

## **PREVALENCE OF DEMENTIA IN SUBJECTS OF AGE GROUP 50-90**

Vegim Zhaku<sup>1</sup>, Aziri.H, Kolonja.B<sup>1</sup>, Maqellara.A<sup>1</sup>, Zendeli.K<sup>1</sup>, Bilalli.G and Rushiti.M<sup>1</sup>, Arben Taravari<sup>2</sup>

<sup>1</sup> State University of Tetovo, Tetovo, MACEDONIA

<sup>2</sup> Department of Neurology, State University of Tetovo, Tetovo, MACEDONIA

### **ABSTRACT**

**Aims:** In this prospective study that was carried out for 8 months, it has been aimed to observe the prevalence of dementia, from the minimal state examination (MMSE) test and the clock drawing test (CDT). Also we wanted to find out if the level of education, age and sex were indications in these people. Encouraging health systems and caring policies in Macedonia, was one of the main aims.

**Methods:** Were included 600 coincidental individuals, from 6 cities in western part of Macedonia (Kumanovo, Tetovo, Gostivar, Kicevo, Debar and Struga). Data taken from MMSE test and CDT from coincidental – healthy supposed individuals, were manually elaborated.

**Results:** Higher prevalence was concluded in Kumanovo while the lowest in this study was concluded in Struga. Generally, 56.33 % had under 25 points in MMSE Test, while 55.5% had problems during drawing the clock.

**Conclusion:** Semen quality is affected by numerous genetic and environmental factors. Smoking, alcohol consumption and being employed in certain occupational groups are just a few of many risk factors.

**Key Words:** Dementia, Alzheimer's Disease, Delirium.

### **INTRODUCTION**

Older individuals experience occasional difficulty retrieving items from memory (usually manifested as word-finding complaints) and experience a slowing in their rate of information processing. By contrast, dementia is an acquired persistent and progressive impairment in intellectual function, which compromise in multiple cognitive domains at least one of which is memory.

The demented patient's deficits must represent a significant decline in function and must be severe enough to interfere with work or social life.

In 2009, there were an estimated 6.8 million people aged 60 years and over suffering from dementia in EU member states, accounting for around 6% of the population in that age group, according to estimates by Wimo et al. (2010).

France, Italy, Spain, Sweden and Switzerland had the highest prevalence, with 6.3% to 6.6% of the population aged 60 years or older.

Clinical symptoms of dementia usually begin after the age of 60, and the prevalence increases markedly with age, but in Macedonia, we found on our study, a considerable number of people under 60 years, suffering

from dementia.

Intellectual impairments in older patients are frequently the result of two other syndromes, each of which frequently coexists with dementia: depression and delirium. Depression is a common concomitant of dementia, but it can also masquerade as dementia. Moreover, a patient with depression and cognitive impairment whose intellectual functions improves with treatment of the mood disorder has an almost fivefold greater risk of suffering irreversible dementia later in life.

Several factors are related to dementia:

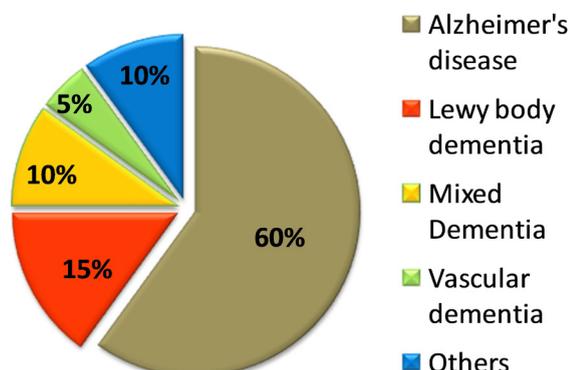
- age,
- head injury,
- genetic factors,
- black race,
- higher LDL cholesterol levels,
- physical activity,
- male sex,
- smoking,
- drug use,
- education level, etc.

There are also many factors that decrease risk, such as:

- NSAID use,
- HMG-CoA reductase inhibitor use,

- Moderate alcohol intake and
- Strong social supports

**Graph 1.Types of Dementia**



## MATERIAL AND METHODS

Our study is a prospective study, carried out for 8 months in which are included 600 randomly selected subjects, from 6 cities in western part of Macedonia (Kumanovo, Tetovo, Gostivar, Kicevo, Debar and Struga).



**Fig.1 Cities where tests were provided**

As a material for this study were used data taken from:

- MMSE test and
- CDT, from coincidental – healthy supposed subjects.

From them, 374 (62.33 %) are male and 226 (37.66 %) female, with an age average for male 69.4 and for female 68.2 age.

After datas were collected from the all cities, a students group from the Science Group at Faculty of Medical Sciences in State University of Tetova, analysed and processed all the tests manually.

## The evaluation rests on two points:

- 1.The MMSE was conducted and the score determined according to the guidelines for the standardized MMSE. Every test that had a score below 25 points in MMSE test was considered positive.
- 2.CDT datas were processed with the method of Watson and colleagues, identifying executive cognitive dysfunction. Patients are given a predrawn circle and asked to draw numbers on it to make it look like a clock.

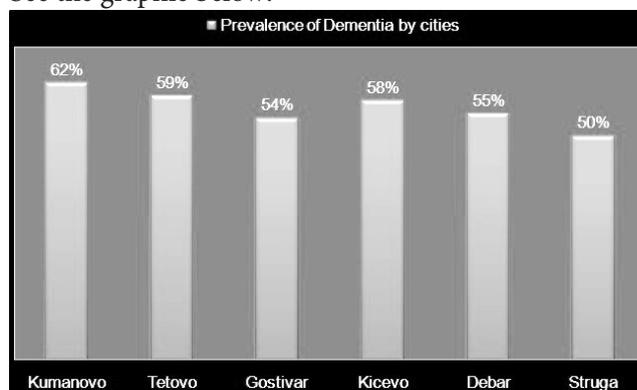
## RESULT

After a week the Science Group displayed this results:

-Higher prevalence was concluded in Kumanovo (62 subjects, from which 21 belong to age group (81-90), 19 (age group 71-80), 14 (age group 61-70) and 9 were from the age group 50-60),

-Struga had the lowest (50 subjects, from which 18 belong to the age group (81-90), 16 (age group 71-80), 12(age group 61-70), 4 belong to age group 50-60).

See the graphic below:



If we refer the map of Republic of Macedonia, we see that there is a difference between the cities located in south and north, except of Gostivar, which has the lowest prevalence after Struga.

During the elaboration, students of 6-th cities, were asked about their way of life, social factors, because, many factors, are related with the prevalence of dementia, such as:

- Cigarette use
- Low education
- Nutrition, etc.

Students from Kumanovo said that their grandparents smoke a lot, most of them had finished only four years of primary school, while food hadn't many differences with other cities.

While students from Struga, said that cigarette use is moderate, while most of their grandparents had finished 8 years of primary school and gymnasium.

In general, for 4 age groups, of both sex (Males & Females), 56.33 % (207 (M); 131 (F)) of them had under 25 points in MMSE Test, while 55.5% (204 (M); 129 (F)) had problems during drawing the clock.

This proves that males are more predisposed of suffering from dementia, eventhough, a new analysis of data from the 90+ age study in University of California, among the largest epidemiologic studies of aging and dementia in the oldest old, shows that all-cause dementia doubled every 5 years for women but remained stable for men, but this was not concluded in our study in Macedonia.

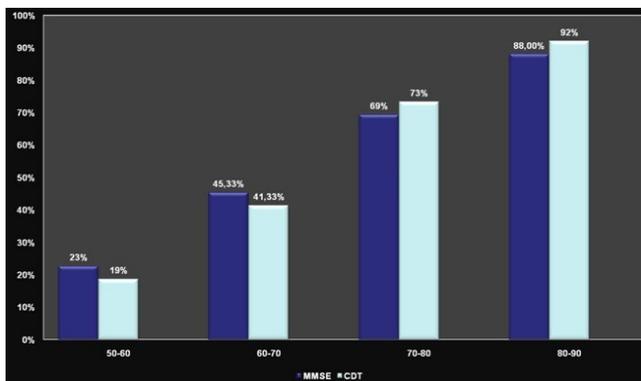
Look at the table below:

Mini Mental State Examination (MMSE)		
Test		
Gender	M	F
Positive MMSE	207 (61,24%)	131 (38,76%)
Total M&F positive	338	
Clock Drawing Test (CDT)		
Gender	M	F
Positive CDT	204 (61,26%)	129 (38,74%)
Total M&F positive	333	

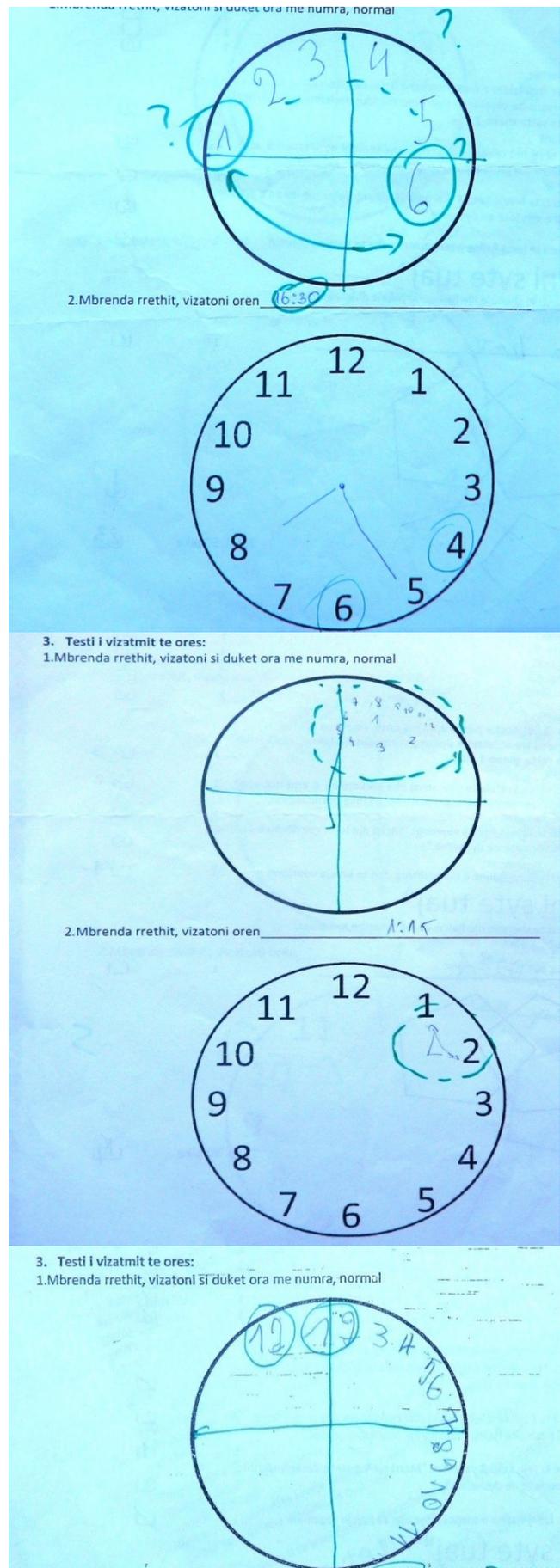
Table 1. Proportion between positive Males and Females, in MMSE Test and CDT

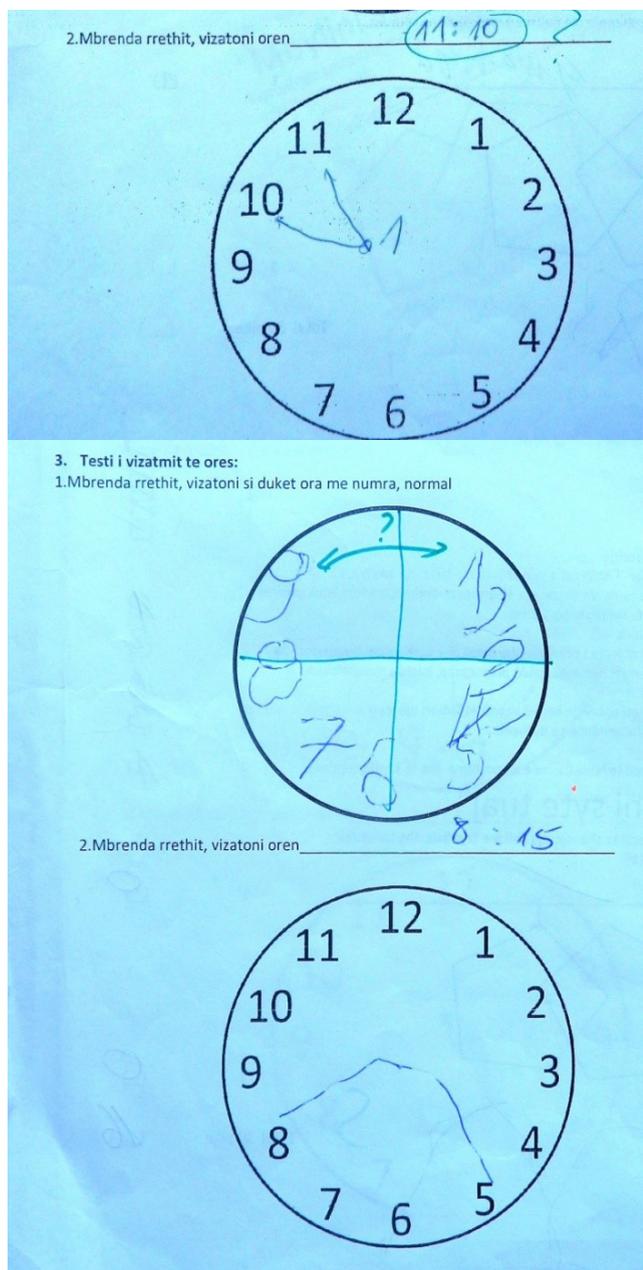
Within increase of age, positivity of results increases in both tests ( $p > 0.05$ ).

In the graphic below is shown the rate between MMSE and CDT in 4 age groups.



In the following, we want to share some of our most interesting tests:





## DISCUSSION:

As the number of older persons suffering from dementia is already large, and is expected to grow in the future, dementia has become a health policy priority in many Europe countries, but it is not so in our country, Macedonia.

There are no effective health care treatments for stopping dementia, which is why the social care aspect plays an important role in treating the disease, with family members an integral part of this process.

In January 2011, the European Parliament adopted a resolution calling for dementia to be made an EU

health priority and urging members states to develop dedicated national plans and strategies (only a small number of countries including France and the United Kingdom, along with Norway, currently have national strategies in place). These strategies should address the social and health consequences, as well as services and support for sufferers and their families.

In the terrain, our students from the scientific group of the Faculty of Medical Sciences by State University of Tetova, noticed that resolution such that, that was adopted in January 2011 it is very important. That's why tend to raise awareness of dementia and related disorders, encouraging health systems and caring policies. Macedonian Government, need to develop a National Strategy on Dementia, which will increase awareness, ensure early diagnosis and intervention, and enhance community, to seek support and professional assistance, a challenge posed by a growing number of people with dementia. Our students witnessed that the families of the patients suffering from dementia, faced with difficulties because of bad conditions and ineffective care. From our study, it resulted that 64,2% had never visited a neurologist regarding this problem, and this turns on the alarm of emergency for this problem.

It was also proved, as in other scientific topics like this, that the prevalence of dementia and cognitive dysfunctions increases with age. The level of education and social factors had a significant influence in the positivity of the results. The correlation between subject's occupation and the positivity of results, was not concluded.

## REFERENCES

1. Taravari A. Neurologjia. Demenca. 2012;4:230-310.
2. Петров И, Таравари А, Никодијевиќ Д, Петрова В. Современи терапевтски принципи кај невролошки заболувања. 2011;9:155-179
3. Barberger-Gateau P et al. Dietary patterns and risk of dementia: the Three-City cohort study. *Neurology*. 2007;69:1921-1930.
4. Canadian study of health and aging: study methods and prevalence of dementia. *CMAJ* 1994;150(6):899-913. [PMC free article] [PubMed]
5. Sonnen JA et al. Pathological correlates of dementia in a longitudinal, population-based sample of aging. *Ann Neurol*. 2007;62: 406-413.
6. [http://ec.europa.eu/health/reports/docs/health\\_glance\\_2012\\_en.pdf](http://ec.europa.eu/health/reports/docs/health_glance_2012_en.pdf)