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Assessment of maternal health and nutrition knowledge of farm women in Assam

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Abstract

Maternal health refers to the health of women during pregnancy, childbirth and the postnatal period. Inadequate nutrition during pregnancy can result in complications such as anaemia, pre-eclampsia, hemorrhaging, and even maternal mortality. Improving the diets of women, their access to nutritional services and promoting proper nutrition and care both prior to and during pregnancy, as well as during breastfeeding are essential measures to combat malnutrition. The study was carried out among married farm women (18-38 years) in the Golaghat district of Assam. Overall knowledge level of the respondents towards maternal health was found to be medium (44.57%) while in respect of general nutrition and health and hygiene the knowledge level was found to be low. In terms of education, it was noted that there is a positive and significant correlation between knowledge levels and educational attainment. Both education and occupation are crucial factors in assessing an individual's knowledge, awareness, and understanding. To enhance the understanding of maternal health issues among farm women in rural areas, it is essential to provide proper training, raise awareness, and offer demonstrations.

Keywords: Maternal health, Nutrition, antenatal mother, knowledge level

Introduction

One of the main aims of millennium developmental goal of India was to improve the maternal health. In spite of implementing many schemes and goals for the betterment of nutritional value in the antenatal mother, the destination is still a dream in India (Sindhu *et al.* 2017) ^[9]. Understanding and improving women's health is a very important and challenging task of every stakeholder. Women in rural regions play a crucial role in supporting their families and communities by significantly impacting food and nutrition security, generating income, and improving rural livelihoods and overall quality of life. Maternal health refers to the health of women during pregnancy, childbirth and the postnatal period. It is commonly noted that women's diets tend to include few fruits, vegetables, dairy products, fish, and meat. Inadequate nutrition during pregnancy, which is deficient in essential nutrients such as iodine, iron, folate, calcium, and zinc, can result in complications such as anaemia, pre-eclampsia, hemorrhaging, and even maternal mortality. Additionally, these poor dietary choices can contribute to stillbirths, low birth weight, stunting, and developmental delays in children. Improving the diets of women, their access to nutritional services and promoting proper nutrition and care both prior to and during pregnancy, as well as during breastfeeding are essential measures to combat malnutrition in all its forms. Awareness of women regarding their health assumes special significance in the Indian context because the maternal health problems are mainly due to ignorance, poverty, and

lack of knowledge regarding the issue. Considering the facts mentioned the present study was designed to elicit the maternal health care knowledge of farm woman in Assam and to find out the factors influencing the knowledge level.

Materials and Methods

The study was carried out among married women who are pregnant or are mothers of a single child under the age of one, belonging to the age group of 18-38 years, across 15 villages in the Golaghat district of Assam covering 260 farm women. The participants in the study were primarily women engaged in farming. The study utilized a structured questionnaire designed to assess maternal and nutritional knowledge. This questionnaire comprised two sections: the first section outlined the socio-economic profile of the respondents, while the second section included a total of 38 statements with varying correctness, awarding scores of 2 points for correct answers and 1 point for incorrect ones. The tool was divided into four aspects: General Nutrition (10 statements), Health and Hygiene (8 statements), and Maternal Care (12 statements) and knowledge on government schemes supporting women of reproductive health (8 statements). Based on the scores obtained knowledge level of the respondents were calculated and they were grouped accordingly.

Results and Discussion

Socio-economic characteristics influence the perception of people and the impact of these characteristics cannot be

ignored in any aspect of life (Parveen, 2019) [7]. Socio-economic barriers, low educational attainment and community perceptions about the quality of care appear to limit optimal utilization of maternal health services. To improve reproductive health in rural areas, it will be necessary to increase men and women's knowledge of the importance of maternal health care, and improve the quality of care offered in nearby health care facilities (Butawa 2010) [5]. Adverse socioeconomic conditions can result in maternal malnutrition, impacting health of both the mother and child. Different elements of socioeconomic status like age, education, occupation are associated directly or indirectly to the health of individuals. From Table 1 it was observed that 16.54 percent women were pregnant and 86.46 percent were married and having a child under one year of age. Age plays a significant role in shaping individuals' perceptions of various aspects of life, including dietary modifications and lifestyle changes. As people age and gain experience, their opinions on the same issues can evolve over time. It is often stated that age is a crucial factor to consider in any research to ensure accurate data

collection. In this study, the majority of the population falls within the age group of 23-28 years, followed by 31.92% in the 28-35 year age range. It was recorded that majority of the respondents (37.69%) had completed Higher secondary followed by Graduation (21.54%), HSLC (20.38%), under matric (13.46%) and post graduate (6.92%). The majority of respondents were engaged in farming, accounting for 73.08% of the total. In contrast, 9.23% were involved in business activities, while 15.77% focused exclusively on household tasks. A very small fraction, only 1.92%, participated in service-related work. It is evident from the Table that majority of the respondents were from OBC caste (71.92%) followed by SC and ST (20.00%) and general category (8.08%). Education and occupation are crucial factors in assessing an individual's knowledge, awareness, and understanding. Education serves not only to elevate social status but also to reshape perceptions of daily life, particularly concerning health and nutrition, regardless of one's physical condition. Both education and occupation play a pivotal role in comprehending reality and attaining a higher quality of life.

Table 1: Socioeconomic characteristics of the participants in the quantitative component of the study (N=260)

Sl. No.	Particulars	Urban (N=260)	
		No	Percentage
1.	Status		
a)	Pregnant	43	16.54
b)	Married and having child under one year	217	83.46
2.	Age		
a)	18-23	51	19.62
b)	23-28	102	39.23
c)	28-35	83	31.92
d)	35-38	24	9.23
3.	Education		
a)	Under matric	35	13.46
b)	HSLC passed	53	20.38
c)	HS passed	98	37.69
d)	Graduate	56	21.54
e)	Post graduate	18	6.92
4.	Occupation		
a)	Service	5	1.92
b)	Business	24	9.23
c)	Farming	190	73.08
d)	Solely Housewife (Not engaged in farm work)	41	15.77
5.	Caste		
a)	General	21	8.08
b)	OBC	187	71.92
c)	SC and ST	52	20.00

The data presented in the Table 2 indicates the component wise maternal health and child care knowledge among rural women. In terms of general nutrition, 35.19% of rural women exhibited a low level of knowledge, while 30.75% had a medium level, 22.54% demonstrated a high level, and 11.52% showed a very low level of knowledge. Sindhu. *et al.*, 2017 [9] also stated that more than half of the mothers lack the knowledge about the importance of nutrition in fetus growth which influence on infant mortality and morbidity. It was found that in respect of health and hygiene, 40.21% of rural women had a low level of knowledge, followed by 36.62% with a medium level, 16.5% with a high level and 6.67% with a very low level of knowledge. For maternal care, it is noteworthy that the

majority of respondents (56.72%) had a medium level of knowledge, with 22.18 percent at a low level, 11.95 percent at a high level and 9.15 percent at a very low level of knowledge. Maternal health care services are critical to reduce maternal fatalities and should be available throughout the health system due to their importance in ensuring safe motherhood and the overall well-being of families and communities (Olaolorunpo and Maryjane, 2023) [6]. It was observed that the knowledge on different supportive government schemes for women of reproductive age group majority (54.17%) of women had medium level of knowledge followed by high (25.83%) low (11.67%) and very low level of knowledge (8.33%). In respect of overall knowledge of the respondent it was observed that majority

of respondent had medium level of knowledge followed by low level, high level and very low level of knowledge. Present study findings were supported by Biyyala *et al.*, 2018 [1] and Patil and Patil, 2022 [8] indicating that a greater number of reproductive age group women were found to have average to good level of awareness about maternal and child health. Further they had pointed out that about 69% had average knowledge about personal hygiene and child’s hygiene practices.

Table 2: Component wise Knowledge level of farm women on maternal health

Sl. No.	Aspects	Knowledge level (%)			
		Very low	Low	Medium	High
1	General Nutrition	11.52	35.19	30.75	22.54
2	Health and hygiene	6.67	40.21	36.62	16.5
3	Maternal care	9.15	22.18	56.72	11.95
4	Government Schemes	8.33	11.67	54.17	25.83
5	Overall Knowledge	8.92	27.31	44.57	19.21

Data pertaining to factors influencing maternal health knowledge of farm women is presented in the Table 3. Results revealed that, with respect to status, knowledge level was recorded to be medium irrespective of status. Mean knowledge level was ranged between 40.41 to 52.11 with standard deviation from around 13-14. While irrespective of age group also majority of farm women showed medium level of knowledge on maternal health with the mean score ranging from 41.61 to 43.28. The chi square analysis showed non-significant association between Both χ^2 and correlation showed non-significant association between age of farm women and their knowledge on maternal health. Likewise, ‘r’ value also depicted non-

significant relationship. Patil and Patil (2022) [8] had also found almost similar results in respect of age. The chi-square value indicated significant association between educational category and knowledge on maternal health of farm women.

Comparison of mean scores of educational categories indicated that mean score of post graduated women was more as compared to other educational category women which shows that post graduated women had more knowledge on maternal health. Further ‘r’ value (0.832) shows positive and highly significant relationship between education and knowledge maternal health. The Chi-square value showed existence of significant association between different education level and knowledge on maternal health of farm women. The data presented in the table clearly indicates that as education levels rise, there is a significant improvement in knowledge levels. The mean score of under matric education level group of farm women was recorded to be 22.23 while it was recorded as high as 66.89 in respect of the group with post graduation level of education.

With respect to occupation, the Chi-square value showed existence of non-significant association between different occupation and knowledge on maternal health of farm women. Comparison of mean score indicated that women having service occupation were better in maternal health knowledge followed by farm women engaged in business and had least knowledge who were mostly engaged as house wife. Further ‘r’ value shows positive and significant relationship between occupation and knowledge on maternal health. With respect to caste, mean scores indicated that mean scores of general caste women was more than OBC & SC/ST. This showed that general caste women were better in maternal health and child care knowledge.

Table 3: Influence of selected variables on maternal health of farm women

Variables	Factors categories	Knowledge on maternal health and child care				χ^2 value	‘r’ value	Mean \pm SD
		Very low	Low	Medium	High			
Status	Pregnant	2 (4.65)	13 (30.23)	23 (53.49)	5 (11.63)	-	-	40.41 \pm 14.35
	Married and having child under one year	25 (11.52)	42 (19.35)	113 (52.07)	37 (17.05)			52.11 \pm 13.78
Age	18-23 years	6 (11.76)	16 (31.37)	21 (41.18)	8 (15.69)	1.23 ^{ns}	0.024 ^{ns}	41.61 \pm 17.73
	23-28 years	8 (7.84)	27 (26.47)	47 (46.08)	20 (19.61)			42.91 \pm 17.10
	28-35 years	5 (6.02)	23 (27.71)	37 (44.58)	18 (21.69)			43.28 \pm 17.65
	35-38 years	4 (16.67)	5 (20.83)	11 (45.83)	4 (16.67)			42.08 \pm 20.68
Education	Under matric	4 (11.43)	13 (37.14)	14 (40.00)	4 (11.43)	13.42*	0.832**	22.23 \pm 10.85
	HSLC passed	5 (9.43)	15 (28.30)	23 (43.40)	10 (18.87)			25.38 \pm 7.67
	HS passed	10 (10.20)	23 (23.47)	47 (47.96)	18 (18.37)			44.82 \pm 10.44
	Graduate	1 (1.79)	15 (26.79)	28 (50.00)	12 (21.43)			60.39 \pm 8.06
	Post graduate	3 (16.67)	5 (27.78)	4 (22.22)	6 (33.33)			66.89 \pm 5.10
Occupation	Service	1 (20.00)	0 (0)	3 (60.00)	1 (20.00)	3.19 ^{ns}	0.334*	59.60 \pm 14.60
	Business	0 (0)	5 (20.83)	11 (45.83)	8 (33.33)			53.92 \pm 15.71
	Farming	37 (19.47)	45 (23.68)	66 (34.74)	42 (22.11)			43.12 \pm 15.69
	Solely Housewife (Not engaged in farm work)	8 (19.51)	14 (34.15)	16 (39.02)	3 (7.32)			32.10 \pm 21.56
Caste	General	3 (14.29)	3 (14.29)	10 (47.62)	5 (23.81)	-	-	57.14 \pm 9.87
	OBC	39 (20.86)	31 (16.58)	79 (42.25)	38 (20.32)			45.43 \pm 14.54
	SC and ST	11 (21.15)	9 (17.31)	25 (48.08)	7 (13.46)			43.12 \pm 12.23

Women have unique nutritional needs throughout their lives, particularly before and during pregnancy, as well as while breastfeeding, when they are most vulnerable nutritionally. Prior to pregnancy, it is essential for women to maintain a nutritious and safe diet to build adequate reserves for the demands of pregnancy. During pregnancy and breastfeeding, the requirements for energy and nutrients

increase significantly. Meeting these needs is crucial for the health of both the mother and her child, both in utero and during early childhood. In many instances, women's diets often lack sufficient fruits, vegetables, dairy, fish, and meat. Inadequate nutrition during pregnancy can lead to serious health issues such as anemia, pre-eclampsia, hemorrhage, and even maternal mortality. Additionally, poor dietary

intake can result in stillbirth, low birth weight, wasting, and developmental delays in children. During breastfeeding, inadequate nutrition complicates mothers' efforts to restore their nutrient stores and fulfill their increased dietary requirements. Various factors influence women's diets, particularly food access and affordability, gender inequality, and social and cultural norms that may limit women's ability to make informed decisions regarding their nutrition and healthcare. To ensure optimal maternal health and promote fetal development, it is essential to maintain a balanced diet that is rich in vital nutrients such as folic acid, iron, calcium, and omega-3 fatty acids. Additionally, adequate calorie intake and appropriate supplementation, when necessary, play a crucial role. Hence, inclusion of plenty of fruits, vegetables, whole grains, lean protein, and healthy fats very much essential which can provide the most vital nutrients. For poor households, fruits and vegetables are often the only sources of micro nutrients and homestead production of fruits and vegetables provides the households with direct access to important nutrients which otherwise may not be readily available or within their economic reach (Borthakur *et al.*, 2021) ^[2]. Nutrition gardens are the micro solution for addressing undernourishment and food insecurity in both urban and rural families; fruits and vegetables grown in nutrition gardens play an important role in filling the gap in nutritional needs by providing access to food that is harvested, prepared and consumed by family members (Borthakur *et al.*, 2023) ^[3]. A scientifically designed nutrition garden can play a significant role in enhancing maternal health by providing a sufficient supply of micronutrient-rich fruits and vegetables, which help combat nutrient deficiencies during this critical period.

Conclusion

Knowledge is having of understanding and skill on a specific aspect by an individual or humankind gained through experience and association (Borthakur *et al.*, 2023) ^[4]. Sustaining proper nutritional status throughout the stages of life is a very important factor to lead a healthy life. Enrichment of knowledge during the adolescent period regarding maternal health and nutrition is very important because awareness during this crucial period on the importance of good nutrition enable the girl to plan her diet during the upcoming life stages whether that may be pregnancy or lactation. It is evident from the study that majority of the respondent had medium level followed by low level of knowledge. Therefore, it is essential to provide proper training, raise awareness, and demonstrate maternal health-related aspects to enhance the knowledge of farm women in rural areas by all the stakeholders. This initiative is crucial for fostering a healthy and prosperous society.

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