

ETHNOBOTANICAL STUDY OF THE IMPACT OF CERTAIN DEMOGRAPHIC INDICATORS ON THE ATTITUDES TOWARDS THE USE OF MEDICINAL PLANTS AMONG LOCAL POPULATION OF THE NORTH BLACK SEA COAST

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ABSTRACT

This study aims to explore the attitude of the local population of the North Black Sea coast area towards the use of medicinal plants and to evaluate the impact of demographic indicators such as gender, age, education and residence. The survey was conducted in the period April - June 2015 in various towns and villages, using face-to-face interview technique with random demographic selection of respondents. Pearson's coefficient (r) was used for assessment of the impact of demographic indicators on respondents' answers.

Survey results show that 96.85% have a positive attitude, and only 4.32% exhibit indifference. From the demographic characteristics, only gender and age have a moderate impact. Cross-link analysis reveals that with the increase of the age of males their positive attitude towards the use of medicinal plants also increases, while female ratio is not significantly changed. The share of indifferent respondents and those who are positive but do not use medicinal plants, for both genders, is greatest among respondents aged between 20 and 30 years.

The local population of the North Black Sea coast area demonstrates a steady positive attitude towards the use of medicinal plants without outlining regional and local differences. A tendency of decreasing interest in medicinal plants among the younger generation is observed, which on its behalf is weakening the traditional knowledge on medicinal plants and its continuity.

Keywords: *ethnobotany, medicinal plants, North Black Sea coast*

INTRODUCTION

Ethnobotany is an interdisciplinary science, focused mainly on the use of plants for food and treatment (1,2). One of the main objectives of ethnobotanical studies is documenting the changes in the traditional knowledge of plants (1,3). Bulgaria's rich

history and culture blending traditions with modern way of living presents an intriguing area of study (4). North Black Sea wetlands are an important speciation factor contributing to the extremely wide variety of medicinal plants. Considering the conservation and rational use of biological resources, we aim to explore the attitude of the local population towards the use of medicinal plants and reveal the impact of demographic factors on this attitude.

MATERIALS AND METHODS

The survey was conducted in various towns and villages of the North Black Sea coast in the period April - June 2015, using face-to-face interview technique consistently applied in similar studies (5,6), with random selection of respondents.

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The question posed in order to evaluate the attitude towards medicinal plants and their uses and to report on the impact of demographics profile of respondents on this matter, was formulated as follows: "What is your attitude towards the use of medicinal plants?" Along the way, demographics data on gender, age, education and residence was collected.

Some of the interviews were conducted by specially trained pharmacy students who interviewed their families and relatives. Interviews of family members have been proven to provide more detailed answers compared to an interview with a stranger (4,7).

Pearson's coefficient (r) was used for assessment of the impact of various demographics indicators on respondents' answers.

Chi-square method was used to analyse the statistical significance of deviation of experimental data compared to the theoretically expected ones (1,8).

RESULTS AND DISCUSSION

A total of 185 interviews in 11 towns and 9 villages of the North Black Sea coast area were conducted. Distribution of respondents' demographic characteristics such as gender, age, education and residence, was as follows: the share of surveyed females

respectively. The majority of respondents lived in towns (89.19%), while only 10.81% come from villages.

Results indicate that 95.68% of the respondents from the North Black Sea coast demonstrate positive attitude towards uses of medicinal plants. It is noteworthy that the ratio of respondents using 2-3 species of medicinal plants, and those using more than 3 species of medicinal plants, is roughly the same (37-39%), their total share accounting for 85% of the interviewees. The ratio of those using mostly 1 species of herb, and those who do not use any medicinal plants (9-11%) is approximately the same. The share of indifferent respondents is negligible - 8 people (4%).

Our data correspond to the results reported by similar studies performed in the country: Dragoeva (2015) reports that 93.89 percent of 475 respondents believe that medicinal plants are useful for their health. Kozhuharova (2013) reports positive attitude of 86.33 percent of 183 respondents from various towns and villages in Bulgaria (1,9). All available results confirm the growing worldwide popularity of phytotherapy in recent decades (1,10).

Demographic analysis of the attitudes of respondents to medicinal plants and their uses demonstrate moderate influence of gender and age (Table 1).

Table 1. Impact of demographic characteristics of respondents ($n = 185$) on their answers

Demographic characteristics							
Gender		Age		Education		Residence	
P	r	P	r	P	r	P	r
$P \leq 0.05$	$r = 0.35$	$P \leq 0.05$	$r = 0.40$	$P > 0.05$	$r = 0.26$	$P > 0.05$	$r = 0.21$

P - Statistical difference between expected and observed frequencies; $P \leq 0.05$ - significant, $P > 0.05$ - non significant; r - Pearson's coefficient; $0 < r < 0.3$ - weak correlation, $0.3 < r < 0.5$ - moderate correlation, $0.5 < r < 0.7$ - significant correlation

(72.97%) was greater than the one of males (27.03%). Age groups from 20 to 30, 41 to 50 and from 61 to 70 years prevailed in numbers and showed similar shares: 21.08%, 19.46% and 22.16%, respectively. The other three groups had approximately equal shares of about 12%, but were fewer in number. In terms of educational status, only a small portion were illiterate - 9.19%. The percentage of respondents with secondary education was approximately equal to that of higher university education - 44.32% and 46.49%, re-

Kozhuharova (2013) reports comparable results regarding the population's attitude from the inland region of the country, while Dragoeva's (2015) research displays moderate impact of the age indicator on respondents' answers (1,9).

Gender impact proves viable for males as "the indifferent" are 10%, and the "using more than 3 species of medicinal plants" are 28%. The highest share is among males using 2 to 3 species of medicinal plants, 32 percent.

Only 2.22 is the percentage of “indifferent” women, while “using more than 3 species of medicinal plants” are 42.96 percent of women (Fig. 1).

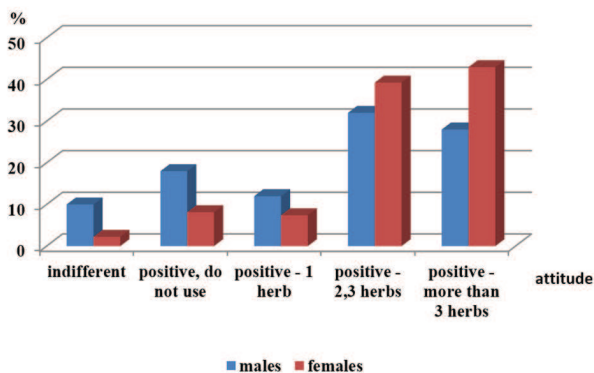


Fig. 1. Gender impact on the attitude towards the use of medicinal plants

The number of indifferent and those commonly using 1 species of medicinal plants is prevailing among the male population, whereas females using 2-3 or more medicinal plants are nearly twice as high.

Amongst the male population there is a relatively even distribution between indifferent and positive attitudes towards medicinal plants, in contrast to females who demonstrate more drastic differences.

Age impact reveals that the highest percentage of negative responses belongs to respondents of the 20 - 40 age group: respectively 7.69% and 12.50%. The same age group (20 - 40) manifests the highest percentage of those with a positive attitude but not using medicinal plants.

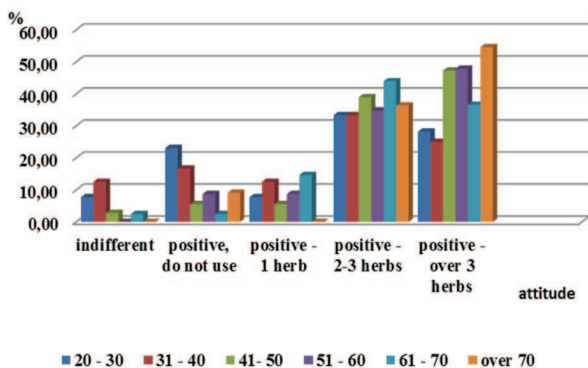


Fig. 2. Age impact on the attitude towards the use of medicinal plants

The highest percentage of positive responses from those using more than 3 medicinal plants belongs to interviewees aged 70+, i.e. 54.55%, followed by the 41 - 50 age group with 47.22%, and the 51 - 60 age group with 47.83%. Once again, the age group of 20 - 40 years exhibits differences in results compared to the rest (Fig. 2).

Cross-link analysis of gender, age and attitude (by answering the question “What is your attitude towards medicinal plants?”) reveals increasingly positive attitude among males with the increase of the age. Indifferent respondents and the ones with positive attitude who do not use medicinal plants show the highest percentage in the age groups below 40 years of age. The above-mentioned indicates greater responsibility to one’s own health status with age progression, hence the increased interest in natural therapies (Fig. 3). Similar results are reported by Kozhuharova (2012) in her research from the inland regions of the country (11).

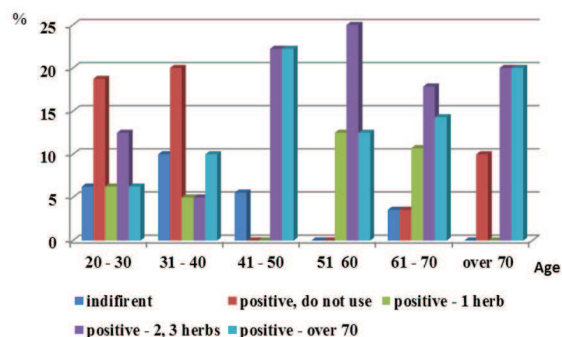


Fig. 3. Attitude of males to traditional use of medicinal plants according to age

The attitude of females are not significantly affected by age. In each age group the percentage of those frequently using 2 to 3 medicinal plants and more than 3 medicinal plants is at times higher compared to others (Fig. 4). In Kozhuharova’s research (2012) females show a peak in the age group of 31 - 40 years (11).

For both genders the share of indifferent individuals and those who have a positive attitude but do not use any medicinal plants, is highest among respondents 20-30 years of age. This can be explained by the excellent health status of the younger generation.

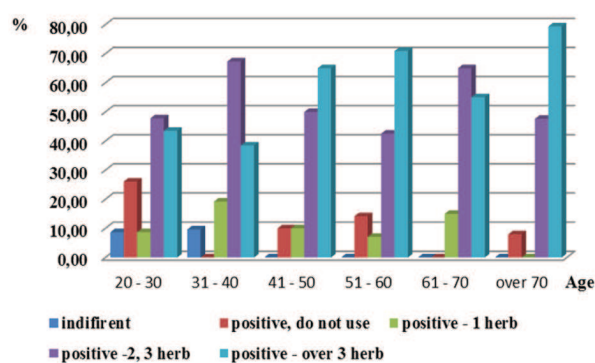


Fig. 4. Attitude of females to traditional use of medicinal plants according to age

Education and residence are not statistically significant demographic indicators with an impact on the attitudes of respondents to medicinal plants and their uses.

The above-mentioned data are quite interesting considering that rural populations are closer to medicinal plants and their habitats compared to urban populations, which are more isolated. This can be explained by the fact that healthy living and use of natural products to maintain ones' health status is preserved and passed down through the generations despite modern migration and urbanization trends. Moreover, the majority of urban residents have migrated from the countryside bringing with them the knowledge and positive attitudes towards medicinal plants.

CONCLUSION

The results of this survey demonstrate a steady positive attitude towards medicinal plants and their uses among the population of the North Black Sea coast area. No regional differences in the attitude of the local population compared to that of the inland of the country have been observed.

Only gender and age have a moderate impact on the attitude towards medicinal plants expressed by the local population. Males happen to be more conservative in all likelihood because of their duty and position as primary household earners. With the advance of age they tend to reinforce the positive attitude, whereas in females it is a steady one. This can be explained with their innate maternal instinct, the role of woman in bringing up offspring and their disposition to natural products treatment.

There has been declining interest in medicinal plants amongst younger generation, which is presumably due to the influence of modern society dynamics and lifestyle. Declining interest represents a serious threat to the future consistency in traditional knowledge of medicinal plants as young people bear the responsibility to pass it on to the next generations.

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