

Influence of Food Taboos and Beliefs on Anaemia among Pregnant Women In Isiolo County, Kenya

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Abstract

Background: Food taboos have a long history that could be used to explain the presence of certain dietary tradition in every culture. Pregnancy imposes the need for considerable extra calorie and nutrient requirements. A balanced and adequate diet is therefore of utmost importance during pregnancy and lactation to meet the increased needs of the mother and to prevent nutritional stress. Isiolo County is inhabited by communities that still practice all aspect of their culture, religion and beliefs. Some of the beliefs that surround the diet of pregnant women, can harm the pregnant woman and the child. This study sought to assess the common food taboos and beliefs during pregnancy and their influence on anaemia among pregnant women in Isiolo County.

Methods: The study utilized a descriptive cross-sectional research design. The study population was divided into 3 clusters based on the sub-counties in County. Both qualitative and quantitative data were obtained by trained research assistants from a sample size of 374 distributed proportionately among the three sub-counties and analyzed using SPSS version 23. Correlation coefficients were used to establish relationships between variables of the study and logistic regression was used to identify the association of explanatory variables with the outcome variable. A p-value of <0.05 was used to determine significant results. Content analysis was used to present qualitative data gathered from focus group discussion.

Results: The study found a high prevalence (68.02%) of anaemia during pregnancy in Isiolo County. Cultural beliefs and food taboos had negative effect on the prevalence of anaemia among pregnant mothers $\chi^2 (3, N=369) = 8.201, p<0.001$.

Conclusion: There is a high prevalence of anemia in pregnancy associated with cultural beliefs. We recommend partnerships between National Ministry of health and County government department of health to promote campaigns aimed at eliminating negative cultural beliefs.

Background

Every society has long time held beliefs that can negatively impact pregnancy. Communities also have cultural beliefs on foods to be eaten in pregnancy and those to be avoided. Such beliefs can promote a healthy pregnancy and others are detrimental both to the mother and the fetus [1]. Food is considered a taboo when people abstain from consuming it due to religious and cultural reasons. It can be permanent or temporary. A permanent food taboo means avoiding the food and/or drinks throughout the person's life, while some foods are only avoided for certain periods of time like in pregnancy [2]. These restrictions often apply to women and are related to the reproduction cycle (during pregnancy, birth, and lactation periods) [2]. Food taboos are considered to be purposeful averting of a meal piece for motive other than simple aversion or meals fondness. It is said that meal prohibition, accredited by an exacting set of people as part of their ways of life, aids in the solidity of this set of people, helps that particular group uphold its uniqueness in the face of others, and, consequently, gives that feeling of being right place. The averting of certain meals and inaccurate information concerning their benefits can deny women from

getting sufficient nourishment, particularly during the vital phase of pregnancy when it's highly helpful to the mother and her fetus [3].

Traditional beliefs and taboos practiced by communities have been found to have a lot of negative consequences on pregnant women which sometimes result to serious catastrophes. Ekwere *et.al* in the year 2015, did a study on anemia in pregnancy and their study observed that anaemia was a serious global health problem, with an average of 2 billion people, living with anaemia; the most vulnerable group was pregnant women and young children [4]. In Isiolo County out of 4850 pregnant women who attended antenatal clinic, 3007 were found to be anaemic and which translated to prevalence of anemia in pregnancy as at 62% [5].

Africa is considered a continent of diverse culture, beliefs and taboos and Kenya is no exception. In many local communities in Africa, pregnant women have food taboos with consequent depletion of vital nutrients leading to anaemia and pregnancy complications. For instance, Ethiopians holds taboos towards partaking of certain foods like chicken and fish by a pregnant woman [6].

The anaemia prevalence among expectant mothers is still detrimental, causing many women being at risk of morbidity and mortality during maternal time, underweight infants, premature delivery and great probability for prenatal death [7]. In a survey carried out by Gedefaw et al in the year 2015 on anemia and associated factors among pregnant women in Ethiopia found that women consuming Iron supplements for 90 days (3months) as recommended by World Health Organization were about 2.5% [8]. This was minimal, hence, led to high prevalence of anaemia among pregnant mothers. This was compounded by the fact that pregnant mothers are not allowed to eat specific meals like, Eggs, Fish, Chicken liver while pregnant [8]. In a preliminary survey in Isiolo County, the pregnant mothers are also prohibited to take fish from the lake, and chicken liver. Therefore, the current study therefore sought to determine the influence of these food taboos and cultural beliefs on anemia in pregnancy.

Methods

Study design

The researcher employed descriptive cross-sectional design to bring out the peoples' beliefs and clear significant relationship of the variables under study as well as the biggest number of the information, collected in a short period of time at one point in time. The obtained data gave information of cultural beliefs and practices that are within nutrition of expectant mothers, the meals that are believed to be taboos as well as the nutritional practice of women during pregnancy.

The research was conducted in the County of Isiolo, which is one of the eight counties in the previously known Eastern Province. The County is semi-arid and the people living in the county are nomadic apart from areas within Isiolo town and along Waso Nyiro River where the inhabitants practice small farming activities and businesses. The county was chosen due to it is high level of poverty and maternal death as

recorded in the Kenya Demographic Health Survey (KDHS) in the year 2014. The researcher included all expectant mothers who had resided in Isiolo for at least 3 months.

Sampling and sampling techniques

The researcher used the formula of Yamane [9] as defined by Israel (1992) in determining the sample size. The formula is as illustrated below;

$$n = \frac{N}{1 + N(e)^2}$$

n=Sample Size

N=Population Size

e= Desired level of precision, which is at $\pm 5\%$ precision, where we desire a 95% confidence level

Following the formula, the researcher found a sample size of 374. The researcher used cluster sampling to obtain three clusters: Merti, Garbatulla and Isiolo. The sample size of the study participants (374) cases was then proportionately distributed within the 3 clusters. Each cluster composed of wards; Isiolo has five wards, Garbatulla has three and Merti has two wards respectively. Participants from each cluster were sampled through simple random sampling until the required sample proportion was achieved.

Data collection tools

The research used a structured questionnaire and focus group discussions to obtain the required data. Haemocue machine was used to obtain haemoglobin (Hb) levels of the mothers; this was validated with the previously latest recorded Hb level of the mother in their ANC booklet. The questionnaire was pretested among 25 pregnant mothers in Marsabit County. Peer proof reading and constant consultation from supervisors ensured validity of the tool following the pretest. Reliability of the tool was obtained using test-retest method. Responses from the 25 participants of the pretest were computed using SPSS version 23 to obtain Chronbach's alpha, which was at 0.855 and this was considered acceptable. Summary in Table 1.

The research gathered both primary and secondary information. Primary data was on socio-demographic factors, meal taboos, availability of antenatal care and anaemia-related knowledge and attitudes and practices of food taboos were gathered by use of semi-structured questionnaires of which they were given by the interviewer. Apart from questionnaire, focus discussion guide was also employed as data collection equipment as it enhanced the gathering of quality data and clarifying problems where possible. The tool collected demographic information which included; sex, age, educational level and occupation in the first part of the questionnaire, the second part consisted of questions on attitudes, and practices on food taboos and cultural practices. The research assistants were given a one-day training program to

prepare and equip them before going to the field for actual data collection. This also helped in checking face validity.

Data analysis

The collected data was entered, verified and coded for analysis. Statistical Package for Social Sciences (SPSS) v.23 was employed during the analysis of data. Descriptive and inferential statistics was used to analyze quantitative data. Data was summarized using Descriptive statistics. Influence of common food taboos on anaemia among expectant women and mothers attending antenatal care in the County of Isiolo was analyzed using inferential statistics, chi-square, and Fisher exact test where assumptions of Chi-square were violated. Associations were considered significant $P < 0.05$. On the other hand, qualitative analysis was operationalized by arranging the data according to the emerging themes or patterns which were assigned to make them measurable.

Results

Demographic characteristics of participants

Majority of the respondents 171(46.3%) were aged 18-25 years followed by 121 (32.8%) who were aged 25-32 years. The study found that majority of the respondent 199(53.9%) lived in town. Majority of the participants of this study were married 206(55.8%) followed by 89(24.1%) widowed. Summary in Table 2.

Further on computation the study found a strong indirect relationship between marital status and the level of hemoglobin among pregnant women living in Isiolo County. Living with a husband significantly reduced the chances of the pregnant mother having lower hemoglobin level (anemia). ($\chi^2 (1, N=369) = 27.116, p=0.018, r=5.56$). The study revealed that majority of the respondents lived with their extended families 199(53.9%) compared to 170 (46.1%) who lived with nuclear families. There was no significant association between who the pregnant mother lived with and occurrence of anemia in pregnancy.

The study found that, 92(24.9%) participants had never attended school while majority 179(48.5%) had a primary school level of education. Interestingly, the study also revealed a strong negative correlation between level of education of the pregnant mother and their Hemoglobin level. As the level of education increased, the chances of having anemia in pregnancy significantly reduced at $\chi^2 (3, N=369) = 17.55, p < 0.001, r=9.95$.

Relationship between cultural beliefs and taboos and prevalence of anaemia among pregnant women

In most cases, the food taboos are implemented by mothers who do not have the facts about the taboos. Lack or low levels of nutritional knowledge and nutritional requirements in pregnancy imposes risk both to the fetus and the pregnant mother. The current study revealed that in Isiolo County, there were food

taboos stipulated on certain foods during pregnancy like not eating chicken eggs and fish from the lake. Majority of the mothers (71.5%, n=264) practiced the taboos and this was attributed to lack of nutritional knowledge in pregnancy. This clearly indicated that food taboos stipulated were ignorantly put into place therefore affecting the pregnant women and the wellbeing of the fetus.

It was evident from the participants that the food taboos had negative impact on pregnant mothers, this was supported by 81% (n=299) mothers who agreed that the taboos contributed to maternal anemia in pregnancy since the nutritional foods needed in pregnancy were prohibited. This implied that cultural taboos imposed by the community prevented the pregnant mothers from exercising their right of choice on foods they consume during pregnancy hence increasing prevalence of anaemia. Cultural taboos were therefore considered to be significantly contributing to prevalence of anemia in pregnancy at (χ^2 (4, N=369) = 27.126, $p < 0.001$, $r = 0.31$).

It was also noted that majority of the mothers (51.8%, n=191) hailed from poverty-stricken areas and had low literacy levels. This implied that despite having the will to take a balanced diet, the mothers couldn't afford the different food choices and they lacked the nutritional knowledge on which food to consume when pregnant. This was a clear indication that high poverty level contributes to anaemia prevalence in Isiolo County. The study results revealed a significant positive relationship between food taboos and beliefs practiced in Isiolo County and prevalence of anaemia among pregnant women ($r = 0.651$, $f = 67.85$, $p = 0.01$). Summary in Table 3

Discussion of the results

Anaemia is a reduction in the red cell mass in the blood resulting in a drop in oxygen supply to meet the metabolic needs of the body is a challenge to pregnant women in Kenya especially in Isiolo County. This study sought to assess the food taboos and beliefs during pregnancy and their contribution on anaemia among pregnant women in Isiolo County.

The study examined demographic characteristics of the participants and how they were associated with anaemia in pregnancy. Interestingly marital status was a significant determinant on the health of the pregnant women. Married women were most likely to get some assistance from their husbands including financial support and provision of a balanced diet during the time when they needed the help the most. Living with a husband was found to reduce chances of low hemoglobin level (anemia) to a significant percentage. This finding is consistent with that of Mohammed et al in Ethiopia in the year 2019 who found that concerned spouses supported their wives to adhere to the right diet during pregnancy despite the cultural beliefs held. However, almost a fifth of the study participants (18.2%) avoided one or more food items due to extensive pregnancy related food taboos and myths [10]. The main reasons for the non-adherence were mainly traditionally held beliefs and misconceptions. The study concluded that a significant relationship exists between pregnancy and anaemia though other factors apart from pregnancy still explained the risk of anaemia.

Diverse cultural practices restricting the consumption of foods high in iron could affect the haemoglobin level of women during pregnancy. Cultural taboos and beliefs practiced to a large extent were found to influence diet selection during pregnancy in the current study. These findings concurred with those of Patil *et al* in the rural community of Pondicherry in the year 2010 who found that foods such as Green chili pepper, organ meat, fish, eggs and dark green leafy vegetables were the most avoided food items, with the reasons for the avoidance being largely traditionally held myths and misinformation [11]. Further Zerfu *et al* did a study on anemia in pregnancy in Ethiopia in (2016) and found that women avoided some foods during pregnancy due taboos and beliefs that one would gain weight. Some food restrictions are based on decency and aesthetics [12].

In *Kalenjin* community–Kenya, *moboriet* consumption is believed by some people to make a woman defecate during birth. Sugary foods are also believed to be key encourager of saliva over production to the baby. This is a clear indication that some taboos and beliefs about certain diet and foods may hinder consumption of the right diet during pregnancy hence leading to anaemia. The mothers involved in focus group discussion indicated that food taboos concerning pregnant mothers should be scrapped off since they interfere with intake of best foods that boost hemoglobin level. It was indicated that pregnant women were positive and ready to accept the change. However, several women in another group were off the opinion that

“Cultural taboos and beliefs are important in societal set up. The old people have a reason of ignoring some of these foods. Our grandparents never ate these foods and we are healthy, they never died. Traditional methods have been used since time in memorial and the community existed using this rules and taboos”.

(Respondent 2)

This finding was found to be consistent with that of Mohammed *et al* and Zerfu *et al* studies respectively in their studies [11, 12] which indicated that majority of pregnant mothers believed the beliefs were of help to them.

Conclusion

The study found out that food taboos and beliefs significantly explained the high prevalence rate of anaemia in Isiolo County. The study focus groups discussion supported that food taboos and beliefs practiced among the members of the communities has led to unnecessary restriction on locally available foods. This restriction coupled with few food choices in the community complicated the problem further.

Recommendation

The study also recommends involvement of community own resource person in health education to gain in roads into highly held community beliefs and taboos that interfere negatively with maternal health.

References

Ethical and logistic considerations

Study proposal of the study was presented the Board of Ethical Review of Kenyatta University for it to be ethically cleared. The researcher was given a research permit from NACOSTI and the MOH before embarking on data collection. The researcher was also permitted by the Isiolo County Government as well as the professional administrations so that he got clearance for collection of data. Informed consent was obtained and confidentiality was ensured. Autonomy of the participants was assured and the information they gave was used and treated with a lot of confidence. All the guidelines and regulations according to each clearance and permission were followed to the latter.

Consent for publication

Not applicable

Data availability

The data used to support the findings are all available from the corresponding author upon request.

Conflicts of Interest

The authors declare they have no competing conflicts of interest.

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Authors' contribution

S.G was the main contributor in development and writing of the manuscript. He trained the research assistants and controlled the focus group discussions. He also contributed in the data analysis process. J.K mainly supervised the whole process of proposal development; manuscript writing and gave constructive inputs at various stages to make this a success. J.O.O was rigorously involved in the development of the proposal, sorted out the technical ICT issues and gave positive criticism of the document at all stages. All authors prove read the final manuscript and approved it to be submitted for publication.

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Tables

Table 1: Reliability coefficients

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.740	.855	25

Table 2: Demographic characteristics of the participants

<i>Social demographic factors</i>		<i>Frequency</i>	<i>Percent</i>
Age of respondents	18-25	171	46.3
	25-32	121	32.8
	32-39	76	20.6
	39-46	1	0.3
Total		369	100
Place of residence	Town	199	53.9
	Rural	170	46.1
Total		369	100
Marital status	Married	206	55.8
	Window	89	24.1
	Single	50	13.6
	Divorced	24	6.5
Total		369	100
Family setup	nuclear family	170	46.1
	living with extended	199	53.9
Total		369	100
Education level	None	92	24.9
	Primary	179	48,5
	Secondary	88	23.9
	post-secondary	10	2.7
Total		369	100

Table 3: Relationship of cultural beliefs and taboos and anaemia prevalence among pregnant women

<i>Cultural beliefs and taboos</i>	<i>Ratings</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative percentage</i>
Taboos and beliefs stipulated on certain foods during pregnancy are attributed by lack of nutritional knowledge.	Strongly disagree	22	6	6
	Disagree	59	16	22
	Neutral	24	6.5	28.5
	Agree	171	46.3	74.8
	Strongly agree	93	25.2	100
$(\chi^2 (4, N=369) = 12.21, p=0.016, r=1.99).$				
Cultural taboos have negative effect on the prevalence of anemia in the whole community	Strongly disagree	27	7.3	7.3
	Disagree	22	6	13.3
	Neutral	16	4.3	17.6
	Agree	191	51.8	69.4
	Strongly agree	113	30.6	100
$(\chi^2 (4, N=369) = 27.126, p<0.001, r=0.31).$				
<i>Cultural beliefs and taboos</i>	<i>Ratings</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative percentage</i>
Cultural taboos generally propagate the occurrence of anaemia in pregnant women as their nutritional needs greatly increase as pregnancy progresses.	Strongly disagree	16	4.3	4.3
	Disagree	32	8.7	13
	Neutral	31	8.4	21.4
	Agree	184	49.9	71.3
	Strongly agree	106	28.7	100
$(\chi^2 (4, N=369) = 17.17, p<0.001, r=0.09)$				
High levels of poverty and illiteracy has led to the dependence on cultural beliefs setting up diets for pregnant women.	Strongly disagree	27	7.3	7.3
	Disagree	22	6	13.3
	Neutral	16	4.3	17.6

Agree	191	51.8	69.4
Strongly agree	113	30.6	100

$(\chi^2(4, N=369) = 5.02, p=0.03, r=3.29)$