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Level of Nutritional Knowledge among Expectant Mothers in Saidu Teaching Hospital, Pakistan

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Abstract

Maternal nutrition is essential from conception and throughout pregnancy as it is a critical factor in child survival, growth and development. Many expectant mothers do not have adequate knowledge of causes, complications, management and preventive measures of nutritional imbalances during pregnancy, which is responsible for the high prevalence of poor maternal nutritional status. This was a descriptive cross-sectional study. Sample population was from the study population from Saidu Teaching Hospital, Pakistan. Yamane formula was used to calculate sample size of 286. Data collection was carried out using structured questionnaires and analyzed using IBM-SPSS version 25 of 2015 software. The results of the study also found that majority of the expectant mothers were knowledgeable on nutritional requirements during and even after pregnancy. They are aware of the balance diet required for them; however, there were also those who did not understand about the nutritional requirements. Expectant mothers had positive attitude towards nutrition. Majority of expectant women were positive towards antenatal check-up during pregnancy. Majority of them also felt that skipping meals among expectant mothers affects their health. Preparing meals rich in iron such as beef, chicken or fish is necessary. Supplementation of iron and folic acid are good for the mother and fetus. The study also concluded that expectant mothers had positive attitude towards nutrition and were willing to consume food that was healthy for them and to the child. The study thus recommends for periodic awareness training by health care providers on the need to observe nutritional requirement and how to identify the right foods to consume and correct diet to observe. The periodic awareness training can be undertaken by local health care providers in support by the county government, national government and non-governmental health organization like UK Aid, USA Aid and others. The study recommends for the need of subsidizing supplements and nutrients sold in the private dispensaries and health centers so that expectant women from low income household can afford them. Subsidizing of supplements and nutrients can be done by government by reducing VAT taxes on these products.

Keywords: *Nutritional Knowledge, Expectant Mothers, Saidu Teaching Hospital, Pakistan*

1. Introduction

Maternal under-nutrition is one of the most important causes of maternal morbidity and mortality, particularly in the developing countries including Pakistan. Maternal nutrition has direct association with foetal nutrition (Ali, Thaver & Khan, 2014). Evidence suggests a strong association between maternal nutrition and foetal growth. Poor nutritional status of the mother leads to adverse birth outcomes like low birth weight babies, preterm delivery and intrauterine growth retardation (Qureshi & Khan, 2015). Similarly good nutritional status of mothers results in a healthy birth outcome so the diet consumed by expecting mother should be balanced and diverse.

Adequate nutritional intake during pregnancy has been recognized as an important factor for healthy pregnancy and desired birth outcomes (Bawadia *et al*., 2010). It was found that deficiency of nutrients during gestation may cause the fetus to receive suboptimal micro and macro nutrients, causing inadequate intrauterine growth and development, inherited malformations, preterm deliveries, and pregnancy complications (Redmer *et al*., 2004). Thus, attention to appropriate dietary behavior and proper nutrient intake will supply adequate nourishment to achieve optimum health for both mother and child (Wen *et al*., 2010; Verbeke & De Bourdeaudhuij, 2007).

Studies show that nutritional knowledge affects the quality of food intake and also healthy choices of purchased food (Batool, et al., 2017). Advancement of individual nutrition knowledge provides new information which may stimulate changing of attitude and subsequently result in enhancement of dietary practices (WHO, 2018). One study showed that health advice encouraged expectant mothers to improve their food intake (Anderson *et al*., 1993); however, another study indicated that higher knowledge of pregnant women was not an indicator to cause them to change their nutritional habits (Verbeke & De Bourdeaudhuij, 2007).

Eating well during pregnancy means doing more than simply increase how much the mother eats. The mother must also consider what she eats. The ability of the mother to provide nutrients and oxygen for her baby is a critical factor for fetal health and its survival. Failure in supplying the adequate amount of nutrients to meet fetal demand can lead to fetal malnutrition. The fetus responds and adapts to under nutrition but by doing so it permanently alters the structure and function of the body. Maternal over nutrition also has long-lasting and detrimental effects on the health of the child (Lassi et al, 2013). This study sought to determine the level of nutritional knowledge among expectant mothers in Saidu Teaching Hospital, Pakistan.

2. Empirical Review

2.1 Nutritional knowledge of expectant mothers

In America at El-Menshawy hospital found that about half of the women did not have enough knowledge regarding the meaning, the importance and the constituents of a well-balanced diet for the pregnant women. Many women at El-Menshawy hospital lacked the awareness of the consequences of the inadequate nutrition during pregnancy on the mother and fetus. Source of information for most pregnant women was their family members (38%) and a very few acquired adequate information from their attending doctors (20%).Nutrition knowledge of employed women in a study conducted in Malay pregnant women was mainly explained by more access to internet, books and magazines as source of information in work area. (Latifa et al, 2012).

Qureshi, and Khan (2015) investigated the dietary intake trends among pregnant women in rural area of rawalpindi, Pakistan. A cross sectional study was conducted on pregnant women of 2nd and 3rd trimester in a rural area of district Rawalpindi. Study results show that food intake practices of pregnant women in the study area were not satisfactory. The results suggest that pregnant women need nutrition counselling regarding food intake practices during pregnancy.

Ali, Thaver, and Khan, (2014) investigated the assessment of dietary diversity and nutritional status of pregnant women in Islamabad, Pakistan. It was a cross sectional survey involving 350 pregnant women in their second and third trimesters, conducted in outpatient department of Maternal and Child health centre at Pakistan Institute of Medical Sciences (PIMS) Islamabad. The results show that dietary diversity is a good proxy indicator for nutritional status of pregnant women.

Shrestha, et al. (2021) investigated the factors associated with dietary diversity among pregnant women in the western hill region of Nepal: A community based cross-sectional study. A cross-sectional study of 327 pregnant women was conducted in an urban municipality of Baglung district in the western hill region of Nepal. Adequate nutrition knowledge is important for pregnant women.

A study conducted in GSVM medical college in India (2016), showed that only 22% of the women had good knowledge about nutrition during pregnancy, 42% had average knowledge while 36% of the women had poor knowledge about nutrition and healthy lifestyle during pregnancy.

In Malawi only two thirds (70%) of the pregnant women had some knowledge on nutrition and food groups in pregnancy. This low nutritional knowledge may be due to low income and low educational status of the study participants. (Naomi et al,)

The incidence of dietary inadequacies as a result of dietary habits and patterns in pregnancy is higher during pregnancy than at any other stage of the life cycle. It was shown that, nutrition knowledge was predictive of change in dietary habits and health advices encouraged expectant women to advance their food intake. This study revealed that more than half (57.8%) of the respondents did not know the meaning of food (Amjad, et al., 2018).

This study also pointed out that the nutritional knowledge of pregnant women about the importance of food during pregnancy as: (52.5%), (50.6%), (72.3%) and (71.8%) had the knowledge that food during pregnancy is important for bodies energy and heat, proper functioning of the body, growth and development of the fetus and fighting infection respectively in which the figure is slightly greater than the study conducted in Malawi, Lilongwe, that most of the women (60%) said that eating from all food groups is good for a woman's health and for fetal growth and development.

3. Material and Methods

This study was a descriptive cross-sectional study utilizing the quantitative approach. The design would enable the researcher answer the research questions. The study design was selected because it will aid in rapid data collection and it is cost effective. The study population was 2000 expectant mothers in Saidu Teaching Hospital, Pakistan. Data was collected using structured interviewer administered questionnaires. Data collected during the study was entered and verified in a Microsoft Excel program. It was then transferred and analyzed using IBM-SPSS

version 25 of 2015 software. Measures of central tendency and dispersion were used to analyze data. Results were presented in tables and charts.

4. Results and Discussion

4.1 Demographic characteristics of Expectant mothers

A total of 286 respondents were sampled to participate in the study. Questionnaires were submitted and analyzed. Only 232 questionnaires were properly filled and returned representing 81.1% response rate. Participants were majorly drawn from Nairobi City County. Most of the participants were residents of Saidu Teaching Hospital. Majority of the expectant mothers had their Last Menstrual Period (LMP) in late 2019 and early 2020 and their estimated due date (EDD) was between August 2020 and November 2020. It was also noted that most of the women were in parity [2+0 G 3], [3+1 G 5], [1+0 G 2], [2+0 G 3], [2+0 G 3], [0+0 G 1], [3+0 G 4], [2+0 G 3], [2+0 G 3], [4+1 G 6], [2+0 G 3], [2+0 G 3]. Table 1 shows the demographic characteristics of expectant mothers and husbands.

Table 1: Demographic characteristics

Demographic characteristics	Mothers	Husbands
Educational attainment		
Intermediate level of education	37.10%	25.90%
high school	26.30%	17.70%
primary	17.20%	19.40%
degree	14.70%	21.60%
illiterate	4.30%	3.00%
professional career	0.40%	4.70%
Age of expectant mothers in years	**Age in years**	-
Average age	33.28 years	-
Youngest	19 years	-
Oldest	44 years	-

It was also established that the average age of the expectant mothers was 33.28 years with youngest expectant mother being 19 years old and oldest being 44 years old. In terms of educational attainment, most 37.1% of the expectant women had Intermediate level of education, 26.3% high school level of education, 17.2% primary, 14.7% degree, 4.3% illiterate and 0.4% some level of professional career. For husbands, 25.9% had Intermediate level of education, 21.6% degree, 17.7% high school, 19.4% primary, 7.8% middle school, 4.7% professional courses and 3.0% illiterate. Level of education is important in enhancing knowledge on pregnancy and the need to seek antenatal care services. Majority of the expectant women were housewives.

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4.2 Nutritional Knowledge of Expectant Mother

The study sought to establish the level of nutritional knowledge among expectant mothers attending ANC clinics Saidu Teaching Hospital. The results of the study are presented in Table 2.

Table 2: Nutritional Knowledge of Expectant Mother

Nutritional Knowledge Of Expectant Mother	No [Freq.,%]	Yes [Freq.,%]	Mean	Std. Dev.
A balanced diet is important during pregnancy	[20, 8.6%]	[212, 91.4%]	0.91	0.281
Women nutrition during pregnancy is different from others	[50,21.6%]	[182, 78.4%]	0.78	0.412
Iron is a source of vitamin	[165, 71.1%]	[67, 28.9%]	0.29	0.454
The daily recommended intake of iron for a woman during pregnancy is 27mg	[85, 36.6%]	[147, 63.4]	0.63	0.483
The daily recommended intake of protein for a woman during pregnancy is 25mg	[88, 37.9%]	[144, 62.1%]	0.62	0.486
During pregnancy, a woman needs more folic acid and iron than a woman who is not pregnant	[84, 36.2%]	[148, 63.8%]	0.64	0.482
A pregnant woman must have at least 600micrograms of folic acid from daily diet	[80, 34.5%]	[152, 65.5%]	0.66	0.476
Women should get 1000mg of calcium daily during pregnancy	[92, 39.8%]	[139, 60.2%]	0.6	0.491
Omega-3 and Omega-6 fatty acids are essential for brain and retina development of fetus	[50, 21.6%]	[182, 78.4%]	0.78	0.412
Nutrients deficiency during pregnancy could affect health status of mother and baby	[42, 18.1%]	[190, 81.9%]	0.82	0.386
If woman was a normal weight before pregnancy she should gain weight between 11.5kg and 16.0kg during pregnancy	[49, 21.1%]	[183, 78.9%]	0.79	0.409
Body Mass Index(BMI) of less than 18.5 kg/m2 is a suitable weight during pregnancy	[52, 22.4%]	[180, 77.6%]	0.78	0.418
Additional energy needs should be tailored based on the woman's BMI before pregnancy	[49, 21.1%]	[183, 78.9%]	0.79	0.409
Underweight mother can affect fetal wellbeing and growth	[36, 15.5%]	[196, 84.5%]	0.84	0.363
Obese women are at an increased risk of several pregnancy problems	[48, 20.7%]	[184, 79.3%]	0.79	0.406

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The knowledge scores were categorized as good (≥75%), moderate (51% to 74%) and poor (≤50%) as suggested by the Technical Working Group on Research Ministry of Health, Malaysia (Norimah et al., 2008).

Knowledge was measured using 15 question about nutrition during pregnancy. The answers to all questions were a dichotomous answer of 'Yes' or 'No'. More than half of participants 123 (53%) had good knowledge level, 78 (34%) had moderate knowledge level, and only 31 (13%) had poor knowledge level.

Results of the study showed that majority 91.4% of expectant mothers were aware that balanced diet is important during pregnancy. It was also found that majority 78.4% of expectant mothers had the knowledge that women nutrition during pregnancy is different from others. Majority of 71.1% expectant mothers denied that iron is a source of vitamin with 28.9% indicating that iron is a source of vitamin implying that few of women were misinformed that iron is a source of vitamin which is not the case while majority were aware that iron is a source of minerals for pregnant women.

Majority 63.4% of expectant mothers were aware that the daily recommended intake of iron for a woman during pregnancy is 27mg. Results indicated that majority 62.1% of expectant women did not agree that the daily recommended intake of protein for a woman during pregnancy is 25mg. Majority 63.8% of expectant women acknowledged that during pregnancy, a woman needs more folic acid and iron than a woman who is not pregnant. It was also noted that majority of 65.5% expectant women were aware that they must at least take 600micrograms of folic acid from daily diet. It was also found that majority 60.2% of expectant women are knowledgeable that they should get 1000mg of calcium daily during pregnancy.

The study found that majority 78.4% of the expectant mothers are aware that Omega-3 and Omega-6 fatty acids are essential for brain and retina development of fetus. Majority 81.9% of the expectant mothers are aware that nutrients deficiency during pregnancy could affect health status of mother and the child. It was also established that majority 78.9% of expectant mothers were aware that women may gain weight during pregnancy. Moreover, majority of expectant women agreed that Body Mass Index (BMI) of less than 18.5 kg/m2 is a suitable weight during pregnancy, which is not the case as that indicates underweight. Therefore, this shows that majority of the expectant mothers lacked knowledge on appropriate BMI during pregnancy. In addition, majority 78.9% of expectant women were knowledgeable that additional energy needs should be tailored based on the woman's BMI before pregnancy. 84.5% of expectant women were knowledgeable that underweight mother can affect fetal wellbeing and growth of the fetus while 79.3% of the expectant women were aware that obese women are at an increased risk of several pregnancy problems.

The results of the study also found that majority of the expectant mothers were Knowledgeable on nutritional requirements during and even after pregnancy. They were aware of the balance diet required for them; however, there were also those who did not understand about the nutritional requirements. Despite their nutritional requirement understanding, majority of the expectant mothers in the area could not afford the type of meals required during pregnancy on daily basis.

Results of the study showed that majority of expectant mothers were aware that balanced diet is important during pregnancy. A healthy and varied diet is important at all times in life, but particularly so during pregnancy. The maternal diet must provide sufficient energy and nutrients

to meet the mother's usual requirements, as well as the needs of the growing fetus, and enable the mother to lay down stores of nutrients required for fetal development as well as for lactation. A poor, unbalanced maternal diet and micronutrient deficiencies may result in undernutrition or overnutrition of the unborn child. The results agree with Tanha, Mohseni, Ghajarzadeh and Shariat (2013) that balance diet is vital during pregnancy. However, Latifa, Fouda, Ahmed, Shehab (2012) found that about half of the women did not have enough knowledge regarding the meaning, the importance and the constituents of a well-balanced diet for the pregnant women.

It was also found that majority of expectant mothers had the knowledge that women nutrition during pregnancy is different from others. Majority of expectant mothers denied that iron is a source of vitamin with 28.9% indicating that iron is a source of vitamin implying that few of women were misinformed that iron is a source of vitamin which is not the case while majority were aware that iron is a source of minerals for pregnant women. Iron is particularly important in pregnancy and infancy to meet the high demands for hematopoiesis, growth and development. Iron plays key roles in oxygen transport by red blood cells, energy production, growth and development, functions particularly important during the demands in pregnancy and infancy for hematopoiesis, growth and development.

Majority of expectant mothers were aware that the daily recommended intake of iron for a woman during pregnancy is 27mg. Expectant women require at least 27 milligrams (mg) of iron every day during pregnancy. Several developed countries recommend an Adequate Intake of 0.2 to 0.26 mg/day (United States, Canada, Australia and New Zealand), but the United Kingdom recommends a higher RNI (1.7 to 3.3 mg/day for 0–3 and 4–6 months. The results agree with Brannon and Taylor (2017) recommends an Adequate Intake of 0.2 to 0.26 mg/day of iron for expectant mothers. When iron stores are depleted, dietary iron needs increase to meet the sustained high demands for hematopoiesis, tissue accretion and brain development of the fetus.

Results indicated that majority of expectant women did not agree that the daily recommended intake of protein for a woman during pregnancy is 25mg. Proteins help the fetal tissues develop and also develops & repairs breast and uterine tissue, muscles, and blood during pregnancy. Daily recommended quantity of proteins is 75-100 g/day. Healthy fetal development is dependent on the availability of adequate proteins, which provide the basic building blocks necessary for formation of enzymes, antibodies, muscle, and collagen. Collagen is used as the framework for skin, bones, blood vessels, and other body tissues. During pregnancy, the mother must consume adequate protein to meet the needs of her growing fetus in addition to meeting her own increased needs as she physically grows in size to carry the pregnancy.

5.0 Conclusions

The study concluded that nutritional knowledge among expectant women is important. Maternal diet is critical for a successful pregnancy, as well as fetal health outcomes. Nutritional knowledge entails the correct diet, type of food and nutrients that need to be consumed by expectant mothers. The diet should be balanced to allow proper fetus growth and also for the health of the mother. A healthy and varied diet is important at all times in life, but particularly so during pregnancy. The maternal diet must provide sufficient energy and nutrients to meet the mother's usual requirements, as well as the needs of the growing fetus, and enable the mother to lay down stores of nutrients required for fetal development as well as for lactation. A poor, unbalanced maternal diet and micronutrient deficiencies may result in under nutrition or over nutrition of the unborn child.

5.3 Recommendations

Nutritional knowledge for expectant mothers on what to be consumed is vital to the health growth of pregnancy. It is also vital to the health of the mother and the fetus. The study thus recommends for periodic awareness training by health providers on the need to observe nutritional requirement and how to identify the right foods to consume and correct diet to observe. The periodic awareness training can be undertaken by local health providers in support by the county government, national government and non-governmental health organization like UK Aid, USA Aid and many others.

References

Ali, F., Thaver, I., & Khan, S. A. (2014). Assessment of dietary diversity and nutritional status of pregnant women in Islamabad, Pakistan. *Journal of Ayub Medical College Abbottabad*, *26*(4), 506-9.

Amjad, A., Amjad, U., Zakar, R., Usman, A., Zakar, M. Z., & Fischer, F. (2018). Factors associated with caesarean deliveries among child-bearing women in Pakistan: secondary analysis of data from the demographic and health survey, 2012–13. *BMC pregnancy and childbirth*, *18*(1), 1-9. https://doi.org/10.1186/s12884-018-1743-z

Anderson, A. S., Campbell, D., & Shepherd, R. (1993). Nutrition Knowledge, Attitude to Healthier Eating and Dietary Intake in Pregnant Compared to Non-Pregnant Women. *Journal of Human Nutrition and Dietetics*, 6 (4): 335–353. https://doi.org/10.1111/j.1365-277X.1993.tb00379.x

Batool, A., Razaq, S., Javaid, M., Fatima, B., & Toyama, K. (2017). Maternal complications: Nuances in mobile interventions for maternal health in urban Pakistan. In *Proceedings of the Ninth International Conference on Information and Communication Technologies and Development* (pp. 1-12). https://doi.org/10.1145/3136560.3136573

Bawadia, H. A., Al-Kuranb, O., Al-Bastonia, L. A., Tayyemc, R. F., Jaradatd, A., Tuurie G., Al-Beitawif, S. N., & Al-Mehaisenb, L. M. 2010. Gestational Nutrition Improves Outcomes of Vaginal Deliveries in Jordan: An Epidemiologic Screening. *Journal of Nutrition Research*, 30 (2): 110- 117. https://doi.org/10.1016/j.nutres.2010.01.005

Brannon, P. M., & Taylor, C. L. (2017). Iron supplementation during pregnancy and infancy: Uncertainties and implications for research and policy. *Nutrients*, *9*(12), 1327. https://doi.org/10.3390/nu9121327

De Vriendt, T., Matthys, C., Verbeke, W., Pynaert, I., & De Henauw, S. (2009). Determinants of Nutrition Knowledge in Young and Middle-Aged Belgian Women and the Association with their Dietary Behavior. *Appetite*, 52 (3): 788–792. https://doi.org/10.1016/j.appet.2009.02.014

Lassi, ZS., et al (2013). Folic acid supplementation during pregnancy for maternal health and pregnancy outcomes.Review. *The Cochrane Library*. Issue 3. https://doi.org/10.1002/14651858.CD006896.pub2

Latifa M Fouda, Manal H Ahmed, Nihal S Shehab (2012) Nutritional Awareness of Women during Pregnancy. Journal of American Science 8(7).

Naomi M (2010) Investigating health and nutrition messages given to pregnant women at bwaila hospital in Lilongwe. Akershus University College, Faculties of Health, Nutrition and Management.

O'Brien, G. & Davies, M. (2007). Nutrition Knowledge and Body Mass Index. *Health Education Research*, 22 (4): 571–575. https://doi.org/10.1093/her/cyl119

Perumal N, et al. BMC Pregnancy Childbirth. (2013), Health and Nutrition knowledge, attitudes and practices of pregnant women attending and not attending ANC clinics in Western Kenya. https://doi.org/10.1186/1471-2393-13-146

Qureshi, Z., & Khan, R. (2015). Dietary intake trends among pregnant women in rural area of rawalpindi, Pakistan. *Journal of Ayub Medical College Abbottabad*, *27*(3), 684-688.

Redmer, D. A., Wallace, J. M., & Reynolds, L. P. (2004). Effect of Nutrient Intake during Pregnancy on Fetal and Placental Growth and Vascular Development. *Domestic Animal Endocrinology*, 27 (3): 199–217. https://doi.org/10.1016/j.domaniend.2004.06.006

Shrestha, V., Paudel, R., Sunuwar, D. R., Lyman, A. L. T., Manohar, S., & Amatya, A. (2021). Factors associated with dietary diversity among pregnant women in the western hill region of Nepal: A community based cross-sectional study. *PloS one*, *16*(4), e0247085. https://doi.org/10.1371/journal.pone.0247085

Tanha, F. D., Mohseni, M., Ghajarzadeh, M., & Shariat, M. (2013). The effects of healthy diet in pregnancy. *Journal of family & reproductive health*, *7*(3), 121.

Verbeke, W. (2008). Impact of Communication on Consumers' Food Choices. *Proceedings of the Nutrition Society*, 67: 281–288. https://doi.org/10.1017/S0029665108007179

Verbeke, W., & De Bourdeaudhuij, I. (2007). Dietary Behaviour of Pregnant Versus Non-Pregnant Women. *Appetite*, 48 (1): 78–86. https://doi.org/10.1016/j.appet.2006.07.078

Wen, L. M., Flood, V. M., Simpson, J. M., Rissel, C., & Baur, L. A. (2010). Dietary Behaviours During Pregnancy: Findings from First-Time Mothers in Southwest Sydney, Australia. *International Journal of Behavioral Nutrition and Physical Activity*, 7: 13. https://doi.org/10.1186/1479-5868-7-13

World Health Organization, WHO (2017). Recommendations on antenatal care for a positive pregnancy experience.

World Health Organization, WHO (2018). Recommendations; calcium supplementation during pregnancy for prevention of pre-eclampsia and its complication.