

# POPULATION LIFESTYLE AND HEALTH IN IALOMIȚA COUNTY (ROMANIA)

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**Abstract:** L'état de santé de la population est influencé par divers facteurs tels les facteurs socio-économiques, les facteurs liés au niveau de vie ou à l'organisation des services de santé. De plus, de nombreuses études ont également souligné le rôle joué par le mode de vie; un mode de vie sain est souvent associé à une bonne santé. Les composantes de mode de vie tels la structure de la consommation alimentaire, l'activité physique, certains comportements nocifs sont étroitement liés au niveau de l'éducation, lieu de résidence, l'âge ou aux traditions familiales. L'objectif de l'étude est d'explorer d'une part la relation entre le mode de vie et l'état de santé de la population du département Ialomița et, d'autre part, la manière dans laquelle certains éléments du mode de vie peuvent largement contribuer à une croissance de la fréquence de certaines maladies. Suivant un cadrage méthodologique spécifique, notamment pour le tri de localités envisagées dans l'étude, on a analysé les changements de l'habitude alimentaire, l'activité physique, les comportements nocifs (tabagisme et consommation d'alcool) et le comportement sanitaire de la population. Les données ont été recueillies dans l'enquête menée dans les localités Slobozia, Bărbulești, Balaciu et Drăgoești et qui présentent d'ailleurs un état de santé variée (très bonne, bonne et précaire/mauvaise). Les résultats préliminaires de l'étude ont montré que le mode de vie est un facteur déterminant pour l'état de santé de la population en cause, mais il y a également d'autres facteurs à prendre en compte afin d'évaluer la santé de la population. Ainsi, les femmes, les personnes âgées ou aisées semblent être plus adaptées aux modes de consommation alimentaire équilibrée et à une activité physique soutenue; en plus, elles prouvent des comportements moins nocifs et acquièrent un comportement sanitaire approprié.

## 1. INTRODUCTION

It is well known that health status varies according to several determinants as health services, sociodemographic factors and lifestyle. Several researches investigate the relationship between lifestyle and population health status.

According to World Health Organisation, lifestyles are "*patterns of (behavioral) choices from the alternatives that are available to people according to their socio-economic circumstances and the ease with which they are able to choose certain ones over others*" (WHO, 1986).

Previous studies undertook a comprehensive investigation of the association between sociodemographic components, lifestyle factors and health status (Li *et al.*, 2017), while others have shown a close epidemiological association between fruit and vegetable consumption and health (both illness and wellbeing) (Stranges, 2014).

A healthy lifestyle can be defined by a combination of modifiable factors: healthy diets (Martinez-Gonzalez, 2014), physical activity, low adiposity, nonsmoking, moderate alcohol consumption (Ronksley, 2011). Still, lifestyle components varied according to different opinions. In epidemiological studies, these modifiable lifestyle factors have been consistently linked to a reduced heart disease risk, up to 80% reduction in coronary heart disease incidence and 50% reduction in ischemic heart incidence (Chiuve, 2008).

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There are strong theoretical reasons to believe that healthy lifestyle practices, which aim to increase physical activity and improve diet, could contribute to a better mental well-being. In the same study, significant improvements among participants were found directly after the intervention which was sustained at the 3-month follow-up (Johnson et al, 2017).

Moreover, physical activity has been shown to improve mental health in general (Fox, 1999).

Some of the lifestyle behaviors (non-smoking, light to moderate alcohol intake, high physical activity, diet rich in vegetables and fruits, and low adiposity) were independently associated with reduced cardiovascular disease events (Gaziano, 2017).

Six components were considered to define a low risk lifestyle: smoking, alcohol consumption, physical activity, dietary habit, body mass index (BMI) and waist to hip ratio (WHR) (Dam, 2008)

Lifestyle behaviors were found to be related to age, education level, place of residence and family traditions (Blaxter, 1990). Past studies results show that females smoke more than males, they are overweight, and they reported at least one lifestyle risk factor compared to males (Jarbol *et al.*, 2017). People with lower-income were more active and have healthier diets than people with higher-income (Katzmarzyk, 2009).

Smokers and overweight participants and those with increased sedentary behavior rated their health status worse than average. There were more smokers and non-active people among respondents with low income. Additionally, more smokers and overweight people had a low education level and the frequency of smoking was highest among the unemployed participants (Jarbol *et al.*, 2017).

The main objective of this study is to investigate the relationship between population lifestyle and health in Ialomița County, and the way in which certain lifestyle components can increase the frequency of certain diseases. The study area is Ialomița County, located in the south-east part of Romania, in the Romanian Plain, close to Bucharest area. In 2011, the rural population share was 53.9%.

In a previous study (Talos, 2016), after analyzing several health indicators (general mortality, infant mortality, mortality and morbidity by specific causes), one can notice numerous health inequalities among Ialomița County localities (Fig. 1).

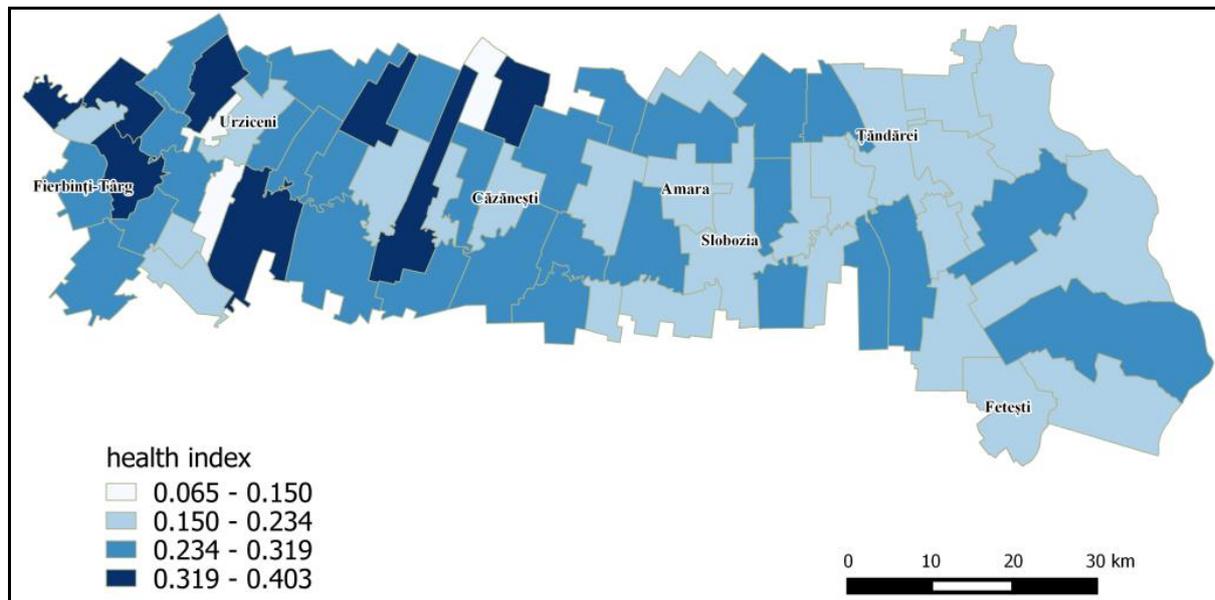


Fig. 1 – Inequalities in population health status in Ialomița County (2012).

The health index is an aggregated index that highlights a precarious health status when its values are close to 1 and a good health status when the values are close to 0 (Dumitrache, 2004).

According to the health index, population from urban area has a better health status compared to population from rural area. These inequalities can be explained by different factors: age, medical resources, medical education and different lifestyle behaviors (Taloș, 2016).

The population health status in Ialomița County is precarious due to the high share of the rural population, which presents a number of characteristics as ageing, low incomes, low education level and a lifestyle behavior appreciated as unhealthy.

## 2. METHODOLOGY

Five lifestyle components: food consumption structure, physical activity, stress level, unhealthy behaviors (smoking and alcohol consumption) and medical behavior have been analyzed in sample localities (Slobozia, Bărbulești, Balaciu and Drăgoești).

A health survey was utilized as the data collection tool for this study.

In order to investigate the relationship between lifestyle and population health status among different categories of population in Ialomița County, independent variables like age, gender, marital status, education level, individual monthly income, working place (whether it implied regular physical activities or if it was a sedentary type of job like working in an office for example) were considered. Moreover, information about the respondent's food consumption structure, physical activity evaluation, presence of unhealthy behaviors (smoking and alcohol consumption), presence of chronic diseases and family history of chronic diseases were collected.

A total of 212 eligible participants were part of this health survey.

The respondents are from both from urban and rural areas (the sample localities were 1 city and 3 rural communities), women slightly outnumbered men with a total of 55.2%. The majority of respondents were married (67.5%), 71.7% had between 25 and 65 years old, 37.3% had graduated high school and the majority had an individual monthly income under 1000 LEI/ 222 EURO (60.4%). Nearly 40% of respondents worked in an office, 30% had no job and 30% were employed in a high physical work type of activity.

Analyses were carried out using the IBM SPSS version 21. Descriptive statistics, including standard deviations, frequency, crosstabs and percentage, were used to summarize the participant's socio-demographic data and healthy lifestyle behaviors. A multiple regression was used to reveal the main predictors of lifestyle (a p-value of <0.05 was considered significant for all analyses), and correlations were used to examine the link between health behaviors and socio-demographic characteristics.

## 3. RESULTS AND DISCUSSION

In order to assess different lifestyle behaviors, independent variables (age, gender, marital status, education level, individual monthly income, type of working place) were associated with the results of the health survey, and they are presented in Table 1 as percentages.

- *health status*

Health status can be evaluated using health indicators or using health survey. There are major differences between the outcomes, but there are better results when the two methods are used together. Usually, field research issues complete statistic data, as they report the realistic situation.

Table 1  
Categories of lifestyle behaviors

Socio-demographic characteristics	Health status		Food consumption structure		Physical activity		Unhealthy behavior	
	very good	very bad	fruit diet	meat diet	active	inactive	binge drinker	current smoker
<b>Residence</b>								
urban	9.6%	0%	26%	23%	31%	33%	8%	12%
rural	9.9%	3.5%	26%	29%	61%	20%	6%	23%
<b>Age</b>								
under 25 years	32%	0%	19%	23%	58%	29%	3%	23%
25-45 years old	12%	0%	12%	31%	46%	27%	2%	24%
45-65 years old	1.50%	3%	20%	36%	57%	13%	13%	18%
over 65 years old	0%	0%	31%	21%	62%	20%	7%	7%
<b>Educational level</b>								
primary school	4%	3%	17%	26%	63%	22%	9%	19%
highschool	14%	0%	19%	29%	48%	24%	5%	27%
university	13%	0%	18%	38%	49%	22%	6%	11%
<b>Family history of chronic diseases</b>								
yes	8%	1%	15%	33%	60%	17%	7%	19%
no	12%	1%	22%	27%	46%	29%	6%	21%
<b>Prezence of chronic diseases</b>								
yes	10%	20%	22%	40%	60%	18%	15%	11%
no	16%	0%	17%	30%	48%	30%	5%	26%

Self-reported health is an indicator of health status used in survey research, recommended by World Health Organization. It can be influenced by behavioral factors, social and demographic factors. Self-reported health can be a predictor of mortality and morbidity.

In this study, was considered necessary a field research to complete the assessed health status based on the health index. Only 10% of respondents (both rural and urban) appreciated their personal health status as being very good. Compared with participants from urban areas, those from rural areas reported very bad health status (3.5%).

Population age and education level were important elements for evaluating personal health status, as younger respondents were convinced that they have a very good health status (32%) and the adults over 45 years old were pessimist about their health. Moreover, a higher educational level was related to a good appreciation of personal health status. People with higher education level evaluated their personal health status as being very good (13%), while only 4% of those with a lower education level said they have a very good health status.

Participants with chronic diseases reported a very bad health status, while the absence of chronic diseases in the family history made them optimistic about personal health appreciation.

One can notice that the profile of the respondent with a very good health status can be define by age, education level and the absence of chronic diseases.

- *food consumption structure*

It is a lifestyle component that can be influenced by various factors as age, income, education level and family background, so the food consumption structure may vary among population of different age, personal monthly income, education level and preferences.

There are contrasting views regarding the ideal food consumption structure, but the majority of them highlight the importance of fruit and vegetables consumption. Block et al. (1992) demonstrated based on 132 studies that fruit and vegetables provide protection against cancer, and Ness and Powles

(1997) that it prevent heart disease. The defense mechanism is unclear, but there is certain the high fiber intake and low fat and sugar share.

In the present study, it was considered the share of fruit and meat consumption from different categories. The participants from rural area reported an increased frequency of meat consumption (29%) compared to respondents from urban areas (23%), while the fruit diet was similar in both areas (26%).

An increased frequency of fruit and vegetable consumption was reported by elderly people (31%) and adults between 45–65 years old have a meat based diet (36%).

Participants with higher education level and those with chronic diseases prefer meat instead of fruit diet (38% and 40%), thinking about the benefits of proteins and neglecting the vitamins and minerals.

In case of food consumption structure, age is an important determinant, as individuals are more likely to choose a healthy behavior when they become ill and perceive the risks and consequences associated with those risks, rather than adopt health promotion behaviors to remain healthy.

- *physical activity*

Caspersen *et al.* (1985) defined physical activity as something “*planned, structured, and repetitive. Physical fitness is a set of attributes that are either health- or skill-related*”.

World Health Organisation reported inactivity as one of the 10 main death cause, and if the physical activity is constant, the death risk is reduced with 50% (Pierce *et al.*, 2007). It is recommended to have a daily physical activity of 30 minutes, and the benefits are also physical and intellectual. Still, there are diverse restrictive elements for accomplish this recommendation like age, free time, income, education level and self-motivation.

Participants from this study appreciated their physical activity as being active or inactive, thinking about their daily routine and activity.

Elderly people evaluated their activity as intense and active (62%) compared to young participants (58%), and the latter were more likely to be inactive (29%) as they not prefer to walk and spend time in parks and nature, in contrast with population over 65 years old (20%).

People from rural areas reported a more intense physical lifestyle (61%) compared to participants from urban areas (31%). In addition, education level was found to be associated with an intense physical behavior. Participants with a higher education level were significantly less physically active than those with a lower education level (49% compared to 63%). The reason can be related to the fact that respondents with lower education level were mostly from rural areas and they use frequently the bicycle and they have more outdoor activities (gardening, farming).

Also, the presence of chronic diseases and family background were reasons to have an intense daily activity (60%), as they received medical recommendation.

- *unhealthy behaviors*

Unhealthy behaviors have been studied and they are related to illness, health problems and addiction: skipping meals, eating fast food, smoking, drinking sweetened beverages, heavy alcohol drinking, use of drugs (Mozaffarian, 2011).

For this study have been chosen two unhealthy behaviors: smoking and alcohol consumption, considering them adequate for the study area – Ialomița County.

An assumption can be that an individual who smokes and drinks heavily is leading a generally unhealthy life, for which other forms of health behavior is unlikely to compensate (Blaxter, 1990).

Plant and Plant (2006) stated in a personal report, that people are optimistic about lifestyle behaviors, and they underestimate personal alcohol consumption, and overestimate the consumption of fruit and vegetables.

In this study, smoking was found to be associated with age and living area. Important associations were detected between respondents who smoke at the age of 25–45 years and the participants

from rural area. There was a statistically compelling difference found in age groups ( $p < 0.001$ ) and residence ( $p < 0.001$ ). Respondents from the 25–45 age group (24%) were current smokers, while only 12% from urban area are smoking.

There were moderate alcohol consumers among participants from rural and urban areas (6% and 8%), also non-drinkers or moderate drinkers among participants belonging to the 25–45 age group compared to those in the 45–65 age groups (2% compared to 13%,  $p < 0.001$ ).

Adequate lifestyle behaviors were confirmed by those who presented a chronic disease, were over 65 years old and had a higher education level: less of them smoke, more were physically active and had healthier food consumption structure. This fact is indicating that people become more responsible with their health after having problems or being ill.

In order to expose more aspects regarding lifestyle behaviors in case of illness, lifestyle components and chronic diseases were associated and the results are summarized in Table 2.

Table 2

Lifestyle behaviors in case of chronic disease

Chronic diseases	Health status		Food consumption structure		Physical activity		Unhealthy behavior	
	very good	very bad	fruit diet	meat diet	active	inactive	binge drinker	current smoker
arterial hypertension	0%	0%	10%	45%	69%	14%	10%	10%
heart diseases	8%	0%	31%	31%	61%	15%	0%	15%
asthma	0%	0%	20%	0%	100%	0%	0%	0%
diabetes	0%	13%	13%	0%	75%	12%	12%	0%
arthrosis	0%	0%	60%	0%	60%	20%	20%	20%
ulcer	0%	0%	0%	50%	0%	50%	0%	0%
tuberculosis	0%	50%	0%	50%	50%	0%	50%	50%
respiratory diseases	0%	0%	33%	0%	33%	33%	0%	33%
digestive diseases	0%	0%	33%	67%	33%	0%	17%	17%
endocrine diseases	0%	0%	0%	0%	0%	33%	0%	0%
nervous diseases	25%	0%	25%	25%	75%	0%	0%	25%
infectious diseases	0%	0%	20%	20%	60%	20%	0%	0%
other diseases	0%	0%	0%	0%	0%	0%	0%	0%

Health-related lifestyle behaviors are important determinants of disease and mortality.

The differences in lifestyle behaviors between disease groups are striking. There were statistically significant differences in evaluating personal health status among different categories of chronic diseases: in case of tuberculosis and diabetes the health status was appreciated as very bad (50% and 13%). Such differences were also found when analyzing diet, physical activity and presence of unhealthy behaviors. Generally, respondents with chronic diseases exhibited a healthier lifestyle, including an increased fruit and vegetable consumption, intense physical activity, less alcohol and tobacco consumption.

Participants with arthrosis, respiratory diseases and digestive diseases eat more fruits compared to those with tuberculosis and ulcer who prefer a meat based diet. Those who were diagnosed with heart diseases, asthma, diabetes, arthrosis and tuberculosis have a more intense physical lifestyle.

Respondents with arterial hypertension, diabetes, arthrosis, tuberculosis and digestive diseases were significantly more likely to consume alcohol daily and to be current smokers than their counterparts.

To capture the share of components in determining lifestyle for the present study, multiple regression was used. This admits that the most significant lifestyle's predictors are medical behavior and physical activity, as together they explain 48% of lifestyle's variance:  $R^2 = 0.33$ ,  $F = 97.14$ ,  $p < 0.001$  (medical behavior), and  $R^2 = 0.48$ ,  $F = 55.22$ ,  $p < 0.001$  (physical activity) (Fig. 2).

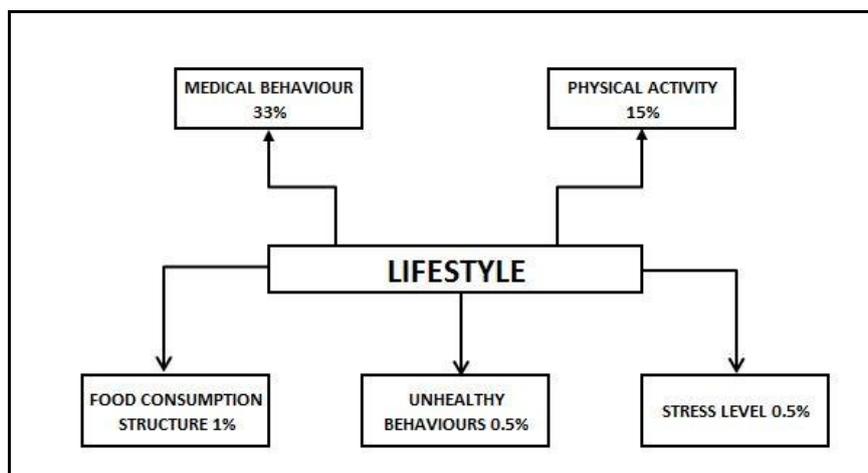


Fig. 2 – Lifestyle predictors.

#### 4. CONCLUSIONS

The study focused on investigating lifestyle behaviors (food consumption structure, level of physical activity, smoking, alcohol consumption, medical behavior, and stress level) among Ialomița County population, in relation with health status.

Assessing population lifestyle behaviors is important in order to identify the determinants of choosing the correct health related actions. According to this study there are lifestyle differences between genders, education level, occupation, age and social status in Ialomița County. Moreover, it is possible to identify the groups with unhealthy behaviors and start a local research that can minimize health inequalities and prevent future health problems among population.

Preliminary results of this study showed that lifestyle is an important factor in determining population health status, as two of the lifestyle components (medical behavior and physical activity) analyzed in the study have a major influence (48%). These components can prevent illness and determine a good health status among population.

Different categories of population have various health status and lifestyle behaviors. In Ialomița County, women, elderly people and population with higher levels of education have a balanced food consumption structure, maintain as intense physical life and adopt fewer harmful behaviors while also presenting an adequate sanitary behavior compared to men, young people and the lower level educated population.

Several lifestyle behaviors were associated with a good health status, but those components are also influenced by other factors like age, education level or place of residence. In order to improve lifestyle behaviors is important to know the context and a complex analysis is required.

Lifestyle is an important determinant of health status, but there are also other factors that should be considered in assessing population health: medical services, environment, and socio-economic factors.

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