Cooperation Programme

INTERREG V-A Greece-Bulgaria 2014 – 2020

"Policies for Enhancing Access to Health Services in Deprived Areas"

The Healthy Municipality
MIS Code: 5011021

Deliverable 3.5.2
"Research (questionnaire): Access to and degree of needs' coverage of health services in partners' areas"

Summary

Content

INTRODUCTION

The project – The Programme

The project: «Policies for Enhancing Access to Health Services in Deprived Areas» - «The Healthy Municipality» is financed by the INTERREG V-A COOPERATION PROGRAMME GREECE – BULGARIA 2014 – 2020.

The Research – The Deliverable 3.5.2

The research entitled «Research (questionnaire): Access to and degree of needs' coverage of health services in partners' areas») (Deliverable 3.5.2) has been carried out in the framework of the project **«Policies for Enhancing Access to Health Services in Deprived Areas» - «The Healthy Municipality»** implemented under the INTERREG V-A - Cooperation Programme Greece – Bulgaria 2014 – 2020.

The aim of that project is to design health **prevention** policies as well as to apply pilot applications at a Municipality level, especially in deprived areas, thus contributing to upgrading the provided health services and to improving the living standards of the inhabitants of those areas.

The research was conducted by TRANSCOOP, Project Beneficiary –PB- 5 of the specific project.

A**im of the research** was to record the most frequent diseases that the population of the Municipalities of Arriana and Iasmos (Regional Unit Rhodope / Region East Macedonia Thrace) suffer from. Besides, to locate the problems that the residents are confronted with in receiving support from the public local health structures, with the ultimate goal of preventing diseases and improving the living standards of the local population.

In addition, a further objective of the research was to investigate the possible relation of the morbidity in those areas with the various socio-economic parameters (income, housing, employment, etc.).

To this end, data have been collected on:

- Demographic characteristics of the population, on their education level, on employment, living conditions
- Perceived morbidity and on health problems of the residents
- The access of the residents to the public primary health care services and the satisfaction degree from the use of these services.

RESEARCH METHODOLOGY

The Interviewers - The Questionnaire

The research has been carried out in the **Municipalities of Arriana and Iasmos,** in the Regional Unit of Rhodope. The interviews were conducted by (4) interviewers (2 per Municipality), selected from the area after an open call. The interviewers were associates at the local "Home Assistance Program", thereby ensuring the ability to easy communicating with the residents of interest. The latter was of particular importance, as the successful implementation of the research, with consideration of its content, presupposed relationships of trust between interviewer and interviewee.

The specializations of the interviewers were the following: (3) Social Workers and (1) Psychologist.

In order to familiarize the interviewers with the scope of the research and with the content of the questionnaire, several meetings have been organized between the TRANSCOOP Research Managers and the interviewers. Those meetings took place in the town halls of Arriana and Iasmos respectively.

The questionnaire deployed (apart from some minor changes emerged from discussions with the interviewers, and aiming at rendering it more understandable to the respondents) was designed by the Aristotle University of Thessaloniki – AUTH (PB2 of the project), as deliverable 3.2.2

The classification of the diseases was made according to the World Primary Care Classification 2nd Edition - ICPC-2 in accordance with the related deliverable 3.2.2 of AUTH.

The questionnaires have been filled in, in most of the cases, in digital form on the mobile phone (where the mobile telephony network allowed it), by providing a password to each interviewer for the relevant database. In the cases, where this was not possible, the questionnaires were manually completed and the data were then transferred to the relevant digital platform at a later time.

The Data Protection

The questionnaire was **anonymous**. Prior to questioning, **interviewers read a short information text with regard to protection of their personal data to the potential interviewee** and if the individual did not agree with providing the interviewer with his/ her data, the interview did not begin.

The above was also embedded with **a special question within the questionnaire** with the following wording: **Question 3**: "Did the respondent become aware and agree with the personal data management policy? In case of a negative answer the interview will be

interrupted" (with respect to the legal recommendation of Prof. Dr. Petros Stagos, - Aristotle University of Thessaloniki-, on the subject: Respecting the applicable legal rules on the processing of specific categories of personal data (related to health), (project deliverable 3.2.2).

The Publicity

In order to facilitate the survey, publicity actions have been carried out by the 2 Municipalities, with relevant announcements on their official websites, about the purpose and the time plan of the survey, thus encouraging residents to participate.

The Municipal and Community Counselors of the two Municipalities were also informed about the survey and contributed to its publicity (either via facebook or with individual meetings with the residents).

Time of the Research

The survey was conducted in the period from November 2018 to March 2019.

The Population Sample

The sample of the population was large enough to ensure a relative representativeness. The sample involved 1000 people from each Municipality. A stratified sampling was followed, with proportional allocation. The allocation to the Municipal Units (M.U.) of the Municipalities was proportional to the population distribution of each Municipal Unit. The table below shows the distribution of the individuals proportionally by Municipal Unit, in the two Municipalities.

Proportionally in each Municipal Unit	Population	Research Sample
MUNICIPALITY OF ARRIANA	16577	1000
MUNICIPAL UNIT OF ARRIANA	5589	337
MUNICIPAL UNIT OF KEHROS	1222	74
MUNICIPAL UNIT OF ORGANI	2183	132
MUNICIPAL UNIT OF FILYRA	7583	457
MUNICIPALITY OF IASMOS	13810	1000
MUNICIPAL UNIT OF IASMOS	5703	413
MUNICIPAL UNIT OF SOSTIS	6334	459
MUNICIPAL UNIT OF AMAXADES	1773	128

The deviations from a strictly pre-planned sampling result from practical difficulties and from the inability of the interviewers in some cases to reaching all potential interviewees.

However, the number of the sample and the ratios achieved are considered satisfactory with regard to the final reliability of the results. In addition it was sought for the respondents to belong to the group of > 40 years of age, given that this group presents a greater vulnerability.

The Data Processing

The collected response data were encoded on a database from which they were subsequently transferred to the SPSS v.24 software for statistical analysis. The data analysis was performed with descriptive statistics and includes tables on frequency, relative and cumulative frequencies. Besides, diagrams, and bar charts were used, expressing the different descriptive measures in relation to one variable and in combination with two or more variables. Those charts illustrate in a certain way the relationships or the correlations between the variables related to the participants' responses and the variables corresponding to the different demographic – socioeconomic characteristics.

THE RESULTS OF THE RESEARCH

Summary of the Most Important Results

The age of the respondents (of the sample), in a large percentage, in both Municipalities, lies above 60 years of age. The educational level of the sample is considered very low. Besides, the monthly family income is low (lower in the Municipality of Arriana than in Iasmos).

A large percentage of respondents in both municipalities are pensioners. In the Municipality of Arriana, a large percentage concerns farmers, while in the Municipality of Iasmos, a significant percentage concerns self employed and private – public employees.

Housing conditions are particularly problematic in the Municipality of Ariana.

68% of the sample in the Municipality of Arriana considers its health from excellent to good. A much higher percentage of 79.6% in the Municipality of Iasmos considers its health from excellent to good. However, 58.3% of the sample in the Municipality of Arriana and 37.6% of the sample in the Municipality of Iasmos reported some health problem during the last year (worries, new problems, chronical problems).

The **more frequent diseases** reported **in the Municipality of Arriana** are, in order of occurrence frequency, as follows:

1. **Diseases of the Circulatory System**. Increased blood pressure (35.3%) and hypertension – non complicated (31.9%), were found as the most common causes of the circulatory diseases in the Municipality, while coronary heart disease occurs in 5.7% of the sample.

2. **Diseases of the Endocrinological System**. Non-insulin-dependent diabetes mellitus (46.3%), fat metabolism disorder (16.5%) and hypothyroidism / myxoids (14.0%) are the most prevalent causes of the Endocrinological System diseases, while a percentage of 9,9% develops insulin-dependent diabetes mellitus.

3. **Diseases of the Musculoskeletal System**. There are no causes that stand out in high percentages for these diseases. Foot / ankle symptoms (12.0%) and knee osteoarthritis (11.0%) appear more frequenty.

4. **Psychiatric - Psychological Diseases.** The depressive feeling (21.6%) and the depressive disorder (21.6%) show the higher percentages. The feeling of anxiety / nervousness (10.2%) and the schizophrenia (10.2) come up in lower percentages.

The **more frequent diseases** reported **in the Municipality of Iasmos**, are in order of frequency occurrence, as follows:

1. **Diseases of the Circulatory System**. Hypertension complicated was found in a greater percentage (33.3%), the hypertension non complicated (28.2%), while increased blood pressure was found in a percentage of 16.8%.

2. **Psychiatric - Psychological Problems**. The most prevalent disease was the depression (19.0%).

3. **Diseases of the Endocrinological System**. The non-insulin-dependent diabetes mellitus (33.3%) and the hyperthyroidism / thyotoxicosis (31.9%) are the most prevalent diseases, while the insulin-related diabetes occurs with 23.6%.

In general, there is **a linear increase with the age in most diseases** (Circulatory Diseases, Endocrinological Diseases, Musculoskeletal Diseases, Respiratory Diseases)**.** Differentiation is observed in Psychiatric / Psychological Diseases where the age group of "41-60 years" shows the highest rates.

The lowest income groups "up to 500 €" and "500-1,000 €" monthly, show the highest rates in all diseases. The lower income group "up to 500 €" has the higher rates in most diseases.

The diseases are more prevalent among low-educated residents. Also they are more prevalent in farmers and retired persons.

In the Municipality of Arriana (89.1%) of the sample with health problems, sought for medical help. In the Municipality of Iasmos, a smaller percentage (76.0%) asked for medical help.

Out of those who reported on seeking help for their problem, slightly more than half, a percentage of (52.7%) in the Municipality of Arriana visited the nearest Public Health Service. The respective percentage in the Municipality of Iasmos was much smaller (34.7%).

In both Municipalities **the main reason for not going to the nearest Public Health Structure was that "There was no proper medical specialization - equipment" with 82.6% in Arriana and 63.4% for Iasmos.**

In Iasmos, at a much lower rate of 11.0% the answer was "Due to lack of confidence".

More Details on the Most Important Results

A. General and Socioeconomic Characteristics of the Sample (Municipalities of Arriana and Iasmos)

GENERAL – DEMOGRAPHIC CHARACTERISTICS		
	Municipality of Arriana	**Municipality of Iasmos**
GENDER		
Men	47,2%	46,9%
Women	**52,8%**	**53,1%**
AGE		
over 60 years	**45,5%**	**42,0%**
41 – 60 years	36,8%	26,6%
26-40 years	12,3%	20,8%
16-25 years	4,4%	6,7%
0-15 years	1,1%	3,9%
FAMILY STATUS		
Married with children	**73,1%**	**54,4%**
Widows	11,5%	16,9%
Unmarried	11,3%	**23,3%**
Married without children	3,2%	3,7%
NUMBER OF CHILDREN		
With 1 child	23,5%	12,5%
With 2 children	**51,1%**	**42,1%**
With 3 children	12,1%	18,3%
With 4 children	3,3%	10,6%
Without children	8,8%	11,5%

According to the above tables the age of the respondents (of the sample) in a large percentage (45.5% in the Municipality of Arriana and 42% in Iasmos Municipality) lies above 60 years. Together with the age group "41 - 60 years", these two groups make up 82.3% of the sample for the Municipality of Arriana. Respectively in the Municipality of Iasmos those two age groups set up 68.6% of the sample, while the group of 26-40 years also captures a large percentage (20.8%).

SOCIO – ECONOMIC CHARACTERISTICS		
	Municipality of Arriana	**Municipality of Iasmos**
EDUCATION LEVEL		
They cannot read and write	**24,9%**	**16,0%**
They can read and write	**21,2%**	**25,4%**
They have not completed primary education	**29,9%**	**27,0%**
They have not completed high school	12,1%	12,8%
High school graduates	4,8%	9,2%
They have post-secondary education	5,3%	6,5%
PROFESSION		
Farmers	**34,4%**	14,4%
Self-employed	3,6%	6,4%
Private and Public Employees	4,6%	11,3%
Pensioners (Retired)	**39,5%**	**40,7%**
Housewives	4,7%	5,1%
Pupils - Students	2,4%	6,0%
Unemployed	10,3%	14,0%
INCOME		
No income at all	6,3%	1,8%
Up to 500 €	**54,5%**	27,1%
500-1.000 €.	33,5%	**38,9%**
1.000-1.500 €	3,7%	17,1%
1.500-2.000 €	1,5%	11,0%
2.000-3.000 €	0,5%	3,4%
INSURANCE		
Insured	91,1%	85,5%
Uninsured	8,9%	14,5%

The educational level of the sample is very low. A significant percentage of the sample (24.9% in the Municipality of Arriana, 16% in the Municipality of Iasmos) stated that "They cannot read and write". A large percentage in the 2 Municipalities (51.1% in the Municipality of Arriana and 52.4% in the Municipality of Iasmos) stated the two categories: "I can read and write" & "I Have Not Completed the Primary Education".

The largest percentage of respondents is retired (39.5% in the Municipality of Arriana, 40.7% in Iasmos). A percentage of 34% in the Municipality of Arriana are farmers, much less (14.4%) in Iasmos. Self employed and private – public employees, capture double rates in Iasmos than in Arriana. 10.3% in the Municipality of Arriana and 14% in the Municipality of Iasmos declared unemployed.

The monthly family income is lower in the Municipality of Arriana (54.5% of the sample stated up to € 500), than that of Iasmos (27.1% belongs to the category of income up to € 500). Small but not negligible percentages are the uninsured (8.9% in the Municipality of Arriana, 14.5% in the Municipality of Iasmos).

73.1% of the respondents in the Municipality of Arriana are married with children (54.4% in the Municipality of Iasmos, where also the percentage of unmarried is high). In both Municipalities, most have 2 children (in the Municipality of Iasmos there are more families with more than 2 children compared to the Municipality of Arriana).

HOUSING CONDITIONS		
	Municipality of Arriana	**Municipality of Iasmos**
NUMBER OF PERSONS IN THE SAME HOUSE		
1 person	8,5%	26,4%
2 persons	38,8%	26,6%
3 persons	25,1%	21,7%
4 persons	19,3%	17,7%
More than 4 persons	8,4%	7,6%
TYPE OF HOUSE		
Detached house	96,5%	89,6%
Apartment building	3,5%	5,6%
Homeless		4,4%
TOILET AND BATHROOM IN THE HOUSE		
Inside the house	62,6%	85,1%
Outside the house	12,7%	10,3%
Only toilet inside the house	**24,5%**	3,1%
There is no bathroom or toilet	0,2%	1,5%
ENERGY SOURCE FOR HEATING		
Heating Oil	9,4%	28,1%
Electricity	1,3%	5,9%
Burning wood	**87,9 %**	**63,1%**
Other ways (pellets, LPG etc)	1,5%	2,3%
None		0,7%
ENERGY SOURCE FOR COOKING		
Electricity	1,7%	**87,1%**
Gas	**94,1%**	6,4%
Burning wood	4,2%	6,1%

Generally, in both Municipalities the residents live in a single-family house. A percentage of 85.1% of the sample in the Municipality of Iasmos has a toilet and bathroom inside the house, compared to 62.6% in the Municipality of Arriana. (In the Municipality of Arriana only 24.5% have a toilet and that outside the house). A large percentage of 87.9% in the Municipality of Arriana is heated by burning wood (63.1% in Iasmos). In Iasmos, three times as much as in the Municipality of Arriana, is heated with heating oil. A percentage of 94.1% in the Municipality of Arriana uses gas for cooking and only 6.4% in Iasmos (completely opposite to Arriana). (In Iasmos, 87.1%, uses electricity for cooking).

B. Perception of the Health Status

Municipality of Arriana

A percentage of 68% of the sample in the Municipality of Arriana considers its health from excellent to good. 30.1% of the sample in the Municipality of Arriana considers its health either very good or excellent (21.3% very good, 8.8% excellent). 37.9% believes that its health is good. A significant percentage of 26.3% considers its health moderate and 5.7% bad. At Municipal Unit level, the highest percentage (75.5%) that considers its health from excellent to good is found in Filyra, followed by Kehros with 71.1%, Organi with 69.7% and Arriana with the lowest 57,3%.

Although, as mentioned above, 68% of the sample in the Municipality of Arriana, considers its health excellent or good, 58.3% of the sample reported some health problems in the last year (worries, new problems, chronic problems).

Thus, 51.2% of the sample (just over the half) of the sample in the Municipality of Arriana worried last year about health problems (the remaining 48.8% did not worry). Per Municipal Unit (M.U.), a higher percentage worried about its health in the M. Unit of Arriana (72.4%) and in the M. Unit of Kehros (60%).

48.1% of the sample in the Municipality of Arriana stated that they had new health problems. Larger percentages were reported, again in the M. Unit of Arriana (58.6%) and Kehros (57.3%).

A high percentage of 75.6% of the sample in the Municipality of Arriana stated some chronic health problems (24.4% have no chronic health problem). The highest percentage, 84.3%, was reported in the M. Unit of Organi.

Diseases

Frequency of cases reposted from 1 to 6 diseases

The Municipality of Arriana shows increased frequencies of cases reported from 1 to 4 diseases, in absolute figures and in percentages. (There are very few cases of those who reported a 5th and a 6th disease).

Diseases reported	Municipality of Arriana frequency of cases reporting from 1 to 5 diseases (number)	Municipality of Arriana frequency of cases reporting from 1 to 5 diseases (%)
1	973	94,0
2	580	56,0
3	259	25,0
4	63	6,1
5	13	1,3

Diseases – 1st to 6th Diseases – Municipality of Arriana

The diseases reported in the Municipality of Arriana as the 1st, 2nd, 3rd and 4th disease (only very few cases reported a 5th and a 6th disease) are in frequency order as follows:

1. Circulatory System
2. Endocrinological System
3. Musculoskeletal System
4. Psychiatric - Psychological Diseases
5. Gastrointestinal Diseases
6. Respiratory System

1st Disease	2nd Disease	3rd Disease	4th Disease	5th Disease: 13 cases	6th Disease: 3 cases
32,6% circulatory	27,9% circulatory	25,1% circulatory	28,6% circulatory		
12,4% endocrinological	20,9% endocrinological	24,7% endocrinological	15,9% endocrinological	23,1% endocrinological	1 endocrinological
10,3% musculoskeletal	12,2% musculoskeletal	12,7% musculoskeletal	11,1% musculoskeletal		
9,0% psychiatric	8,8% psychiatric	8,5% psychiatric	9,5% psychiatric		
6,5% gastrointestinal	8,3% gastrointestinal	7,7% gastrointestinal	9,5% gastrointestinal	23,1% gastrointestinal	

1st Disease	2nd Disease	3rd Disease	4th Disease	5th Disease: 13 cases	6th Disease: 3 cases
7,0% respiratory	4,8% respiratory	3,9% respiratory	4,8% respiratory		2 respiratory
			4,8% nervous system		

Details with ref. to the First Disease - Health Problem

In the Municipality of Arriana, the **diseases of the circulatory system** show a percentage of 32.6%, followed by **the endocrinological diseases** (12.4%) and **the musculoskeletal disorders** (10.3%). Psychiatric-psychological problems occur with a frequency of 9.0%, followed by the respiratory and gastrointestinal diseases with 7.0% and 6.5% respectively.

Regarding the circulatory diseases in the Municipality of Arriana, higher frequencies of the circulatory problems were recorded in the Municipal Units of Filyra (33.7%), Kehros (33.3%) and Arriana (32.4%).

Analyzing the Circulatory diseases in the Municipality, increased blood pressure (35.3%) and hypertension – non complicated (31.9%), were found as the most common causes of the circulatory diseases in Arriana. Coronary heart disease appears with 5.7%.

With regard to the **endocrinological diseases** in the Municipality of Arriana, the Municipal Units of Arriana (15.7%) and Kehros (13.6%) show the highest rates.

Breaking down the endocrinological diseases at the Municipality, non-insulin-dependent diabetes mellitus (46.3%), fat metabolism disorder (16.5%) and hypothyroidism / myxoids (14.0%) are the most prevalent forms of disease, while 9,9% develops insulin-dependent diabetes mellitus.

As regards the **musculoskeletal diseases**, at the Municipality of Arriana, there are no significant differences between the Municipal Units.

Also, analyzing musculoskeletal diseases in the Municipality, there are no diseases that stand out in high percentages. Foot / ankle symptoms (12.0%) and knee osteoarthritis (11.0%) appear more frequently.

As to the **psychiatric - psychological problems**, the Municipal Units of Kehros (15.2%) and Organi (14.8%) show the highest rates.

Analyzing the psychiatric - psychological diseases in the Municipality, the depressive feeling (21.6%) and the depressive disorder (21.6%) show the highest frequency.

The feeling of anxiety / nervousness (10.2%) and the schizophrenia (10.2) occur in lower percentages.

Municipality of Iasmos

A percentage of 79.6% of the sample, in the Municipality of Iasmos (greater than that of the Municipality of Arriana), considers its health from excellent to good.

29.6% in the Municipality of Iasmos (almost the same percentage as in the Municipality of Arriana) considers its health either very good or excellent, but the relative percentages of excellent and very good health differ when compared to the Municipality of Arriana. In the Municipality of Iasmos: 26.7% consider its health very good and 2.9% as excellent. A large percentage of 50.0% (well above the Municipality of Arriana) believe that its health is good. 17.5% believes that its health is modest (a much smaller percentage compared to the Municipality of Arriana) and 2.9% believe that its health is bad.

Per M. Unit, the higher percentage, that considers its health from excellent to good, is recorded in the M. Unit of Sostis (84.6%), followed by the M. Unit of Iasmos with 78.7%.

Although, as mentioned above, a percentage of 79.6% considers its **health from excellent to good, 37.6% of the sample reported some health problem in the last year (worries, new problems, chronic problems).**

Thus, a percentage of 25.0% of the sample in Iasmos (much less than the respective in Arriana Municipality) worried last year about health problems (the remaining 75.0% did not worry). By M. Unit the bigger percentage that worried about its health was reported in the M. Unit of Amaxades (58.6%).

A much smaller percentage (compared to the Municipality of Arriana) of 29.1% of the sample in the Municipality of Iasmos, had new health problems. The higher percentages were recorded in the M. Unit of Amaxades (56.3%).

A much smaller percentage (compared to Arriana Municipality), however of significance, 58.8% of the sample in the Municipality of Iasmos, reported some chronic health problem (41.2% had no chronic health problem). Larger percentages occur in the M. Unit of Amaxades (73.4%).

Diseases

Frequency of cases reposted from 1 to 6 diseases (incl. 6)

The Municipality of Iasmos shows a lower frequency of cases reporting from 1 to 4 diseases compared to the Municipality of Arriana. (There are very few cases of those who reported a 5th and a 6th disease).

Diseases reported	Municipality of Iasmos frequency of cases reporting from 1 to 5 diseases (number)	Municipality of Iasmos frequency of cases reporting from 1 to 5 diseases (%)
1	796	79,0
2	412	40,9
3	181	18,0
4	57	5,7
5	15	1,5

1st up to 6th Disease - Health Problem - Municipality of Iasmos

The diseases reported in the Municipality of Iasmos for the 1st, 2nd, 3rd and 4th disease (only very few cases reported a 5th and a 6th disease) are in frequency order the following:

1. Circulatory System
2. Psychiatric - Psychological Problems
3. Endocrinological System
4. Gastrointestinal Diseases
5. Respiratory System
6. Musculoskeletal System

1st Disease	2nd Disease	3rd Disease	4th Disease	5th Disease: 15 cases	6th Disease: 6 cases
38,8% circulatory	24,5% circulatory	20,4% circulatory	12,3% circulatory	13,0% circulatory	2 circulatory
12,6% psychiatric	12,9% psychiatric	13,8% psychiatric	12,3% psychiatric	6,7% psychiatric	
9,0% endocrinological	17,0% endocrinological	14,9% endocrinological	12,3% endocrinological	20,0% endocrinological	
5,5% gastrointestinal	14,3% gastrointestinal	11,6% gastrointestinal	12,3% gastrointestinal	13,3% gastrointestinal	
5,3% respiratory	5,8% respiratory	2,8% respiratory	5,3% respiratory	6,7% respiratory	
4,9% musculoskeletal	7,8% musculoskeletal	8,8% musculoskeletal	12,3% musculoskeletal		
			12,3% eye	6,7% eye	
				13,3% blood, immune	

1st Disease	2nd Disease	3rd Disease	4th Disease	5th Disease: 15 cases	6th Disease: 6 cases
					3 nervous
					1 social

As to the First Disease - Health Problem, in Detail

In the Municipality of Iasmos, **38.8% of the cases state diseases of the circulatory system, followed by the psychiatric-psychological problems** (12.6%) **and the endocrinological diseases** with 9.0%. The gastrointestinal disorders appear with a frequency of 5.5%, followed by the respiratory diseases with 5.3% and the musculoskeletal problems with 4.9%.

Regarding the circulatory diseases in the Municipality of Iasmos, the M. Unit of Iasmos comes up with the highest percentage (41%).

Analyzing the circulatory diseases in the Municipality, a greater percentage was located in the hypertension complicated (33.3%), the hypertension non complicated (28.2%), while a percentage of 16.8% was reported in "increased blood pressure".

In the Municipality of Iasmos, the M. Unit of Amaxades brings up the highest percentage (19.3%) **in Psychiatric – Psychological Problems**. Analyzing the psychiatric - psychological diseases in the Municipality, the most prevalent was the depression (19.0%).

With regard to the **Endocrinological Diseases**, the M. Unit of Iasmos captures the highest rate (10.5%).

Breaking down the endocrinological diseases in the Municipality, the non-insulin-dependent diabetes mellitus (33.3%) and the hyperthyroidism / thyotoxicosis (31.9%) are the most prevalent, while the insulin-related diabetes appears with 23.6%.

Correlations

Age and Diseases

In general, there is a linear increase of most diseases (Circulatory Diseases, Endocrinological Diseases, Musculoskeletal Diseases, Respiratory Diseases) with the age. Differentiation is observed in Psychiatric / Psychological Diseases where the age group of "41-60 years" shows the highest rates. The same differentiation is observed in Gastrointestinal Diseases.

More in Detail:

The age groups "over 60" and "41-60 years" have the highest rates of circulatory diseases, 77.8% and 21.0%, respectively. An increase in the problems of the circulatory system with the age is recorded.

The age groups "over 60 years" and "41-60 years" have the highest rates of endocrinological diseases, 51.3% and 36.3% respectively. There is also a linear increase of endocrinological diseases with the age recorded.

The age groups "over 60" and "41-60 years" have the highest rates of musculoskeletal disorders, 47.5% and 36.7%, respectively. There is also a linear increase of the musculoskeletal problems with the age.

The age groups "Over 60" and "41-60 years" have the highest rates of respiratory diseases, 34.5% and 29.1% respectively. There is also a linear increase in respiratory diseases with age.

The age group "41-60 years" has the highest percentage (42.6%) of psychiatric / psychological problems followed by the age group of "over 60 years" (25.0%) and the age group of "26-40 years" (22.9%).

The age group "41-60 years" has the highest rate of gastrointestinal problems (44.3%). The next one is the age group "over 60 years" with 30.2%.

Finally, the highest frequencies (those reporting 1, 2, 3, 4, 5 diseases) appear at older ages (41-60 years and over 60 years).

Monthly Income and Diseases

The lowest income groups "up to 500 €" and "500-1,000 €" monthly, show the highest rates in all diseases. The lower income group "up to 500 €" presents the higher rates in most diseases.

In more Detail:

The lowest income groups "up to 500 €" and "500-1,000 €" monthly, have the highest rates of circulatory diseases, 45.4% and 38.4% respectively.

The lower income groups "up to 500 €" and "500-1,000 €" monthly, have the highest rates of endocrinological diseases, 37.8% and 38.3% respectively.

The lowest income groups "up to 500 €" and "500-1,000 €" monthly, have the highest rates of Psychiatric - Psychological Problems, 53.7% and 29.3% respectively.

The lower income groups "up to 500 €" and "500-1,000 €" monthly, have the highest rates of Respiratory Problems, 46.8% and 34.9% respectively.

The lower income groups "up to 500 €" and "500-1,000 €" have the highest rates of musculoskeletal diseases, 50.0% and 33.3% respectively.

The lower income groups "up to 500 €" and "500-1000 €" have the highest rates of gastrointestinal diseases, 38.3% and 37.4% respectively.

Finally, the highest frequencies (those reporting 1, 2, 3, 4, 5 diseases) appear at the income levels of "up to 500 €" and "500-1,000 €".

Education, Profession and Diseases

From the specific correlations between health problems (diseases) and the different levels of education, it has been resulted that these problems are more prevalent among low-educated residents.

Also the specific correlations between diseases and the various professions have shown that these problems are more prevalent at farmers and retired persons.

C. Use of Health Structures (Public or Private) and Degree of Satisfaction in Managing the Health Problems

The following Table returns the shares (percentage) of the sample, for each Municipality, of those with health problems who stated that they had to ask for help for their problem, the percentages of those who asked for help at the nearest public health structure, the reasons for not going to the nearest public health structure and the degree of their satisfaction (the degree they estimate that their health problem has been addressed). The table provides data for 4 diseases, however, since no differences were observed for the 4 diseases, the analysis below concerns only the 1st disease.

In the Municipality of Arriana (89.1%) of the sample with health problems, asked for medical help. In the Municipality of Iasmos, a smaller percentage (76.0%) asked for medical help.

Of those who reported that asked for help for their problem, a greater percentage (52.7%) in the Municipality of Arriana visited the nearest Public Health Service than in the Municipality of Iasmos (34.7%).

In the Municipality of Arriana the main reason for not going to the nearest Public Health Structure was that "There was no appropriate medical specialization – equipment available" with 82.6%. A much smaller number (9.4%) reported that "It was an emergency ".

In the Municipality of Iasmos, the main reason for not visiting the nearest Public Health Structure was that "There was no appropriate medical specialization – equipment available" with 63.4%. At a much lower rate, of 11.0% , replied "Due to lack of confidence" and "It was an emergency", with 7.9%.

Instead of going to the nearest Public Health Structure, 37.4% of the sample in the Municipality of Arriana visited a private doctor and 31% visited a Hospital. A percentage of 20.3% in the Municipality of Arriana had laboratory examinations at a Private Laboratory and 10.2% at a Hospital.

In the Municipality of Iasmos, 26.1% visited a private doctor and 15.7% visited a Hospital. 15.3% in the Municipality of Iasmos had laboratory tests conducted at a Private Laboratory and 17.3% at a Hospital. (N.B. the above percentages do not add up to 100 because, in the corresponding question, participants had more than one choice. Values (%) refer to the total sample per municipality).

	1st disease	2nd disease	3rd disease	4th disease
% Asked for medical help	(89,1%) of the Municipality of Arriana, (76,0%) of the Municipality of Iasmos	(88,0%) of the Municipality of Arriana, (74,6%) of the Municipality of Iasmos	(85,6%) of the Municipality of Arriana, (70,6%) of the Municipality of Iasmos	(85,2%) of the Municipality of Arriana, (70,2%) of the Municipality of Iasmos
From those, who asked for help, they visited the nearest Public Health Structure	52,7% of the Municipality of Arriana, (34,7%) of the Municipality of Iasmos	51,0% of the Municipality of Arriana, (40,2%) of the Municipality of Iasmos	51,7% of the Municipality of Arriana, (35,9%) of the Municipality of Iasmos	50,8% of the Municipality of Arriana, (27,5%) of the Municipality of Iasmos
The main reason stated for not going to the nearest Public Health Structure	"There was no appropriate medical specialization – equipment": 82,6% of the Municipality of Arriana & 63,4% of the Municipality of Iasmos "It was an emergency": 9,4% of the Municipality of Arriana & 7.9% of the Municipality of Iasmos " Lack of confidence": 11,00% of the Municipality of Iasmos (1,9% of the Municipality of Arriana)	"There was no appropriate medical specialization – equipment": 87,6% of the Municipality of Arriana & 66,1% of the Municipality of Iasmos "It was an emergency": 7,6% of the Municipality of Arriana & 7.8% of the Municipality of Iasmos " Lack of confidence": 13,3% of the Municipality of Iasmos (0,4% of the Municipality of Arriana)	"There was no appropriate medical specialization – equipment": 85,6% of the Municipality of Arriana & 75,3% of the Municipality of Iasmos "Inability to move": 6,7% of the Municipality of Arriana & 6,5% of the Municipality of Iasmos "It was an emergency": 5,8% of the Municipality of Arriana & 6,5% of the Municipality of Iasmos " Lack of confidence": 9,1% of the Municipality of Iasmos (0,0% of the Municipality of Arriana)	"There was no appropriate medical specialization – equipment": 81,00% of the Municipality of Arriana & 71,4% of the Municipality of Iasmos "It was an emergency": 9,5% of the Municipality of Arriana & 10,7% of the Municipality of Iasmos " Lack of confidence": 4,8% of the Municipality of Arriana) "Inability to move": 10,7% of the Municipality of Iasmos

	1st disease	2nd disease	3rd disease	4th disease
Instead of going to the nearest Public Health Structure, they went to...	To a private doctor: 37,4% of the Municipality of Arriana & 26,1% of the Municipality of Iasmos To Hospital: 31,1% of the Municipality of Arriana & 15,7% of the Municipality of Iasmos Laboratory tests at a Private Laboratory: 20,3% of the Municipality of Arriana & 10,1% of the Municipality of Iasmos	To a private doctor: 22% of the Municipality of Arriana & 12,3% of the Municipality of Iasmos To Hospital: 18,0% of the Municipality of Arriana & 6,3% of the Municipality of Iasmos Laboratory tests at a Private Laboratory: 11,0% of the Municipality of Arriana &4,00% of the Municipality of Iasmos	Medical examination abroad: 9,4% of the Municipality of Arriana & 5,7% of the Municipality of Iasmos To Hospital: 7,1% of the Municipality of Arriana & 2,9% of the Municipality of Iasmos Laboratory tests at a Private Laboratory: 3,8% of the Municipality of Arriana & 1,2% of the Municipality of Iasmos	
Degree of satisfaction in addressing their problem	Average: 7,25 Municipality of Arriana, Average: 6 Municipality of Iasmos	Average: 8,4 Municipality of Arriana, Average: 7,12 Municipality of Iasmos	Average: 7,85 Municipality of Arriana, Average:6,88 Municipality of Iasmos	Average: 7,69 Municipality of Arriana, Average: 6,63 of Municipality of Iasmos

Regarding the assessment degree concerning the satisfaction of the sample in addressing their health problem, in the Municipality of Arriana (Average=7.25, t=1.96) respondents seem to be more satisfied than in the Municipality of Iasmos (Average =6.0, t = 2.42). However, the difference is not statistically significant.

Table. Distribution (%) of satisfaction ratings as to the 1st Health Problem, in the two Municipalities

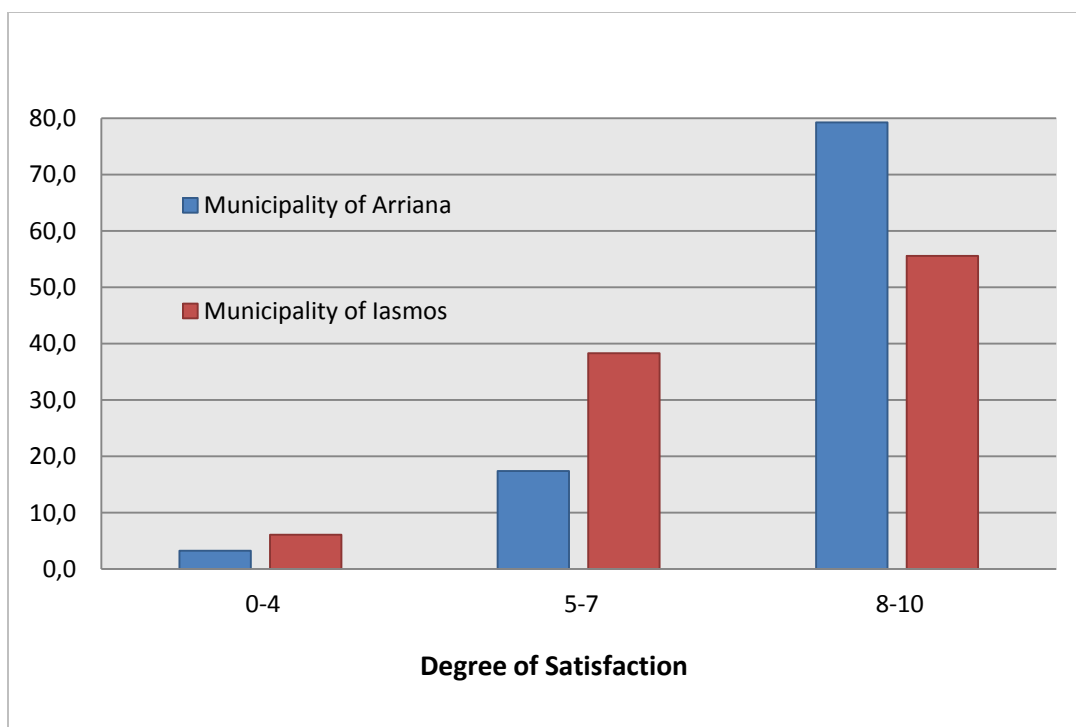| Degree of Satisfaction	Municipality of Arriana	Municipality of Iasmos
0-4	3,3	6,1
5-7	17,4	38,3
8-10	79,3	55,6

Chart 1. Distribution (%) of satisfaction ratings reg. response to the 1st Health Problem, compared between the two Municipalities

With regard to **the reasons for not going to the nearest Public Health Structure, by Municipal Unit,** it is observed that the majority of respondents in all Municipal Units choose that "There was no appropriate medical specialization - equipment" as the reason for not

visiting a nearby Public Health Structure. Specifically, this response was much more frequent, in Kehros 94.1%, in Arriana 93.3%, in Filyra 76.6%, in Iasmos 70.3%. Other, less important reasons that emerge are "It was an emergency" with a rate of 8.3% (with higher percentages in Organi & Filyra) as well as "Due to lack of confidence" with a total of 6.7% (the higher rates in Sostis and in Amaxades). In the M.Unit of Sostis 14.7% responded "the Health Unit was closed on the day I needed it".

Table. Reasons for not going to the nearest Public Health Structure, by Municipal Unit

	M.U. of Arriana	M.U. of Filyra	M.U. of Organi	M.U. of Kehros	M.U. of Iasmos	M.U. of Sostis	M.U. of Amaxades	
The Health Unit was closed on the day I needed it	2	3	1	1	9	**21**	0	37
	1,5%	2,1%	2,9%	2,0%	5,1%	**14,7%**	0,0%	4,9%
There was no appropriate medical specialization - equipment	126	108	18	48	123	82	40	545
	93,3%	**76,6%**	52,9%	**94,1**%	**70,3%**	57,3%	57,1%	72,8%
It was an emergency	5	17	7	2	14	12	5	62
	3,7%	12,1%	**20,6%**	3,9%	8,0%	8,4%	7,1%	8,3%
Due to lack of confidence	0	6	1	0	14	20	9	50
	0,0%	4,3%	2,9%	0,0%	8,0%	**14,0%**	**12,9%**	6,7%
Inability to move / Need for Hospital	0	5	2	0	10	5	11	33
	0,0%	3,5%	5,9%	0,0%	5,7%	3,5%	15,7%	4,4%
I didn't consider it important	2	2	5	0	5	3	5	22
	1,5%	1,4%	14,7%	0,0%	2,9%	2,1%	7,1%	2,9%
	135	141	34	51	175	143	70	749
	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

D. Use of Health Services and Problems

Preventive Control or Vaccination in the Last Year

In the Municipality of Arriana, 70.9% of the sample had some preventive examination in the last year (vaccination, or blood test, or cardiac exam, etc.).

In the Municipality of Iasmos, 67.6% of the sample had some preventive examination in the last year.

The table below shows the numbers and percentages of cases for each preventive measure, vaccine or test, by Municipality. It is observed that in the Municipality of Iasmos more vaccinations have been performed, 29.7%, against 18.6% in the Municipality of Arriana and more preventive blood tests, 54.1%, against 51.2% in the Municipality of Arriana. In the Municipality of Arriana more cardiac tests have been performed, 17.2%, compared to 8.3% in the Municipality of Iasmos.

Table. Frequencies and % - frequency of cases per Municipality, for each preventive measure, vaccine or test

| | Municipality | | Total |
	Arriana	Iasmos	
Vaccination (e.g. for flu)	192	299	491
	18,6%	29,7%	24,0%
Preventive blood tests	530	545	1075
	51,2%	54,1%	52,6%
Cardiac exams (ECG, stress test, etc.)	178	84	262
	17,2%	8,3%	12,8%
Intestinal examination (e.g. colonoscopy etc.)	22	1	23
	2,1%	0,1%	1,1%
Test pap/ mammography (women) / prostate control (PSA, men)	116	121	237
	11,2%	12,0%	11,6%
MRI / CT / Ultrasound	5	6	11
	0,5%	0,6%	0,5%

By Municipal Unit: As shown in the Table below, the highest rates of preventive control are located in the M.Units of Filyra (77.7%), Amaxades (76.6%), Iasmos (74.4%). The lowest percentage, 58.4%, appears in Sostis.

Table. The % - frequencies of those who had a preventive control or vaccination last year, per Municipal Unit

	NO	YES	Total
M.U. of Arriana	119	219	338
	35,2%	64,8%	100,0%
	19,1%	15,8%	16,9%
M.U. of Filyra	102	355	457
	22,3%	**77,7%**	100,0%
	16,4%	25,7%	22,8%
M.U. of Organi	46	86	132
	34,8%	65,2%	100,0%
	7,4%	6,2%	6,6%
M.U. of Kehros	28	49	77
	36,4%	63,6%	100,0%
	4,5%	3,5%	3,8%

M.U. of Iasmos	106 25,6% 17,0%	308 **74,4%** 22,3%	414 100,0% 20,6%
M.U. of Sostis	191 41,6% 30,7%	268 58,4% 19,4%	459 100,0% 22,9%
M.U. of Amaxades	30 23,4% 4,8%	98 **76,6%** 7,1%	128 100,0% 6,4%
	622 31,0% 100,0%	1383 69,0% 100,0%	2005 100,0% 100,0%

Type of Preventive Check by Municipal Unit

The following Table returns the frequencies of the various types of preventive tests per Municipal Unit. The percentages (not summing up to 100, as more choices were possible) refer to the % of cases from a Municipal Unit where this preventive check has been stated.

Blood tests are predominant with the second being the preventive vaccination in all Municipal Units.

Most blood tests were performed in Iasmos (64.3%) and Filyra (61.3%), with more vaccinations in Amaxades (44.5%) and Iasmos (40.6%). More cardiological preventive examinations were performed in Kehros (27.3%) and Filyra (19.3%). More gynecological / andrologic examinations in Organi.

Table. Preventive Check by Municipal Unit*

	Vaccination (e.g. for flu)	Preventive blood tests	Cardiac exams	Gynecological / Andrological tests	MRI / CT / Ultrasound
M.U. of Arriana	74 21,9%	139 **41,1%**	52 15,4%	23 6,8%	4 1,2%
M.U. of Filyra	72 15,8%	280 **61,3%**	88 19,3%	59 12,9%	0 0,0%
M.U. of Organi	25 18,9%	54 **40,9%**	11 8,3%	30 22,7%	1 0,8%
M.U. of Kehros	4 5,2%	45 **58,4%**	21 27,3%	2 2,6%	0 0,0%
M.U. of Iasmos	168 40,6%	266 **64,3%**	33 8,0%	52 12,6%	2 0,5%
M.U. of Sostis	69 15,0%	210 **45,8%**	44 9,6%	46 10,0%	0 0,0%
M.U. of Amaxades	57 44,5%	65 **50,8%**	6 4,7%	21 16,4%	4 3,1%

(*The percentages refer to the % of the cases which had the particular check in the particular Municipal Unit).
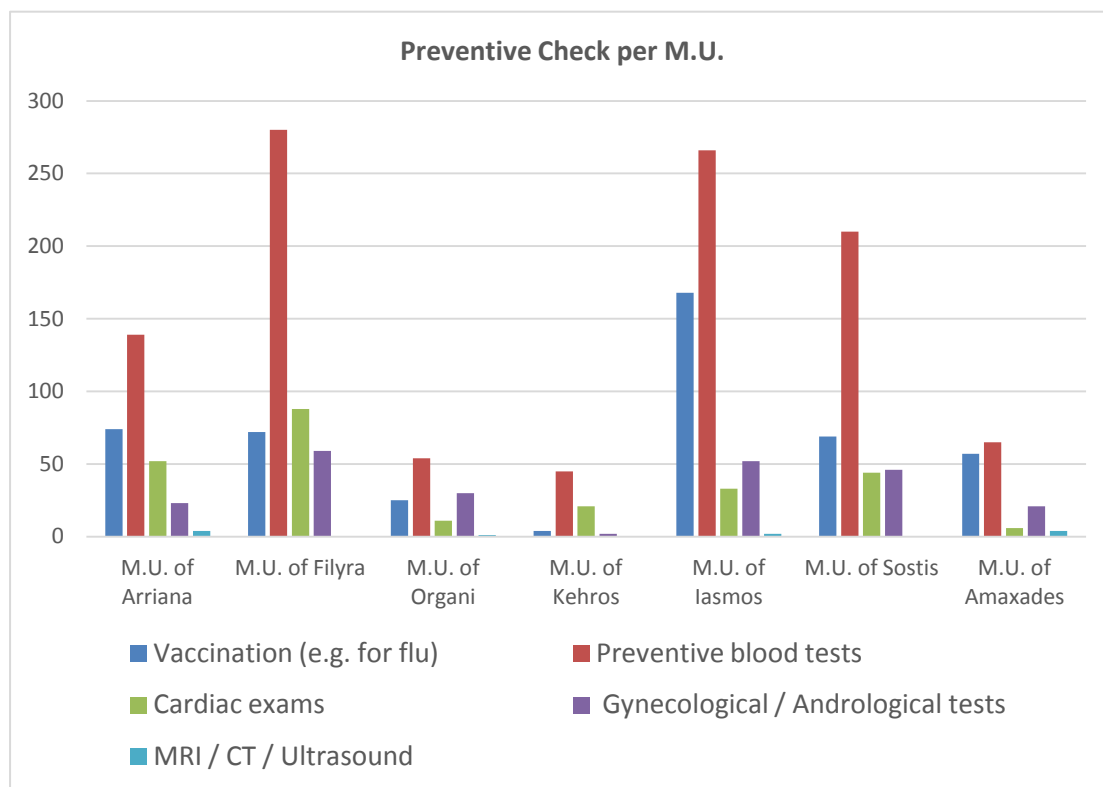
Chart 2. Preventive Check per M.U.

Correlations of Preventive Tests with Age, Income

In general, the preventive check increases with age, with a higher frequency at people over 60, with the majority (83.9%) of them, getting vaccinated or having some other preventive test.

Also, the rate of preventive measures increases as the income level rises. Those with the lowest income level have the lowest (36.1%) rate in preventive tests or vaccination.

Visits to Dotors

For medical examination, in the Municipality of Arriana, the highest percentage of visits (43.4%) was stated in the category of "2-3 times in the last year". The same frequency is observed also by Municipal Unit.

In the Municipality of Iasmos, the highest percentage of visits (35.3%) was also stated in the category of "2-3 times in the last year", however an important number (31.9%) of visits stated lies in the category of "once a year". In the Municipal Unit of Sostis, the highest percentage of visits was stated in the category "once a year".

For medical prescription, in the Municipality of Ariana, the highest percentage of visits (33.9%) was in the category "more than 5 times in the last year". In the Municipal Units of Arriana and Kehros, the number of visits for prescription "more than 5 times in the last year" was reported by 48.6% and 32% respectively, and it is the highest for these Municipal Units in the Municipality. In Filyra and Organi, the highest frequency was in the category "4-5 times a year".

In the **Municipality of Iasmos** the highest percentage of visits for prescription, 38.0%, was in the category of "2-3 times in the last year". In the category "more than 5 times in the last year", the percentage in the Municipality of Iasmos reached only 4.6%.

In the Municipal Units of Amaxades and Iasmos the highest frequency concerned the category "2-3 times in the last year". In the Municipal Unit of Sostis, the highest frequency concerned the category 'once a year'.

Expenditures for Doctors

The majority in both municipalities declared costs for doctors "of less than 100 euros": 70.9% in the Municipality of Arriana and 74.0% in the Municipality of Iasmos. In most Municipal Units, the larger percentage spent up to 100 €. In Organi and Amaxades there is an increasing tendency for higher expenses.

Number of Admittances in Health Care Units, the Last Year

The highest percentages (90.8% in the Municipality of Iasmos and 82.9% in the Municipality of Arriana) did not require hospitalization. A percentage of 13.3% in the Municipality of Arriana was admitted to a Public Hospital or Clinic once in the last year, while this percentage for the Municipality of Iasmos was 7.0%.

In all Municipal Units, ~ 10% of cases have been hospitalized once. The Higher rates hospitalized once, per M.U. concerned in 17.0% of cases the M.U. of Filyra and 16.9% the M.U. of Kehros.

Existence of Problems in Accessing Health Services

27.0% in the Municipality of Arriana and 47.3% in the Municipality of Iasmos stated problems - barriers relating to the use of health services.

For the Municipality of Arriana the most frequent issue was the problem of communication with the doctor. For the Municipality of Iasmos the greater frequency occurred in the problem of "delay in fixing an appointment with the doctors of the National Health System".

In the Municipality of Arriana, per Municipal Unit, the highest percentages of problems were observed in the M.Unit of Kehros (40%) and Arriana (37.7%).

In the Municipality of Iasmos, the highest percentages of problems were observed in the M.Unit of Amaxades (66.1%) and Iasmos (51%).