Traditional Food Taboos and Practices during Pregnancy, Postpartum Recovery and Infant Care of Zulu Women in Northern KwaZulu-Natal

Mmbulaheni Ramulondi (ramulindom@unizulu.ac.za)
University of Zululand Faculty of Science and Agriculture

Helene de Wet
University of Zululand

Nontuthuko Rosemary Ntuli
University of Zululand

Research

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Abstract

**Background:** Indigenous practices and beliefs influence and support the behavior of women during pregnancy and childbirth in different parts of the world. Not much research has been conducted to examine whether and how cultural traditions continue to shape maternity experiences of Zulu women. The aim of this study is to establish the extent at which women in certain rural communities still adhere to traditional food taboos and practices during pregnancy, postpartum recovery and infants feeding, rather than modern medical practices.

**Methods:** A survey was conducted in rural northern KwaZulu-Natal between 2017 and 2020. A total of 140 women between the ages of 18 and 90 years were interviewed purposively based on their experiences in pregnancy, postpartum recovery, infant care and their willingness to share the knowledge. The interviews were conducted with school employees (teachers, cleaners and kitchen staff), workers in a cashew nut factory, and women in homesteads. Data were analyzed using descriptive statistics.

**Results:** Most (64%) of the participants said that they adhered to these cultural food taboos and practices. The most common foods avoided were certain fruits (mango, orange, naartjie paw-paw, peach), butternut, eggs, sweets (sugar, juice, sweet food, and honey), chili, ice and alcohol. The most highly recommended foods during pregnancy were leafy vegetables, fruits, liver and fish. For postpartum recovery, women mostly consumed soft porridge, all fruits and vegetables, beetroot and tea. Food not allowed for children younger than two years included meat, sugar and sweets, and chewable foods.

**Conclusion:** There were insignificant differences on food taboos and practices between the literate and illiterate participants. Most of the food taboos they mentioned do not have scientific explanation. Restrictions from fruits (vitamins C and A) and protein consumption may result in malnutrition and deprive the unborn babies of sufficient nutrients, and the foods recommended during pregnancy and postpartum period would not provide all the essential nutrients required for successful pregnancy. However, some of the food taboos would protect women from unhealthy eating. Our findings provide a basis for developing culturally appropriate nutritional intervention programs for Zulu women with a view to provide effective nutritional counselling.

**Background**

Pregnancy requires a healthy diet that includes an adequate intake of energy in the form of proteins, vitamins and minerals to meet maternal and fetal needs [1]. A healthy diet includes a variety of foods, such as green and orange vegetables, meat, fish, legumes, nuts, whole grains and fruits [2]. A caloric intake of a pregnant woman should increase by approximately 300 kcal/day [3]. However, some pregnant women often lack access to a healthy diet that provides for their increased nutritional requirements because of some food taboos which are often practiced in low and middle income countries [4, 5, 6]. Food taboos are food and beverages that people abstain from consuming for religious, cultural or hygienic reasons [7]. Several studies from Asia [4, 5, 8, 9, 10] and Africa [6, 11, 12, 13, 14] have indicated that women from various parts of the world, during pregnancy and postpartum period, are forced to abstain from nutritious foods as part of their traditional beliefs. Evidence revealed that these food taboos accounts mostly to maternal and fetal malnutrition during pregnancy [15]. Inadequate intake of micronutrients may lead to different types of malnutrition, such as deficiencies of iron, vitamins and zinc, where insufficient vitamin A and iron-deficiency anemia contribute to at least 18% of maternal deaths in developing countries [16]. In many cultures the belief is that the avoidance of certain food intake (food taboos) protects the health of the mothers and their unborn babies [7, 8, 13]. However, this may increase the risk of deficiency of proteins, fats, vitamin A, calcium, and iron in pregnant women [17].
Food taboos have a big influence on pregnant women as they have been followed by many generations and they also form part of their culture [6]. Consequently, people practicing these pregnancy-related taboos believe that breaking them may harm the unborn baby or threaten the health of the mother [18]. Additional reasons for women to avoid certain foods include their fear for possible miscarriages and difficulties during delivery [19]. Some women observe these food taboos because of their own previous experience or that of other women. Other women observe these taboos because it is a symbol of respect for elders [20]. This avoidance of food usually does not conform to the modern medical view about the appropriate types and quantity of foods needed by pregnant women to safeguard ideal maternal-fetal nutrition [21]. Traditional beliefs may influence women to disobey the recommendations or advices from health care practitioners [22].

The taboos of the same food or food group vary based on differences in regions, culture, and beliefs or reasons. In Indonesia, papaya is encouraged during pregnancy as it is classified as “cold” food [20], but in India it is discouraged as it may lead to a miscarriage [23]. Again, eggs are believed to cause bald-headed babies, in Zambia [24], and cause pregnant woman to behave like a chicken during delivery, which may in turn extend delivery period in Indonesia [20]. Further, in Ghana, eggs are avoided because they cause overweight in the foetus, which contributes to difficulties during child birth and possible death of the mother [21]. The classification of foods as either “hot” or “cold” in some Asian countries has an impact on pregnant women because pregnancy is understood as a hot condition, and thus they avoid “hot” foods [25]. “Hot” foods that should be avoided include high protein food such as fish, lentils, meat, eggs, beans, and yoghurt [26, 27, 25, 28]. The general belief is that “hot” foods are harmful and “cold” foods are beneficial during pregnancy. “Hot” foods are encouraged during the last stage of pregnancy to aid the expulsion of the foetus [29]. “Cold” foods such as cucumber, watermelon, young coconut, squash and papaya are recommended during pregnancy because they are believed to increase body water and enhance foetus comfortability in the womb [20].

Several studies have revealed that several women also practice a special food diet during pregnancy and lactation [8, 30]. Consumption of special food is mainly to improve the quality and quantity of milk, strengthen the baby and improve hemoglobin [5]. The World Health Organization (WHO) [31], recommend that a pregnant woman should consume foods that has adequate amount of folic acid, iodine, calcium, vitamin D, vitamin B12, vitamin B6, vitamin A, vitamin E, vitamin K, choline, copper, magnesium, sodium and zinc in order to ensure successful pregnancy. Postpartum is a critical period worldwide because most maternal deaths occur during this period [32]. Recommendations for nutrients intake during this period are based on replenishing nutrient stores, specifically, calcium, vitamin B6, and folate as well as supporting requirements for lactation when the woman is breastfeeding [32]. Nutritional status of breastfeeding women is of vital importance and adequate nutrition begins during pregnancy, when reserves are accumulating [33].

Maternal and child health are inseparable, thus whatever affects the mother's health, usually affects the child [34]. A number of traditional food taboos adopted by pregnant women are carried over to their children after delivery. These practices include not giving children certain foods [35]. Food taboos also have a strong effect on infant feeding and undermine optimal infant feeding practices [36]. The belief of restricting children from eating protein rich foods such as meat and eggs, because they will steal, deprive children of these nutritious foods, which may lead to malnutrition [35]. World Health Organization [37] reported that 45% of global deaths among children under five years of age are attributed to under-nutrition, which is approximately three million deaths each year. Cultural customs, taboos and beliefs contribute to some of the reasons for malnutrition according to UNICEF [38].

The World Health Organization [39] recommended that after six months of exclusive breastfeeding, appropriate and adequate complementary foods should be introduced. Optimal nutrition during first years of life is crucial for optimal growth and development and possibly prevention of chronic diseases in adulthood [40]. Inadequate feeding practice is
often a greater factor of malnutrition than lack of food [41]. Nutrient deficiencies that occur in the first years of life may have a negative impact on brain growth [42]. A study done in a rural part of KwaZulu-Natal reported high prevalence of anemia (49%), vitamin A deficiency (20%), zinc deficiency (32%), and iron deficiency (35%) in infants aged 6–12 months [43]. Cultural practice is one of the barriers to optimal complementary feeding practices and need to be addressed through nutritional program intervention [44].

Very little knowledge on the food taboos and practices of Zulu women during pregnancy, postpartum period and infant feeding is documented in the literature. It is thus important to evaluate the prevalence of food taboos and assess food that is taken during pregnancy, postpartum recovery and infant feeding. It is thus important to establish the extent at which women in the rural communities adhere to these food taboos. Indigenous knowledge, attitudes and practices towards child feeding in the study area is not previously documented. Thus this study is also assessing indigenous mother's knowledge, attitude and practice on child feeding under two years. Intervention programmes that provide nutritional advice can then address these health concerns and the assumptions that underlie successful pregnancy and delivery, given the deep-rooted nature of its cultural beliefs.

**Material And Methods**

**Study area**

The study was conducted in northern Maputaland which is located in the north-eastern part of KwaZulu-Natal, one of the nine provinces of South Africa. This region is dominated by isiZulu speaking people. Northern Maputaland (Umhlabuyalingana Municipality Zone) is an economically deprived area with approximately 44.9% of the population (total population of 163 694 people) not having a formal income [45]; only 3% of the population is receiving an income that is more than R1600 (96$ at 13 September 2020) per month. This is possible because only 2% of the population has obtained tertiary qualifications. Fifty-four percent of the households are headed by females. Households are made up of a young population with only 4% of the members older than 65 years. This region consists of two hospitals and seventeen clinics [45].

**Ethnobotanical Data Collection**

The survey was conducted with women in rural areas of northern Maputaland. One hundred and forty questionnaires were conducted between the period of 2017 and 2020. Ethnical clearance was received from University of Zululand [UZREC 171110-030] prior the onset of the survey. Written permission of the community leaders was also obtained from the Mashabane Traditional Council. Responses to the structured questionnaires designed for this study were collected by means of one-on-one interviews, conducted purposively, based on the women's experience in pregnancy, postpartum recovery and early child care and willingness to share the knowledge with the researchers. The objective of the study was explained in their native language (isiZulu) and consent form was signed prior to participation. Homesteads location was recorded using the global positioning system (GPS). This study was limited to pregnant women and mothers. Thirty-seven interviews were conducted in three schools (Emlambongwenya Primary School, Ingwavuma High School and Nyamane High School). Among those who were interviewed at schools, sixteen, ten, four, three, two, and two were teachers, school vendors, cookers, cleaners, learner support agents, and Grade 12 learners, respectively. Fifteen interviews were conducted with general farm workers at Coastal Cashew Farm, whereas the remaining interviews (88) were conducted with lay persons in their homesteads.

Structured questionnaires were used to obtain information including socio-demographic information such as age, religion, educational background, occupation, number of pregnancies, and number of children alive, number of children
that died before the age of two, place of giving birth as well as their attendance of antenatal clinics. The questionnaire included questions on food avoided during pregnancy, food recommended during pregnancy, food/beverages that are taken to encourage lactation and postpartum recovery as well as the food groups that are restricted for young children (two years and younger). The reasons behind all the food taboos and cultural beliefs were also documented. Participants were also asked to give reasons for their actions and non-actions. Additionally, respondents were asked to ascertain whether or not they followed these traditional beliefs and the reason behind following the tradition. Data were analyzed using descriptive statistics.

## Results

### Socio-demographic information

In a total of 140 interviewed women with an age range from 18 to 90 years, the highest percentage (48%) of participants was from middle aged (31–50 years) group followed by old aged (51–90 years) group of 31%, and the least percentage (21%) was for young aged (18–30 years) group. Education levels varied widely among participants, with 84% having received some level of formal education but the remaining 16% did not have formal education. Among those who had formal education, some had attended primary school (18%), others had proceeded to secondary school (45%), and a few had obtained tertiary qualifications (21%). Employment levels also varied, where more than half of the participants (56%) were unemployed; 9% were self-employed; and just 35% were employed. All participants had experienced pregnancy and reported a total of 511 pregnancies. The majority (86%) of participants gave birth in clinics and hospitals, whereas only 14% delivered their babies at home, with assistance from parents, domestic workers, or elderly people in the community, and two of the participants had themselves assisted with deliveries.

Of the children born to the participants, as many as 34 (7%) were either stillborn or had died before the age of two years. Contributing factors of these deaths may include improper medical procedures as 53% of deaths reported occurred on pregnancies that were delivered at home. Among the older women (between 56 and 90 years), 4% claimed that they had never attended antenatal clinics during any of their pregnancies because, at that time, there had been only a limited number of such clinics in the area. One of them reported having used traditional medicine to maintain a healthy pregnancy. Among those who attended antenatal classes, the stage at which they started to attend varied dramatically, from the second to the eighth month of pregnancy. Ninety-one percent of the participants were Christians. However, some of them do believe in tradition and they were following these traditional food taboos and practices.

### Food Avoidance During Pregnancy

Table 1 shows food avoided by pregnant women from northern Maputaland. Some foods such as chili, eggs, fruits (orange/mango/pawpaw/naartjie/peach) and butternut were avoided because they were believed to affect the health of the foetus, where the majority reasoned these foods as affecting the skin of the unborn baby; followed by the birth of a baby with no hair; and they may cause jaundice. Foods such as beans and tomatoes are known to affect mothers instead of foetus and are avoided because they are believed to cause heartburn in pregnant women. Although rice does not affect the health of the foetus or the mother, it was also avoided during pregnancy because it is known to have no growth value for the baby.
Table 1
Food and liquid avoidance during pregnancy and the reasons for it

| Education background | Food and liquid avoided | Reasons |
|----------------------|-------------------------|---------|
| None n = 23          | Mango/ pawpaw/naartjie/orange/pawpaw/ peach/ butternut | Baby will have jaundice/ hair loss |
| Grades 1–7 n = 24    | Chili / ice             | Baby will have burned skin or dark marks, rash and blisters appear before birth, causes diarrhoea, causes red spot (*ibala*), the baby will cry a lot |
| Grades 8–12 n = 63   | Eggs                    | Baby will have no hair, causes jaundice |
| TEd n = 30           | Sweets/sugarcane/commercial fruit juice/sweet food/honey | Baby will drool after birth, have too much saliva, and develop eczema |
| Total n = 140 (%)    | Alcohol                 | Baby will be born sick/unhealthy/disabled/brain damage |
|                      | *Imifino* (green leafy vegetables) | Baby will have too much saliva after birth, burn the skin of the baby/cause dark marks on skin |
|                      | Amasi (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 inside and not being clean when born |
|                      | 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 |
|                      | Too much fat (oily food) | Mother will develop high blood pressure/increases heart rate, the baby will get fat/ causes heart disease to the baby |

n = number of participants responded; TEd = Tertiary Education
| n | TEd | Education background | Details |
|---|-----|----------------------|---------|
| 2 | 5   | Caffeine energy drinks/coffee | Causes abortion/miscarriage, increases blood pressure |
| 2 | 4   | Liver | Baby will be born with no hair |
| 1 | 3   | Lemon | Will have a small/skinny baby (underweight baby) |
| 2 | 2   | Tea (hot) | Burn skin of the baby |
| 2 | 1   | Red meat | The baby will have gout, allergies, causes skin irritation |
| 1 | 1   | Bird meat | Baby will be very small/will talk too much, mother will have low supply of milk |
| 2 | 1   | Soil | Block the tubes/causes jaundice/the baby will come out holding the soil |
| 1 | 2   | Peanuts | Baby will come out with whitish stuff/baby will vomit a lot |
| 1 | 1   | Goat meat | If the father's surname is Mathenjwa and you eat goat meat, the baby will be stupid or crazy/ if the father's surname is Dlamini and you eat goat meat, the baby will lose hearing ability |
| 1 | 1   | Sour food | Baby will have malnutrition or skinny |
| 2 | 2   | Salt | Causes high blood pressure |
| 2 | 2   | Beans | Gives the mother heartburn |
| 2 | 2   | Muthi (herbal mixture) | Harms the baby |
| 1 | 1   | Potatoes | Increases the baby's weight making it harder to deliver |
| 2 | 2   | Pineapple | Pineapple causes miscarriage in early pregnancy |
| 1 | 1   | Rabbit meat | Baby's eyes will always be open like a rabbit |
| 1 | 1   | Rice | No growth value for the baby |
| 1 | 1   | Polony (process sausage) | Baby will have no hair |
| 1 | 1   | Avoid drinking too much water | Baby's joints will be weak |

n = number of participants responded; TEd = Tertiary Education
| n | Food item | Baby's Condition | Comments |
|---|-----------|------------------|----------|
| 1 | Bone marrow | Baby will have runny nose | |
| 1 | *Intethe* (grasshopper) | Baby will have a long head | |
| 1 | Butternut and pumpkin | Baby's face will be dark black | |
| 1 | Apples | The baby will be born bald | |
| 1 | *Mganu* alcohol (Marula beer) | The baby will become a drunkard | |
| 1 | Laxatives | Induces abortion | |
| 1 | Chicken feet | Baby will have 6 fingers | |
| 1 | Samp (*crashed white maize fruit*) | Baby will be skinny | |
| 1 | Sea food | Baby will be born bald | |
| 1 | *Isithubi* (made from cow milk) | Because you are pregnant, no specific reason | |
| 1 | Tomatoes | Causes heartburn to mother | |
| 1 | *Amabele* (Sorghum beer) | Causes sexual activeness | |
| 1 | Meat prepare for ceremonies | Considered as unhealthy | |
| 1 | Fruits | Causes excess body weight on the baby | |
| 1 | *Amadumbe* leaves (*Colocasia esculenta* (L.) Schott) | Affects the eyesight of the baby | |
| 1 | *Imbati* (*Obetia tenax* (N.E.Br.) Friis) | Affects the eyesight of the baby | |

Food avoidance is also based on health reasons particularly the fear of high blood pressure. Some women (6%) perceive that foods that are rich in fats and salts can cause high blood pressure. Other health reasons of avoiding these food groups is that the baby will get fat and the consumption of these food may cause heart disease to the unborn baby. Food taboos according to family clans including surnames such as Mathenjwa and Dlamini were also documented. One of the participants reported that if a pregnant woman is carrying a baby from the Mathenjwa clan she is not supposed to eat goat meat because the baby will either be stupid or mentally disturbed. Food such as sorghum, sea food, chicken feet, apples and rice were mentioned as food taboos during pregnancy but were only cited
by less than 1% of the participants. One of the interesting taboos mentioned was avoidance of eating chicken feet because the baby will be born with six fingers.

Food Recommended During Pregnancy

Leafy vegetables were mentioned by 51% of the participants as the most recommended food consumed during pregnancy (Table 2). Most mentioned reasons for recommending particular food was that they result in a healthy baby, provide vitamins as well as increasing and cleaning the blood. Some of the foods were recommended because they give the baby certain features. These include consumption of fish, which makes the baby to be clever, whereas apples are believed to lead into having a baby with white eyes. Some of the foods were recommended because they also help to ease labor. Consumption of *Corchorus olitorius* “igushe” (slimy leafy vegetable) leaves was known to help dilate the uterus during delivery. Raw or boiled eggs were also recommended to facilitate labor. One of interesting drinks recommended during pregnancy was traditional beer commonly known as *ijuba*, which was believed to makes the baby to be pretty and lighter in skin color.
| Education background | None | Grades 1–7 | Grades 8–12 | TEd | Total | Food and liquid recommended | Reasons |
|-----------------------|------|------------|------------|-----|-------|----------------------------|---------|
| n = 23                | n = 24 | n = 63 | n = 30 | n = 140 | (%) | Vegetables (leafy) | Provides vitamins, increases blood, healthy mind, builds bones/improves growth of the baby |
| 11                    | 13    | 33        | 15        | 72   | (51)  | Fruits | Healthy for baby |
| 4                     | 5     | 15        | 12        | 36   | (26)  | Liver | Restores, increases and cleanses blood |
| 2                     | 1     | 12        | 6         | 21   | (15)  | Fish | Makes the baby clever, delivery will be easy like a fish swimming in water, restores blood |
| 1                     | 1     | 6         | 6         | 14   | (10)  | Peanuts | Healthy for the baby, protect one’s body from infections, a good source of healthy oil |
| 2                     | 3     | 5         | 2         | 12   | (9)   | Phuthu pap (maize porridge) and Samp | Healthy for baby, energy for the baby |
| 2                     | 4     | 6         | 12        | 6    | (9)   | Milk | For health and lactation reasons, strong bones, baby will be light in complexion, strong teeth, white eyes |
| 4                     | 4     | 2         | 1         | 11   | (8)   | Red meat/meat | Provide vitamins |
| 4                     | 1     | 1         | 4         | 10   | (7)   | Amasi (sour milk) | Provides good nutrition for the baby/lightens the skin of baby |
| 1                     | 4     | 5         | 10        | 7    | (7)   | Water | Avoid dehydrating and for healthy baby |
| 1                     | 3     | 4         | 1         | 9    | (6)   | Apple | Give white eyes (cleans the eyes)/strengthens the babies bones and makes the baby’s skin to be fresh |
| 1                     | 4     | 3         | 8         | (6)  |       | Beans | Healthy for the baby, strong bones |
| 1                     | 4     | 2         | 7         | (5)  |       | Beetroot | Increases and cleanses blood |
| 1                     | 5     | 6         | 6         | (4)  |       | Carrot | Clear the eyes of a baby and the mother/good eye sight, promote brain development of the baby |
| 1                     | 3     | 4         | 4 (3)     |       |       | Igushe (slimy leafy vegetable) (Corchorus olitorius L.) | To helps dilate the uterus when one deliver |
| 1                     | 2     | 3         | 3 (2)     |       |       | Banana | Gives mother strength/for nutrients, help monitor urination if one is travelling a long distance |

n = number of participants responded; TEd = Tertiary Education
| Education background |
|-----------------------|
| 1 2 3 (2) Yogurt     |
| 2 1 3 (2) *Ijuba* (traditional beer) |
| 2 2 (1) Prickly pear fruit *(Opuntia spp.)* |
| 2 2 (1) Raw egg/boiled egg |
| 1 1 2 (1) Cheese     |
| 1 1 1 lhala fruit *(Strychnos spinosa Lam.)* |
| 1 1 (0.7) Chicken    |
| 1 1 (0.7) Maize      |
| 1 1 (0.7) Brown bread |
| 1 1 (0.7) Starchy food |
| 1 1 (0.7) Tomato     |
| 1 1 (0.7) Mopane worms |
| 1 1 (0.7) Rooibos tea |
| 1 1 (0.7) Amadumbe *(Colocasia esculenta (L.) Schott)* |

n = number of participants responded; TEd = Tertiary Education

**Specific food taken (recommended) during the postpartum period (for recovery and encouraging lactation)**

Soft maize porridge was the most recommended food to be consumed after delivery to regain strength and facilitate lactation (Table 3). The most cited reasons for consumption of these foods were that they restore strength, encourage lactation and increase blood. Latex from a plant called *Ingontshwa/amabhelebhele* [*Sarcostemma viminale* (L) R. Br.] was also cited to be taken to facilitate lactation.
Table 3
Specific food taken during the postpartum period by the mother and the reasons for it

| Education background | None Grades1-7 | Grades8-12 | TEd | Total | Food taken during this period | Reason |
|----------------------|---------------|------------|-----|-------|-------------------------------|--------|
| n = 23               | n = 24        | n = 63     |     |       |                               |        |
|                      | n = 23        | n = 30     | n = 140 |       |                               |        |
| (%)                 | (%)           | (%)        | (%) | (%)   |                               | (%)    |
| 13                   | 16            | 44         | 8   | 81    | Soft porridge (maize porridge) | Restore strength and encourage lactation |
| 5                    | 8             | 15         | 9   | 37    | All fruits and vegetables    | Increases and restores blood |
| 6                    | 4             | 15         | 11  | 36    | Beetroot                     | To cleanse and restore loss blood and to avoid constipation |
| 4                    | 7             | 15         | 2   | 28    | Tea                          | Encourages lactation |
| 2                    | 14            | 8          | 24  | (17)  | Liver                        | Increases blood |
| 2                    | 2             | 18         | 3   | 25    | Mageu (fortified maize drink) | Encourages lactation, gives strength and energy |
| 2                    | 5             | 4          | 6   | 17    | Meat                         | Build muscles |
| 2                    | 4             | 9          | 2   | 17    | Amasi (fermented milk)       | Restore strength and blood, facilitates lactation |
| 2                    | 4             | 8          | 1   | 15    | Coffee/milo                  | Encourages lactation |
|                      | 5             | 6          | 11  | (8)   | Spinach and Mfino (leafy vegetables/weed) | Healthy, provides energy, Increases lactation, restores blood |
| 1                    | 1             | 4          | 3   | 9     | Samp (crashed maize fruit)   | Restores energy |
| 1                    | 4             | 1          | 6   | (40)  | Beans                        | Restores energy, boosts lactation |
| 2                    | 2             | 1          | 5   | (4)   | Peanuts                      | Restore strength and blood |
| 1                    | 2             | 1          | 4   | (3)   | Eggs                         | Healthy, increases the blood |
| 1                    | 1             | 1          | 3   | (2)   | Hot porridge                 | Burns the dirty blood after delivery, to regain energy |

n = number of participants responded; TEd = Tertiary Education
### Education background

| n | 1 | 3 (2) | Yogurt | If you have a caesarean delivery, it prevents a big tummy |
|---|---|-------|--------|----------------------------------------------------------|
| 2 | 1 | 3 (2) | Water  | Facilitates lactation                                     |
| 3 |   | 3 (2) | Pumpkin| Restores energy                                         |
| 2 |   | 2 (1) | Cheese, polony (processed sausage) | Provide vitamins |
| 1 |   | 1 (0.7) | Maize bread | Restores energy and builds muscles |
| 1 |   | 1 (0.7) | Chicken soup | Warms the body after delivery |
| 1 |   | 1 (0.7) | Brown bread | Restores energy |
| 1 |   | 1 (0.7) | *Ingontshwa/amabhelebhele* plant (latex) (*Sarcostemma vimenale* (L) R. Br) | Encourages lactation |
| 1 |   | 1 (0.7) | *Isijingi* (porridge made from *Citrullus lanatus* (Thunb.) Matsum. & Nakai) | Facilitates lactation |
| 1 |   | 1 (0.7) | Juice  | Facilitates lactation                                     |
| 1 |   | 1 (0.7) | *Amadumbe* (*Colocasia esculenta* L.) | Restores energy |
| 1 |   | 1 (0.7) | Coke  | Facilitates lactation                                     |
| 1 |   | 1 (0.7) | Mayonnaise | To regain strength |
| 1 |   | 1 (0.7) | Fish  | To regain blood                                          |

n = number of participants responded; TEd = Tertiary Education

### Food Restrictions To Children Below Two Years

The most mentioned food to be avoided to be given to children below two years was meat (Table 4). Most cited reasons for restricting these foods was that their teeth/digestive system is not strong, causes rotten teeth and may result in malnutrition. One of the interesting foods avoided was salty foods as it is believed that salt goes to the knees of the baby and can delay the walking process and can also delay the development of their teeth.
### Table 4
Food that should be avoided to be given to children below two years and reasons for it

| Education background | Food avoidance for child > 2 years | Reason                                                                 |
|----------------------|-----------------------------------|------------------------------------------------------------------------|
| None n = 23          |                                    | teeth and digestive system are not strong, the child will crave meat his whole life or craves other kids food, the baby will grow up sexually active, causes diarrhoea and intestinal worms |
| Grades 1-7 n = 24    |                                    |                                                                         |
| Grades 8-12 n = 63   |                                    |                                                                         |
| TEd n = 30           |                                    |                                                                         |
| Total n = 140 (%)    |                                    |                                                                         |
| 10 8 11 10 39 (28)   | Meat                              |                                                                         |
| 3 7 22 3 35 (25)     | Sugar and sweets                   | Rotten teeth, too much saliva and sores on tongue                       |
| 7 3 12 1 23 (16)     | Strong food [cereal, amadumbe (Colocasia esculenta L.), dry corn, sweet potatoes] | Hard to digest due the child's underdeveloped digestive system          |
| 1 2 7 2 12 (9)       | Fizzy drinks                       | Causes asthma                                                           |
| 1 2 2 5 10 (7)       | Water                              | The water will go to the knees and delays walking process, disturbed the stomach |
| 1 2 6 1 10 (7)       | Banana/sweet potato                | Constipation, causes diarrhoea, rotten teeth                            |
| 1 4 1 3 9 (6)        | Samp and beans                     | Teeth are not strong/cannot digest it                                   |
| 2 3 4 9 (6)          | Salty food                         | The salt will go to the knees and delays walking process/ the process of having teeth will take longer |
| 3 1 3 1 8 (6)        | Ox liver                           | Will poop inside house for the rest of his/her life, very active bile, the baby will be lazy, the baby will be stupid, does not digest well |
| 2 2 3 7 (5)          | Amasi milk (fermented milk)        | Causes tape worms and diarrhoea                                         |
| 2 4 1 7 (5)          | Yogurt and purity                  | Baby will not grow well, cause fever and intestinal worms.              |
| 1 3 3 7 (5)          | Milk, cheese, chicken and polony (process sausage) | They speed up maturation                                               |
| 4 2 6 (4)            | Phuthu pap (maize porridge)        | Causes intestinal worms, slow digestion, causes kwashiorkor            |
| 5 5 (4)              | Chili/spices                       | Ulcers, runny tummy, can also irritate the skin.                       |

n = number of participants responded; TEd = Tertiary Education
| Education background |
|----------------------|
| 1 4 5 (4) Eggs       | Speeds maturation process |
| 3 1 4 (3) Cakes/cookies | Cause teeth decay |
| 1 2 3 (2) Hot chips   | Skin problems/cause ring worms |
| 1 2 3 (2) Soft porridge which is not supplemented by milk | The baby will have kwashiorkor (malnutrition) |
| 1 2 3 (2) Tea         | Causes headache and can be addictive |
| 1 1 2 (1) Alcohol     | Brain damage |
| 1 0.7 Chicken to a girl | The child will lust over men and be sexually active at an early stage |
| 2 2 (1) Cabbage       | Diarrhoea/causes constipation |
| 1 0.7 Food related to the child’s surname is taboo | Child will get sick |
| 1 0.7 Honey           | Baby will suffocate because it is too thick |
| 1 0.7 Fish            | Fish contain bones that may harm the baby |

n = number of participants responded; TEd = Tertiary Education

**Traditional Food Practice Adherence By The Participants**

Sixty-four percent of the participants in the current study were adhering to traditional food practices during pregnancy, postpartum period and infant feeding. Participants believes that miscarriage or still born and some health complications such as jaundice, eczema and malnutrition in new born babies are linked to consumption of restricted food, with two percent of the participants claiming that they had a personal experience of such. Thirty-six percent of the participants reported that although they know traditional beliefs, they are not following these taboos. The reasons ranged from believing that traditional beliefs do not work (14%); due to food cravings (16%); prohibited by their religion (Christianity) to believe in any traditional things hence they believe in information they receive in clinics (3%); and because their families did not teach them about traditions (3%).

Our results showed no significant difference in educational level and income status of the women who followed food taboos and those that did not follow them. Among the sixty-four percent of women who were following these traditional food practices, they claimed to do so for various reasons. Majority of women (46%) claimed to follow these traditional food practices for the baby’s health followed by those who were adhering for their own health (21%). Other reasons for adherence to the traditional food practices included that participants valued their families’ opinion (11%), cultural respect (9%), for easy delivery (9%), respect of the ancestors (2%) as well as the respect for the community (2%).

**Discussion**
This study showed that food taboos still exist alongside with the use of modern health care services. Sixty-four percent of the participants in the current study are still practicing food taboos and following traditional recommendations during pregnancy, postpartum period and infant feeding. This high level of practice accords with results of other studies that were conducted in Asian countries including Pakistan [46], Indonesia [20], Thailand [47], China [48], India [8], Cambodia [49], central Asia [50] as well as in African countries including Ghana [21], Ethiopia [11], Nigeria [13], Kenya [30], Sudan [18] and South Africa [51,52]. Our study differs from previous studies done in South Africa because it was focusing on the Zulu culture of women living in a rural area. The study did not only focus on either dietary practice during pregnancy or dietary practice during postpartum recovery but it also extended to dietary practice during infant feeding.

The higher number of participant within middle (31–50 years) and old (51–90 years) age groups in this study resulted from these age groups having the relevant information needed, and were the ones who were most easily available for interviews. Older women also had better knowledge than the young and middle age women on cultural food practices during pregnancy, postpartum period and infant feeding, perhaps because they were culturally more experienced. There were insignificant differences in educational level and income status of the women who followed food traditions and those that did not. Similarly, in Pakistan [46] and India [4], literate and illiterate mothers shared the same traditional misconceptions of dietary practice during pregnancy and postpartum period. In contrast, a study in Ethiopia reported that the value of a modern balanced diet during pregnancy was significantly associated with younger, more educated mothers who had attended antenatal clinics [12]. The analysis of the findings of the current study were structured thematically, with the findings, how it relates to literature and how the findings relate to modern science or medicine.

**Dietary restrictions during pregnancy**

Our findings (Table 1) revealed that cultural food taboos meant that women would avoid certain foods that are essential for a healthy pregnancy. This causes concern, as almost all (96%) of our participant sample had attended antenatal clinics and would have been informed about dietary requirements during pregnancy. The women cited common and nutritious foods – including oranges, mangoes, naartjies, pawpaws, commercial fruit juice, peaches, butternuts and eggs – as being traditionally restricted. Yellow and orange fruits and vegetables were to be avoided, they explained, because of a belief that the baby would then be born with jaundice, a condition causing the newborn's skin and eyes to become yellow. The same restriction on the grounds that such fruits were responsible for skin discoloration in the baby were also reported in a study in the Eastern Cape, South Africa [52]. The belief could be associated with doctrine of signature, which links yellow and orange fruits to yellow skin. Our study shows that both Zulu and Xhosa (Eastern Cape) cultures share this restriction and for the same reasons.

In previous studies, common reasons for restricting certain fruits during pregnancy included the fear of abortion or miscarriage. For example, in Asian countries, papaya is considered a “hot food” whose consumption could lead to miscarriage [4,5]. Fruits traditionally to be avoided, as reported in our study, are in fact rich in vitamins A and/or C, both of which are essential during pregnancy. Vitamin A is important for cell division, fetal organ and skeletal growth and maturation [53], and its deficiency affects some 19 million pregnant women, mostly in Africa and south-east Asia [1]. Severe vitamin A deficiency in the mother can lead to low vitamin A reserves in the body, which can detrimentally affect the lung development and survival of the baby in the first year of life [54]. Vitamin C is an antioxidant required for the synthesis of collagen and for prevention of pre-eclamptic toxaemia (characterized by high blood pressure, swollen ankles and protein in the urine) [31]. Dietary intake of vitamin C can be useful in sustaining pregnancy to term; its lack was found to cause premature rupture of the chorioamniotic membrane [55]. Vitamin C is also important for raising the uptake of iron [31]. Thus avoidance of these fruits can lead to complications for the unborn baby.
The current study reported traditional avoidance of eggs in pregnancy for Zulu women, due to a belief that the baby would be born with no hair. Previous studies have noted egg restrictions in various cultures during pregnancy, but for different reasons. They were taboo in Pendhalungan society (Indonesia), which believed that the baby would be born smelling fishy [56]. In India (Tumkur), eggs are restricted because they are thought to cause bluish discoloration in the baby. In Kenya (Uasin Gishu County), consumption of eggs in pregnancy is believed to make a foetus grow excessively big, which causes problems for the mother during childbirth [30]. In the Eastern Cape (South Africa), eggs are taboo for Xhosa people because they are believed to increase the mother’s sexual appetite, which can be shifted to the unborn female child [52].

However, modern science reveals that eggs offer good value for pregnant women at an affordable price, as they provide essential fatty acids, proteins, choline, vitamins A and B12, selenium, iodine and critical nutrients at levels above or compared to those found in other animal-source food [57]. Consumption of eggs during pregnancy has the potential to improve the child’s birth outcomes and brain development. Inadequate intake of choline by the mother during pregnancy has been associated with neural tube defects and changes in brain structure and functions in the offspring [58]. The vitamin D in eggs can also prevent rickets in the newborn baby and keep the mother’s teeth and bones healthy [1]. Iodine deficiency can increase the risk of spontaneous abortion, perinatal mortality, birth defects and neurological disorder [59]. Restricting egg consumption during pregnancy is therefore a concern, especially as it is common in many cultures.

Almost two-thirds (61%) of our participants reported the belief that avoiding chili and ice during pregnancy could prevent the baby’s skin having burns or dark marks or rash or blisters before birth, diarrhoea in the mother, red spot (ibala) on the back of the baby’s head, and excessive crying. Similar traditional restrictions were reported in Indonesia, where chili was avoided because it makes infants cry easily and also makes them dirty and sick [9]. However, no scientific evidence has been found of any side effects of the consumption of chili during pregnancy. On the contrary, they are a great source of vitamins A, C and E [60]. They also have medicinal properties that include boosting immunity [61], treating diabetes and obesity [62], lowering blood pressure, and reducing heart attacks [63].

In Indonesia (Madura island), consuming ice/cold water was reported to be taboo as it makes the mother’s womb fertile, resulting in a large baby, which could complicate the birth process. In addition, it could cause the mother to give birth to conjoined twins or to experience bleeding during delivery [9]. The consumption of ice is pagophagia, commonly known as pica (the craving for and chewing of substances with no nutritional value), and is closely related to iron deficiency [64]. Women who report cravings for ice during pregnancy, therefore, could be reporting a symptom of a condition that needs to be addressed, and that could go undetected if the tradition of avoiding ice in pregnancy is enforced.

Some of the traditional Zulu food taboos reported in our study are beneficial to health and should be reinforced. Consumption of sweets, sugarcane, commercial juice, sweet food, and honey, for example, was also considered taboo during pregnancy as it could result in a drooling baby with a great deal of saliva and also cause eczema. In Laos in the People Democratic Republic, sugarcane was taboo because it would lead to a fat baby and thus a difficult delivery [65]. Avoidance of sugary foods in pregnancy was also reported in Kenya (Uasin Gishu County), where 11% of the participants believed that the sugar would make the baby salivate excessively. Sugary foods eaten by the mother could also give the baby colic and give the mother and baby malaria [30]. Modern science supports some of these restrictions. Sugar consumed during pregnancy can affect both mother and unborn child: it can shape feeding behaviours and taste preference in the offspring, and increase future possibility of obesity and related metabolic diseases [66]. High maternal intake of sugar during pregnancy can also increase the risk of atopic asthma in the baby
[67]. Again, high consumption of added sugar during pregnancy has also been associated with the development of gestational diabetes mellitus [68]. Thus this is a worthy taboo as it prevents a variety of complications in a new-born.

Food taboos can protect mother and foetus from food toxin. For example, alcohol consumption was reported in the present study as a taboo for pregnant women, because it was believed to cause the baby to be born sick, unhealthy, disabled or brain damaged. In Kenya, alcohol consumption in pregnancy is also taboo, because it is believed to suck the baby's blood, thereby causing low birth weight and stunted children [30]. Science has shown alcohol to be a teratogen that can readily cross the placenta and result in irreversible damage to the brain and other organs of the developing foetus [69]. Prenatal alcohol exposure can cause fetal alcohol spectrum disorders, which include learning difficulties, executive dysfunction, impaired speech, motor problems, and behavioural issues [70]. Consumption of alcohol during pregnancy can also induce preterm labour, lead to decrease breast milk production and, in the first trimester, increase the risk of spontaneous miscarriage [71]. This traditional food taboo, therefore, protects women and their babies from side effects, and is consistent with modern maternity health advices.

**Traditional food recommendations during pregnancy**

Foods taken by the participants in the current study does not provide all essential nutrients required for successful pregnancy. Dairy, meat, eggs, nuts and legumes were less recommended, thus this may lead to insufficient intake of some nutrients required. In the current study, 51% of the participants recommended leafy vegetables to be consumed when one is pregnant as they believed it provides vitamins, increases blood, healthy mind, build bones and improve growth of the baby. However, some women (21%) perceived that eating green leafy vegetables is a taboo as they believe that the baby will be born with excessive saliva, burned skin or the baby will have dark marks on the skin. Thus, the consumptions of leafy vegetables during pregnancy is controversial as some participants believe it's a taboo while others recommend it. In India (Tamilnadu), green leafy vegetables are considered as “cold food” and consumption of these food items during pregnancy causes a cold and fever to the mother [8]. Consumption of vegetables was recommended in Thailand, where some women claimed to consume them throughout the pregnancy and other only consume them towards the end of pregnancy [47]. According to a study done in Kenya, 89% of the participants recommended traditional leafy vegetables, as they are believed to increase the volume of the blood in woman's body and build the body which gives women strength during labor [30].

Leafy vegetables are rich in iron and folate. Iron form the red blood cells for the mother and the baby. It helps to carry oxygen in the blood from the lungs to the tissue. The baby's brain and body need iron and oxygen to grow [1]. Iron deficiency may cause anemia and inadequate intake of iron during pregnancy is associated with increased cardiovascular risk for the offspring in adult [72]. Folate plays an important role in many metabolic reactions such as biosynthesis of DNA and RNA, methylation of homocysteine to methionine and amino acid metabolism. Inadequate dietary intake can lead to anemia, leucopenia and thrombocytopenia [73]. Pregnant women should be given a proper education on the nutritional facts of leafy vegetable as some women are avoiding them because they believe that they may have some side effects on the unborn baby. There is no scientific evidence that support that leafy vegetables can cause skin problems to the unborn baby as mentioned by some participants.

The second most recommended food by the participants during pregnancy was fruits which are believed to result in having a healthy baby. Fruits recommended included all variety of fruits except those that were restricted (mango, naartjie, orange, pawpaw, fruit juice, peach). In Indonesia, fruits were suggested during pregnancy because they do not cause nausea [9]. These results are similar to what was reported in Kenya, where 35% of the participants reported that eating fruits was recommended because fruits are believed to increases the mother's blood volume. Fruits are also believed to improve the mother's appetite; helping in digestion, and improve the skin (softness) of the baby after birth.
They are a rich source of vitamin A, vitamin C and fiber. Fiber is required to prevent constipation, reduce the risk of gestational diabetes and pre-eclampsia [31].

Liver was the third most recommended food during pregnancy in the current study. The women said it restores, increases and cleanse blood. This result is similar to what was reported in Kenya, where 24% of the participants recommended liver during pregnancy as they believe that it increases the volume of the blood [31]. Liver is a good source of vitamins A, C, B-6, iron, protein and cobalamin. Vitamin A is important for visual health, immune function and fetal growth and development [1]. It exists in two forms, preformed vitamin A which is found in animal sources as well as provitamin A (carotenoids) found in plant sources. Absorption of vitamin A from vegetable sources is poor, thus food of animal origin is necessary to achieve daily requirement [74]. Dietary intake of preformed vitamin A greater than 7000 micrograms may be teratogenic leading to increased risk of congenital malformations [75]. According to the WHO [31], pregnant women should avoid consumption of liver as it contains retinol thus women should be encouraged to consume more products of plant origin that contain carotenes (provitamins), which is not teratogenic to the foetus and less of preformed vitamin A.

Fish was also recommended during pregnancy as the participants believed that consumption of fish makes the baby clever, woman will deliver easy like a fish swimming in water and it also restore blood. The assumption of fish making the baby clever could be possible as fish consist of nutrients that are required for fetal neurodevelopment. In the study conducted in Tumkur (India) fish was recommended by 78% of the participants during pregnancy as it improves memory, IQ and milk production [5]. However, in other studies fish was considered a taboo, where in west Bengal (India), fish caught by a net are avoided because the net represent the uterus, thus, one will have to break the net in order to deliver the baby, which means delivery through caesarean section [10]. In another study done in Eastern Cape (South Africa), fish was considered a taboo because the baby will be born with scales and with a rash on the skin, eczema, or be born with no hair and rough skin with small pimples [52].

Fish is a rich source of protein, and other nutrients that are required for fetal neurodevelopment which include iodine, selenium, choline; vitamin D, iron and long chain n-3 fatty acids [76]. Other health benefits of fish consumption during pregnancy include increased birth weight and reduced risk of spontaneous miscarriage [77]. Iodine is essential for the development of the fetal central nervous system [31]. Some fish also contains mercury (accumulated from polluted water) which cause acute toxicity in man and can pass through the placenta [78], thus it can affect the foetus and it is recommended that pregnant women minimise exposure to mercury [76]. Potential contamination of fish by mercury requires cautious consideration as a dietary recommendation of fish during pregnancy [79]. Research showed difficulty of balancing the benefits of fish with the risk of mercury intake [80]. Thus, women should be educated about the types of fish that are low in mercury and safe for consumption during pregnancy.

Traditional Food Recommendations during postpartum recovery

The most recommended food in the current study was soft porridge (maize meal), as it is believed to restore strength and encourage lactation. Soft porridge is a bulk food of low-nutrient density, which is made by diluting maize meal with water to obtain thin consistency [81]. Soft, not too strong and not too spicy foods were also recommended during postpartum recovery in a study conducted in Brazil [82]. In Limpopo Province (South Africa), special meals such as warm soft porridge and indigenous vegetables with ground peanuts were reported to be consumed to encourage production of milk and promote recovery after birth [51]. In order to regain strength and energy, breastfeeding mothers need a diet high in protein and carbohydrates for milk production [83], thus women need to be advised on dietary intake of protein to boast milk production.
The second most mentioned food taken during postpartum recovery in the current study was fruits and vegetables to increase and restore blood. These results are contradicting with a study done in China, where 18% of the participants never ate vegetables, while 78% never ate fruits during postpartum period [48]. “Cold foods” (vegetables) were restricted during postpartum recovery as it decreases breast milk production. Rather women were advised to consume “hot food” which includes fruits such as papaya, banana, coconut, pineapple and red chili as it helps the mother to recover from the trauma of labor [10]. In India, green leafy vegetables were not recommended during lactation because they are considered “cold foods” and can cause a cough and cold to the child [8].

Beetroot was also recommended for postpartum recovery to cleanse, restore loss blood and to avoid constipation. The belief is that since beetroot is red in colour, it symbolise blood, thus it has to be consumed after loss of blood during delivery. Beetroot is a good source of fibre, potassium, manganese, iron, vitamin C, folate and other numerous vitamins and minerals [84]. Taking beetroot for 20 days was reported to increase the serum iron level, mild increase of haemoglobin and ferritin, thus beetroot might have some therapeutic properties for iron deficiency. It was suggested that beetroot should be put within the dietary protocols for women at childbearing age [85].

Women in the current study reported to consume high volumes of tea and coffee during postpartum recovery as they believe it encourage lactation. This also help them to keep hydrated. However, they need to be advised about the types of tea to consume as some contain caffeine. The World Health Organization [39] recommended a limit intake of tea and coffee during pregnancy and lactation as it interfere with iron absorption. Caffeine can pass into the breast milk and cause hyperactivity and sleeping problems in the baby. Water was mentioned to be essential during postpartum period as it facilitate lactation. However, this contradict a study done in India, where the participants reported that consumption of water is restricted as it may lead to the swelling of the stomach of the baby [5]. Water restriction was also mentioned in a study done in west Bengal [10].

**Food taboos in infants**

The most common restricted food avoided in young children in the current study was meat. It was restricted because their teeth are not strong, they may crave meat their whole life or crave other children's food, and the baby will grow up sexually active or it can cause diarrhoea and worms. The current study differs from the study conducted in Laos in the People Democratic Republic, where young children were given everything the rest of the family eats [65]. In a study done in Mid-West state of Nigeria, meat and eggs were not given to children because parents believed that children will steal [86]. Animal products are the only foods that contain enough iron, zinc, calcium and riboflavin to supply daily requirements for complementary feeding, while being low in anti-nutrients [87].

The World Health Organization [39] recommended that meat, poultry, fish and eggs should be eaten daily, or as often as possible. Meat provides an important role in a diet, as it provides nutrients which are amino acids, vitamin A, vitamin B1, vitamin B2, niacin, vitamin B6, vitamin B12, iron and zinc [40]. Infants and children under the age of five years are at risk of developing iron deficiency anaemia because of their increased requirements for rapid growth and diets that are often lacking sufficient absorbable iron [88]. Deficiency of iron in young children may lead to increased perinatal mortality, delayed mental and physical development, reduced auditory and visual function and impaired physical performance [89].

The second most mentioned food avoided in the current study was sugar and sweets as they may cause rotten teeth, too much saliva and sores on the tongue. There is no nutritional requirement of any type of sugars in infants [90]. Thus this taboos align with modern nutritional requirements for infants. Added sugar contribute to poor health outcomes, which is a concern to children as excessive consumption of sugar has been linked to several abnormalities and adverse health conditions [91]. Sugar intake has been associated with increased risk of dental caries and adiposity
If parents feed their children food with sweet flavours, it is most likely to affect subsequent food preferences and eating behaviours [92]. Again, early-life exposure of excess sugar may also create a predisposition to non-communicable diseases [93]. Reducing added sugar intake and replacing it with water is associated with reduced weight and adiposity in children [90].

Food taboos during infancy and childhood are also intended to protect children during vulnerable stages in life [50]. Strong (chewable) foods such as cereal, Amadumbe, dry corn and sweet potatoes were also avoided for young children because they are hard to digest due to the child’s underdeveloped digestive system. In Tajikistan (Asia), heavy foods (bread, meat, vegetable filled pastry, rice dumpling filled with meat and vegetables) were considered a taboo because it is difficult to digest these meals [50]. In some countries, people practice premastication, or chewing of food by the mother, father, grandmother or sibling to soften strong foods [65]. This is done to ensure that infants with underdeveloped digestive system are able to get enough food to meet daily dietary requirements.

**Conclusions**

The study revealed that food taboos and practices relating to pregnancy, postpartum and infant feeding period do exist and a significant number of Zulu women in a rural area still practice them. Women adhere to these food taboos and practices for health and sociocultural reasons. Most of the food taboos and practices mentioned had no scientific explanation. Food taboos and practices still contribute to unhealthy nutrition in pregnancy and early childhood. While practicing food taboos and practices can expose women to poor nutrition, some food taboos can also potentially protect women against unhealthy eating. Thus it is important to understand the dual impact of food taboos to develop effective, culturally sensitive, community based programs. Although the majority of women were attending antenatal clinics, their food preferences during pregnancy, postpartum recovery and early child care are more influenced by cultural beliefs. Thus there is a need for nutrition education and awareness among pregnant women to reduce misconceptions. Programs should focus on changing the current knowledge, attitude and practices. During pregnancy, not only deficiency, but also excessive amounts of certain substances particularly vitamin A can be dangerous. Thus the nutritional education should also emphasize the daily requirements of potential harmful nutrients. The study revealed that some of the food taboos and practice align with modern health recommendation for a healthy pregnancy while others are contrary to the recommendations. The study indicated that infants are restricted from some food that are essential for growth, thus there is a need for intervention to improve nutritional related caregiving practices during the period of complementary feeding.

**Declarations**

**Ethics approval and consent to participate**

The ethic approval to conduct the study was given by University of Zululand [UZREC 171110-030] prior onset of the survey. All the participants were asked to sign consent form prior to participation.

**Consent for the publication**

The authors give their consent for publication of this manuscript.

**Availability of data and materials**

All data are included in the manuscript.

**Completing interest**
The authors declare that they have no competing interest.

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Authors’ contributions

HDW conceptualized and fund the study from her personal generated research funds. MR and NRN carried out the field work; MR and HDW wrote the manuscript. All author’s read and approved the final manuscript.

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Authors details

Department of Botany, University of Zululand, Private bag X1001, KwaDlangezwa, 3886, South Africa.

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