The Nutrition Transition: Changes in Patterns of Food Consumption in Southeastern Botswana

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Introduction

Non-communicable diseases such as cardiovascular disease, cancer, and diabetes are the leading causes of death worldwide (Bloom 2011). Poor nutrition is a major risk factor for non-communicable diseases (NCDs), and is of particular importance in rapidly-urbanizing Botswana. As people move away from villages where traditional food is dominant and into urban areas like Gaborone, convenience food which is typically less healthy is readily available.

A comparative study of patterns of food consumption was conducted in Mochudi, a peri-urban area of Botswana, and on the campus of University of Botswana, in the capital city Gaborone, to investigate how diets vary in rural and urban areas. Participants were asked qualitative and quantitative questions about what food they eat, how much they eat, their sources of food in Mochudi and Gaborone, their perception of healthy food, and risk factors for non-communicable diseases other than nutrition. Results suggest that a nutrition transition is occurring.

Methods

Participants

• Convenience sample of N=20, with residents of Mochudi (n=10) and students from University of Botswana (n=10)
• Participants from Mochudi ranged in age from 12 to 50 years (n=21), and there were 4 females and 6 males interviewed
• Participants from UB-Gaborone ranged in age from 18 to 25 (n=21), and there were 5 females and 5 males

Measures

• Oral interview with 31 questions, both qualitative and quantitative
• Question themes: unhealthy food consumption, home cooked meals, grocery stores, concept of healthy food, and risk factors for NCDs
• Questions for residents of Mochudi investigated the aforementioned themes in Mochudi as well as during visits to Gaborone
• Questions for UB students investigated the aforementioned themes at UB as well as in students’ home villages

Data Analysis

• Single factor ANOVA, frequency distribution, ranges, and means in JMP 10.0.0 and Excel 12.2.6

Results

Unhealthy food consumption: Magwinya or “fat cakes,” which are a traditional food made of fried dough, were consumed the most frequently by UB students in Gaborone (n=24.6/month), followed by residents of Mochudi (n=21.5) and finally in UB students’ home villages (n=13.3). Fresh chips were consumed the most frequently by UB students in Gaborone (n=32.8/month), followed by residents of Mochudi (n=26.2/month), and finally in UB students’ home villages (n=13.8). Fresh chips were consumed less frequently by UB students in Gaborone than residents of Mochudi and UB students in their home villages. Most people shop at Choppies, a grocery store in Mochudi, and on the university campus of University of Botswana, in the capital city Gaborone, to investigate how diets vary in rural and urban areas. Part

Discussion

Conclusions

Foods such as magwinya, fresh chips, and fizzy drinks are very prevalent in Gaborone and are consumed more often by UB students in Gaborone than by UB students in their home villages or residents of Mochudi. These foods are rich in fat, calories, and sugar. UB students eat significantly fewer home cooked meals per day when in Gaborone than residents of Mochudi or when in their home villages. Most people shop at Choppies, Spar, and Shoppers, and the most common things they wanted changed were prices, service, and quality of the food.

Residents of Mochudi maintained close ties with Gaborone, visiting on average 3.3 times per month. During these visits, meat and magwinya were the most common foods. Insecurity was nearly nonexistent, but alcohol was 15 times more common in UB than in Mochudi. Exercise was very common, with residents of Mochudi consuming far less alcohol than UB students.

Participants from Mochudi ranged in age from 12 to 50 years (n=21) This was followed by 18% of respondents visiting Spar (n=6) and 14% of respondents visiting Shoppers (n=7). These were followed by Shop Rite (n=4) and Pick N Pay (n=2).

In this sample, smoking was nearly nonexistent, but alcohol was 15 times more common in UB than in Mochudi. Exercise was very common, with residents of Mochudi consuming far less alcohol than UB students.

Participants from Mochudi ranged in age from 12 to 50 years (n=21), and there were 5 females and 5 males interviewed. According to the participants, the most common foods consumed were magwinya and fresh chips.

Conception of healthy food: When asked what came to mind with the words “healthy” food, 15% of people mentioned vegetables (n=6), 12% mentioned “fat free,” “less fat,” or “reduced fat” (n=7), 8% mentioned “fruit” (n=5), 7% mentioned “balanced diet” (n=4), 8% mentioned “milk” (n=5), and 9% mentioned “vitamins” (n=4). When grouped together, 26% of people (n=10) mentioned some sort of nutrient: vitamins (n=8), carbohydrates or energy (n=7), proteins (n=6), nutrients (n=2), minerals (n=1), and fiber (n=1). When asked what types of healthy foods they ate, 38% of people (n=15) mentioned meat, 22% vegetables were mentioned among people the most common (n=8), 8 dairy foods were mentioned with milk being the most common (n=4). 6 proteins were mentioned with meat being the most common (n=3). 6 carbohydrates were mentioned with bread, dumplings being the most common (n=3).

Risk factors for NCDs: Only 1 participant smoked cigarettes, and he smoked an average of 4 per day. 35% of respondents drank alcohol (n=7). Of those 6 respondents had 1-4 drinks per week. Out of the three risk factors for NCDs investigated between people in Mochudi and at UB, patterns of exercise were the most similar (p=0.8, p=0.9, respectively). The largest contrast was regarding alcohol consumption with residents of Mochudi consuming far less alcohol than UB students (p=0.2, p=0.3, respectively).

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References


Home Cooked Meals: Insecurity, like unemployment, was mentioned by 15% of people (n=6) and 10% of respondents desired change in quality of food (n=4). 16 fruits were named, 5 of those 6 respondents had 1 fruit they consumed when in Gaborone 60% of respondents mentioned meat (n=11), 40% mentioned fizzy drinks (n=8), 10% mentioned fresh chips (n=2), 20% mentioned rice (n=2), 20% mentioned fruit (n=2), and 22% mentioned sweets (n=2).

Figure 1: Consumption of magwinya, fresh chips, and fizzy drinks per month

Figure 2: Home cooked meals per day in Mochudi, Gaborone, and UB students’ home villages

Figure 3: Food eaten by residents of Mochudi in Gabs

Figure 4: Risk factors for NCDs in Mochudi and Gabs