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A study to explore the dietary patterns and related knowledge among antenatal women attending Kamla Nehru Hospital Shimla (Himachal Pradesh), with a view to develop an informational booklet

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ABSTRACT

Introduction: Pregnancy is a highly demanding period for nutrition demand, this period includes the taking of an additional intake of nutritious foods which results in weight gain of about 10-12kg during pregnancy. Foods rich in Fiber like whole grains pulses, proteins and water should be taken during pregnancy. Objective: The study aimed to determine the dietary patterns and related knowledge among primigravida women of 1st trimester (1-12 weeks) during pregnancy. Methods: The study adopted an exploratory survey design that was conducted at O.P.D Kamla Nehru Hospital, Shimla, Himachal Pradesh in the month of February-March 2019. A total of 400 primigravida women of 1st trimester (1-12 weeks) were selected by purposive sampling technique and after collecting the data from the subject's Informational booklets were given to the subjects, the dietary patterns and related knowledge during pregnancy was assessed by using Self-structured questionnaire and interview technique was used to collect data. Result: Data analysis was done with descriptive and inferential statistics. Frequency and percentage were used to analyze the socio-demographic profile of the subjects. Mean and Standard Deviation was used to analyze the dietary patterns of Primigravida women of 1st trimester (1-12 weeks). A chi-square test was used to find the association between the knowledge regarding dietary patterns with the selected socio-demographic variables.28 close-ended questions were asked from the 400 subjects. 57% of the study subjects have good dietary patterns, 42.3% have average dietary patterns and 0.7% have poor dietary patterns. The majority of (61.3%) antenatal women had Moderate knowledge, (11.7%) had adequate knowledge and (27%) had inadequate knowledge regarding diet during the antenatal period. The significant association found between knowledge score of that antenatal women's Sources of information regarding diet (0.031*) was found significant with other socio-demographic variables. No other significant association was found with other socio-demographic variables. Conclusion: The results of the present study reveal that there is a lack of knowledge and practices among primigravida women of 1st trimester (1-12 weeks) during pregnancy hence women's knowledge needs to shift the care at the earliest to prevent further complications during pregnancy.

Keywords— *Antenatal Women, Knowledge, Informational Booklet*

1. BACKGROUND OF THE STUDY

Pregnancy is a highly demanding period for nutrition demand this period includes the taking of an Additional intake of nutritious foods which results in weight gain of about 10-12kg during pregnancy. Foods rich in Fibre like whole grains pulses, proteins and water should be taken during pregnancy. (Rekha Sharma 2004) When the pregnant woman's diet is inadequate and if it does not meet the requirement during the time of pregnancy for herself and fetus, the fetal requirements are met by withdrawing these from the tissues of the pregnant women. This further weakness in the mother increases the chances of serious life-threatening complications and increases the susceptibility of low birth weight infant and he will not be able to feed properly during the early stages of life. [1]

One must eat to live, what he/she eats will affect the ability to keep well and healthy. The variety of food people consume, the ways they respond to different varieties and patterns of eating food. They are an important part of one's life that generally developed during the childhood period and basically during pregnancy. The quality of proportion of nutrition during preparing the food is important and intake of food in the first trimesters should include balanced portions of essential nutrients, vitamins, minerals, proteins, fats, carbohydrates, etc with emphasis to quality. [2]

2. NEED FOR THE STUDY

Between the years 1990 and 2015, maternal mortality worldwide dropped by 44%**.** The maternal mortality rate in developing countries in 2015 is 280 per 1, 00,000 live births. According to Himachal Pradesh Prevalence of anaemia in (15-49 age groups) in

rural area is 44.7%and 37.5% in urban in 2013-14 and according to the latest survey the pregnant women who are anaemic are 50.2% and due to that More than 8 million babies worldwide are born each year with a serious birth defect (According to WHO) [3]

3. CONCEPTUAL FRAMEWORK

This model is given by Rosenstock's (1974) and Becker's and Maimen's (1975) Health Belief Model. The model was made to predict what the individual may or may not use preventive measures.

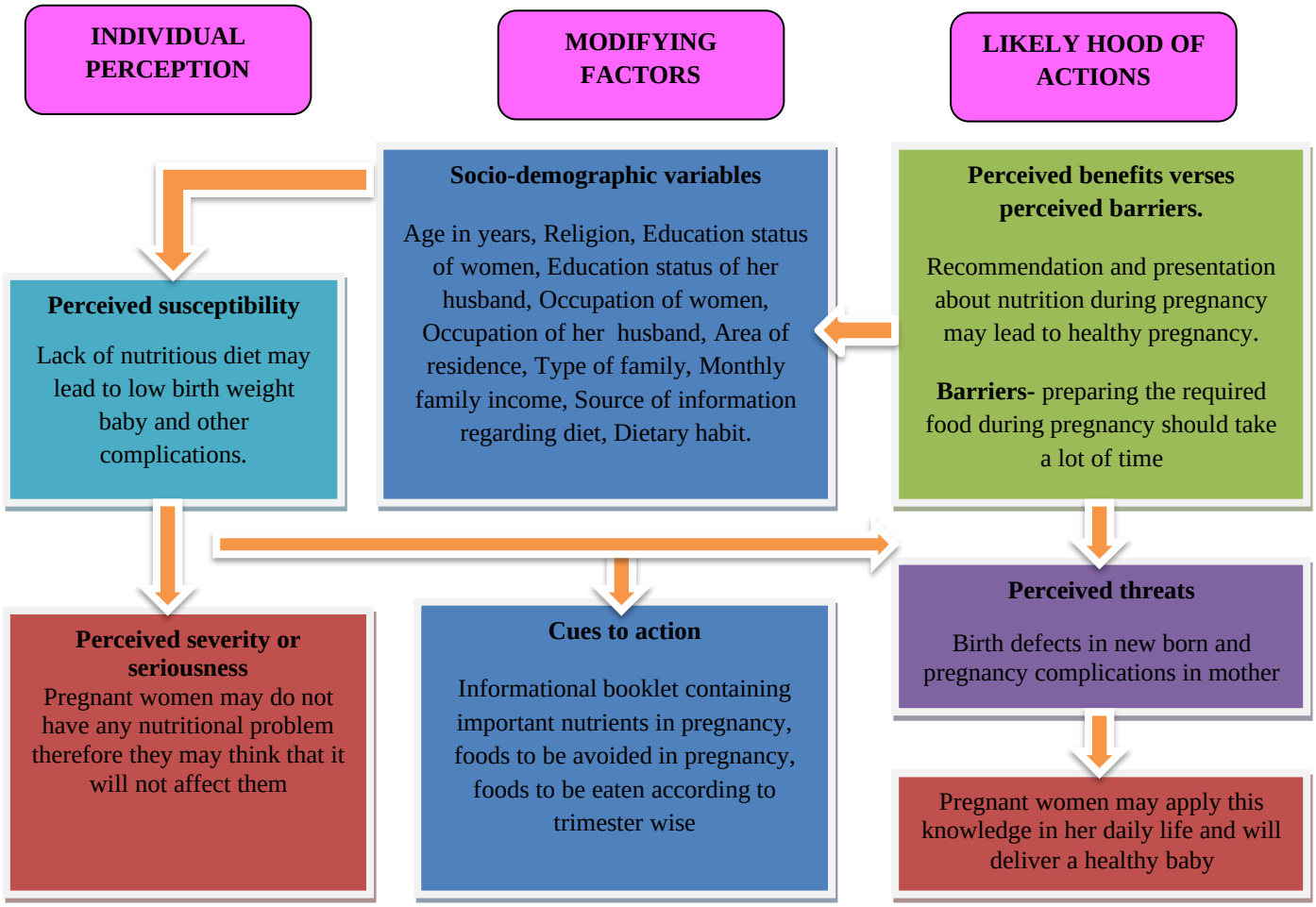

Fig. 1: Framework

4. REVIEW OF LITERATURE

This study was conducted among 350 antenatal women in Tamil Nadu, India. The questionnaire was designed about the knowledge, attitude, and practice of nutrition, danger signs, and complications in pregnancy. Around 98% of women were very clear that nutrition is necessary for pregnancy and 53% of them told that the quantity of food intake should be increased. A major source of knowledge about nutrition was obtained from the family members (81%). The common danger sign was abdominal pain (61%) followed by bleeding per vagina (22%). About 77% of mothers had an idea that a minimum of 6-10 visits should be there in their antenatal period. This study concluded that health professionals should concentrate more on the nutritional values and the antenatal care should be taken regarding the role of adequate nutrition, constituents and sources of a balanced diet and the consequences of over and undernutrition. [4]

A descriptive study has conducted a sample of 96 pregnant women interviewed to know about nutrition and mostly the source of information was family, neighbors, and friends (34.4%). Almost two-fourth (45.8%) of pregnant women still have the wrong perception regarding the consumption of green vegetables and coldness (61.4%) is the main reason behind not the consumption of green vegetables. The reason for the consumption of processed food was because of easy availability and nine in ten pregnant women replied media influenced them to eat processed food. Two-third of pregnant women replied the right answer for reason of taking iron tabs. The study found that there is no association between women's literacy and knowledge of nutrition. About 6 in 10 (59.3%) sampled women had moderate knowledge of nutrition whereas only one forth-pregnant woman had high knowledge of nutrition. One-sixth pregnant women had low knowledge.[5]

5. METHODOLOGY

5.1 Sample size

400 primigravida women of 1st trimester.

5.2 Methods of data collection

The self- structured interview schedule was used to collect the data from the subjects.

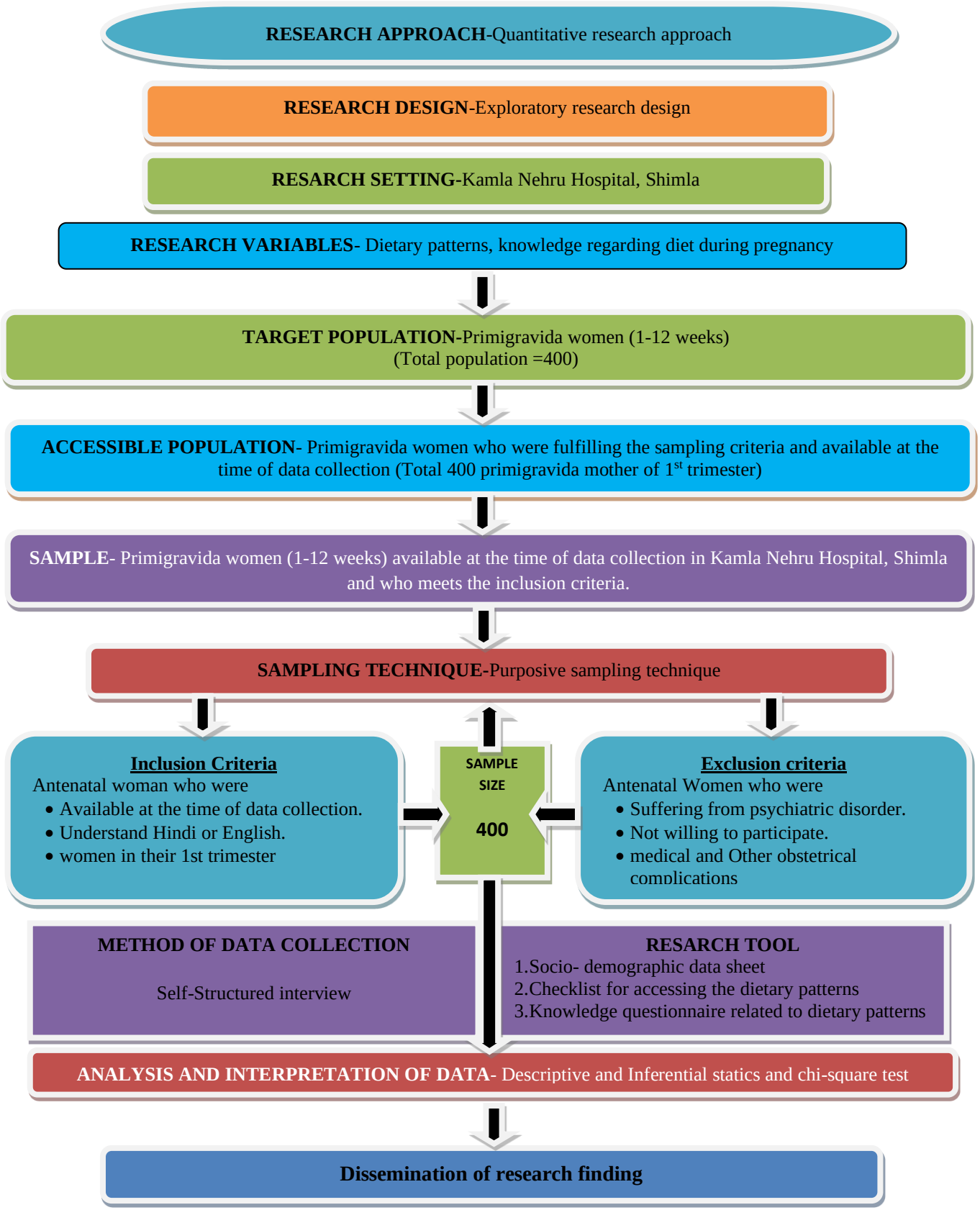

Fig. 2: Methodology

5.3 Tool for data collection

Self –Administered questionnaire consists of:

Section A- it consists of Socio-demographic variables

Section B-It includes a checklist for assessing the dietary patterns

Section C- The structured knowledge questionnaire

6. CONTENT RELIABILITY

The reliability of the tool was calculated by using Cronbach's alpha, and the reliability of the tool is 0.92 hence the tool was reliable for the study.

7. CONTENT VALIDITY

The validity was validated by an expert's opinion. The tool was given to 12 experts in the field of Obstetrics and Gynaecological Nursing, dietician, and Medicine department, after the valuable suggestions the tool was found to be complete in terms of clarity of language.

8. PILOT STUDY

Study setting: Kamla Nehru Hospital, Shimla
Study sample: Primigravida women of 1st trimester (1-12 weeks) were attending O.P.D in Kamla Nehru Hospital, Shimla at the time of data collection and who meets the inclusion criteria**.**
Sample size: 38
Sampling technique: Purposive sampling technique

After obtaining formal permission from the authorities the pilot study was conducted on the 2nd week of February on 38 samples by using Purposive sampling Technique. The Researcher gave self-introduction, explained the purpose of the study and written informed consent was obtained from the samples. The data was collected from the samples by using self- structured checklist and knowledge questionnaire.

9. ETHICAL CONSIDERATIONS

(a) The proposal was presented in front of the Institutional research committee and ethical clearance was obtained.
(b) Written permission was taken from the Principal of Akal College of nursing and the principal of IGMC, Shimla.
(c) The researcher explained the research to the participants.
(d) Written informed consent was obtained from each participant.
(e) Participants were informed that they can withdraw from the study at any point.
(f) The anonymity and confidentiality were protected throughout the study.
(g) Professional norms were maintained.

10. A PLAN FOR DATA ANALYSIS (DESCRIPTIVE AND INFERENTIAL)

The data analysis was done according to the objectives of the study. Both descriptive and inferential statistics were used.

10.1 Descriptive Analysis

- Frequency and percentage is used to analyzed the socio-demographic profile of the subjects
- Mean and Standard Deviation is used to analyzed the dietary patterns of antenatal women.

10.2 Inferential Analysis

A chi-square test was used to find the association between the knowledge regarding dietary patterns with the selected socio-demographic variables.

11. ANALYSIS OF the MAIN STUDY

Data analysis and interpretation
In the current study data analysis is done in the following sections:

11.1 SECTION-A

Frequency and Percentage distribution of Antenatal women on the basis of the socio-demographic profile.

Table 1: Frequency and Percentage distribution of Antenatal women on the basis of the socio-demographic profile, N=400

Variables	Frequency (f)	Percentage (%)
Age in years		
19-24	75	18.8%
25-30	85	21.3%
31-35	**145**	**36.3%**
36-40	95	23.8%
Religion		
Hindu	**392**	**98.0%**
Muslim	5	1.3%
Sikh	2	0.5%
Christian	1	0.3%
Educational status of women		
No Formal Education	63	15.8%
Primary	112	28.0%
Secondary	**122**	**30.5%**
Higher Education	80	20.0%
Graduate and Post Graduate	23	5.8%
Educational status of husband		
No Formal Education	39	9.8%
Primary	99	24.8%

Secondary	128	32.0%
Higher Education	87	21.8%
Graduate and Post Graduate	47	11.8%

Variables	Frequency (f)	Percentage (%)
Occupation of women		
Government employee	39	9.8%
Private employee	119	29.8%
Housewife	**210**	**52.5%**
Self-employed	32	8.0%
Occupation of husband		
Government employee	68	17.0%
Private employee	127	31.8%
Farmer	**132**	**33.0%**
Self-employed	73	18.3%
Area of residence		
Urban	157	39.3%
Rural	**207**	**51.8%**
Semi Urban	36	9.0%
Type of family		
Nuclear	190	47.5%
Joint	**210**	**52.5%**
Extended	0	0
Monthly family income (in rupees)		
Below 5000	99	24.8%
5,000-10,000	**174**	**43.5%**
10,001-15,000	96	24.0%
15,001-20,000	21	5.3%
More than 20,001	10	2.5%
Sources of information regarding diet		
TV, Radio	60	15.0%
Magazines, Newspapers	44	11.0%
Family members	92	23.0%
Friends, Relative	75	18.8%

Variables	Frequency (f)	Percentage (%)
Health personnel	**129**	**32.3%**
Dietary habits		
Vegetarian	177	44.3%
Non-Vegetarian	**185**	**46.3%**
Eggetarian	38	9.5%

11.2 Section –B

Findings related to dietary patterns

Table 2: findings of dietary patterns, N=400

S.NO	ITEMS	Yes %(f)
1.	Do you take a minimum of 3 meals a day?	100
2.	Do you take tea or coffee before breakfast?	57
3.	Do you take biscuits, bread or Rusk before breakfast?	68
4.	Do you add protein powder to your diet?	85
5.	Do you consume calcium-rich foods (milk, ghee, butter, yogurt, cheese) daily?	89
6.	Do you consume iron-rich foods like legumes, green leafy vegetables, citrus fruits, etc.?	85
7.	Do you consume whole grain carbohydrates like brown bread, oats, brown rice, etc.?	86
8.	Do you consume protein-rich foods like (\meat, chicken, cheese, legumes, eggs, fish, milk, almonds) in your diet?	81
9.	Do you drink 8-10 glasses of water in a day	96
10.	Do you consume iron-folic acid supplements daily	58
11.	Do you consume calcium supplements daily	81
12.	Do you get regular exposure of sun for at least for 10-15 minutes daily	68
13.	Do you consume packed junk foods like momos, chowmin, Maggie, burger, French fries, etc	57
14.	Do you consume tea or coffee during the day time	58
15.	Do you consume hard drinks like Pepsi, Fanta, coca-cola, Marinda, etc	58
16.	Do you consume sweetened foods like pastries, ice cream, candies, sweets, etc? Daily	68

17.	Do you take something between meals like (snacks like chips, chocolate, Namkeen, biscuits, pakoda, etc)?	65
18.	Do you take any special diet in your pregnancy?	57
19.	Do you eat more in your pregnancy than on a normal basis	76
20.	Do you consume dry fruits like almonds, cashews, raisins, etc daily?	63
21.	Do you consume fresh fruits or fresh fruit juices daily	51
22	Do you consume with rice in a day	57
23	Do you add salads to your diet	63
24	Do you consume 2 meals or more with chapatti in a day	85
25	Do you consume 2 meals or more with paratha in a day	36
26	Do you consume 2 meals or more with bread, Rusk or biscuits in a day	56
27	Do you consume 2 meals or more with semisolid foods like pour ghee, khichari in a day	73
28	Do you consume any substance which is not food (charcoal, chalk, uncooked rice, mud, etc)?	44

N=400

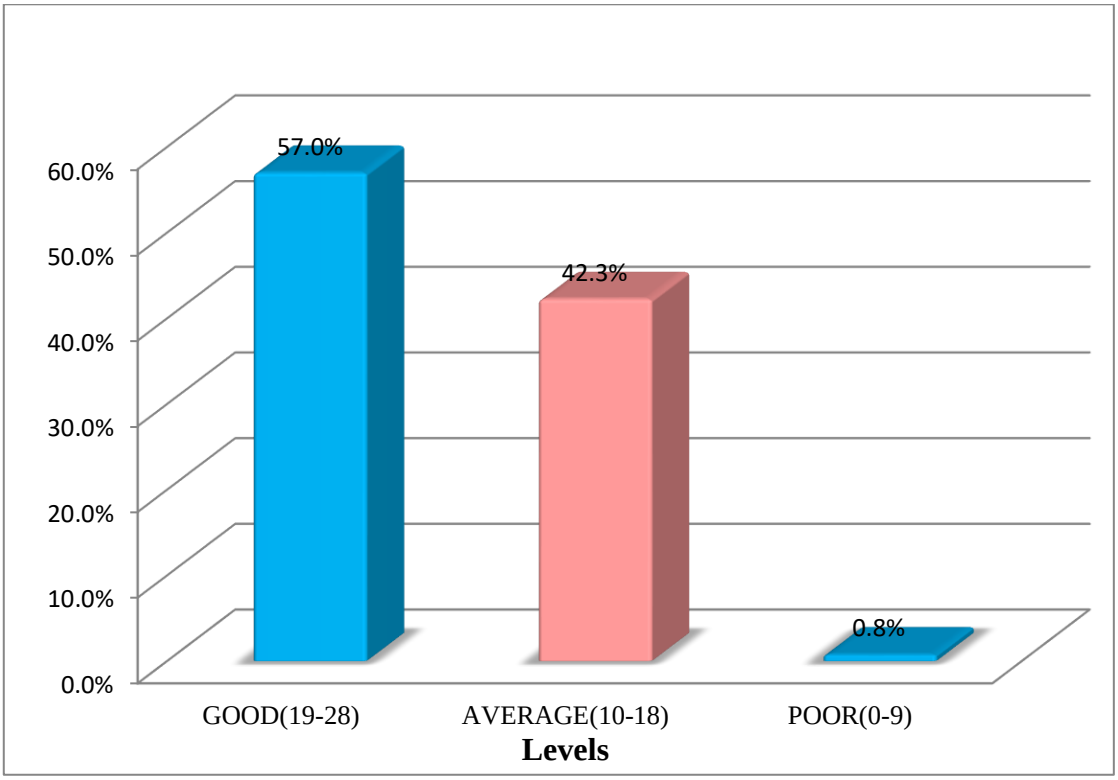

Fig. 3: Level of dietary patterns among primigravida women during pregnancy.

Table 3: Criteria measure of checklist score

Category Score	Frequency	Percentage
Good (19-28)	**228**	**57.0%**
Average (10-18)	169	42.3%
Poor (0-9)	3	0.7%
Maximum Score=28 Minimum Score=0		

The level of the subject of dietary patterns was classified as a good, average and poor level of dietary patterns. Out of 400 study subjects (57%) of the study, subjects have good dietary patterns, (42.3%) has average dietary patterns and the remaining (0.7%) has a poor dietary pattern.

11.3 Section–C

Table 4: Level of knowledge regarding dietary patterns during pregnancy among antenatal women, N=400

Criteria measure of knowledge score		
Category Score	**Frequency**	**Percentage**
Adequate (19-28)	47	11.8%
Moderate (10-18)	**245**	**61.3%**
Inadequate (0-9)	108	27.0%
Maximum Score=28		

The levels of knowledge scores were classified as Adequate (19-28), moderate (10-18) and inadequate (0-9) level of knowledge scores. The maximum of (61.3%) antenatal women had Moderate knowledge, (11.7%) had adequate knowledge and (27%) had inadequate knowledge regarding diet during the Antenatal period.

N=400

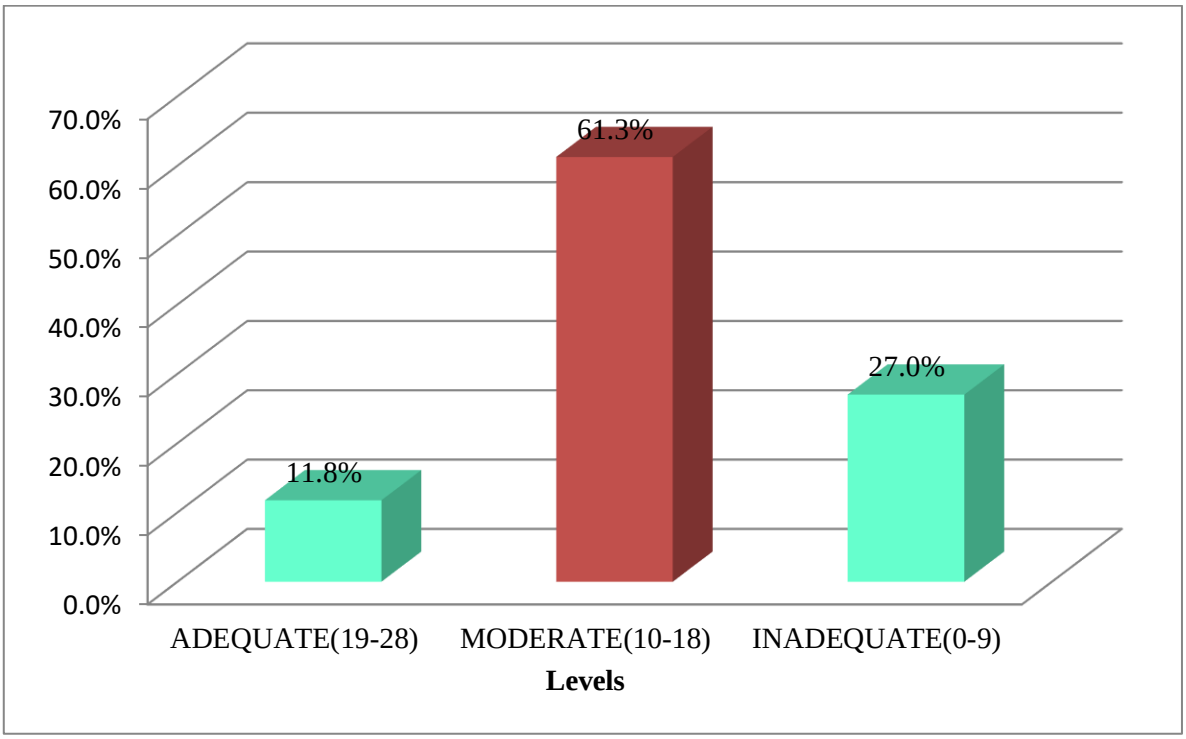

Fig. 4: Levels of Knowledge among Antenatal Women regarding diet during pregnancy

11.4 Section-D

Association between the Knowledge Scores of antenatal women with their socio Demographic Variables.

Table 5: Association between the Knowledge Scores of antenatal women with their socio Demographic Variables, N=400

S.NO.	Demographic variables	Frequency			Association with knowledge score		
		Adequate	Moderate	Inadequate	Chi test	Df	P value
1.	**Age in years**						
	19-24	8	45	22	3.62	6	0.72
	25-30	11	49	25			
	31-35	13	94	38			
	36-40	15	57	23			
2.	**Religion**						
	Hindu	45	242	105	9.94	6	0.12
	Muslim	2	2	1			
	Sikh	0	0	2			
	Christian	0	1	0			
3.	**Educational status of women**						
	No Formal Education	11	31	21	13.87	8	0.08
	Primary	13	61	38			
	Secondary	11	88	23			
	Higher Education	9	52	19			
	Graduate and post graduate	3	13	7			
4.	**Educational status of husband**						
	No Formal Education	5	26	8	5.06	8	0.75
	Primary	15	59	25			
	Secondary	13	79	36			
	Higher Education	8	50	29			
	Graduate and Post Graduate	6	31	10			
5.	**Occupation of women**						
	Government employee	9	21	9	9.32	6	0.15
	Private employee	9	2	38			
	Housewife	27	30	53			
	Self-employed	2	2	8			
6.	**Occupation of husband**						
	Government employee	4	8	16	.99	6	0.32
	Private employee	3	5	39			
	Farmer	18	2	32			
	Self-employed	12	0	21			

7.	**Area of residence**						
	Urban	20	3	44	.87	4	0.75
	Rural	21	30	56			
	Semi-Urban	6	22	8			
8.	**Type of family**						
	Nuclear	25	18	47	1.34	2	0.51
	Joint	22	27	61			
	Extended	-	-	-			
9.	**Monthly family income (in rupees)**						
	Below 5000	12	62	25	5.025	8	0.755
	5,000-10,000	17	0	47			
	10,001-15,000	14	3	29			
	15,001-20,000	3	5	3			
	More than 20,001	1	5	4			
10.	**Sources of information regarding diet**						
	TV, Radio	9	42	9	16.95	8	0.03
	Magazines, Newspapers	6	24	14			
	Family members	12	65	15			
	Friends, Relative	9	40	26			
	Health personnel	11	74	44			
11.	**Dietary habits**						
	Vegetarian	16	110	51	3.32	4	0.50
	None Vegetarian	24	113	48			
	Eggetarian	7	22	9			
*significance at p<0.05							

Table No 3 Depicts that the knowledge scores of dietary patterns among study subjects with their selected socio-demographic variables were calculated by using chi-square. The result revealed that antenatal women's Sources of information regarding diet (0.031*) was found significant with other socio-demographic variables. No other significant association was found with other socio-demographic variables.

12. MAJOR FINDINGS OF THE STUDY

- The above major findings of the study were, the study subjects answered the total 28 close-ended questions about dietary patterns during pregnancy out of 400 total subjects (57%) of the study subjects has good dietary patterns, (42.3%) has average dietary patterns and (0.7%) has poor dietary patterns.
- The levels of knowledge scores were out of 400 total subjects, (61.3%) antenatal women had Moderate knowledge, (11.7%) had adequate knowledge and (27%) had inadequate knowledge regarding diet during the Antenatal period.
- The relationship of knowledge scores with demographic variables such as age, religion, type of family, education status of women, occupation of women, family income per month (in rupees), area of residence, there is no significant association between the level of scores except for one variable source of information regarding diet. The calculated chi-square values were less than the table value at the 0.05 level of significance.

13. RECOMMENDATIONS

- A similar study can be replicated on a wider sample to help validate and generalize the findings to the population.
- A comparative study / similar study can be done to compare the knowledge and practices among rural and urban antenatal women.
- A quasi-experimental study can be done to evaluate the effectiveness of structured teaching program related to knowledge and antenatal dietary practices among women

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