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Tapestry of Indigenous Food Intake of Zulu African population of KwaZulu-Natal province in South Africa

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ABSTRACT

Introduction: *The Zulu African populations are the largest ethnic group (77.8%) in South Africa living predominantly in the KwaZulu-Natal province. Indigenous foods consumed by them includes: jeqe(steamed bread), samp and beans, phutu porridge (maize meal), amasi or magau (fermented cow's milk), amadumbe(root crop similar to sweet potato) and imifino(wild edible greens including morogo or spinach leaves).*

Aim: *The study aims to determine by self-reported food intake questionnaires the indigenous food dietary intake patterns and diversity among adults residing within KwaZulu-Natal.*

Materials and Methods: *Participants were conveniently sampled with door-to-door visits within the rural Umzinyathi district of KwaZulu-Natal. Trained fieldworkers administered 24 hour recall to determine dietary diversity and dietary patterns (per consumption of 12 food groups).*

Results and Discussion: *The study sample (N=150) were predominantly female (83.3%). Primary food group consumption indicated dietary pattern intake of mainly cereals(97.3%), sweets(94.6%), miscellaneous items(93.3%) and oils and fats(81.3%). 70% of participants reported daily vegetable consumption, followed by an intake of flesh and organ meats(40%) and fruit(36.6%). Dietary patterns indicated 56.6% consumed 4–6 different food groups, while 14.6% participants consumed 10–12 food groups. Indigenous food consumption included ujeqe, samp, organ meats and indigenous vegetables like amadumbe tubers and amaranth.*

Conclusion: *According to the self-reported food intake questionnaire the dietary pattern intake of this rural community indicates a lack of dietary diversity from limited food intake and availability within the area focusing on specific indigenous foods. Food education can help vegetable gardens to include more diverse, healthy indigenous food groups with health benefits to incorporate into recipes.*

Key words: Food Tapestry, Indigenous Food, Dietary Diversity, Zulu African Population Group, KwaZulu-Natal Province.

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INTRODUCTION

South Africa is one of the fastest urbanizing countries in the world, resulting in a shift in lifestyles and food choices to be investigated. This dietary diversity and availability of different food groups gives a tapestry of indigenous foods availability to different population groups within the nine different provinces across the country. The Zulu African population arte the largest ethnic group (77.8%) with an estimated 10 – 12 million people living predominantly within the KwaZulu-Natal province [1]. The KwaZulu-Natal province is divided within 11 districts with the Umzinyathi district categorized as predominantly rural, with no coastal borders, where the population consumes indigenous foods due to the lack of commercial food availability. Some of these indigenous foods consumed traditionally by the inhabitans are inexpensive sources of proteins, carbohydrates, dietary fibre, with a nutritious vitamins and minerals content [2]. Indigenous foods consumed by the Zulu population includes the following: jeqe (steamed

bread), samp and beans, phutu porridge (cooked maize meal), amasi or magau drink (fermented or cultured cow's milk), amadumbe (root crop similar to sweet potato) and imifino (wild edible green leaves including morogo or wild spinach leaves) [3-7].

MATERIALS AND METHODS

Participants from the Zulu population group, for this pilot study, were conveniently sampled with door-to-door visits within the rural Umzinyathi district of the KwaZulu-Natal province in South Africa. The trained fieldworkers administered a 24-hour recall to determine dietary diversity as well as dietary patterns determined per consumption of 12 food groups with specific indication of indigenous foods. Vegetable gardens available at households were investigated with an indication of the type of vegetables grown there for individual and household consumption.

RESULTS

The study sample (N=150) of black African population consisted predominantly of 83.3% females (n = 125) and only 16.7% males (n = 15). Twelve food groups were identified, but the primary food group consumption consisted of seven food groups: cereals, flesh and organ meats, fruit, vegetables, oils and fats, sweets and miscellaneous. The lowest intake was of the food groups of eggs and fish and seafood categorized. Within the study sample 35 vegetable gardens (24.5%) are available at the households investigated (Table 1).

Within the Cereals and Starches food group the highest daily intake of indigenous foods was 37.9%, which included jeqe (steamed bread), maize meal porridge and Samp. Followed by the intake of flesh and organ meats (21.4%), which refers to parts of an animal (ox, mutton, goat or poultry) that are used as foods but are not skeletal muscle [8]. It includes the plucks (heart, livers and lungs), abdominal organs and extremities (tails, feet, head, brains and tongue), which are rich in animal protein, vitamin B12, vitamin A and folate [9]. Root vegetables like amadumbe and the green leafy Marog can be grown indigenously in vegetable gardens with a daily intake of 13.9%. Prickly pears are classified within the fruit food group with a 5.7% daily intake and a 0.8% daily intake of magau (self-produced or commercially bought) from the milk and milk products food group (Table 2).

With 100g portions the Calorie (cal) value is the highest in Phutu (350 cal) served as a daily starch group staple, followed by Samp (316 cal) with a higher fibre content of 6.7g compared to the 2.3g fibre of maize meal porridge. Amadumbe is a root vegetable high in carbohydrates (low glycaemic index) similar to sweet potato, but rich in fibre (30.3g), magnesium, potassium, iron, vitamin A, B1, B2, B6 and C. Magau, produced as fermented sour cow's milk at home or commercially bought in South Africa, has a high calorie content (344 cal) rich in vitamin A, B9 and C. Magau is consumed on its own as a drink or part of a meal together with Phutu. Organ meats or offal is a main protein source that forms part of traditional African food culture and readily available after the slaughter of an animal, but requires preparation and cooking soon after if no regrigeration equipment is available at a household [10] (Table 3).

Table 1: Dietary diversity intake of females (n = 125).

FOOD GROUPS	DIETARY DIVERSITY INTAKE (%)
Cereals and Starches	52.80%
Roots and Tubers	28%
Other vegetables	63.20%
Fruit	98.40%
Flesh and Organ meats	33.60%
Eggs	4%
Fish and Seafood	8%
Legumes and Nuts	18.40%
Milk and Milk Products	104%
Oils and Fat	48%
Sweets and Honey	151%
Miscellaneous	52.80%

Table 2: Daily Indigenous Food Intake within Food Groups.

FOOD GROUP	DAILY INTAKE (%)	TYPE OF INDIGENOUS FOOD
Cereals and Starches	37.90%	Jeqe (steamed bread), Maize Meal porridge, Samp
Flesh and Organ Meats	21.40%	Organ Meats
Vegetables	13.90%	Amadumbe (root vegetable), Marog (type of green leafy vegetable)
Fruit	5.70%	Prickly Pear
Milk and Milk Products	0.80%	Magau (fermented sour milk)

Table 3: Nutrient values of Indigenous Foods.

Type of Indigenous Foods	Main Nutrient Values (100g)			
	Calories (cal)	Carbohydrates (g)	Fibre (g)	Vitamins & Minerals
Jeqe (steamed bread from refined wheat flour)	259	55	2.4	Iron
Phutu (maize meal porridge)	350	72	2.3	Iron, Vitamin B
Samp	316	73	6.2	Sodium
Amadumbe (root vegetable)	264	17	30.3	Iron, Magnesium, Potassium, Vitamins A, B1, B2, B6, C, E
Marog (wild green leafy vegetable)9	64	0	6.7	Iron, Folate, Betacarotene
Prickly Pear	41	10	3.6	Iron, Calcium, Magnesium, Vitamin B6, C
Organ meats (ox, mutton or poultry intestines, kidney, liver, feet)	130	0	0	Iron, Phosphate, Zinc, Vitamin B12
Magau (fermented sour milk)	344	78	1.7	Vitamin A, B9, C

DISCUSSION

The majority dietary pattern intake was 97.3% cereals, followed by 94.6% sweets and 93.3% miscellaneous items. 81.3% consumed oils and fats on a daily basis, while 70% of participants indicated a daily vegetable intake. The diversity of the vegetable intake consisted mainly of tomatoes and onions limiting the dietary diversity, but including indigenous vegetables amadumbe and marog (13.9%). In the cereals and starches group indigenous food intake made out 37.9%, while the only indigenous fruit was Prickly Pear (when in season) 5.7% within the fruit group (36.6%) [11, 12]. This was followed by an intake of flesh and organ meats (40%) as a main protein source when available to a household. The fibre content of Samp (6.2g per 100g) and Marog (6.7g per 100g) can increase the healthy dietary intake. Various vitamins and minerals can be consumed in smaller amounts with the intake of indigenous foods. Dietary patterns indicated that nearly 56.6% of the participants consumed 4 – 6 different food groups, while 14.6% consumed 10 – 12 of the food groups indicated.

CONCLUSION

The results indicated a lack of dietary diversity from food intake and availability within the population area, eventhough a tapestry of indigenous food variety grows in this district in KwaZulu-Natal. Further food intake education focusing on the nutrient benefits of indigenous foods should be given at local clinics within areas in the Umzinyathi district. The development of vegetable gardens containing indigenous produce at more households should be incorporated into health and agricultural education. Recipe development focusing on these indigenous foods should be provided to the population to improve dietary diversity. The intake of these indigenous food crops can also treat and prevent certain disease conditions beyond the basic function of nutrient and energy supply.

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