

**KNOWLEDGE, ATTITUDE AND PRACTICES OF MOTHER OF
SCHOOL GOING CHILDREN SUFFERING FROM IODINE DEFICIENCY
DISORDER IN JUNAGADH.**

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INTRODUCTION

- Iodine is an essential micronutrient required for normal body growth and mental development.
- Its primary role is to synthesis of thyroxin, after thyroid glands, holds the highest concentration of the iodine.
- Iodine deficiency in first 1000 days can cause hypothyroidism and irreversible impair to neuromotor development

Consequences of Iodine Deficiency-

- Nutritional iodine deficiency reckons its impact right from development of the fetus to all ages of human beings.
- It could result in abortion, still birth, mental retardation, squint , dwarfism ,goiter, neuromotor defects etc.
- Most of these disorders are permanent and irreversible in nature except certain type of goiter.
- Where mild to moderate deficiency during childhood reduces the growth of child and during pregnancy
- The daily requirement for iodine increases from 150ug to 250 ug to account for increased renal clearance and to cover the need of the fetus.

- Due to iodine deficiency severe brain damage can lead to goiter which further lead to loss of IQ, mild and moderate brain damage .
- As goiter is one of the most prevalent iodine deficiency disorder, need to know more about it. It classifies into grades that is grade 0, grade 1 and grade 2
- In grade 0 – no palpable or visible goiter / no goiter is shown
- In grade 1 – A mass in the neck that is consistent with an enlarged thyroid, that is palpable but not visible, when the neck in normal position, goiter palpable but not visible.
- In grade 2- a swelling in the neck that is visible when the neck is in a normal position and is consistent with an enlarges thyroid when the neck is palpated/goiter visible and palpable.
- Iodine deficiency can be disease of the soil which gradual leaching of iodine from soil due to floods, melting of glacier and rivers changing course.

RATIONALE

According to the survey of current status of household coverage of iodized salt in India (NISI-2014-2015). Gujarat state covers 70 -80 percentage of iodized salt intake.

As per the last survey conducted in Gujarat under the department of health and family welfare, government of India for control and prevention of iodine related disorders in school -going children,

Out of 33 districts 17 districts were found endemic for iodine deficiency disorder and Junagadh is one of them. The age of 6-12 is crucial age iodine deficiency disorder in this age leads to brain damage, effect IQ level and goiter.

RESEARCH QUESTION

What is the knowledge, attitude and practices of mother of school going children suffering from iodine deficiency disorder in Junagadh ?

Operational Definitions-

- Knowledge: in this study knowledge refers to the awareness of respondents regarding Iodine deficiency disorder using structured questionnaire
- Attitude: in this study it is defined as a the beliefs/values of the respondents
- Practices: in this study practice is the action of doing something by the respondent

OBJECTIVES OF THE STUDY

- To determine the knowledge, attitude and practices of mothers of sample population
- To assess the major factors contributing to iodine deficiency disorder

METHODOLOGY

- **Study design:**

Study design of this study is a Mixed(Quantitative & Qualitative) study and cross-sectional study.

- **Sampling techniques** – convenient sampling

As per the NIDDCP guidelines, at the district level, survey was conducted using the population proportionate to size (PPS) sampling methodology for children aged 6 – 12 years , clinical survey conducted in endemic district .

Junagadh is one of them under the training and guidance of district program coordinator and the data from clinical survey under the guidelines of the niddcp was collected to determine the further iodine grades of children and this data was further used in the study . [_DATA FOR GRADES1 OF IDD.XLSX](#)

- The sample population of this study is 86 respondents/children from chosen three government schools of rural area, as per the survey.

•**Table No 1-**

Villages	children in grade o	children in grade 1	children in grade 2
Mekiya	69	13	8
Leriya	68	12	10
Virdi	68	14	8

- As for the convenient random sampling, divided the population in equal proportionate, children of grade 0 are more in number, so to avoid biasness ,children's are divided in to equal proportion.
- N=86, The children were classified among three iodine grades that is grade 0, grade 1, grade 2 and with grade 0 to grade 2 children's mothers was called in the parent teacher meet and questionnaire was given to them to fill , which help to know the different practices of mothers of children and association of contributing factor

Table No 2 -

Village	Children in grade 0	Children in grade 1	Children in grade 2
Mekiya	10	10	8
Leriya	10	10	10
Virdi	10	10	8

STUDY TOOL - Using closed ended questionnaire

- **Demographic**

It consist of four section - which is demographic data to know background profile such as name, age, sex, residence, occupation, other section is consists of household data to know their social economic status and literacy rate,

- **Knowledge and practice**

Knowledge section to know the awareness and knowledge of mothers regarding iodine and IDD and the practice section is to know practices of mothers related to iodine

DATA ANALYSIS -SPSS and MS EXCEL Used for data analysis

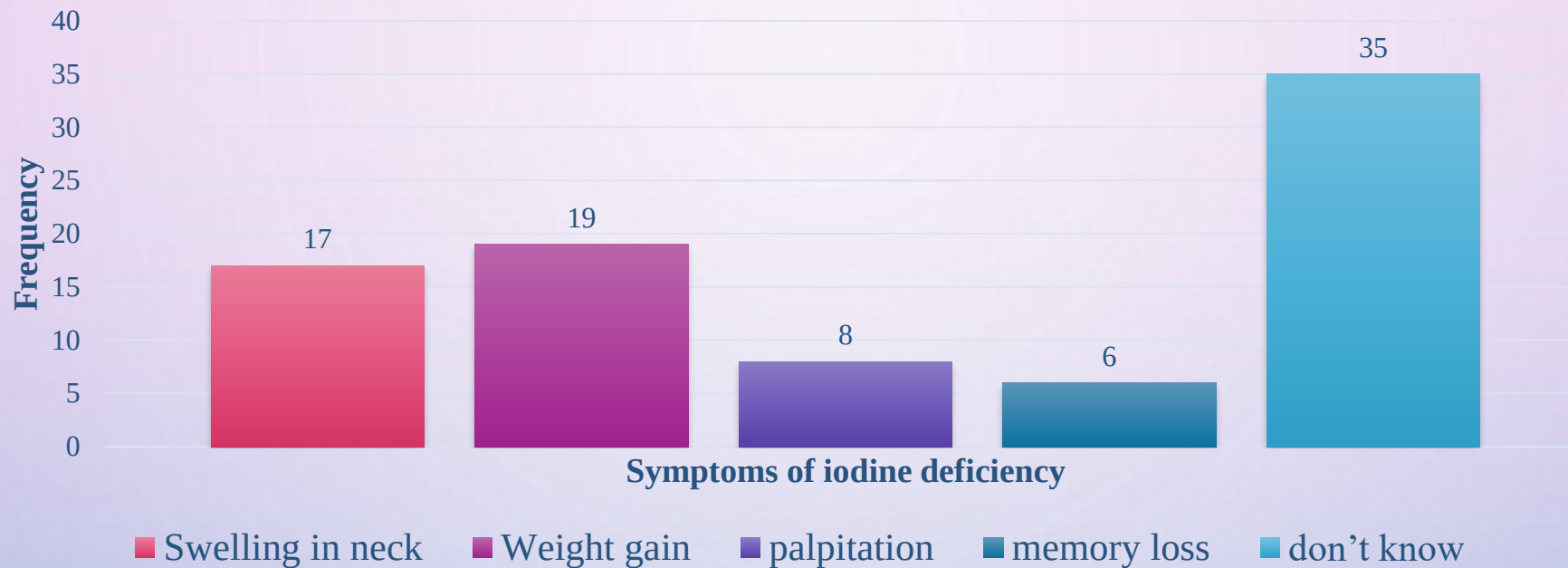
❑ To determine the knowledge, attitude and practices of mothers of sample population

• **KNOWLEDGE OF SYMPTOMS OF IDD**

table no. 3

which of these are symptoms of iodine deficiency					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 swelling in neck	17	19.8	20.0	20.0
	2 weightgain	19	22.1	22.4	42.4
	3 palpitation	8	9.3	9.4	51.8
	4 memoryloss	6	7.0	7.1	58.8
	5 dontknow	35	40.7	41.2	100.0
	Total	85	98.8	100.0	
Missing	System	1	1.2		
Total		86	100.0		

Awareness regarding symptoms of iodine deficiency in children



INTERPRETATION:

To know the awareness regarding symptoms of iodine deficiency in children ,I asked this question to respondent which are mothers of sample population and I came across to know 17 mothers can relate swelling in neck as a symptoms , most of them in this number are literate ,as well as they know because some of their children are in severe grade of iodine deficiency and 35 mothers don't know the symptoms of IDD and 19 that is 22% of mothers were considering weight gain as a symptom.

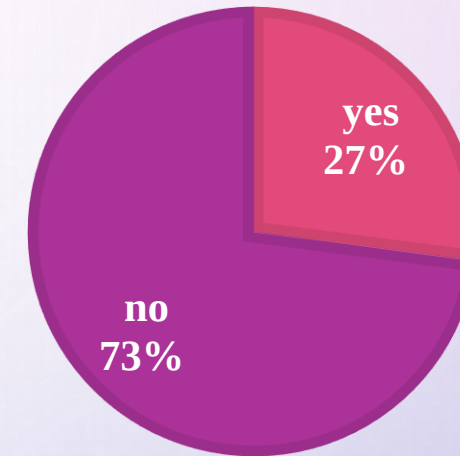
• KNOWLEDGE OF IDD GRADES

grades do you know the grades of IDD (table no. 4)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 yes	23	26.7	27.1	27.1
	2 no	62	72.1	72.9	100.0
	Total	85	98.8	100.0	
Missing	System	1	1.2		
Total		86	100.0		

KNOWLEDGE REGARDING GRADES OF IODINE DEFICIENCY DISORDER

■ yes ■ no



INTERPRETATION- To know the knowledge of iodine deficiency grade I asked this question to respondent , to know their knowledge regarding it, and 73% don't know about it and 27% said yes that they know and reason behind it some of the respondent children are in grade 3 or in grade 2.

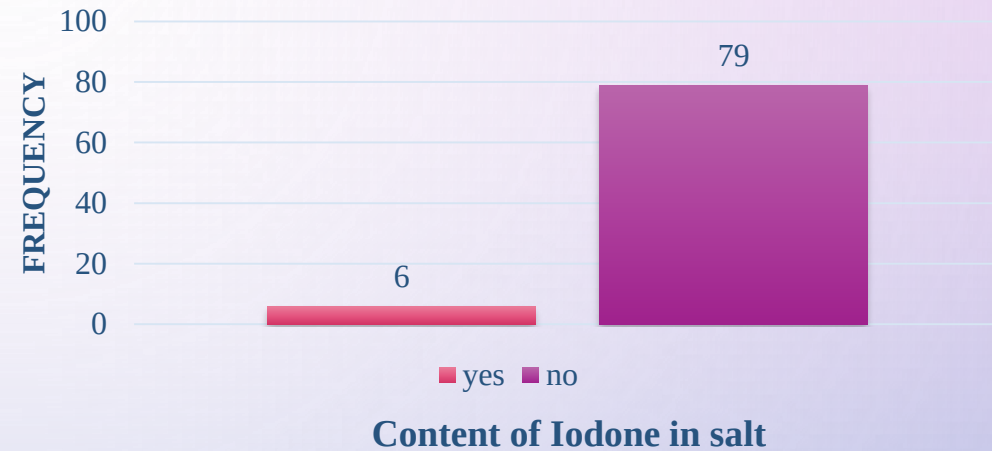
• **KNOWLEDGE ABOUT IODINE CONTENT**
IN SALT

TABLE NO.5

Content in salt do you check the content of iodine in salt

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 yes	6	7.0	7.1	7.1
	2 no	79	91.9	92.9	100.0
	Total	85	98.8	100.0	
Missing	System	1	1.2		
Total		86	100.0		

Knowledge regarding content of iodine in salt



INTERPRETATION:

Out of 85 respondents only 6 respondent have knowledge about iodine content in salt and out of 86 respondent 79 respondent don't know. so more awareness and IEC need to be need to know the importance and amount of iodine regarding with age.

❑ To assess the major factors contributing to iodine deficiency

ASSOCIATION BETWEEN IDD AND LITERACY

Count		table no 6			
		Iodine deficiency does your child currently have iodine deficiency?			Total
		1 yes	2 no	3 don't know	
Attended school have you ever attended class	1 yes	6	23	8	37
	2 no	28	4	16	48
Total		34	27	24	85

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.340 ^a	2	.000
Likelihood Ratio	31.515	2	.000
Linear-by-Linear Association	2.855	1	.091
N of Valid Cases	85		

Null hypothesis – There is no association between IDD and literacy

INTERPRETATION

This table represents the two categorical, nominal factors, which are independent to each other, Chi-Square statistics are reported with degrees of freedom and sample size and the significance level (.000), $p < .05$. which shows there is an association between iodine deficiency and literacy. The sample included 85 respondents, 37 who attended school, and 48 who reported as not attended school, null hypothesis is rejected

- **ASSOCIATION BETWEEN IDD AND OCCUPATION**

TABLE NO.7

Type of work what type of work you mainly do * iodine deficiency does your child currently have iodine deficiency? Crosstabulation

Count Fig no. 8				
type of work what type of work you mainly do	iodine deficiency does your child currently have iodine deficiency?			Total
	1 yes	2 no	3 don't know	
0 housewife	26	8	21	55
1 professional	0	4	1	5
2 salesworker	0	2	1	3
4 production worker	0	9	0	9
5 agricultural worker	8	4	1	13
Total	34	27	24	85

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	38.737 ^a	8	.000
Likelihood Ratio	43.541	8	.000
Linear-by-Linear Association	1.548	1	.213
N of Valid Cases	85		

NULL HYPOTHESIS – there is no association between IDD and occupation

INTERPRETATION: This table represents the two categorical, nominal factors, which are independent to each other ,Chi-Square statistics are reported with degrees of freedom and sample size and the significance level (.000), $p < .05$. which shows there is an association between occupation and IDD , where out of 85 respondent 55 respondents are housewife from which 26 respondents children have IDD and 13 are in agriculture from which 8 children have IDD , Hypothesis is rejected

- **ASSOCIATION BETWEEN IDD AND GENDER**

Table no. 8

SEX OF SUBJECT * DOES YOUR CHILD CURRENTLY HAVE IODINE DEFICIENCY?

CROSSTABULATION

Count		Iodine deficiency			
		does your child currently have iodine deficiency?			
		1 yes	2 no	3 dntknw	Total
sex sex of subject	1 girl	21	15	11	47
	2 boy	13	12	13	38
Total		34	27	24	85

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.446 ^a	2	.485
Likelihood Ratio	1.446	2	.485
N of Valid Cases	85		

NULL HYPOTHESIS – there is no association between IDD and gender

INTERPRETATION There is no association between iodine deficiency disorder and gender , as $p < .05$, which shows no contribution of gender in iodine deficiency , which leads to equal risk among both genders. Hypothesis is accepted.

Association between IDD and special food for prevention of IDD fig no.9

		iodine deficiency does your child currently have iodine deficiency?			Total
		1 yes	2 no	3 don't know	
prevention have you make any special food for prevention from IDD , if yes then name	1 sea food	0	15	5	20
	2 plant grown in iodine rich soil	0	12	0	12
	3 cowmilk	21	0	0	21
	4 not applicable	13	0	19	32
Total		34	27	24	85

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	98.279 ^a	6	.000
Likelihood Ratio	119.213	6	.000
Linear-by-Linear Association	.500	1	.479
N of Valid Cases	85		

NULL HYPOTHESIS – There is no association between IDD and food.

This table represents, significant value is $p < 0.5$, there is association between IDD and food for prevention. Food plays an important role, having proper nutrient, and some food and milk products are very rich in iodine content. 15 mothers gave seafood and seen no children in IDD as compare to others. Null hypothesis is rejected

❖ **A qualitative study on respondent of sample population to know their knowledge and awareness regarding iodine deficiency disorder**

- The one on one discussion tool was based on four parameters - comprehension of the message, interest in the prevention from iodine deficiency, desire to initiate , and an action prohibiting cessation process, which are the four states of mind a consumer experiences before making a purchase of a salt from the market and does respondent use any other source of iodine rather than salt

FINDINGS

- Awareness of the iodine and symptoms of iodine - most of the participants were aware about the type of iodine but not aware about the symptoms of iodine , one of the respondent said headache , fever and one said i have thyroid because of iodine , so they actually not aware about the symptoms of iodine.
- Perceived benefits of iodine - even not a single respondent know the benefit of iodine , only a respondent who is B.com by qualification she knows that iodised salt should be taken because , deficiency mostly seen in children and as a prevention she used it do , the person consuming it seems to have such a thought process.

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- Continuation of iodised salt while watching any advertisement regarding it – it won't make a big difference. As some said in audio that they watched advertisement, but they don't know what is iodised means they only understand the word shudh namak, that's why they used TATA salt.
 - Action prohibiting cessation process: in Gujarat the main issue is they use sugar more than salt in cooking that's why gujarat is a diabetic capital , i asked whether they used salt more than sugar in cooking while watching advertisement , as it provides a positive stimuli, but the process of cessation will not be affected if they are extremely determined to use sugar than salt , as salt intake is low.

Suggestions

- As many clinical studies related to IDD was done but in Junagadh there is more need to do study or survey related to knowledge, awareness and practice as they know the word iodine, abut they don't know the meaning, symptoms and its importance. As I found there is an association between literacy and knowledge about iodine deficiency so some outreach camp, IEC in their regional language need to be done as most of the population in rural areas are not aware
- As many of the articles said that iodine deficiency occurs more in girls but in my study, there is no association between iodine deficiency and gender so both need to be considered

- As during the audio interviews most of the respondent said that they watched advertisement regarding salt, but they don't know the actual purpose behind it.
- so mamta divas will be utilized for giving them basic knowledge about the nutrient contents and importance.
- salt is not the only source of iodine other substituents are also there like milk, iodized plant and fish so we can encourage them to use these products .
- IDD is preventable but need to do proper utilization of field workers in ground level as in rural area ASHA are frontline worker and she can aware mothers about salt intake and different nutrients.

- In many of the studies have read regarding IDD can lead to loss of learning , damaging in pregnancy , but not talked about prevention or intervention as mid-day meal is the source to give proper intake of iodized salt in school going children and every Saturday there is ASHA meeting which can be utilize to give training regarding IODINE and its deficiency ,
- And when mothers comes for ANC checkup, proper counselling given to them .
- Nutak natak , IEC regarding the symptoms of IDD .
- As in this study most of the women was not attended school , then mahilla arogye samiti can be used to provide them sufficient knowledge and awareness
- In this study have seen most of them are not practice to use other substitute rather than salt , MAS can be helpful to tell them the importance of iodized rich food.

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