

Knowledge and Practice of Iodized Salt Consumption among Household of Morang

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Abstract

Iodine is a necessary micronutrient, required for the synthesis of thyroid hormones, which is necessary for the normal growth and development of the body. Iodine Deficiency Disorders (IDD) is major public health issues that affect people of all ages. IDD affects around 2 billion individuals worldwide with approximately 50 million experiencing clinical symptoms. Iodine deficiency illness was once common in Nepal. The Government of Nepal has made several attempts to address IDD by fortifying salt with iodine, but the problem persists, particularly in Nepal's hilly and mountainous regions. Thus the objective of the study was to assess the level of knowledge and practice of iodized salt consumption among household of Sundarharaincha-12, Morang. A cross-sectional research study was used where respondents were selected by using non probability purposive sampling technique. Total 106 household was included in research study. A semi-structured questionnaire for data collec-

tion was used by interview method. Finding was analyzed by using SPSS version 16. The findings of the study showed that all of the respondents (100.0 %) had knowledge that iodine is an essential element needed for life. About three fourth of the respondents (74.5 %) regular used two child logo salt. Almost all respondents (95.3 %) added salt during cooking. Education and type of family of the respondents had association with the level of knowledge and ethnicity, education and income of the respondents had association with the level of practice of iodized salt consumption. The study was concluded as majority of the respondents had good knowledge while few of the respondents had poor knowledge on iodized salt consumption. However, their knowledge levels were not reflected in their practices as only more than two third of households had good practice while one third had poor practice of iodized salt consumption.

Keywords

Household, Iodine Deficiency Disorders, Iodized Salt.

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1 Introduction

Iodine is a trace element that can be found naturally in some foods, is added to some types of salt and can also be purchased as a nutritional supplement. The thyroid hormones, thyroxine (T₄) and triiodothyronine (T₃) require iodine to function properly. Thyroid hormones are essential determinants of metabolic activity because they govern numerous fundamental biochemical activities, such as protein synthesis and enzyme activity. According to most recent global estimates, 1.88 billion people are at risk of iodine deficiency with 241 million children having insufficient iodine intake. South-East Asia and Africa account for half of the children with insufficient iodine consumption [1]. Iodine deficiency still exists in 54 countries, according to the WHO [2]. Furthermore iodine deficiency condition is still vital problem in Nepal. Around 94.2 % of the Nepalese household are using with source of iodized salt in practice but only around 60 % household consumed adequately iodized salt [3]. Being sufficient knowledge and practice on intake of iodize salt for proper physiological functioning of body. However there is evidence that dietary iodine plays a crucial role in regulating thyroid function and an adequate physiological adaptation. Although deficient dietary iodine may leads to pathological alteration (deficiency of thyroid hormone) occur with a degree and duration of iodine deprivation [4]. Trumpff et al., argued that iodine supplementation from the first trimester to the end of pregnancy may decrease the risk of cognitive and psychomotor developmental delay in the fetus [5].

Food consumption and habits have a direct impact on one's health. Food habits that are dangerous and defective might cause health problems and clinical disorders. They are also necessary for healthy development of the skeleton and central nervous system in fetus and babies. Iodine's Recommended Dietary Allowances (RDAs) are as follows: 110 micrograms (mcg) from birth to 6 months, 130 mcg from 7 to 12 months, 90 mcg from 1 to 3 years, 90 mcg for children aged 4 to 8 years, 120 mcg for children aged 9 to 13 years, 150 mcg for children aged 14 to 18 years, 150 mcg for those aged [6] and up, 220 mcg during pregnancy and 290 mcg during lactation. Iodine deficiency is the most common single preventable cause of brain damage and mental retardation worldwide and it is estimated that one third of the world's population is deficient in iodine [7].

Many people around the world do not get enough iodine from their diet and iodine deficiency remains a major public health issue worldwide. Iodine deficiency affects over 30 % of the world's population. Iodine Deficiency Disorders (IDD) are a major public health issue that affect people of all

ages, with children and nursing mothers being the most vulnerable. IDD affects around 2 billion individuals worldwide with approximately 50 million experiencing clinical symptoms. Biban 5 because salt iodization has been proved to be an effective technique of reducing the prevalence of IDD, it is a recommended strategy for IDD control. Iodized salt is consumed by 88 % of the world's population and around 1.5 billion people worldwide live at a risk of IDD [8].

According to new study, iodine adds two kids logo salt is being given for iodine supplementation by the government and the use of enough iodized salt has reached 47.3 % of 2 rural households. The proportion of suitably iodized salt in two child logos is 95.6 %, loose crushed 33.3 %, grandular salt 7 %, phoda salt 22.5 % and other packet salt 38.7 %. In the Nepalese community, people store salt in an open plastic container or in open packet of phoda salt, which is not a good practice. For the most effective storage of salt, hardwood covered containers, glass covered containers and plastic packaging is recommended [9]. The government of Nepal began assessing iodine status in partnership with national and international organizations in 1965 and it has continued since that day. Various studies evident that iodize salt used (at least 15 ppm at the household level) increased from 55.2 % in 1998 to 77 % in 200, demonstrating the positive impact of Universal Salt Iodization (USI) in Nepal [10]. Although one-third of population not used properly so it is one of the world's highest rates of Iodine deficiency disorder. This paper highlights current data from the 2016 national micronutrient survey, which show that the salt iodization program is a success, but still potential obstacles that the program will face in the future [11]. Nepal is a hilly, landlocked country that is distant from the sea. The countries geographic location, along with considerable yearly rainfall, landslides etc. results in low soil iodine content. IDDs are particularly common as a result of these circumstances. In Nepal, IDD is a major source of micronutrient insufficiency as evidenced by most adult women in some remote mountainous area of Nepal have goiters and up to 10 % of the population has cretinism, the most severe type of IDD [12, 13]. Recent studies have revealed that, thyroid diseases affect 4.32 % of Nepal's population. However, females were more likely than males to have thyroid problems (2:1). People with thyroid abnormalities were diagnosed with subclinical hypothyroidism 72.41 % of the time, primary 3 hypothyroidism 13.7 % of the time and hyperthyroidism 13.7 % of the time [14]. Only 69 % of families in underdeveloped nations use iodized salt (Roy et al., 2016). Very little is currently known about knowledge and practice is emerging issue of household people of Nepal by World Bank's collection of

development indicators derived from officially recognized sources, iodized salt consumption in Nepal was reported at 94.2 % in 2017 but around 60 % household consumed adequately iodized salt [3].

The objective of this study was to assess the level of knowledge and practice of iodized salt consumption among household of Sundarharaincha-12, Morang.

2 Materials and Methods

Cross sectional study design was used to conduct study. This design also known as Snapshot study that study present without any manipulation of variables. Study was conducted in ward no 12 of Sundarharaincha municipality of Morang District, Province 1. Morang is divided into eight municipalities and eight rural municipalities, with one metropolitan city (Biratnagar). Morang has a total area of 1,855 km², had a population of 965,370. Sundarharaincha is one of the municipality of Morang districts. There are total 12 wards in Sundarharaincha municipality, total area of 110.16 km² and population of 80,518. Sundarharaincha-12 is one of the wards of Sundarharaincha municipality, total area of 15.13 km² and total population of 9,810 and the total household is 1,680.13 The population of this study was both male and female of 18 years and above who were involving in cooking, residing in Sundarharaincha-12. Because, researcher can collect more exact and reliable data from people who are involved in cooking. Non probability purposive technique was used for sampling. Sample size calculated by following formula Sample (n) = $z^2pq \div d^2$ [15].

Where n = sample size, z = 1.96 at 95 confidence = 46.7 % which p = 0.467, Knowledge regarding household consumption of iodized salt among rural women of Tripura, India. 6 106 (including 10 % non response rate).

Inclusion Criteria: Both male and female who were 18 years or above and were involved in cooking, residing in Sundarharaincha-12 were included in this study.

Exclusion Criteria: Respondents who have declined consent or incapable of interacting properly during data collection were excluded from this study.

Data collection was developed on the base of objectives of the study and by extensive literature review and consulting with research advisor. Semi-structured questionnaire was developed for the data collection. The questionnaire was pretested in 10 % of the sample size in another area, which was not selected for the actual study. Questionnaire was divided into 3 parts: Part I: Questions related to Demographic data. Part II: Questions related to Knowledge of iodized salt consumption. Part III: Questions related to Practice of iodized salt

consumption. Content validity was maintained by extensive literature review, consulting with research advisors, experts including the supervisors. The questionnaire was developed on the basis of objectives of the study and formulated in English and translated in Nepali with the subject expertise and linguistic validity was maintained. Pre-testing in 10 % of population was done in similar other setting that helps to find out accuracy, appropriateness, feasibility of the instrument and also guide for modification if needed and those subjects was not included in final data collection. Collected data was checked for errors on the same day and consistency of data was maintained throughout the study. Limitation: Practice of iodized salt consumption of the respondents measure by questionnaire, only however observation of practice might better the result. Researcher could not use the kit to measure the level of iodine present in household salt, might influence the research result. the was small scale.

Data was collected after approval of proposal from Research Management Committee (RMC) of Biratnagar Nursing Campus. A request letter was obtained from Biratnagar Nursing Campus and submitted to ward office of Sundarharaincha 12 for conduction of the study. After taking permission for conduction of study from ward office, was started to data collection. Researcher self was involved in data collection and prevent contamination by conducting face to face interview session, involving one participant only at a time. The data was collected for a period of 2 weeks from 2078/05/20 to 2078/06/02. During data collection, health's criteria was adopted such as using face mask, face shield, gloves and maintaining physical distancing etc. The purpose of study was explained to the respondents and informed consent was taken from each respondent. The data was collected by face to face interview on the door to door visit of each household, involving one participant from one household. Irrespective of gender, who was responsible for the cooking during the time of data collection. The respondent was not forced by any means to participate in the study. They were given freedom to withdraw their participation from the study without any fear or clarification at any time during study. The time taken for each respondent was 20 to 30 minutes. Confidentiality was maintained throughout the study as the collected information was used only for the study purpose. collected data was checked, edited and organized for completeness and consistency throughout the study. Data entry and analysis was done in SPSS, version 16 "SPSS Statistics for Windows, version x.0 (SPSS Inc., Chicago, III., USA)". In descriptive analysis percentage, mean, median, standard deviation was used. Inferential statistics was used to find out the association be-

tween dependent and independent variables. Findings were presented in the form of tables.

3 Results

Table 1 illustrates the distribution of socio-demographic characteristics of respondents in which over all mean and standard deviation of the age of the respondents was 34.60 ± 10.756 . One

third of the respondents (33.0 %) belongs to 21-30 years of age group and (33.0%) belongs to 31-40 years of age group, followed by (0.9 %) from more than 60 years of age group. More than two third of respondents (67.0 %) were female. and more than three fourth of respondents (77.4 %) were married. Almost all of them (98.1 %) were Hindu. About three fourth of the respondents (71.7%) were belongs from Brahman/ Chhetri ethnicity.

Table 1: Socio-Demographic Information of the Respondents. (n=2)

Variables	Frequency (f)	Percentage (%)
Age (in completed years)		
≤ 20	9	8.5
21-30	35	33.0
31-40	35	33.0
41-50	15	14.2
51-60	11	10.4
>60	1	0.9
Mean age \pm SD 34.60 ± 10.756		
Sex		
Female	71	67.0
Male	35	33.0
Marital status		
Married	82	77.4
Unmarried	24	22.6
Religion		
Hinduism	104	98.1
Muslim	2	1.9
Ethnicity		
Dalit	18	17.0
Janajati	10	9.4
Brahmin/ Chhettri	76	71.7
Muslim	2	1.9

Table 2 majority of the respondents (88.7%) were literate and among them, more than one third (35.8 %) had completed the secondary level education. More than half of the respondents (52.8 %) belong from nuclear family. More than one fourth of the respondents (26.4 %) occupation was homemaker and more than one third of respondents (34.0 %) sources of income were agriculture. More than half of the respondents (51.9%) income was sufficient for 6-12 months. Table 7 showed association between levels of practice with selected socio-demographic variables. It showed that ethnicity, education and income of the respondents had association with the level of practice of iodized salt consumption ($p = < 0.05$). Likewise there was no any association between level of practice and their age, sex, marital status, religion, type of family and occupation ($p = > 0.05$).

Table 3 present that all of the respondents (100.0 %) had knowledge that Iodine is an essen-

tial element needed for life and almost all of the respondents (99.1 %) were knowledgeable about important of Iodized salt to boosts thyroid function. Health personnel were their main source of information (40.6 %) for those who heard about iodized salt and iodine diet. All of the respondents (100.0 %) know that intake of iodized salt is important for health. Majority of the respondents (83.0 %) had good knowledge about IDD. Majority of the respondents (83.0 %) mentioned goiter as main IDD. Majority of the respondents (81.1 %) mentioned that lack of iodine containing food is responsible for development of IDD. Two fourth of the respondents (42.5 %) know that pregnant women need more dietary iodine then women who are not pregnant. Majority of the respondents (83.0 %) mentioned that Iodine diet is needed in our life especially in pregnancy to help in physical/mental growth and development. Majority of the respondents (87.7 %) reported that lack of iodine

Table 2: Socio-Demographic Information of the Respondents. (n=106)

Variables	Frequency (f)	Percentage (%)
Education		
Illiterate	12	11.3
Literate	94	88.7
Primary Level	20	18.9
Secondary Level	38	35.8
Higher Education	36	34.0
Types of Family		
Nuclear	56	52.8
Joint	50	47.2
Occupation		
Home Maker	28	26.4
Business	22	20.8
Farmer	17	16.0
Wage Labour	14	13.2
Service	13	12.3
Student	12	11.3
Sources of Income		
Agriculture	36	34.0
Business	23	21.7
Wage Labour	21	19.8
Service	18	17.0
Others	8	7.5
Income Sufficiency for		
< 6 months	29	27.4
6-12 months	55	51.9
12 months	22	20.8

can cause mental retardation in children.

Table 4 illustrates that majority of the respondents (86.8 %) had good knowledge while few of the respondents (13.2 %) had poor knowledge about iodized salt consumption.

Table 5 present that, all the respondents (100.0 %) used packet salt and nearly half of the respondents (45.3 %) always checked the labeling on iodized salt packet when buying. About three fourth of the respondents (74.5 %) regular used two child logo salt. Nearly two third of the respondents (62.3 %) were considered that salt is iodized or not iodized while choosing salt. All the respondents (100.0 %) used to keep the iodized salt in air tight container and more than three fourth (78.3 %) knew that iodine amount is loose due to exposure to heat and humidity if iodized salt is not store in air-tight container. More than three fourth of respondents (79.2 %) stored salt in dry place. Nearly two third (61.3 %) of the respondents mentioned that lack of knowledge affect the storage of iodized salt. Almost all respondents (95.3 %) added salt during cooking and least (4.7 %) added after cooking. More than half of the respondents (55.7 %) reported that there was no any relation between time of adding iodized salt and iodine content during cooking.

Table 6 illustrate that more than two third (67.0

%) of the respondents had good practice while one third (33.0 %) had poor practice of iodized salt consumption.

Table 7 showed association between levels of knowledge with selected socio- demographic variables. It showed that education and type of family of the respondents had association with the level of knowledge of iodized salt consumption ($p = < 0.05$). Likewise there was no any association between level of knowledge and their age, sex, marital status, religion, ethnicity, occupation and income ($p = > 0.05$).

Table 8 showed association between levels of practice with selected socio- demographic variables. It showed that ethnicity, education and income of the respondents had association with the level of practice of iodized salt consumption ($p = < 0.05$). Likewise there was no any association between level of practice and their age, sex, marital status, religion, type of family and occupation ($p = > 0.05$)

4 Discussion

The socio- demographic finding of the current study reveals that, majority belongs to the age group of 31-40 years (33.0 %) and least (0.9 %) in > 60 years age group with mean of 34.60 ± 10.756 years, similar to the findings in rural Madhupur village of

Table 3: Knowledge of Iodized Salt Consumption (n=106). (* Multiple Response Questions: each response is considered as 100%.)

Variables	Frequency	Percentage (%)
Importance of Iodized salt for boosting the thyroid function		
Yes	105	99.1
No	1	0.9
Sources of Information		
Health Personnel	43	40.6
Communication	38	35.8
Books	22	20.8
Friends	3	2.8
Knowledge on IDD		
Yes	88	83.0
No	18	17.0
Knowledge on Main IDDs		
Goiter	88	83.0
Mental Retardation	43	40.6
Hypothyroidism	42	39.6
Cretinism	40	37.7
Knowledge on Factors Leads to Develop IDDs		
Lack of iodine containing food	86	81.1
Lack of vitamin	20	18.9
Level of Iodine that Pregnant women Needs		
More dietary iodine than the women who are not pregnant	45	42.5
About the same dietary iodine as women who are not pregnant	31	29.2

Table 4: Level of Knowledge of Iodized Salt Consumption

Variables	Frequency (f)	Percentage (%)
Good	92	86.8
Poor	14	13.2

India .6 with total sample size of 270 women shows that majority of respondents belonged to the age group of 31-40 years (30.4 %) with mean of 38.6 ± 13.8 years. The finding of the current study reveals that more than two third of respondents (67.0 %) were female, which is contradictory to the finding of the study done in Western Region of Ghana [16]. with total 280 household reveals majority (86.4 %) were female. This contrast might be due to difference in sample size and study population. In this study, more than three fourth (77.4 %) respondents were married, which is similar to the study done in Mecha district, Ethiopia [17]. with total 714 sample size which demonstrates that about three fourth (73.9 %) were married. This study shows that almost all respondents (98.1 %) were Hindu, majority (88.7 %) were literate and more than half (52.8 %) belongs from nuclear family, similar to the study conducted in Tripura, India. 6 with 270 sample size shows that most of the respondents (90.4 %) were Hindu, more than three fourth (77.4 %) were literate and more than two third (67.0 %) belongs from nuclear family. Regarding the main sources of information in this study reveals that less than

half respondents (40.6 %) indicated Health Personnel were the main sources of information, which is coherence with the study conducted in Wolaita Sodo town and Sodo Zuria Woreda, Ethiopia [18] among 556 households shows that nearly one third (30.1 %) indicated that Health Care Workers were the main source of information.

This study reveals that all of the respondents (100.0 %) indicated that intake of iodized salt is important for health, which is contradictory to the finding of the study done in Tripura, India (Karmakar et al., 2019) with 270 sample size shows more than half of the respondents (58.9 %) reported that intake of iodized salt is important for health. This contrast might be due to difference in sample size, study setting and study population. This study reveals that majority of the respondents (83.0 %) were knowledgeable about IDDs, which is contradictory to the findings of the study done in Tach Armachio district, Ethiopia [19] in 563 households shows more than half (56.2 %) were knowledgeable about IDDs. This contrast might be due to difference in sample size, study setting and study population. Similarly, regarding knowledge on IDD, majority

Table 5: Information Regarding Practice of Iodized Salt Consumption (n=106). (* Multiple Response Questions: each response is considered as 100%.)

Variables	Frequency (f)	Percentage (%)
Check labelling on Iodized Salt Packet when buying		
Always Checking	48	45.3
Occasionally Checking	36	34.0
No Checking	22	20.8
Use of Two Child Logo Salt		
Regular	79	74.5
Occasionally	27	25.5
Factors that considered when choosing salt *		
Iodized or Non-Iodized	66	62.3
Price	60	56.6
Packaging	50	47.2
Effects of not using Air-tight Container		
Loose the iodine amount due to exposure to heat and humidity	83	78.3
No any effect	23	21.7
Storage of iodized salt		
Dry Place	84	79.2
Near to Fire	20	18.9
Moist Place	2	1.9
Factors Affecting Storage of Iodized Salt*		
No knowledge about iodized salt storage	65	61.3
Time Scarcity	39	36.8
Unavailability of Appropriate Container	33	31.1
Time Prefer to Add Salt While Cooking		
During Cooking	101	95.3
After Cooking	5	4.7
Decreased the Iodine Content from Salt by adding salt during cooking		
No	59	55.7
Yes	26	24.5
No Idea	21	19.8

Table 6: Level of Practice of Iodized Salt Consumption

Variables	Frequency (f)	Percentage (%)
.16 Good	71	67.0
Poor	35	33.0

(83.0 %) of the respondents reported Goiter as a main IDD. The finding is supported by the study conducted in Bia district, Ghana.15 with 280 sample size shows most of the participants (90.4 %) indicated Goiter as IDD. This study reveals majority of the respondents (87.7 %) reported that lack of iodine can cause mental retardation in children, which is contradictory to the finding of the study done in Prakasam district, India. 1 with sample size of 276 households shows that very few of respondents (8.6 %) recognized iodine deficiency lead to mental retardation. This contrast might be due to difference in study setting and study population.

This study shows that all of the respondents (100.0 %) consumed packet salt and the finding is coherence with the study conducted in Tripura, In-

dia with 270 sample size shows almost all (98.9 %) respondents used packet salt. 6 Similarly the finding is supported by the study done in the villages of Gautam Budh Nagar, India (Roy et al., 2016) with sample size of 253 households shows most of the respondents (93.7 %) used packet salt [6] This study reveals nearly half (45.3 %) of the respondents always checked labelling on iodized salt packet when buying, which is similar to the study conducted in Jigjiga town, Ethiopia19 with 384 households shows that more than one third (36.0 %) read carefully the information provided/ labelling on the salt packet when buying.

This study shows nearly two third (62.3 %) of the respondents checked salt whether it is iodized or not and the finding is contradictory with the study

Table 7: Association between Level of Knowledge and Selected Socio-Demographic Variables

. (*indicates p value < 0.05 shows association using chi-square test.)

Socio-Demographic Variable	Level of Knowledge		p Value
	Good	Poor	
Age			0.109
≤ 40	71 (89.9%)	8 (10.1%)	
> 40	21 (77.8%)	6 (22.2%)	
Sex			0.322
Male	32 (91.4%)	3 (8.6%)	
Female	60 (84.5%)	11 (15.5%)	
Education			0.000*
Illiterate	4 (33.3%)	8 (66.7%)	
Literate	88 (93.6%)	6 (6.4%)	
Type of Family			0.012*
Nuclear	53 (94.6%)	3 (5.4%)	
Joint	39 (78.0%)	11 (22.0%)	
Income			0.163
< 6 Months	23 (79.3%)	6 (20.7%)	
≥ 6 Months	69 (89.6%)	8 (10.4%)	

conducted in Mecha district, Ethiopia (Tariku Mazengia, 2019) with sample size 714 reveals that nearly one fourth (22.4 %) checked salt whether it is iodized or not. This contrast might be due to difference in sample size, study setting and study population. Regarding the container used for storage of iodized salt, reveals that all of the respondents (100.0 %) used air-tight container, which is similar to the study done in Prakasam district, India 1 with 276 total sample size shows almost all (96.0 %) used air-tight (closed) container to store iodized salt. Similarly the finding is supported by the study conducted in Addis Ababa city, Ethiopia [20] with sample size of 550 shows that majority of the respondents (88.9 %) stored their salt in closed container. This study reveals more than three fourth (78.3 %) knew that due to exposure to heat and humidity, iodine amount is reduce/ loose, which is contradictory with the study done in Mekelle Tigray, Ethiopia [21] with total sample size of 280 households shows more than half (57.0 %) reported that reduces iodine content when iodine salt is not stored in closed container. This contrast might be due to difference in study setting and study population.

Regarding storage of iodized salt, this study shows that more than three fourth (79.2 %) of the respondents stored salt in dry place, which is contradictory with the study conducted in Prakasam district, India 1 with 276 total sample size shows almost all (97.1 %) respondents stored salt in dry place. This contrast might be due to difference in sample size, study setting and study population. This study reveals that almost all (95.3 %) added salt during (beginning or in between) cooking and the finding is coherence with the study conducted

in Tripura, India, 6 with 270 sample size shows almost all (97.8 %) used to add salt during cooking. Over all good knowledge and practice of iodized salt consumption of this study reveals majority (86.8 %) and more than two third (67.0 %) respectively, which is similar to the study conducted in the Addis Ababa city, Ethiopia [20] with sample size of 550 shows over all prevalence of good knowledge and practice was more than three fourth (78.0 %) and more than three fourth (76.3 %) respectively. Similarly the finding is supported by the study done in Mekelle Tigray, Ethiopia (Ambaye Ambaye, 2015) with total sample size of 280 households reveals over all knowledge and practice was 90.4 % and 64.6 % respectively.

Concerning the association between level of knowledge on iodized salt consumption with the selected demographic variables, finding of this study shows that education and type of family of the respondents had association with the level of knowledge on iodized salt consumption ($p = < 0.05$), which is also supported by the study conducted in Prakasam district, India 1 with 276 total sample size shows education is associated with knowledge. Similarly finding is supported by the study done in Coastal Regions of Bangladesh [22] in 400 households reveals education is associated with knowledge. Whereas in the current study, there is no any association between level of knowledge and their age, sex, marital status, religion, ethnicity, occupation and income ($p = > 0.05$), which is contradictory with the study conducted in Addis Ababa city, Ethiopia [20] with sample size of 550 shows income is associated with knowledge. Likewise the finding is contradictory with the study conducted in Coastal Regions of Bangladesh [22] in 400 house-

Table 8: Association between Level of Practice and Selected Socio-demographic Variables. (*indicates p value < 0.05 shows association using chi-square test)

Socio-Demographic Variables	Level of Practice		p Value
	Good %	Poor %	
Age			
≤ 40	56 (70.9)	23 (29.1)	0.144
> 40	15 (55.6)	12 (44.4)	
Sex			
Male	23 (65.7)	12 (34.3)	0.846
Female	48 (67.6)	23 (32.4)	
Ethnicity			
Brahmin/Chhetri	57 (53.8)	19 (17.9)	0.001*
Muslim	2 (1.9%)	0 (0.0)	
Janaajati	7 (6.6%)	3 (2.8)	
Dalit	5 (4)	13 (12.3)	
Education			
Illiterate	4(33.3)	8(66.7)	0.008*
Literate	67(71.7)	27(28.7)	
Income			
< 6 Months	13 (44.8%)	16 (55.2%)	0.003*
≥ 6 Months	58 (75.3%)	19 (24.7%)	

holds reveals age is associated with knowledge. This contrast might be due to difference in sample size, study setting and study population. Concerning the association between level of practice on iodized salt consumption with the selected demographic variables, finding of this study shows that ethnicity, education and income of the respondents had association with the level of practice of iodized salt consumption ($p = < 0.05$). This finding is supported by the study conducted in Addis Ababa city, Ethiopia [20]. With sample size of 550 shows income and education are associated with practice. Similarly the finding is contradictory with the study done in Coastal Regions of Bangladesh [22] in 400 households reveals education is not associated with practice. This contrast might be due to difference in sample size, study setting and study population. Likewise there is no any association between level of practice and their age, sex, marital status, religion, type of family and occupation ($p = < 0.05$). The finding is contradictory with the study conducted in Coastal Regions of Bangladesh [22] in 400 households reveals age is associated with practice. This contrast might be due to difference in sample size, study setting and study population.

5 Conclusion

The findings of the study concluded that majority of the respondents had good knowledge and more than two third of households had good practice on iodized salt consumption. As well as, it also shows that education and type of family of the respondents is associated with the level of knowledge and

ethnicity, education and income of the respondents is associated with the level of practice of iodized salt consumption. However, few of the respondents had poor knowledge while one third had poor practice of iodized salt consumption shows that there is still gap in knowledge and practice level. So awareness program may enhance the knowledge and practice of concern area's people.

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