Assessment of nutritional status and dietary patterns of the adult Roma community in Albania

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Abstract

Aim: Assessment of nutritional status and dietary patterns of Roma population should be documented because they may reflect the extent of marginalization and associated health risks. This study assessed the nutritional status and dietary patterns among Roma community in Albania.
Methods: A representative sample of 400 Roma individuals living in five districts of the country was included in this study. A food frequency questionnaire was administered, body weights and heights were measured and socio-demographic and health information was collected through interviews. Factor analysis was used to identify dietary patterns of the Roman community.
Results: The results of this study revealed that, in Roma population living in Albania, 49% of individuals had a normal body weight, 43.8% were overweight and/or obese (especially the age group >25 years) and 7.2% were underweight. Two dietary patterns were identified: one pattern with a higher consumption of dairy products, vegetables, and milk and another pattern included fat, bread and alcohol. The increase in BMI is due to disproportionate distribution of food items and calories derived rather than a balanced diet.
Conclusion: Majority of the Roma population in this study sample from Albania consumed a high-calorie diet resultant mainly from cooking oil, bread and alcohol, which may predispose these vulnerable individuals to overweight and obesity.

Keywords: dietary patterns, marginalized population subgroups, nutritional status, Roma community, vulnerable subgroups.

Introduction

Before the 1990s, the situation of Roma community was quite similar to the rest of the Albanian population. They worked in different state sectors and incomes of their families were on the same level as incomes of the majority of the population. After the 1990s, however, the situation of Roma people in Albania grew critical; most of the Roma people lost their jobs because of the privatization of the state industry. The democratization process that developed in Albania and the period of transition caused an economic catastrophe for Roma families. Some factors influenced the conditions of Roma in this period in particular, for example, the competition on the free trade market and labor market and migration. Currently, around 90% of Roma people in Albania are unemployed (1, 2). Some of them are self-employed in the trade market, but other Roma businesses have been unsuccessful. The average expenses of a Roma family are 199 USD per month; 40% of Roma families live in bad conditions, and; only 20% of Roma people have an adequate income to buy medicines. Furthermore, Roma individuals have difficulties in benefiting from state social assistance policies. One of the main reasons of the disability to compete in the arising free market economy is the low level of education. Illiteracy amongst Roma has increased during the transition period. The percentage of illiteracy is as high as 52.4%. As for the sex distribution, 56.5% are female and 48.3% are male. About 40% of Roma families ask their children to work to ensure primary needs and this is the main reason why children do not attend school. Another important emerging problem is that many Roma families have bad housing conditions. Parts of their houses have been destroyed by government with the promise of rebuilding them, but this issue has not been solved to date. As a consequence of this, Roma people live in shamble cabins or even in the streets (3,4).

To date, much of the research from international organizations and NGOs regarding Roma population have focused on health aspects and various health indicators of childhood, infant nutrition and parenting practices. This is the first study to report dietary habits and obesity measures among adult Roma population in Albania highlighting the socioeconomic inequalities and the consequences on nutrition (5-7).

Methods

This is a cross sectional study conducted on the year 2010. A stratified two-stage cluster-sampling was used for selecting a representative sample of 400 subjects aged ≥ 15 years from Roma communities of five districts in Albania: Tirana, Berat, Korça, Vlora and Pogradec.

The study was approved by the ethical committee of the Medicinal Faculty of Tirana University. Each participant signed an informed consent form before enrolment in the study.

A structured questionnaire was used to collect socio-demographic data of participants, housing and living conditions, economic status, dietary patterns and drinking habits. Participants in the study were asked how often they usually consumed each food item from the food frequency questionnaire. The food-frequency questionnaire included the most common food items and was administered by trained interviewers. Participants in the study were asked how often they usually consumed each item. The four possible answers ranged from "never", "sometimes", "often" and "always". The intake frequencies of bread and alcohol were converted into average daily intake for each item and for each individual participant. Additional information collected during the interview consisted of the cooking manner and consumption of foods items. Dietary patterns were identified using factor analysis (8,9).

Anthropometric measurements included weight (kg) and height (m). Overall obesity was measured with the body mass index (BMI), calculated as weight/ height^2 (kg/ m^2).

Chi-square test was used to compare the proportions between categorical variables. Student's t-test was used to compare the mean food intake and BMI leaves by sex of study participants. Linear regression was used to determine the association of BMI and age. Spearman's correlation coefficient was used to assess the linear relationship between food patterns and BMI.

A (two-tailed) p-value of ≤ 0.05 was considered statistically significant.

Data were analyzed with IBM SPSS Statistics,

version 20 for Windows.

Results

The mean age of participants was 36.5± 14.2 years. The study population consisted of 161 (40.2%) men (mean age: 33.2± 12.4 years) and 239 women (mean age 36.5± 14.4 years).

Socio-demographic characteristics and lifestyle factors are shown in Table 1.

Almost half the subjects (184, or 46%) had no education at all, 190 (47.5%) had ≤ 8 years, 23 (5.7%) individuals attended the high school, and only 3 (0.8%) of them attended university studies

Table 1. Socio-demographic characteristics of study participants

Variable	Number	Percent
Gender		
Female	239	59.7
Male	161	40.2
Age (mean± SD)	36.5±14.2	
Age-group (years)		
15 – 25	104	26.0
26 – 35	109	27.2
36 – 45	92	23.0
46 – 55	51	12.8
56 – 65	27	6.7
>65	17	4.2
Residence		
Tirana	150	37.5
Berat	98	24.5
Korça	50	12.5
Vlora	52	13.0
Pogradec	50	12.5
Education		
None	184	46.0
≤8 years	190	47.5
9-12 year	23	5.7
>12 year	3	0.8
Number of family members [mean (range)]	6 (1-20)	
Number of family members employed		
0	157	39.2
1	142	35.5
2	73	18.3
3	21	5.2
4	4	1.0
5	2	0.5
>5	1	0.3
Income level (Lekë)		
<5000	124	31.0
5000-10000	78	19.5
11000-15000	75	18.8
16000-30000	97	24.3
31000-50000	24	6.0
>50000	2	0.5
BMI (mean±SD)	24.6±4.8	

(x^2=304.9, P<0.01). The vast majority of cases belonged to young age-groups. Individuals aged ≤ 45 years accounted for 76.3% of cases. The mean number of family members was six (range: 1-20). There was evidence of a very high rate of unemployment among Roma community. No family members employed was reported by 157 (39.2%) of participants, whereas 142 (35.5%) participants reported one employed family member, and 73 (18.3%) participants reported two employed family members. Overall, ≤ 3 employed members were reported by 28 (7%) of participants (P<0.01). Very low and/ or low middle monthly income was reported by 277 (69.3%) participants while middle and high income by 123 (30.7%) of them (P<0.01). Mean BMI value was 24.6±4.8. It was difficult for 356 (89.0%) study participants to buy food items due to economic reasons, whereas for 15 (3.7%) participants the main reason was the distance from the markets (P<0.01).

More than half of study participants 295 (73.7%) lived in houses or apartments, whereas the rest (105, or 26.3%) lived in slum areas (P<0.01). One hundred forty three (35.7%) participants had only one room followed by 139 (34.7%) having two rooms and 74 (18.5%) having three rooms and only 25 (6.4%) participants reported having more than four rooms (x^2=102.0, P<0.01). Having a kitchen or a specific place to cook the meals was reported by 142 (35.5%) of participants and for 63(44.4%) of them this place was outside the house (P<0.01).

A refrigerator was owned by 241 (60.2%) of participants (P<0.01). Food items were washed before consuming by 363 (90.8%) of participants (P<0.01). The percentage of individuals who always washed their hands before meals was 37%.

More than half of participants (236, or 59%) did not pay attention to expiration date of food items (P<0.01). Conversely, 298 (74.5%) of individuals consumed potable water from the tap, 71 (17.8%) from the wells and only 31 (7.7%) of them consumed bottled water, (x^2=311.0, P<0.01). Furthermore, 215 (53.7%) of individuals consumed three meals per day, followed by 138 (34.5%) of individuals who consumed two meals and 45 (11.3%) who consumed one meal, (x^2=109.2, P<0.01). Also, 387 (96.7%) individuals reported that they cooked their meals at home (P<0.01).

The vast majority of individuals (300, or 82.5%) had no information about the nutritional values of the food items they consumed vs. 70 (17.5%) who reported they had information from television (48.6%), family (30.0%), friends (2.7%) and other sources of information (1.5%).

There were no significant differences by sex and age group with regard to monthly income, economic difficulties encountered by participants, having a refrigerator and a place to cook, frequency of food-washing, attention to foods' expiration date and information about the nutritional values of the food items that participants consumed. Finally, there was a significant decreasing trend of frequency of hand-washing by increasing age group ($x^2_{\text{for trend}}$=5.3, P=0.02).

Table 2. Frequency pattern of consumptions of selected food items

Food item	Frequency of consumption: N (%)			
	Never	Sometimes	Often	Always
Bread	12 (3.0)	-	301 (75.3)	87 (21.7)
Meat	74 (18.5)	235 (58.8)	67 (16.8)	24 (6.0)
Fish	134 (33.5)	194 (48.5)	60 (15.0)	12 (3.0)
Fat	4 (1.0)	-	19 (4.7)	377 (94.2)
Milk	155 (38.8)	186 (46.5)	-	59 (14.7)
Dairy products	41 (10.3)	232 (58.0)	105 (26.2)	22 (5.5)
Vegetables	17 (4.3)	157 (39.3)	136 (34.0)	90 (22.5)
Fruits	94 (23.5)	236 (59.0)	4 (1.0)	66 (16.5)
Other juices	114 (28.5)	240 (60.0)	-	46 (11.5)
Alcoholic beverages	284 (71.0)	37 (9.3)	53 (13.2)	26 (6.5)

Food consumption

The frequency of consumption of principal food items is presented in Table 2.

The bread made of wheat flour was consumed often and/ or always by 388 (97%) of individuals (P<0.01). The average daily intake of bread was 188.6 gr. Conversely, 235 (58.8) of individuals reported that they sometimes consumed fresh meat of poultry and veal followed by 74 (18.5%) who referred they never consumed it (P<0.01). A large proportion of individuals (134, or 33.5%) never bought fish, followed by 194 (48.5%) of participants who reported using it sometimes compared to 72 (18%) of individuals who used it often or always (P<0.01).

Almost all individuals (377, or 94.2%) used sunflower fat for cooking (P<0.01). Only 59 (14.7%) of individuals reported consuming milk regularly, whereas 186 (46.5%) and 155 (38.8%) reported occasional and/ or no consumption, respectively (x^2= 65.7, P<0.01).

Dairy products, mainly cheese (33%) and yoghurt (22.8%) were "often" consumed by 105 (26.2%) individuals, "sometimes" by 232 (58%) individuals and "never" by 41 (10.3%) of them (x^2=150.0, P<0.01). Vegetables and greens were "often" consumed by 136 (34%) of individuals, "sometimes" by 157 (39.2%) of individuals and "never" by 41 (10.3%) of them (x^2=68.6, P<0.01). The most common greens used by 211(50%) of the study participants were lettuce and other plants with leaves growing wild on hills and mountains which were collected and cooked at home. Fruits were consumed "sometimes" by 236 (59%) of individuals, "never" by 94 (23.5%) and "always" by 66 (16.5%) of them (x^2=125.8, P<0.01). Other juices were consumed "sometimes" by 240 (60%) of individuals, "never" by 114 (10.3%) and "always" by 66 (16.5%) of them (x^2=114.0, P<0.01).

Alcoholic beverages were "always" consumed by 26 (6.5%) of individuals and "never" by 284 (71%) of them (P<0.01). Most of consumers were men (102, or 25.5%) compared to 14 (3.5%) of women (P<0.01).

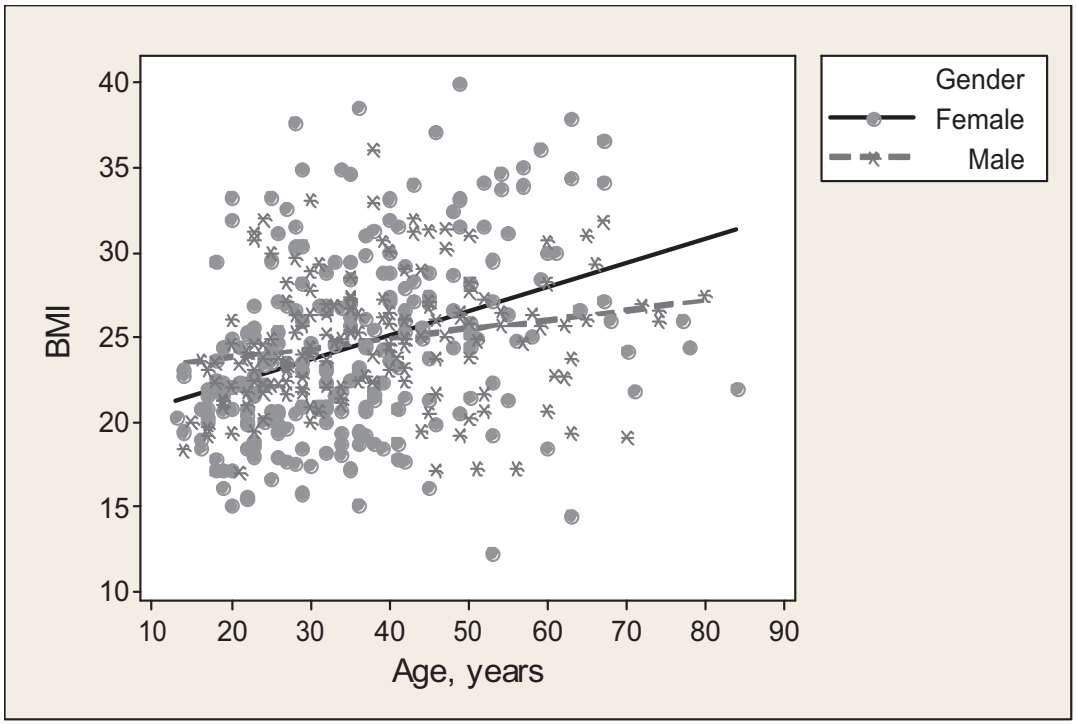
Overall, 196 (49%) of individuals had a normal body weight without a significant difference, with 16 (43.8%) individuals who were overweight and obese of grade I and II (P=0.2). Both genders had an equal proportion of normal weight, 49% respectively (Table 3).

Table 3. Body Mass Index results by gender and age group

		Gender (%)		Age group, years (%)					
	Total (n %)	Women	Men	15 - 25	26 – 35	36 – 45	46 – 55	56 - 65	>65
Underweight	29 (7.2)	10.0	3.1	11.5	7.3	4.3	5.9	7.4	0.0
Normal	196 (49.0)	49.0	49.1	73.1	47.7	41.3	33.3	29.6	18.5
Overweight	117 (29.3)	24.3	36.6	8.7	35.8	38.0	35.3	29.6	29.6
Obese Class I	46 (11.5)	12.1	10.6	6.7	6.4	14.1	21.6	22.2	7.4
Obese Class II	12 (3.0)	4.6	0.6	0.0	2.8	2.2	3.9	11.1	7.4

Underweight were 29 (7.2%) of individual distributed in all age groups. All of them reported economic difficulties. Women had a significantly higher proportion of underweight compared to men (10% vs. 3.1%, respectively, P<0.01). They all had a significantly lower consumption of, meat, fish milk, dairy products, vegetables, fruits and other juices compared to women and men of other categories of BMI. Also, they never consumed alcohol. Men were significantly more overweight than women (36.6% vs. 24.3%, respectively, P=0.01). Overall, 41% of women and 47.8% of men were overweight and obese without a significant difference between them (P=0.2). Age group of >25 years was significantly more overweight than

Figure 1. Association of BMI with age



the age group of <25 years (P<0.01). Linear regression analysis showed a significant increase of BMI with age (F=46.0, p<0.001) (Figure 1).

Dietary patterns

Almost all men and women consumed bread on a daily basis. The mean daily intake of bread was 188.6 gr (173.4 for women and 211.2 for men; t= -5.3, p<0.01). The mean number of meals per day was 2.4 (2.3 for women and 2.5 for men; t= -1.6, p=0.09). The mean daily alcohol intake of study participants was 147.4 ml (152.5± 95.0 ml in men and 110.7 ± 94.4 ml in women; t=1.5, P=0.1). Traditional drink (the "raki") was most frequently used followed by beer and cognac.

The proportion of men who consumed meat was higher than in women (89.4% vs. 74.5 %, respectively, P<0.01). There was no significant difference by gender and age group with regard to consumption of bread, meat, fish, fat, milk, dairy products, vegetables, fruits. The individuals ≤30 years consumed significantly more other juices than older ages (P=0.01).

There was a significant increasing trend of frequency of alcohol use by increasing age group ($x^2_{\text{for trend}}$=6.7, P=0.02).

Factor analysis with varimax rotation method identified two dietary patterns: one with a higher consumption of dairy products, vegetables, and milk and another pattern included fat, bread and alcohol. A significant correlation was found between the daily intake of bread and alcohol with BMI (rho=0.3, P=0.02 and rho=0.3, P=0.02, respectively). Converting the quantity of bread into calories revealed that all individuals gained approximately 900 kcal/ day, whereas 63% of men and 5.8 of women gained additionally 300 kcal/ day.

Discussion

This study revealed that in Roma population of Albania, 49% of individuals had a normal body weight, 43.8% were overweight and/ or obese (especially, the age group >25 years) and 7.2% of them were underweight. Women had a significantly higher proportion of underweight compared to men (10,11). Men were significantly more overweight than women. Individuals of Roma communities have a very high rate of unemployment and illiteracy, a low and very low monthly income and encounter economic difficulties. The vast majority of them lives in normal houses and/ or apartments

and has access to potable water as the rest of the population.

Our study found a rare consumption of fish, fruit and milk, and a moderate consumption of meat and vegetables (12,13). It must be emphasized that vegetables were not bought in the market. Lettuce and other wild plants were collected in the nature. Almost all study participants used bread and fat for daily cooking. More than half of men consumed regularly alcohol. Two dietary patterns were identified among Roma communities: one pattern with a higher consumption of dairy products, vegetables, and milk and another pattern included fat, bread and alcohol (14,15). The increase in BMI is due to disproportionate distribution of food items and calories derived rather than a balanced diet (16,17).

Conclusions

The majority of the Roma population in this study group consumed diets with relatively large energy contributions from cooking oil, bread and alcohol. Taking into account the very high rate of unemployment which in turn has implication to sedentary lifestyle, the current pattern of food consumption may predispose individuals to obesity. This study suggests a need for further research on the consequences of this dietary pattern and for the development of appropriate dietary interventions for this population subgroup in Albania.

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