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Original Research Article

Knowledge on dietary patterns among pregnant women attending antenatal care check-up in Narayani hospital, Nepal

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ABSTRACT

Background: Pregnancy is the period from conception to birth during which there is the requirements of diet that provide the required essential nutrients to keep the mother healthy and allow the fetus to grow and develop in favorable conditions. The objective of the study was to identify the knowledge on dietary pattern among pregnant women attending ANC checkup in Narayani sub-regional hospital.
Methods: The study was of descriptive, cross sectional type. The random sampling technique was applied. The study design was conducted in Narayani sub-regional hospital in Parsa district, Nepal. Participants included 96 pregnant women using semi structured questionnaire through face to face interview. Data analysis was done both manually and with the help of SPSS.
Results: The study showed that there were more women 56(58.3%) from rural areas than that of urban. About seven out of 10 pregnant women were between the ages of 20 to 35 years of age and the study showed that one-fifth of the pregnant women were married before legal age. The mean age of pregnant women was 24. 1 year. There were 6.2% of pregnant women who were illiterate and six out of 10(59.4%) pregnant women had agriculture as their main occupation. The total sampled 96 pregnant women interviewed all knew 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 consumption of green vegetables and coldness (61.4%) is the main reason behind not consumption of green vegetables. The reason for 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 pregnant women replied right answer for reason of taking iron tabs. In the study found that there is no association between women literacy and knowledge on nutrition. About 6 in 10 (59.3%) sampled women had moderate knowledge on nutrition whereas only one forth-pregnant woman had high knowledge on nutrition. One-sixth pregnant women had low knowledge.
Conclusions: The study revealed that, although every pregnant woman had some sorts of knowledge on nutrition, still there is lack of sufficient knowledge on dietary patterns during pregnancy and some wrong perceptions following diet consumption during pregnancy was found. Health education and awareness programs that influences to develop positive attitude can only ultimately brings changes in the behavior.

Keywords: Antenatal care, Associated factors, Dietary pattern

INTRODUCTION

Pregnancy is the period from conception to birth during which there is the requirements of diet that provide the required essential nutrients to keep the mother healthy and to prevent pregnancy-related problems and to allow the foetus to grow and develop in favourable conditions. It is an exciting times and critical period in women's life because mothers health behaviours have direct effects on the health of her baby.[1]

The knowledge about proper nutrition and balanced diet during pregnancy is considered important for the wellbeing of both mother and foetus and also supports maternal health during pregnancy, delivery and breastfeeding. Nutrient requirements increase to support foetal and infant growth and development along with alterations in maternal tissues and metabolism.[2]

NDHS 2011 report based on WHO growth standards shows that 41% of under 5 children are stunted, 11% wasted and 29% are underweight. Prevalence of anaemia in children 6-59 months is 46% and women age 15-49 is 36%. Eighteen percent of women of reproductive age are thin or undernourished (BMI <18.5 kg/m2). The Annual report 2067/68 shows still 3.4% percent of under 5 year children are malnourished.[3]

Nepal millennium development goals progress report 2013 shows the proportion of stunted children is 41%, which is still high of, target 30, underweight children 29% and wasted children is 11%. Among 11% who have wasted 3% are severely wasted. There are more stunted children in rural areas (42%) than in urban areas (27%), among them mid-western region has the highest 50% of stunted children. The maternal mortality rate (MMR) is 229 according to the study carried out by Maternal Mortality and Morbidity study carried out in eight districts in 2009 which is just slightly above the 2015 target of 213. The reason of maternal death is due to haemorrhage, pre- eclamsia/eclampsia, obstructed labour, direct causes and puerperal sepsis .The rationale of the study is to provide recommendations to the policy makers on dietary patterns of pregnant mothers.[4,5,6]

METHODS

The study design was a descriptive cross- sectional study, which was carried out to explore the knowledge on dietary patterns among pregnant women attending ANC check-up in Narayani sub-regional hospital. The study population was the total number of pregnant women attending to the ANC clinic. Total number of pregnant women who attended hospital for ANC visit of the study site was the sampling frame during study.The study was conducted from July 2014 to December 2014. The pregnant Women age 15-49 years attending in ANC visit was the sampling unit of the study. Quantitative and qualitative research methods like data collection using semi structured questionnaires were used.

The Annual report of DoHS FY 2069/70 showed that the expected pregnancy of study area is 3.6 percent of total population. To calculate sample size, Prevalence (P) is 3.6 percent; Q (1-P) is equal to 96 percent. As the prevalence is quite low, maximum tolerable error (L2) was taken to be 40 percent that is desired width with d=0.04; the desired level of significance was taken as 95 percent. So sample size (n) is: n= 4*0.04*.96/0.04*0.04= 96.

A total of 96 samples using simple random sampling were collected.

The sample was selected from the sampling frame through simple random sampling. A semi-structured questionnaire was designed and pre-tested. Before starting the interview the mothers were given a verbal consent and an explanation of the study. If the informant selected turned out not to fulfil criteria for inclusion then the informant next to her was included. Descriptive analysis such as percentage, mean and standard deviation (SD) were used to describe composition and relationship among variables.

The data was entered and analyzed in the Statistical Package for Social Sciences (SPSS). Chi- Square test was applied to determine the relationship of the study variables. P-values based on the chi square test were calculated at 5 % level of significance. The results were analyzed with both descriptive and inferential statistics.

RESULTS

A total of 96 pregnant women responded and the response rate was 100 percent. The socio-demographic finding shows the distribution of respondents on the basis of their socio- demographic characteristics. It includes place of residence, age, ethnicity, religion, education, occupation, gestation period, gravida, ANC visited time and family structure. The mean age of mothers who delivered within 28 days was 25.02 years with a standard deviation of ±4.01. Of the respondents, 69.1% were illiterate, 82 % were wage laborers, 53% were living with a joint family, 79.6% did not have sufficient income to maintain daily expenses and about 58% of the newborns were male (Table 1).

Table 1: Socio-demographic characteristics of respondents.

Area	N	%
Urban	40	41.7
Rural	56	58.3
Total	96	100

Seven out of 10 pregnant women were between the ages of 20 to 35 years of age. Almost one in five were less than 19 years of age. The study evident shows that one fifth of the pregnant women were married before legal age. The mean age of pregnant women was 24. 1 year (Table 2).

Table 2: Distribution of age.

Area	N	%
< 20 years	19	19.8
20-35 years	67	69.8
>35 years	10	10.4
Total	96	100

The result shows that almost one third of the pregnant women were Muslims followed by Tharu which is 28 (29%) of the total respondents pregnant mothers. Kurmi represent 27 (28%) of the total mothers (Table 3).

Table 3: Distribution of respondents by ethnicity.

Ethnicity	N	%
Muslim	31	32.3
Tharu	28	29.2
Kurmi	27	28.1
Others	10	10.4
Total	96	100

About four out of ten pregnant women had completed primary or below education followed by Secondary level which is 26 (27.1%). 6 (6.2%) of pregnant women were illiterate, 17(17.7%) can read and write and 6 (6.2%) of pregnant women have reached to higher education level (Table 4).

Table 4: Distribution of respondent by education.

Education level	N	%
Illiterate	6	6.2
Literate	90	93.8
Total	96	100

Table 5: Distribution of respondent by occupation.

Education level	N	%
Housewife	11	11.4
Business	16	17.4
Service	5	5.2
Agriculture	57	57
Others	7	7
Total	96	100

Almost six out of 10 (59.4%) of the pregnant women had agriculture as their main occupation whereas one sixth (16.7%) of the pregnant women were involved in business activities. The minimum numbers of pregnant women involved in occupation were housewives, services and others, which is 11.4%, 5.2% and 7% respectively. The mothers included in others are labour, working in construction, maid etc. (Table 5).

The study reveals that half of the total sample pregnant women were less than 3 months pregnancy. Almost two-fifth (37.5%) of pregnant women were 3-6 month pregnancy and the mothers with more than 6 months pregnancy (12.5%) were found least during study. The mean months of pregnancy during study were 3.4 months (Table 6).

Table 6: Distribution of respondent by gestation period.

Months of pregnancy	N	%
< 3 months	48	50
3-6 months	36	37.5
>6 months	12	12.5
Total	96	100

There were more pregnant women who were multi gravida 54 (56.3%) than that of primigravida 42 (43.7%) during study (Table 7).

Table 7: Distribution of respondent by gravida.

Gravida	N	%
Primi	42	43.7
Multi	54	56.3
Total	96	100

Almost half of the total sample pregnant women 46 (47.9%) were attended for second ANC visit. Slightly more than three out of 10 pregnant women had attended for first ANC visit. The pregnant women visited for third ANC visit represent 14 (14.6%) and the fourth ANC visited women (4.2%) were found least in number (Table 8).

Table 8: Distribution of respondent by ANC visited time.

ANC visited time	N	%
First	32	33.3
Second	46	47.9
Third	14	14.6
Fourth	4	4.2
Total	96	100

Table 9: Distribution of respondent by family structure.

Family structure	N	%
Nuclear	33	34.4
Fourth	4	4.2
Total	96	100

Total respondent family structured distribution was as mentioned on Table 9. That depicts 33 (34.4) were from nuclear family while rest 63 (75.6%) were from fourth family structured.

Slightly more than one third of the pregnant women knew about nutrition from their family, neighbors and friends. Similarly 27.1% of pregnant women knew from radio/television/newspaper, 21.9% from health care providers and at the meantime 16.6% of mothers had heard from schoolteachers (Table 10).

Table 10: Distribution of respondent by family structure source of information.

Source of information	N	%
Radio/TV/newspaper	26	27.1
Health service provider	21	21.9
Family/neighbour/friends	33	34.4
School teachers	16	16.6
Total	96	100

In the Table 11 shows almost five in ten 47 (48.9%) pregnant women answered meat, milk, ghee and eggs as nutritional food. About one in ten respondent women replied ripe fruits and vegetables as nutritional foods. As a result only one-third 31 (32.3%) pregnant women knew right answer about types of nutritional food.

Table 11: Knowledge on kinds of foods consumed.

Kinds of foods	N	%
Food including meat, milk, ghee, eggs	54	56.2
Food including ripe fruits and vegetables	12	12.5
Both	30	31.3
Total	96	100

The study shows that only seven in ten 69 (71.9 %) pregnant women have the right knowledge of frequency of consumption of food during pregnancy.

Table 12: Frequency of consumption of foods.

Frequency of consumption of food	N	%
Daily	69	71.9
2-3 times per week	19	19.8
Weekly	6	6.2
Monthly	2	2.1
Total	96	100

The Table 12 shows that about nine in ten 91(94.8%) of pregnant women replied pulse should consumed during pregnancy whereas those pregnant women who response not to consume pulse during pregnancy represent 5.2% (Table 13).

Table 13: Pulses consumption during pregnancy.

Pulse consumption	N	%
Yes	91	94.8
No	5	5.2
Total	96	100

As to the consumption of Green vegetables about half portion 52 (54.2%) of the sampled pregnant women reported green vegetables should consume during pregnancy whereas those pregnant women who replied not to consume during pregnancy represents 44 (45.8%). The evident shows that almost half (45.8%) of the pregnant women still have the wrong perception regarding consumption of green vegetables (Table 13). The reason behind not consumption of green vegetables about six in ten (61.4%) pregnant women answered coldness as a reason followed by diarrhea which is 20.4% (Table 14).

Table 14: Regarding knowledge about daily consumption of milk.

Green vegetables consumption	N	%
Yes	52	54.2
No	44	45.8
Total	96	100
Reasons for not consumption (n=44)	N	%
Coldness	27	61.4
Diarrohea	9	20.4
Others	8	18.2
Total	44	100

More than half 51 (53.1%) of the sampled pregnant women consume 500ml of milk followed by 250ml, which is 33.3%. The pregnant women who consumed 750ml of milk during study represent 3.1%. At the mean time only one in ten pregnant mothers has right knowledge about daily consumption of milk (Table 15).

Table 15: Knowledge on amount of daily consumption of milk.

Amount of milk	N	%
250 ml	32	33.3
500 ml	51	53.1
750 ml	3	3.1
1 litre	10	10.5
Total	96	100

Out of total 51 respondent on this stigma ask about consumption of processed food during maximum number of respondent that is 19 (37.3 %) disclosed the view that it is because it effects their pregnancy while only 3 (5.9%) disclosed their view that it effects their health others view are as mentioned on the Table 16.

Table 16: Consumption of processed food during pregnancy.

Variables	n	%
Yes	45	46.9
No	51	53.1
Total	96	100

Table 17: Reasons for not consumption processed food.

Reasons for not consumption	N	%
Contains harmful chemicals	12	23.5
Effects pregnancy	19	37.3
Effects health	3	5.9
All of the above	17	33.3
Total	51	100

Of the total respondent of 87 (90.6%) agreed they are influenced by media and rest 9 (9.4%) say to this influence (Table 18).

Table 18: Knowledge on processed food influenced to eat by media.

Influenced by media	N	%
Yes	87	90.6
No	9	9.4
Total	96	100

About three sixth pregnant women replied "easy to deliver baby" as a reason of taking iron tabs during pregnancy and reason to be strong represents 16.7%. About two-sixth pregnant women have right knowledge on reason of taking iron tablets (Table 19).

Table 19: Knowledge on reason of taking iron tablets.

Reason of taking iron tablets	N	%
Easy to deliver baby	48	50
To be strong	16	16.7
For prevention of anemia	32	33.3

Table 20: Regarding the knowledge on duration of consumption of iron tabs.

Duration	N	%
1st ANC visit to the birth of baby	2	2.1
2nd ANC visit to the birth of baby	46	47.9
2nd ANC visit to 45 days after birth of baby	27	28.1
Don't know	21	21.9
Total	96	100

About half portion of the sampled pregnant women reported 2nd ANC visit to birth of the baby as duration of consumption of Iron tabs. The duration from first ANC visit to birth of baby found least of all which is 2.1%. The pregnant women who have right information about duration on consumption of Iron tabs were found 28.1% as given in Table 20.

DISCUSSION

This study aimed to examine the dietary patterns among pregnant women attending of ANC clinic in Narayani sub-regional hospital of Parsa, Nepal. There were more women (58%) from the rural areas than that of urban. A study of similar type conducted by Munishwor Mool, shows only 36.1% of pregnant women visited ANC from rural areas. Almost seven out of 10 belonged to 20-34 age group and six out of 10 were literate and three out of 10 were school leaving certificate (SLC) and above. One third of the women interviewed had completed SLC. A study carried out by Pradhan A showed 6 out of 10 women were from the same age group.[7] Almost 4 out of 10 pregnant women were literate and slightly more than 5 out of 10 were SLC and above. But the study conducted by Sanjel et al showed 8 out of 10 women were from same age group with regards to multi pregnancy. Findings of the current study is similar to the study conducted by Sanjel et al as both studies recorded multi pregnancy as 60.5%.[8,9]

Almost four out of ten pregnant women were for second ANC visit during pregnancy and half of the pregnant mothers were less than 3 months pregnancy. A study conducted by Sanjel et al showed slightly more than one in ten pregnant women were for second ANC visit and slightly more six out of 10 were less than 3 months pregnancy. In the study the mean months of pregnancy during ANC visit was 3.4 months whereas similar study conducted by Perumal et al shows the mean months of pregnancy during ANC visit was 4.5 months.[9,10]

These studies showed that of the total sampled 96 pregnant women interviewed all knew about nutrition and slightly more than one third of the pregnant women knew about nutrition from their family, neighbours and friends. Almost half 47 (48.9%) of the pregnant women answered meat, milk, ghee and eggs as nutritional food and only one-third 31 (32.3%) pregnant women knew right answer about types of nutritional food. Almost half (45.8%) of the pregnant women still have the wrong perception regarding consumption of green vegetables and six in ten (61.4%) pregnant women answered coldness as a reason. About slightly more than half of the pregnant women replied suitable to eat processed food during pregnancy and the reason for consumption of processed food was found high 23 (51.1%) among easily available. Only three out of ten pregnant women were knowledgeable and conscious about not consuming processed food during pregnancy. Still two third of pregnant women were

unaware on duration of consumption of iron tabs during pregnancy.[8,9]

In the study the association between women literacy and knowledge on nutrition was computed among sampled pregnant women. The result showed that there is no association between women literacy and knowledge on nutrition in the population. The two levels of components were chosen that best describe the knowledge on dietary patterns among pregnant women'. About four out of ten pregnant women had completed primary or below education followed by secondary level which is 26 (27.1%). 6 (6.2%) of pregnant women were illiterate, 17 (17.7%) can read and write and 6 (6.2%) of pregnant women have reached to higher education level. But similar study conducted by Perumal et al showed slightly more than 4 in 10 (45.4%) ANC visit pregnant women had moderate knowledge on nutrition whereas about 2 in 10 (21.7%) pregnant women had high knowledge on nutrition. The same study showed slightly more than one third (32.9%) pregnant women had low knowledge on nutrition.[10]

The study by Arkkola suggest that proper nutrition during pregnancy is considered important for the wellbeing of both mother and foetus and also it showed that maternal nutrition affects the growth and development of the foetus, and also later health outcomes in the offspring. There is strong association between level of dietary pattern and maternal health outcomes.[11]

The result of Nepal millennium development goals progress report 2013 shows that still the malnutrition among under five children is high, the proportion of stunted children is 41%, underweight children 29% and wasted children is 11%. Among 11% who have wasted 3% are severely wasted. There are more stunted children in rural areas (42%) than in urban areas (27%). These show that there is still lack of proper nutrition during pregnancy and after birth of child. The report recommended that the special attention should be given to the nutrition of mothers during pregnancy and lactation for proper health of mother and fetus.[12-14]

CONCLUSION

This study was a cross-sectional study based on the pregnant women attending ANC check up to find out the knowledge on dietary patterns. The result shows that there is lack of sufficient knowledge on dietary patterns among pregnant women during pregnancy. Although every pregnant woman has some sorts of knowledge on nutrition, still there were also some wrong perceptions following diet consumption during pregnancy.

Basically, of the total sampled 96 pregnant women interviewed all knew about nutrition and slightly more than one third of the pregnant women knew about nutrition from their family, neighbours and friends. Regarding knowledge about types of nutritional foods, almost five in ten 47 (48.9%) pregnant women answered meat, milk, ghee and eggs as nutritional food and only one-third 31 (32.3%) pregnant women had right knowledge about types of nutritional food. Almost two fourth (45.8%) of pregnant women still have the wrong perception regarding consumption of green vegetables and about six in ten (61.4%) pregnant women answered coldness as a reason. Only one in ten pregnant mothers has right knowledge about daily consumption of milk. It was found that 46.9% of pregnant women found suitable of eating processed food during pregnancy and the reason behind consumption was easily available which represent 23 (51.1%). More than half percent (53.1%) of pregnant women were conscious of consuming processed food and only 19 (37.3%) have right knowledge of not consuming processed food. Nine in ten pregnant women replied Media influenced them to eat processed food. It may be a positive sign that all the respondents had heard about iron tabs but about four in 10 pregnant women have right knowledge for taking iron tabs and on duration of consumption of Iron tablets.

The study revealed that some sorts of health education and awareness programs are needed to increase knowledge regarding dietary habits. Knowledge, which influences to develop positive attitude can only ultimately brings changes in the behaviour. The intervention strategies should be developed that focused for pregnant women and active community participation should be made at every step for interventions. This study is confined to descriptive analysis with measurement of association. Future studies to identify the factors affecting the ANC visits are recommended.

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