D. W., Williams, M. V., Parker, R. M., Gazmararian, J. A., & Nurse, J. (1999). Development of a brief test to measure functional health literacy. *Patient education and counseling*, vol. 38, no. 1, pp. 33-42. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/10421111> on January 21, 2018.
- Blegen, A. (2011). *Nutrition literacy status of adolescent students in kampala*. Retrieved from https://oda.hioa.no/en/nutrition-literacy/mach_ndahura.pdf on February 2, 2018.
- Carbone, E. T., & Zoellner, J. M. (2011). Nutrition and Health Literacy: A Systematic Review to Inform Nutrition Research and Practice. *Journal of the American Academy of Nutrition and Dietetics*, Vol. 112, No. 2, pp. 254-65. Retrieved from <https://www.researchgate.net/publication/265111111> on February 6, 2018.
- Carbone, E. T., & Zoellner, J. M. (2011). Nutrition and health literacy: a systematic review to inform nutrition research and practice. *J Acad Nutr Diet*. 2012 Feb;112(2):254-65. doi:

- 10.1016/j.jada.2011.08.042. Epub 2012 Jan 25. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed> on January 21, 2018.
- Dalane, J. O. (2011). *Nutrition literacy*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed> on February 1, 2018.
- Dastider, M. (2012). *Understanding Nepal: Muslims in a plural society*. Retrieved from https://en.wikipedia.org/wiki/Nepalese_Muslims on February 9, 2018.
- Diamond, J. J. (2007). Development of a reliable and construct valid measure of nutritional literacy in adults. *Nutrition Journal*, Vol. 6, No. 5. Retrieved from <https://nutritionj.biomedcentral.com/articles> on February 2, 2018.
- Essa, J. S. (2011). Nutrition, Health, and Food Security Practices, Concerns, and Perceived Barriers of Latino Farm/ Industry Workers in Virginia. Retrieved from <https://vtechworks.lib.vt.edu/bitstream/handle/10919/34450/Thesis-Chapters.pdf;sequence=1> on March 12, 2018.
- FNP (2007). *Family nutrition programme*. USDA, University of Missouri. Retrieved from extension.missouri.edu/fnep/reports/fnp08AR.pdf on February 2, 2018.
- Gibbs, H., & Novakofski, K. C. (2012). Exploring nutrition literacy: Attention to assessment and the skills clients need. *Health*, Vol. 4, No. 3, pp. 120-124. Retrieved from <http://dx.doi.org/10.4236/health> on February 7, 2018.
- Hock, R. (2007). *The Extreme Searcher's Internet Handbook: A Guide for the Serious Searcher*. Medford, NJ: Information Today, Inc. Retrieved from <https://www.amazon.com/Extreme-Searchers-Internet-Handbook-Searcher> on February 1, 2018.
- Kjøllesdal, J. G. (2009). *Nutrition literacy*. Høgskolen i Akershus. Retrieved from www.oatext.com/Evaluation-instrument-of-nutrition-literacy-on-adults on January 25, 2018.
- National Assessment of Adult Literacy [NAAL] (2003). *Understanding the Health Literacy of America Results of the National Assessment of Adult Literacy*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC> on February 1, 2018.
- Neilson-Bowman, L. (2004) *Health literacy: A prescription to end confusion*. Institute of Medicine, National Academies Press, Washington DC. Retrieved from www.oatext.com/Evaluation-instrument-of-nutrition-literacy-on-adults on January 25, 2018.
- Nutbeam, D. (2000). Health literacy as a public health goal: A challenge for contemporary health education and communication strategies into the 21st century. *Health Promotion International*, Oxford, 15, 259 – 267. Retrieved from <https://statswiki.unece.org> on February 1, 2018.
- Open Learning Exchange [OLE] (2016). *Nutrition sensitive literacy (NSL) pilot project*. Retrieved from <http://www olenepal.org/updates/march-2017-2/> January 12, 2018.
- Qamar, Z. (2013). *Dietary Behaviors and Nutrition Knowledge among South Asians*. Retrieved from oaktrust.library.tamu.edu/bitstream/handle/QAMAR-THESIS.pdf on February 1, 2018.
- Sakhile, K. S., & Shu-Jan, J. L. (2014). Nutritional knowledge, attitude, and practices among pregnant and lactating women living with HIV in the Manzini region of Swaziland. *Journal of Health, Population and Nutrition*, Vol. 32, No. 2, pp. 261–269. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles> on February 7, 2015.

- Shafiee, S., Begum, K., & Mesgarani (2015). Assessment of nutritional status among adolescent boys in an urban population of South India. *Global Journal of Health Science*, Vol. 7, No. 3, pp. 335–344. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles> on February 7, 2018.
- Silk, K. J. et al. (2008). *Increasing nutrition literacy: Testing the effectiveness of print, website, and game modalities*. *Journal of Nutritional Education and Behaviour*, vol. 40, pp. 3-10. Retrieved from <https://books.google.com.np/books?isbn> on February 10, 2018.
- Sneve, J. H. (2017). *Public health nutrition*. Retrieved from https://oda.hioa.no/en/component/jcar/asset/dspace:14709/sneve_maeh2017.pdf on March, 21, 2018.
- Whitney, E., & Rolfes, S. R. (2013). *Understanding Nutrition (13thed.)*. Wadsworth, Cengage Learning, pp. 667. Retrieved from <https://en.wikipedia.org/wiki/Nutrition> on February 6, 2018.