

## To Explore the Perceived Food Taboos during Pregnancy and their Relation to Maternal Nutrition and Health

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### Abstract

*The purpose of this study was to explore perceived food taboos during pregnancy and their relation to maternal nutritional status and health outcomes. The study was guided by the following objectives: To investigate food taboos identified for pregnant women in Namwala District, to identify dietary taboos that were embraced by the Women and to highlight nutritional challenges related to dietary taboos during pregnancy. Descriptive research design was used as the framework for carrying out the study with an estimated population comprising pregnant women who attended and received antenatal services at various clinics. From this estimated population, a sample comprising 74 pregnant women was selected using Purposive sampling method. SPSS V25 was used to analyze the raw data descriptively. The results clearly showed widespread practice of food taboos during pregnancy and the main reason for adherence was culture. The following interventions were recommended: Developing a team of community care givers, with the inclusion of traditional leadership to help break the barrier of food taboos in maternal nutrition. The Ministry of Education can spearhead a curriculum with maternal nutritional education in the school curriculum as early as primary school level in order to discourage people from observing detrimental food taboos. Ante-natal Clinics should include awareness strategies and a Health Feeding Programme in order to provide nutritious meals to pregnant women whilst attending antenatal, like School Health Nutrition (SHN) in schools. This strategy would increase ante-natal attendance with definite positive health outcomes among them, reduction in the number of Pre-term births in Zambia.*

**Keywords:** Antenatal, Community, Culture, Feeding, Health, Maternal, Nutrition, Taboos.

### Introduction

Pregnancy requires a healthy diet that includes an adequate intake of carbohydrates, proteins, lipids, vitamins, minerals, fiber, and water in order to meet maternal and foetal needs [1]. A healthy diet includes a variety of foods

from macro and micro-nutrients. For example, vegetables and fruits selected should have different colors such as green, yellow, brown, and orange in order to consume different vitamins and minerals. Meat products should consist of red and white meats, such as beef, goat meat as well as fish and chicken respectively.

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Legumes, nuts, seeds, and whole grains should also be part of the diet.

A caloric intake of a pregnant woman should increase by approximately 300 kcal/day [2]. However, pregnant women with limited resources often lack access to a healthy diet that provides for their increased nutritional requirements. Furthermore, Traditional practices and beliefs influence the eating behavior of women during pregnancy in different parts of the world. Food taboo is abstaining people from consuming some food or beverages because of some beliefs [3]. In this study food taboos may influence the women to abstain from consuming certain foods for religious, social, or cultural reasons during pregnancy [1] [3]. In many cultures, avoidance of selected foods is believed to protect the health of the mothers and their unborn babies.

Studies have indicated that women from various parts of the world including Zambia, are forced to abstain from nutritious foods as part of their traditional beliefs during pregnancy and lactating periods [3]. It is also important to note that every society, whether rural or urban in Zambia, has its own taboos in almost every aspect, followed throughout their way of life. It has been observed that many taboos target a woman's life, starting from birth, puberty, marriage, childbearing, motherhood, and widowhood as compared to a man's life [4].

In this study, the focus was on pregnant women. Taboos in relation to pregnancy are numerous [4]. A common belief supporting these pregnancy-related taboos is that breaking them may cause abortion or deformity to the new-born and further affect a woman's chances of conceiving yet again [5]. Other reasons include miscarriage and difficulties during delivery [6], their own prior negative experience or that of other women, as well as sign of respect for elders.

Religion in some cases, is the reason behind refusal of eating some foods. On a larger scale, social and cultural beliefs influence dietary taboos in this critical period of a woman's life.

In Islam and Judaism, for example, women are not permitted to consume animal-based foods [2].

Whatever the advocacy championed, food avoidance is usually contrary to research findings in relation to appropriate types of foods and quantities required by pregnant women in order to ensure optimal maternal-foetal nutrition. Traditional beliefs may unfortunately influence women to disregard health care practitioners' recommendations or advice which in some instances has lead primarily to maternal and foetal malnutrition. Inadequate intake of micronutrients can lead to different types of deficiencies. Global micronutrient deficiency burdens have decreased since 1990 [7]. The potential burden of iodine deficiency in some developed countries, for example is worthy of attention. The results of this study can guide policy makers in implementing cost-effective interventions in order to reduce micronutrient deficiency burdens in pregnant women [7].

A healthy diet, one that includes adequate intake of all the needed macro and micro-nutrients is therefore cardinal for better health outcomes [8]. Additionally, consumption of a variety of nutrients from the food groups should be encouraged throughout the pregnancy up to full-term [9].

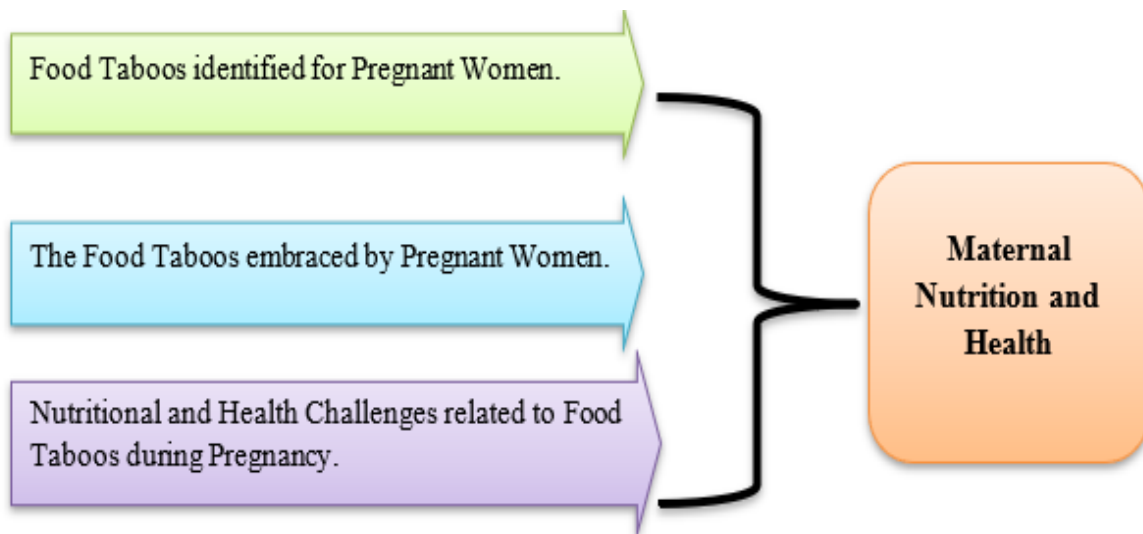
It should be noted that food taboos have a strong influence on pregnant women because they have been practiced for many generations, as a result, they are accepted as part of culture [4]. Since maternal and child health are inextricably linked, whatever affects the mother's health usually affects the child as well [8]. Unfortunately, a number of traditional food taboos that pregnant women accept and adopt are passed down to their children [10]. This means that more and more generations would continue embracing food taboos and beliefs.

The World Health Organization report on under-nutrition indicates that 45% of global deaths among children under the age of five amounts to about three million deaths each year [11]. According to UNICEF, cultural customs,

taboos, and beliefs contribute to causes of malnutrition in many developing countries in Sub-Saharan Africa [12]. Most cultural groups do not believe that a long successful outcome of having a healthy baby lies in an adequate supply of a well-balanced diet, absorption, and metabolism of the mother [13].

Apart from embracing food taboos, most pregnant women tend to have a liking towards the same types of foods which limits variety of nutrients needed for a successful outcome. Stunting is therefore one form of malnutrition that is a great concern globally due to associated negative health outcomes and incapacitation [14]. Factors that contribute to stunting include inadequate food intake, poor health, and social economic conditions. The poor-quality nutritional diets during pregnancy, also contribute to a higher number of stunted children at infancy and early childhood. The factors listed

### Conceptual Framework



**Figure 1.** Conceptual Framework

Source: Research Writing, 2023

The conceptual framework above uses the cause and effect analysis model which allow for access to a problem and identify the root cause with the view to finding a solution. In this case, the three concepts, namely: food taboos identified during pregnancy, food taboos embraced as well as health challenges related to

above have contributed to high prevalence of stunting in Zambia which has remained at 40% [15]. This percentage is unacceptable and requires various interventions in order to reduce nutritional based challenges in Zambia.

The primary function of food is to provide nourishment as already alluded to, despite society embracing dietary customs with different symbolic roles. An adequate balanced diet is, also importance during pregnancy in order to prevent psychological stress [11]. Stress and food taboos can therefore be a prerequisite for low pregnancy weight gain, preterm births, maternal morbidity, and higher mortality rates, especially in rural parts of Zambia.

### Literature Review

The study’s review of literature was based on the conceptual framework diagrammatically developed as shown below.

food taboos have a direct effect on maternal health.

### The Effects of Food Taboos on Pregnant Women and the Unborn Baby

An adequate food consumption pattern and dietary diversity are critical for the overall growth, development, and health outcomes of

pregnant women, and children. The recent Global Nutrition Report 2020 revealed that every third child in low-developed countries is malnourished and expressed concerns regarding achieving the Global Nutrition Targets by 2025 [14]. Africa is considered a continent of diverse cultures, beliefs, and taboos, Zambia inclusive.

There are 73 ethnic groups in Zambia with varying and challenging nutritional traditions and taboos. This big number of groupings indicate the need to develop an elaborate body of knowledge concerning diverse cultural dietary practices during pregnancy as a basis for contextualized understanding and provision of effective guidelines and interventions on this topic. This is a critical issue, especially in areas with high levels of child stunting and maternal malnutrition [15].

Lack of knowledge on culturally prescribed nutritional taboos and beliefs have an impact on the outcome of malnutrition relief efforts or prevention campaigns and interventions [5]. Food beliefs and taboos are believed to be a global phenomenon intended to have positive effects on communities that practice them, including the conservation of scarce or sacred resources [5].

A woman, in a traditional context holds household food decision-making power such that in the event of a food shortage, husbands and children are usually prioritized, neglecting self despite being pregnant and in need of extra nutrition requirements. Culture stipulates that a husband should eat better than everyone else in a family setting. In addition, Food-Care Health Conceptual Framework lists cultural norms, taboos and beliefs as being among the factors that contribute to malnutrition among pregnant women due to failure to make use of available food resources in a given ecological zone because of taboos and beliefs [8].

Few researchers on this subject, have established the fact that pregnant women are restricted from eating certain food items such as eggs, liver, organ meats, kidney, milk, sweet potatoes, sugar, salt, and bananas because these

foods are believed to cause obstructed labor [17]. One extreme belief is that of encouraging a woman to drink sour and too much water after a meal, in order to induce vomiting so that the baby can develop slowly and remain small to ensure less injuries during childbirth [5].

It is important to note that both rural and urban communities embrace taboos regarding foods to avoid during pregnancy, with local justifications as to why certain foods should be avoided [18]. Therefore, paying attention to and analyzing local pregnancy food taboos is an important public health goal for Public Health workers and Nutritionists in different parts of the world, especially Africa.

Pregnant women in Ethiopia practiced food taboos and beliefs in order to maintain harmony with natural and supernatural entities so that they could escape misfortune or calamity [18]. In Ghanaian communities, pregnant women avoided all cassava-based foods, fresh fish, corn dough porridge, eggs, and bananas to ensure healthy babies [19]. In most Western cultures, mice are considered unclean vermin, or pets that carry plague and are thus unfit for food. Mice, on the other hand, are popular in rural Thailand, Vietnam, and some African countries, including Zambia [17].

The American Heart Association reported in its study on food restrictions in Hong Kong that in order to maintain body harmony, pregnant women needed to avoid eating "wet-hot foods" such as shrimp, mango, lychee, and pineapple, as doing so produced a "poisonous" energy which manifested itself as allergic reactions on the skin of a baby. The baby would experience allergic reactions or skin eruptions [2].

It is clear that pregnancy restrictions can have both positive and negative effects on health-quality. Some foods that are avoided during pregnancy can in the real sense induce negative effects to the mother and the un-born child. For example, too much consumption of carbonated drinks, alcohol and too much fat can have a negative effect on maternal health. UNICEF discourages intake of tea and coffee with

caffeine during pregnancy [12]. Caffeine consumption during pregnancy, even in modest amounts (50mg or one half cup) is associated with lower birth weight below 2500g [20]. Drinking alcohol during pregnancy can cause physical, behavioral, and intellectual disabilities known as Foetal Alcohol Spectrum Disabilities (FASDs) which can last a lifetime [10].

While maternal lipid metabolism is critical for foetal development and positive long-term health outcomes such as energy storage, tissue growth, cell signalling, brain and immune system development [21], too much consumption can trigger obesity with negative outcomes such as maternal diabetes, and pre-term births [5].

Avoidance of the above listed foods, alcohol being one of them, is not based on nutritional benefits but on speculative reasoning and fear of the perceived consequences. Furthermore, it is believed that the spirits of the forefathers live very closely with the living, hence ensuring that genealogical values are upheld [11]. Food taboos, whether close to scientific benefits, or evidence-based knowledge are usually intended to protect an individual. The social norms are also meant for communities to corroborate well and maintain identity in the face of others and cultivate a sense of "belonging." [19].

### **Malnutrition During Pregnancy**

Malnutrition occurs when the mother's food intake does not meet the energy requirements of both the mother and the foetus. The chances of malnutrition in pregnancy increase as the demand for calorie-rich food increases. Malnourished mothers are prone to infections, anaemia, lethargy, and fatigue. Intrauterine Growth Restriction (IUGR) and low birth weights are usually associated with maternal malnutrition, which can increase the chances of underdevelopment of the foetus's circulatory, digestive, nervous, and respiratory systems [14].

Data from 52 countries confirmed that the likelihood of a child becoming stunted or chronically undernourished increased

substantially with poor nutrition during pregnancy [15]. Zambia has been faced with increased food insecurity, combined with rising poverty rates, high food prices due to the National debt and un dependable whether patterns caused by climate change. This has resulted into low purchasing power for food.

### **Women Adherence to Food Taboos**

In some parts of the world, pregnant women are not expected to eat meat and groundnuts because, consumption of the two foods can lead to the birth of what is termed as 'spirit children' (children deemed to possess evil spirits) [21]. When they disobey, they face stipulated consequences attached to the prohibited food.

A study conducted in India revealed that, fruits like grapes and bananas were prohibited and perceived as 'cold food'. The belief was that if included in the diet, a pregnant woman would experience fever [22]. Consumption of vegetables in a study conducted in Thailand was recommended. However, whether to eat them at the beginning of the pregnancy, during or at the end of pregnancy depended solely on location of different populations and what they decided to believe in [23].

In Kenya, 89% of participants in one of the studies on food taboos recommended traditional leafy vegetables for the purpose of boosting blood levels [22]. Similarly, the Pendhalungan society recommended consumption of fruits and vegetables in large quantities than usual [24].

Traditional beliefs, coupled with negative attitude towards health workers in some places, affect utilization of health care facilities by pregnant women [17].

### **Methodology**

#### **Research Design**

The study used the descriptive design [25]. The selection was based on the fact that descriptive investigations, unlike other types of investigations, carry out their study without altering or manipulating any of the variables of

the phenomenon. The study also used both qualitative and quantitative methods [26].

### **Study Population**

The study population comprised of pregnant women who attended and received ante-natal services at three rural clinics in Namwala District.

### **Sample Size**

The sample size comprised of 74 pregnant women from the study population [25].

### **Sampling Procedure**

Purposive Sampling was employed in this study by randomly selecting respondents, who were pregnant women [27].

### **Research Instruments**

The research used questionnaires and interviews for data collection.

### **Validity and Reliability**

To ensure validity of the research instrument [28], it was subjected to peer-review at Chalimbana University followed by a pilot study on a selected sample.

### **Data Collection Procedure**

Data collection was done by means of in-depth interview and questioning. All food taboos and cultural beliefs were documented.

### **Data Analysis**

Statistical package for Social Sciences version 25 (SPSS V25) was used to analyze the data that was collected for the study [29].

### **Ethical Consideration**

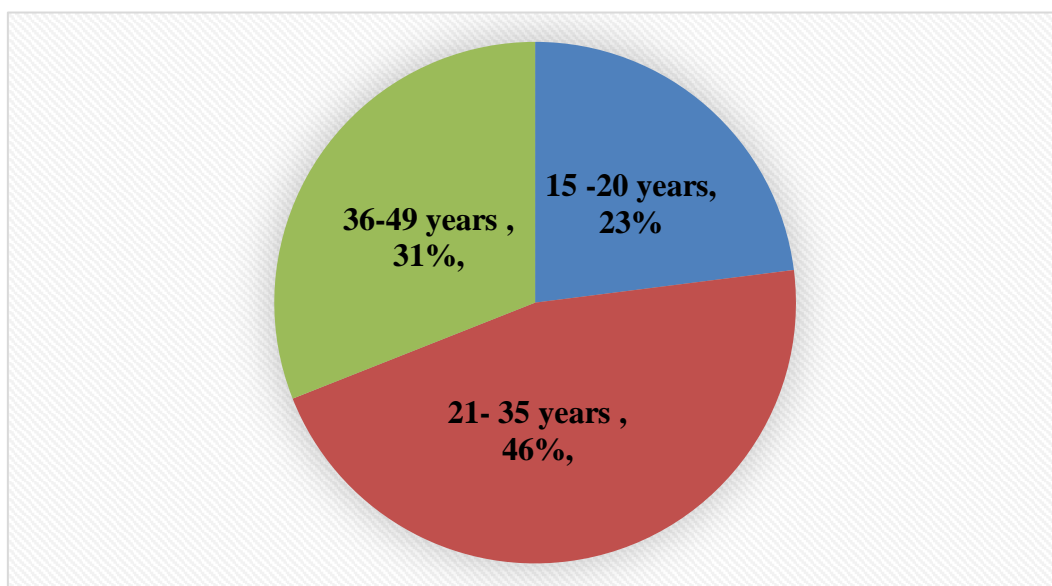
#### **Permission**

Permissions to conduct the research was granted by the District Health Office. Ethical guidelines were followed, informed consent, confidentiality, and the purpose of the research were clearly explained to respondents. Data obtained was kept as confidential.

### **Findings**

#### **Demographic Distribution**

The age distribution of the respondents comprised of 23%, (n=17), between the ages of 15 to 20 years, 46%, (n=34) between the ages of 21 to 35 years and 31%, (n=23) between the ages of 36 to 49 years. It was concluded that the majority of the respondents were pregnant women who were in the age range of 21 years to 35 years.



Source: Research finding, 2023

**Figure 2.** Showing Age Distribution of Respondents

### Level of Education

The raw data in Figure 3 is showing a frequency of 14% (n=11) who had no formal level of education, 59% (n=44) had attained

primary school education level, 16% (n=12) had attained secondary school education level and 11% (n=8) had reached tertiary level of education.

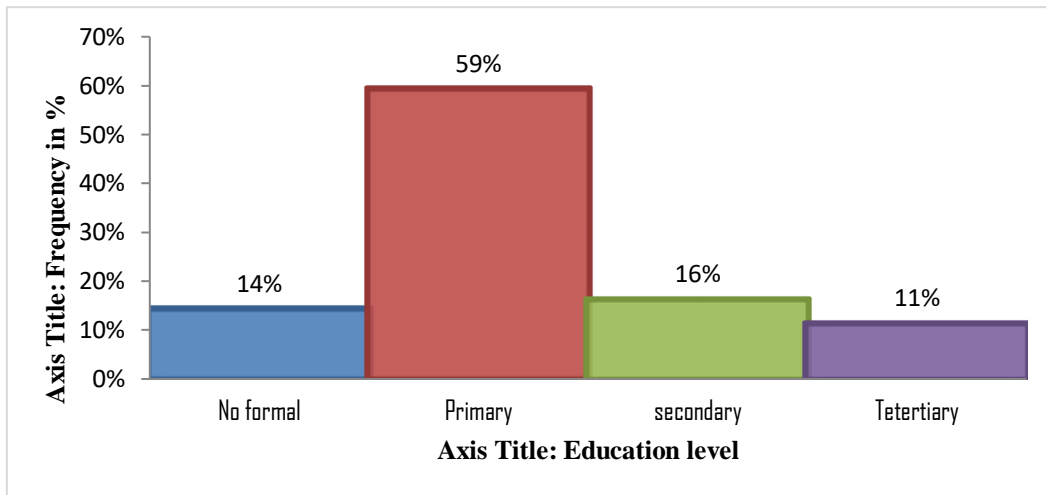


Figure 3. Showing Level of Education

Source: Research finding, 2023

The response in this figure shows that, the majority of the respondents had up to primary level of education.

### The Type of Employment

The type of employment for the respondents are shown in Figure 4 below.

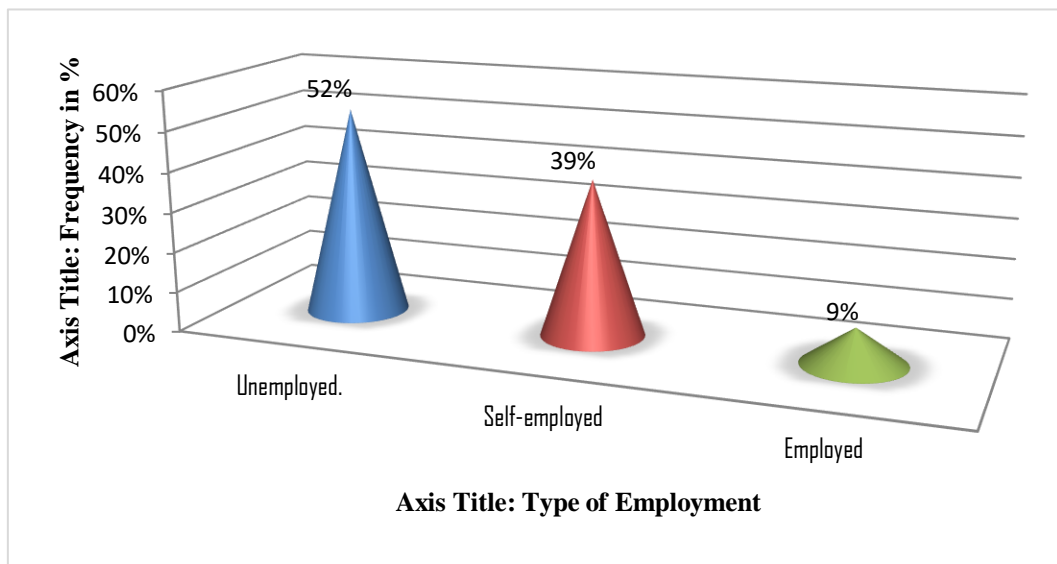


Figure 4. Showing the Type of Employment

Source: Research finding, 2023

Figure 4 above has the following raw data responses regarding the type of employment of the respondents: A frequency of 52% (n=38) were unemployed, 39% (n=29) self-employed

and 9% (n=7) were in formal employment. It was concluded that most of the women in Namwala district were either unemployed or in self-unstaining employment.

## Food Taboos that were Embraced during Pregnancy

The study sought to find out food taboos that were embraced during pregnancy and reasons

for adhering to each one of them. Table 1 below shows the food taboos and reasons for embracing them.

**Table 1.** Food Taboos and Reasons for Avoidance

Food Avoided	Reason(s)
Butternut, mango, pawpaw, orange, Pumpkin	Baby will have jaundice
	Loss of hair
	Baby's face will be dark and other dark spots according to ancestors
Chili	Baby will have burned skin or dark marks
	Causes diarrhoea
	The baby will cry a lot
Eggs, Liver, Polony (Processed meat)	Baby will have no hair
	Liver can cause jaundice
Sweets, sugarcane, sweet food, honey	Baby will drool after birth
	Can develop eczema
Alcohol	Baby will be born disabled or can have brain damage
	Baby will be a drunkard
Green leafy vegetables	Baby will have too much saliva especially if gravy is too much in the vegetables
Mabisi (fermented milk) or Milk	Baby will vomit and have heartburn after birth
	Too much dandruff
	Baby will be born with white stuff on the head
	The baby will be lazy
Any cold food, drink, and ice	Baby will get pneumonia, cause kidney problems, may cause the baby to have skin problem and be underweight
Coke, soft drink, fizzy drinks	Burns baby skin, reduce milk production, causes asthma, acid will harm the baby, causes high blood pressure to the mother
Caffeine energy drinks, coffee	Causes abortion or miscarriage, increases blood pressure
Lemon ( <i>Citrus limon</i> (L. Osbeck)	Will have a small (underweight baby)
Red meat	The baby will have gout, allergies, causes skin irritation
Bird meat	Baby will be very small, will talk too much, mother will have low supply of milk
Too much fat (oily food)	Mother will develop high blood pressure
	Increases heart rate
	Baby will get fat
	Causes heart disease to the baby
Groundnuts ( <i>Arachishypogaea</i> L.)	Baby will come out with whitish stuff on the body Baby will vomit a lot
Sourly fruits	Baby will have malnutrition or will be skinny
Salt	Causes high blood pressure
Beans	Gives the mother heartburn
Potatoes	Increases the baby's weight making it harder to deliver
Pineapple	Pineapple causes miscarriage in early pregnancy



Rabbit meat	Baby's eyes will always be open like a rabbit
Mice	Not healthy food, has micro-organisms, no support from ancestors
Rice	No growth value for the baby
Drinking too much water	Baby's joints will be weak
Bone marrow in bones	Baby will have runny nose
Grasshopper and other insects	Baby will have a long head
	Baby can have ruses
	Not allowed by ancestors
Chicken feet	Baby will have 6 fingers
Samp (crushed white maize)	Baby will be skinny
Tomatoes	Causes heartburn to mother
Meat prepared for ceremonies	Considered as unhealthy for a pregnant woman because of several people participating in the eating with different motives and background
Too many fruits in general	Causes excess body weight on the baby

Table 1 above shows a variety of foods that were prohibited and reasons for doing so. It was concluded that Namwala district had a variety of food that were considered taboo when consumed by a pregnant mother and none adherence would affect the mother but most significantly the unborn child. Some of the foods avoided by the respondents as being unhealthy are evidence based. These foods and the women's perceived

reasons for avoidance are shown in the next two tables, 2 and 3.

### Reasons for Avoiding Fatty Foods on the Unborn Baby

The study sought to find out the reason for avoiding fatty foods by pregnant women and the perceived effect on the baby. Table 2 below has the data as shown.

**Table 2.** Effect of Fatty Foods on the mother and the Unborn Baby

Effect on mother and baby	Number	Percentage
Affect the skin of the unborn baby	15	19%
Baby will be born with no hair	4	6%
Baby will have jaundice.	3	4%
Fat baby and contributing to prolonged labour and difficult delivery	44	60%
Pregnancy illness (nausea and vomiting, abdominal pain, headache, and fever) and food aversions	8	11%
Total	74	100%

Source: Research finding, 2023

Table 2 above show the perceived effects for avoiding fatty foods. A frequency of 19% (n=15) stated that the unborn child's skin would be affected, 6% (n=4) stated that the baby would be born without hair, 4% (n=3) said that the baby would have jaundice, 60% (n=44) said that the baby would be fat and that can contribute to

prolonged labour. Lastly, 11 % (n=8) believed that said that they would experience problems such as nausea and vomiting, abdominal pain, headache, fever and food aversions. The most significant belief observed in this table was that of having a fat baby that would contribute to prolonged labour and difficulties in labour.

**Table 3.** Reasons for Avoiding Alcohol and Caffeinated Drinks During Pregnancy

<b>Alcohol Effect on mother and baby</b>	<b>Percentage</b>	<b>Caffeinated Drinks Effect on mother and baby</b>	<b>Percentage</b>
Baby will be a drunkard	27%	Causes abortion or miscarriage	20%
Baby will be disabled	13%	Burns baby skin	14%
Baby will be sickly	16%	Acid will harm the baby Baby will be unhealthy	19%
Baby will have brain damage	9%	Increases blood pressure	27%
Baby will be slow in thinking and drowsy at birth	35%	Reduction of milk production when baby is born	20%
Total	100%		100%

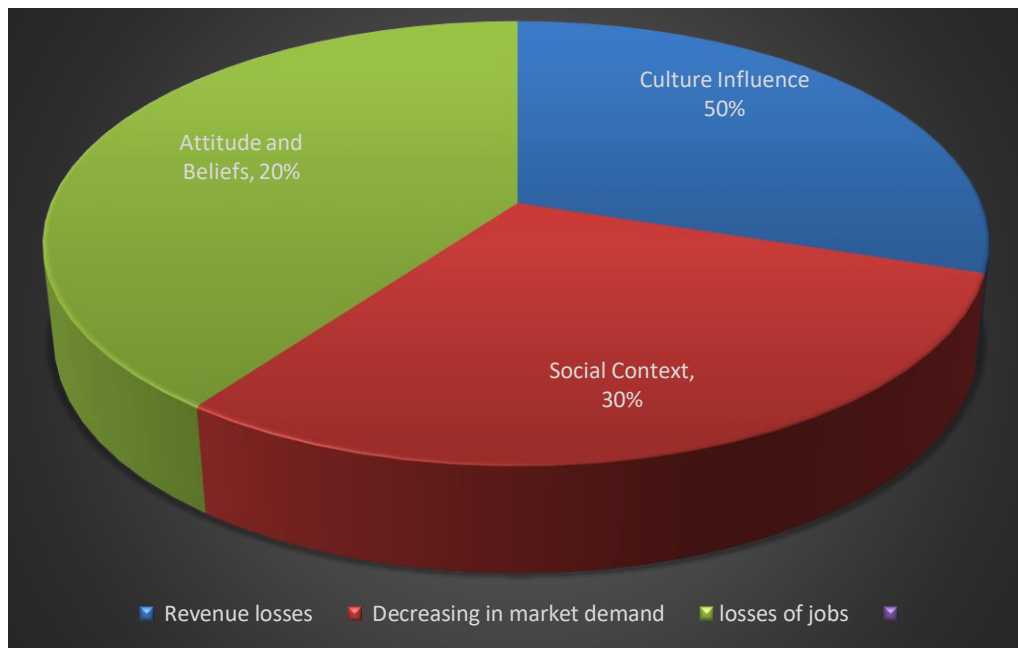
Source: Research finding, 2023

Table 3 presents reasons given by the women for avoiding both caffeinated drinks and alcohol during pregnancy. It was concluded that there were different reasons for avoiding the named foods. The most significant one for alcohol was that the baby would be slow in thinking and would be drowsy at birth. The most significant

one for caffeinated drinks being an increase in blood pressure (hypertension).

### Reasons for Adherence to the Food Taboos

The major reasons for adherence to food are illustrated in Figure 5.



**Figure 5.** Showing Reasons for Adhering to Food Taboos

Source: Research finding, 2023

Figure 5 shows that 50% (n=37) of respondents adhered to food taboos because of culture, 30% (n=22) adherence to food taboos was social and 20% (n=15) adherence to food taboos was attitude and belief. It was concluded

that the main reason or factor for adherence to food taboos was culture.

### Discussions of Findings

Namwala District had a variety of foods that were considered taboo when consumed by a

pregnant woman and none adherence would affect the mother but most significantly the unborn child. This is supported by a study that was conducted under FAO on Food Based Approaches, where it was found that most communities, whether rural or urban, had taboos regarding food abstinence during pregnancy with reasons to justify abstinence [22].

Each abstinence in the rural part of Namwala District of Zambia had own reason(s) in relation to health outcome. Some of the taboos can have health benefits, but a number of them had significant nutritional and health costs for mothers and the developing foetus. As a result, understanding local food taboos in relation to pregnancy is an important public health goal, particularly in rural areas in order to strategize on counselling and campaign messages. The negative attitude by health workers would also improve as such counselling and campaigns are implemented [17].

This study found that one of the reason for adhering to food taboos was the connection to ancestral spirits and the fact that older generations did not have problems in having many children and the experience of miscarriages was rare. Therefore, cultural advice was very important for positive pregnancy outcomes. This is in line with a study that was conducted in West Malaysia. The study discovered that women adhered to food taboos to maintain harmony with natural and supernatural entities and to avoid misfortune and calamity [19].

Non consumption of legumes did not come out clearly in this study of Namwala district. In comparison, some Ghanaian communities, avoid all cassava-based foods, corn dough porridge to ensure that they give birth to healthy babies.

Pregnant women in Namwala were skeptical about the inclusion of forest protein such as rabbit and mice because of viewing them as unhealthy foods which would cause abnormal opening of the baby's eyes. This concedes with most western cultures, where mice is considered unclean, as it carries plague and other

microorganisms, hence not fit for food. Mice, on the other hand, are popular in rural Thailand, Vietnam, and some African countries, including Zambia, among populations from Eastern Province and not from Southern Province where the study was conducted [30].

The American Heart Association reported in its study on food restrictions in Hong Kong that to maintain body harmony, pregnant women needed to avoid selection of foods that included pineapple, as doing so produced a "poisonous" and negative energy which manifested itself as allergic reaction on the skin of the baby. The baby would experience skin eruptions because of this poison and negative energy [2]. The study in Namwala had similar observations in that pineapple was perceived to cause rushes on a foetus to the extent of causing a miscarriage.

### **Reasons for Adherence to Food Taboos**

Different cultures have different values, beliefs and practices. A woman's cultural background affects her needs and expectations during pregnancy and childbirth. The findings of this study were that 50% of the participants did not want to be in conflict with their culture and hence did not eat certain foods. Therefore, culture had an influence on diet during pregnancy. This was observed in other studies from Ghana, Kenya and WHO [10, 17, 19, 22].

Socio-economic Status (SES) was among the factors associated with pregnancy outcomes. The women in Namwala did not have many alternatives to foods that were allowed culturally because of not having enough money for such alternatives. Low Social-economic Status can increase the risk of adverse pregnancy outcomes. Previous studies conducted by the American Heart Association revealed that Low SES is associated with pregnancy complications such as abortion, constipation, preterm delivery, preeclampsia, eclampsia, and gestational diabetes [2]. The findings of this study showed a frequency of 52% (n=38) being unemployed, 39% (n=29) being self-employed and 9% (n=7) being in formal employment.

Culture, as already alluded to, was the main reason for sticking to food taboos in this study. Other studies have confirmed that pregnancy restrictions have both positive and negative effects on health and that, while some of the reasons for food taboos are trivial and sometimes based on speculative reasoning, they persist due to fear of the perceived consequences. It is believed that the spirits of the forefathers live very closely with the living, hence ensuring that genealogical values are upheld [2, 23].

Whether scientifically correct or not, food taboos are frequently intended to protect individuals, and the observance entails abstaining from foods perceived as causal agents for illnesses, allergies, and deformation as well as altered behavior [7], [10]. This study revealed that the people in the rural areas of Namwala enjoyed togetherness because of maintaining values associated with food taboos.

### **Effect of Fatty Foods on the Unborn Baby**

The study found that there were many reasons put across as effects to the unborn baby because of consumption of fatty foods, the most significant being having a fat baby that would contribute to prolonged labour and difficulties in delivery. This assertion was supported by a study that was conducted in rural population of Pondicherry. Embracing food taboos in this area was emphasised with the belief that breaking them would harm the unborn baby or threaten the health of the mother at the time of giving birth [14].

Obesity during pregnancy has been reported to pose a number of risks to a pregnancy with negative maternal outcomes [5]. Therefore, eating in moderation and paying attention to food portions is important for pregnant women.

### **Effect of Alcohol and Caffeinated Drinks on the Unborn Baby**

The reasons of avoiding alcohol were that the baby would be disabled, become a drunkard, would be sickly and the most significant reasons being having brain damage, slow in thinking and

drowsy at birth. WHO cautions pregnant women to avoid drinking alcohol during pregnancy as it can cause Foetal Alcohol Spectrum Disorders (FASDs) [10].

Avoidance of caffeinated drinks by pregnant women in Namwala was because of the belief that it would cause miscarriage, reduce milk production for the baby and the most significant reason being hypertension. Maternal caffeine consumption during pregnancy, even in modest amounts (50 mg or one-half cup of coffee per day), has been associated with lower birth weight and higher rates of birth weight below 2500 g [13].

Some women in Namwala, held to food taboos because of their own bad experience which was associated to food taboos. Others believed that holding to these taboos was a symbol of respect for elders.

Traditional beliefs may influence women to disobey the recommendations or advice from health care practitioners. This was observed in a study conducted in Papua New Guinea on missed opportunities on maternal education [31]. Many studies have attested to the fact that consumption of selected foods and avoidance of the perceived food taboos by participants in related studies, is as a result of believing that their health and that of their unborn children would improve [6], [9]. It is actually one guarantee that having a healthy diet during pregnancy can result into a healthy pregnancy and better childbirth.

### **Conclusion**

The people of Namwala upheld their traditions, cultures, and religious convictions in all aspects of life. High levels of poverty and illiteracy among the respondents contributed to poor food choices. This study's main goal was to find out if there were any dietary habits practiced in the three main settlements of Namwala namely, Namwala Central, Koopa, and Chikwata.

The results in this study showed widespread practice of food taboos during pregnancy and

that culturally imposed food restrictions on expecting women prevented them from consuming basic, locally available meals. Some of the participants revealed that they did not fully understand why some foods were prohibited because they were inherent in those communities.

### **Recommendations for the Study**

1. There is a need for strengthening the nutrition counselling components of antenatal care follow-up, to dispel unhealthy traditional beliefs.
2. There is need to develop a team of Community caregivers which should include the traditional leadership who are the custodian of culture so that they can help in breaking the barrier of food taboos in maternal nutrition.
3. The Ministry of Community Development and the Ministry of Health to conduct dramatized community educating campaigns to pregnant women and members of the community on the importance of adhering to maternal nutrition and health.
4. The Ministry of Education can develop and promote maternal nutritional education

### **References**

[1] Kominiarek MA, and Rajan P. (2016). Nutrition recommendations in pregnancy and lactation. *Med Clin North Am.* 2016;100(6):1199–215.

[2] American Heart Association. (2017). Diet and Lifestyle recommendations. In: The American Heart Association [online]. Dallas. [Cited 20 February 2023]. [www.heart.org/en/healthy-living/healthy-eating/eat-smart/nutrition-basics/aha-diet-and-lifestyle-recommendations](http://www.heart.org/en/healthy-living/healthy-eating/eat-smart/nutrition-basics/aha-diet-and-lifestyle-recommendations).

[3] Patil R, Mittal A, Vendapriya DR, Khan MI, and Raghavia M. (2010). Taboos and misconceptions about food during pregnancy among rural population of Pondicherry. *Calicut Med J.*;8(2):e4.

[4] FAO. (2010), Food-based approaches for improving diets and raising levels of nutrition. International symposium on food and security, Rome:

awareness programmes in the school curriculum in order to provide this important knowledge to school going children for future reference.

5. Antenatal Clinics to include a Health feeding programme where pregnant women attending ante-natal can be exposed to good food choices and selection, cooking methods and nutritious meals.

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### **Conflict of Interest**

We declare that we do not have any conflict of interest.

FAO. Geneva, United Nations Administrative Committee on Coordination (ACC)/Subcommittee on Nutrition (SCN). (Available at [www.unscn.org/layout/modules/resources/files/Policy\\_paper\\_No\\_13.pdf](http://www.unscn.org/layout/modules/resources/files/Policy_paper_No_13.pdf)). 11.

[5] Phelan S. Pregnancy: a “teachable moment” for weight control and obesity prevention. *Am J Obstet Gynecol.* 2010 Feb;202(2):135.e1-8.doi: 10.1016/j.ajog.2009.06.008. Epub 2009 Aug 15. PMID: 19683692; PMCID: PMC2815033.

[6] Kim-Godwin Y.S., (2003), ‘Postpartum beliefs and practices among non-western cultures’ *American Journal of Maternal Child Nursing* 28(2), 74–80.

[7] Han X, Ding S, Lu J, Li Y. Global, regional, and national burdens of common micronutrient deficiencies from 1990 to 2019: A secondary trend analysis based on the Global Burden of Disease 2019

- study. *E-ClinicalMedicine*. 2022 Feb12;44:101299.doi:10.1016/j.eclim.2022.101299 . PMID: 35198923; PMCID: PMC8850322.Ed.). Boston, MA: Allyn and Bacon.
- [8] Kominiarek MA, and Rajan P. (2016). Nutrition recommendations in pregnancy and lactation. *Med Clin North Am*. 2016;100(6):1199–215.
- [9] Boeing, H., Bechthold, A., Bub, A., Ellinger, S., Haller, D., Kroke, A., Leschik-Bonnet, E., et al. (2012). Critical review: vegetables and fruit in the prevention of chronic diseases. *European Journal of Nutrition*, 51(6): 637–663.
- [10] World Health Organization. (2000). International guide for monitoring alcohol consumption and related harm. World Health Organization. <https://apps.who.int/iris/handle/10665/66529>.
- [11] World Health Organization (2016). Recommendations on antenatal care for a positive pregnancy experience. Geneva; [Apps.who.int/iris/bitstream/handle/10665/250796/9789241549912eng.pdf.jsessionid=1f1D3C626C011EB5F23C43745EE73DF?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/250796/9789241549912eng.pdf.jsessionid=1f1D3C626C011EB5F23C43745EE73DF?sequence=1) (Accessed 23/02/2023).
- [12] UNICEF Zambia, country Programme (2016-2021).
- [13] Wang, Mu PhD<sup>a,b</sup>; Xia, Wei PhD<sup>b</sup>; Li, Han PhD<sup>b</sup>; Liu, Fang PhD<sup>a</sup>; Li, Yuanyuan PhD<sup>b</sup>; Sun, Xiaojie PhD<sup>b</sup>; Lu, Songfeng PhD<sup>a,\*</sup>; Xu, Shunqing PhD<sup>b,\*</sup>. Normal pregnancy induced glucose metabolic stress in a longitudinal cohort of healthy women: Novel insights generated from a urine metabolomics study. *Medicine* 97(40):p e12417, October 2018. | DOI: 10.1097/MD.00000000000012417.
- [14] Takele BA, Gezie LD, Alamneh TS (2022) Pooled prevalence of stunting and associated factors among children aged 6–59 months in Sub-Saharan Africa countries: A Bayesian multilevel approach. *PLoS ONE* 17(10): e0275889. <https://doi.org/10.1371/journal.pone.0275889>.
- [15] (Zambia Demographic and Health Survey) (ZDHS, 2018).
- [16] Alaofè, H., Kohler, L., Taren, D., Mofu, M.J., Chileshe, J. and Kalungwana, N. (2014). Zambia food consumption and micronutrient status survey report. Lusaka, National Food and Nutrition Commission. (Available at [www.nfnc.org.zm/download/zambia-food-consumption-and-micronutrient-status-survey-2014](http://www.nfnc.org.zm/download/zambia-food-consumption-and-micronutrient-status-survey-2014)).
- [17] Otoo P, Habib H, Ankomah A. (2015). Food prohibitions and other traditional practices in pregnancy: a qualitative study in western region of Ghana. *Adv Reprod Sci*;3(03):41–9.
- [18] Tsegaye, D., Tamiru, D. & Belachew, T. Food-related taboos, and misconceptions during pregnancy among rural communities of Illu Aba Bor zone, Southwest Ethiopia. A community based qualitative cross-sectional study. *BMC Pregnancy Childbirth* 21, 309 (2021). <https://doi.org/10.1186/s12884-021-03778-6>.
- [19] Arzoaquoi, S.K., Essuman, E.E., Gbagbo, F.Y. *et al*. Motivations for food prohibitions during pregnancy and their enforcement mechanisms in a rural Ghanaian district. *J Ethnobiology Ethnomedicine* 11, 59 (2015). <https://doi.org/10.1186/s13002-015-0044-0>.
- [20] Rhee J, Kim R, Kim Y, et al. Maternal caffeine consumption during pregnancy and risk of low birth weight: a dose-response meta-analysis of observational studies. *PLoS One*. 2015;10(7):e0132334. doi:10.1371/journal.pone.0132334PubMedGoogle ScholarCrossref.
- [21] Alexandra S. Wormley, Adam B. Cohen, Pathogen prevalence and food taboos: A cross-cultural analysis, *Current Research in Ecological and Social Psychology*, Volume 3, 2022, 100056, ISSN 2666-6227, <https://doi.org/10.1016/j.cresp.2022.100056>.
- [22] K. Kouser Banu\*1, A. Prathipa2, B. Anandarajan1, A. Mohamed Ismail Sheriff3, S. Muthukumar1 and J. Selvakumar1 Riang’a, R.M., Broerse, J. & Nangulu, A.K. Food beliefs and practices among the Kalenjin pregnant women in rural Uasin Gishu County, Kenya. *J Ethnobiology Ethnomedicine* 13, 29 (2017). <https://doi.org/10.1186/s13002-017-0157-8>.
- [23] Liamputtong P, Yimyam S, Parisunyakul S, Baosung C. Sanisiriphun. Traditional beliefs about pregnancy and childbirth among women from Chiang Mai, northern Thailand. *Midwifery*. 2005;21(2):139–53. <https://doi.org/10.1016/j.midw.2004.05.002>.

- [24] F W Ningtyias and T Kurrohman 2020 *IOP Conf. Ser.: Earth Environ. Sci.* 485 012149 DOI 10.1088/1755-1315/485/1/012149.
- [25] Devillis, R. E. (2006). *Scale Development: Theory and Application*. Applied Social Science Research Method Series. Vol. 26 Newbury Park: SAGE Publishers Inc.
- [26] Creswell, R. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. USA: SAGE Publications.
- [27] Khaire A, Wadhvani N, Madiwale S, Joshi S. Maternal fats, and pregnancy complications: Implications for long-term health. *Prostaglandins Leukot Essent Fatty Acids*. 2020 Jun; 157:102098. doi: 10.1016/j.plefa.2020.102098. Epub 2020 Apr 21. PMID: 32380367.
- [28] Creswell, J. W. (2005). *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research* (2nd Ed.). Pearson Merrill Prentice Hall.
- [29] Huck, S. W. (2007). *Reading Statistics and Research* (5th Ed.). New York, NY: Allyn and Bacon.
- [30] Banjo, A.D., Lawal, O. A., and Songonuga, E. A. (2006). The nutritional value of fourteen species of edible insects in southwestern Nigeria. *African Journal of Biotechnology*, 5(3): 298-301.
- [31] Jerzy K, Delma P, Nathan K, Totona C, Sophie S, Ethel K. (2013). Food taboos and traditional customs among pregnant women in Papua New Guinea: Missed opportunity for education in antenatal clinics. *Contemporary PNG Studies, DWU Research Journal.*; 19:1–11.