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# Psycho-Social Aspects of Measures Aimed at Decreasing Prevalence of Chronic Diseases in the Population of Returnees in the Osijek Region, Croatia

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## ABSTRACT

*Recognizing high prevalence of Diabetes mellitus and cardiovascular disorders and low coverage by preventive examinations in the population of returnees, in Osijek Region, we initiated activities for early detection and better managing of chronic diseases. Measures done, were based on public health working methods, such as: education, solidarity and self-responsibility. A special attention was put on psychosocial aspects of the health-related matters. Exactly, free glucose tests were organized with subsequent healthy lifestyles advice session. It was brought to our attention that such intervention should be as much as possible individually oriented, considering many personal and social characteristics of an individual. Gynecological examinations for all women interested in were also organized. On that occasion, women were interviewed in order to get information about their motivation and obstacles for doing preventive examinations and difficulties in adaptation as well. Finally, outcomes of the Project were summarized and put in a larger social context.*

**Key words:** returnees, chronic diseases, psychosocial background, community, primary health care, screening, education

## Introduction

During 1991–1992 war operations in Eastern Slavonia, the Osijek Health Centre and the Institute of Public Health organized the primary health care service to work in war conditions, implementing the comprehensive war medicine doctrine, based largely on public health working methods<sup>1</sup>. Experiences, acquired, were valuable when, several years later, the organization of the health service in returnees' communities had to be undertaken.

Deep demographic changes occurred in the Osijek-Baranja County during the war and the post-war period, challenging the health professionals<sup>2</sup>. The studies so far show that war traumas affect the entire population stricken by war<sup>3,4</sup>. However, it is known that displaced persons and refugees are especially vulnerable for health deterioration as a result of life in exile and difficulties to adapt in new environment<sup>2,5</sup>. The study about psychosocial status of refugees from Eastern Slavonia pointed out bad

emotions such as moral pain, shame, loss of pride and inability to express feelings and tension relief, which could influence their health<sup>6,7</sup>. Moreover, soon after settling in new environment, the families of refugees had to be faced with the prospect of coming back, but in changed social and environmental circumstances<sup>2</sup>.

Based on such premises, the Chair for Family Medicine of the Osijek University School of Medicine, in collaboration with the Osijek Health Care Centre, inaugurated the project »Health of returnees and possibility of their adaptation«, approved by the Ministry of science, education and sport. The Project started in 2002 with the aim to recognize basic health determinants of the population of refugees-returnees, their use of medical services, and to identify factors influencing the process of adaptation. The final aim was to intervene in the field of health-care and to propose other measures which could

decrease the adaptation problems of returnees and help their faster integration into social and the community life<sup>2</sup>.

A total of 589 participants were included in the Project. They were randomly chosen from the returnees' population in places of the Osijek-Baranja County from which the residents escaped during the war. In the first part of the Project, the method of the Croatian health survey 2003 with an additional questionnaire was used with the aim to get data on self-perceived health, use of health care services, chronic diseases and drug use, life-styles, some clinical parameters, structure of households and financial circumstances, respondents' characteristics and their subjective opinion about quality of life<sup>2</sup>.

The health-status of returnees were expressed in terms of their self-perceived health, rather than taken morbidity into account. Medical Outcome Study 36-item short-form health survey (SF-36) was applied and the results were compared to those of the Croatian health survey 2003, simultaneously conducted on the population as a whole<sup>2,4</sup>. SF-36 is a short-form measure of health-related quality of life, widely used in population settings<sup>8</sup>. According to this, it is recognized that many subjective and objective factors such as: physical health problems, psychological disturbances, social circumstances in which a person lives, subjective attitudes about health, operative definition of the term »health«, one's own health experiences, needs and desires, the standard of living – strongly influence on personal satisfaction with everyday life. All of these factors should be taken into consideration when plan the interventions. It does mean that not merely the absence of disease, but complete physical, social and mental well-being strongly influence person's working capability and overall social functionality<sup>9</sup>.

The results of the Project indicated high frequency of chronic illnesses and mental health disorders, related to difficulties in adaptation. As expected, data showed decreasing health with age increase, with the lowest scores in limitations of daily activities due to physical health and emotional problems. As an exception, the values for mental status were equally low in all age groups. The same was observed in domain termed »vitality«, which measures energy and tiredness, as well as in self-perceived health<sup>2</sup>. Such results are probably reflective of accumulated stress, manifested by fatigue and lack of energy and pessimism, commonly referred to the community of refugees-returnees<sup>5</sup>. In addition, findings from the Croatian population study showed us that younger people, especially those of low education and income, are more susceptible to external influences, than the older part of the population<sup>4</sup>.

According to the results of the Project, in the returnees' community dominating problems are on social fields such as lack of employment, lack of support for elderly, poverty, concerns for children's prospects etc., which implies the necessity to intervene, not only in medical care, but also in psychosocial help<sup>2</sup>. Measures, proposed, are based on public health working methods, that is on solidarity, education and strengthening of the self-help. For

the main community's problems such as unemployment, elderly living alone, bad transport connections with the City of Osijek, lack of interest among young people to participate in communal activities – the research team encouraged local leaderships to initiate activities to decrease these problems. Exactly, contacts were made with local schools to initiate the formation of groups for care of elderly and to establish sports clubs aimed at bringing together young people from different ethnic backgrounds. Proposed measures also included food supplies for old people, from the City of Osijek, with anticipated home deliveries, and adaptation projects for their homes. Support for families, solidarity and self-help were particularly encouraged<sup>2</sup>.

Project data showed that the health service in returnees communities, shortly after displaced period, was organized well, with the exception of gynecological and dental service. This could, at least in part, be a consequence of traveling distance to these services, bad transport connections with the city of Osijek and expenses related to their usage. There is also a relative lack of pharmacies in places with significant number of returnees. In spite of these problems, the population of returnees is generally not deprived in medical care usage. This is supported by the results showing that almost all participants in the study have their own general practitioner (GP) and that they visit their GPs as well as specialists in average more times per year than the rest of the population in Slavonia<sup>2</sup>.

In this report, a special attention was put on chronic health disorders and preventive examinations in the returnees' community, in comparison to Eastern Region and the whole of Croatia. Activities, performed during 2005 and 2006, such as gynecological examinations for all women who were not checked in the previous two years and free glucose and blood pressure checks, were described. All of these activities were orientated towards the improvement of the primary and secondary prevention of chronic diseases and early detection of cancer.

## Subjects and Methods

This paper reports the results of the second part of the Project: »*Health of returnees and their adaptation*«, carried out by the Department of Family Medicine, Osijek University School of Medicine, and researchers from the Institute of Public Health for the Osijek-Baranja County, participated in. This part of the Project is aimed at looking for the main psycho-social determinants of high prevalence of chronic health disorders in the population of returnees and the program of measures to be done.

In the first part of this report (*Part I*), data showing prevalence of cardiovascular disease and its risk factors and preventive examinations in the population of returnees, were compared with those of the whole region of Slavonia and Croatia. The health-status of returnees were analysed on the stratified sample of 589 adult persons. A single representative was randomly selected from

each returnee family of villages in the Osijek-Baranja County which experienced massive exodus of their residents during the war in Croatia<sup>2</sup>. Data for the general population were taken from »The Croatian Health Survey 2003«. It was done on a representative sample of 9070 adult persons. The sampling strategy has already been described<sup>4</sup>. In Eastern Region, the sample was based on 1707 participants, included in.

The second part of this report (*Part II*) deals with the results of the health education intervention, done in the population of returnees in order to decrease risk factors for diabetes and cardiovascular diseases. Total of 232 adult persons responded to our invitation for action, but 202 of them completed the examination and were enrolled in data analysis. Data were analyzed by using standard statistics:  $\chi^2$  test for the comparison of proportions and t-test – for the comparison of average values of tested health parameters. When three parameters were to be analyzed, methods for the estimation of trend were used: ANOVA – for the estimation of numerical data and Pearson's  $\chi^2$  test – for the comparison of proportions. A probability value of  $p < 0.05$  (two-tailed) indicated a statistically significant difference. The level of significance of 10% was supposed as a tendency. Subjects with serum glucose concentrations of 6.5 mmol/L and more were supposed as to have elevated serum glucose and subjects with serum glucose values exceeding 7.0 mmol/L were classified as to have diabetes. Body mass index (BMI) ( $\text{kg}/\text{m}^2$ ) was used as an measure of obesity. Subjects with  $\text{BMI} \geq 25$  were supposed as overweight and those with  $\text{BMI} \geq 30$  were supposed as obese.

Total of 170 women responded to our call for free gynecological examinations and 124 of them gave their informed consent to be interviewed. The results of that survey are shown in the third part of this report (*Part III*).

## Results

### Part I

#### *Cardiovascular disease and its risk factors and preventive examinations in the returnees' population of the Osijek-Baranja County, in comparison to the whole of Slavonia and Croatia*

Although the results are based on anamnestic method, we could recognize high prevalence of diabetes, other risk factors and cardiovascular diseases in the whole of Slavonia and Croatia. Higher prevalence of diabetes, heart-related disorders, including: angina pectoris, myocardial infarction and »weak heart«, as well as stroke, were registered in the region of Slavonia, in comparison to the whole of Croatia, with the biggest disparity in relation to stroke (Table 1).

The participation of subjects with high blood pressure and diabetes, in the population of returnees, exceeds the values for both Slavonia and Croatia. Extremely high participation of patients with diabetes (10,5%) was noted. Data concerning »heart-related disorders« and elevated serum lipids are comparable. Only the participation of

**TABLE 1**  
CARDIOVASCULAR DISEASE AND ITS RISK FACTORS

	Croatia N=9070	Slavonia N=1707	Returnees N=589
	Participation %		
High blood pressure	27.2	26.7	28.0
Diabetes	8.5	8.9	10.5
Elevated serum lipids	14.7	14.5	14.1
Heart-related disorders	21.1	22.7	22.6
Stroke	2.9	3.8	1.2

subjects with stroke is lower among returnees, in comparison to the whole of Slavonia and Croatia (Table 1).

Demographic data for the region of Slavonia are similar to those for the whole of Croatia, which makes them comparable. It is indicative that in spite of the lower proportion of aged people (65+), among returnees, there is high prevalence of diabetes in this specific population group, exceeding the values for the whole of Slavonia and Croatia (Table 2).

**TABLE 2**  
DEMOGRAPHIC DATA

	Croatia N=9070	Slavonia N=1707	Returnees N=589
18–29	N=870 9.6%	N=153 9.0%	N=172 29.2%
30–64	N=5248 57.9%	N=967 56.6%	N=276 46.9%
65+	N=2952 32.5%	N=587 34.4%	N=136 23.1%

Except for blood pressure and to a certain extent for serum glucose, there is, in general, very low coverage of the population by preventive examinations in Croatia as a whole and Eastern Region as well (Table 3). Returnees are in higher percentage covered by screening against breast cancer and cervical cancer, but in lower percentages against prostate cancer, colorectal cancer and can-

**TABLE 3**  
PARTICIPATION IN PREVENTIVE EXAMINATIONS

	Croatia N=9070	Slavonia N=1707	Returnees N=589
Blood Presssure	59.4	58.7	40.0
Serum Glucose	43.0	42.6	24.2
Breasts	11.6	10.1	40.1
Uterus	13.8	12.2	45.0
Prostate	14.0	12.6	3.0
Colon	4.8	4.7	1.7
Thyroid gland	5.9	5.5	1.6
General preventive examination	12.7	21.6	3.3

cer of thyroid gland, than in the whole region of Slavonia and Croatia. The coverage by screening on high blood pressure and elevated serum glucose and by general preventive examination is also lower in the population of returnees, when compared to the whole region of Slavonia and Croatia (Table 3, fields coloured in grey).

## Part II

### *Single health education session as a preventive measure for diabetes and cardiovascular diseases in returnees'communities*

Taking into consideration the significance of high prevalence of diabetes and cardiovascular disorders, among returnees, from the point of view of public health, the research team of the Project made a decision to enhance the preventive activities aimed at decreasing risk factors and early detection of these disorders. In this section, the short-term outcomes of the health education intervention, performed in 2006, are shown.

Six months after the intervention, the whole group of 202 respondents showed significant weight reduction (defined as »body mass index«) and improvement in glycemic control (Table 4).

**TABLE 4**  
CHANGES IN AVERAGE VALUES OF THE HEALTH  
PARAMETERS: »BODY MASS INDEX« AND SERUM GLUCOSE,  
AFTER THE INTERVENTION

N=202	Body mass index (average values)	Serum glucose (average values)
Prior the intervention	29.02	7.01
After the intervention	25.69*	6.46**

\*t-test  $p=0.00002$  \*\*t-test  $p=0.033$

By selection of respondents in categories, according to the serum glucose values, we could recognize that particular subgroups of respondents are less sensitive (less adherent) to education intervention, than some others (Table 5, fields coloured in grey). Worse outcomes could be

**TABLE 5**  
CHANGES IN SUBJECT PARTICIPATION IN CATEGORIES OF  
SERUM GLUCOSE VALUES, AFTER THE INTERVENTION

Categories of serum glucose values	Prior the intervention	After the intervention
<6.0	N=102 50.49%	N=123* 60.89%
$\geq 6.0 \leq 7.0$	N=34 16.83%	N=36** 17.82%
$> 7.0 < 8.5$	N=28 13.86%	N=13*** 6.44%
$\geq 8.5$	N=39 19.31%	N=30**** 14.85%

$\chi^2$ -test: \* $p=0.035$ , \*\* $p=0.79$ , \*\*\* $p=0.012$ , \*\*\*\* $p=0.24$

expected in persons with mildly elevated serum glucose concentrations (with the starting values within the upper side of the normal range) (the category of serum glucose concentrations  $\geq 6.0 \leq 7.0$  mmol/L), which fits well to the stage of glucose metabolism impairment known as »glucose intolerance«, than in patients with newly diagnosed/short-lasting diabetes (serum glucose values  $> 7.0 < 8.5$  mmol/L). The intervention shows weak effectiveness in patients with clinically well established/long-lasting diabetes (serum glucose values  $\geq 8.5$  mmol/L) (Table 5).

Only the participation of respondents with normal BMI values ( $< 25$ ) significantly increased after the intervention, while the change (decrease) in the participation of respondents in categories of BMI values over than normal ( $\geq 25$ ) did not reach the significant level (Table 6).

**TABLE 6**  
CHANGES IN SUBJECT PARTICIPATION IN CATEGORIES OF  
»BODY MASS INDEX« VALUES, AFTER THE INTERVENTION

Categories of »Body mass index« values	Prior the intervention	After the intervention
<25	N=39 19.31%	N=54* 26.74%
$\geq 25 < 30$	N=89 44.06%	N=84** 41.58%
$\geq 30$	N=74 36.63%	N=64*** 31.68%

-test: \* $p=0.03$ , \*\* $p=0.61$ , \*\*\* $p=0.29$

The intervention did not change any of three eating habits tested (the results of Pearson  $\chi^2$ -test are:  $p=0.35$ , 0.10 and 0.30 respectively, Table 7).

**TABLE 7**  
EATING HABITS

N=202	Question No.	Yes	No	Sometimes
Prior the intervention	1.	73.76%	9.90%	15.84%
	2.	18.31%	33.16%	47.52%
	3.	16.83%	63.36%	19.30%
After the intervention	1.	67.82%	13.36%	18.81%
	2.	17.82%	43.06%	38.61%
	3.	22.77%	57.52%	18.81%

Questions: 1. Do You take your breakfast regularly?, 2. Are You in the habit of eating between the main meals although You are not hungry?, 3. Do You take supper after eight p.m.?

The intervention significantly affected life-style habits in terms of increased physical activity. This could mainly be the result of increase in readiness to exercise of the previously hesitating subgroup of respondents (Table 8).



**TABLE 8**  
PHYSICAL ACTIVITY

N=202	Yes	No	Sometimes
Prior the intervention	56.93%	25.74%	16.83%
After the intervention	71.28%	20.79%	7.92%

Pearson  $\chi^2$ -test  $p=0.004$ **TABLE 9**  
FRUIT AND VEGETABLES INTAKE

N=202	Fruit		Green vegetables	
	1–2 times a week*	3 and more times a week**	1–2 times a week***	3 and more times a week****
Prior the intervention	16.83%	16.33%	11.88%	20.79%
After the intervention	18.31%	19.30%	7.92%	27.22%

 $\chi^2$ -test: \* $p=0.39$ , \*\* $p=0.21$ , \*\*\* $p=0.09$ , \*\*\*\* $p=0.06$ 

In general, self-assessed food-intake frequency indicated low intake of fruit and green vegetables among returnees (the row »prior the intervention«). After the intervention, a tendency toward increased vegetable consumption is visible ( $p=0.06$ , Table 9).

In concerns to meat intake, we could recognize that the population of returnees mostly intake poultry many times a week and that a large proportion of them (54.45%) use pork meat, but chiefly 1–2 times a week. The consumption of fish and other type of meat is generally low and limited to 1–2 times a week (Table 10, the row »prior the intervention«).

Six months after the intervention, the participation of persons who use pork meat significantly decreased ( $p=0.05$ ), but the same occurred with the eating frequency of poultry and other type of meat ( $p=0.01$  and  $0.002$  respectively). The consumption of fish further decreased, but the change did not reach the level of significance ( $p=0.06$ , Table 10).

The results showed in Table 11 indicate that the consumption of dairy products, among returnees, is low and that use of fat in diet is relatively high, when compared to oil (the row »prior the intervention«). Six months after the intervention, there was no change in the consumption of dairy products and oil, while the frequency of fat-intake significantly decreased ( $p=0.03$ , Table 11).

### Part III

#### *Gynecological examination and screening against breast cancer*

Although we noted better coverage by screening against breast and cervical cancer among returnees than in the rest of Slavonia and Croatia, it is not yet satisfactory (Table 3). The questionnaire about using the health services, in the first part of the Project, indicated the necessity for establishing the gynecological service in places with returnees, as a large proportion of women complained about traveling distance and costs when visit their gynecologist<sup>2</sup>. At the beginning, the Osijek Health Center introduced gynecological examinations for all women interested in. On that occasion, women who gave their informed consent (124 out of total 170 who responded the action) were interviewed. The results of that survey are shown in this section.

Already 80% (99/124) women, examined, were in their postmenopausal age (aged 50 years and over) and only around 20% of them (25/124) were younger than 50 (Table 12).

**TABLE 10**  
INTAKE OF DIFFERENT TYPE OF MEAT

N=202	POULTRY		PORK		FISH		BEEF AND OTHER TYPE OF MEAT	
	1–2 times a week*	3 and more times a week**	1–2 times a week***	3 and more times a week****	1–2 times a week+	3 and more times a week++	1–2 times a week+++	3 and more times a week++++
Prior the intervention	37.12%	59.40%	54.45%	12.87%	46.03%	1.98%	31.68%	11.88%
After the intervention	44.02%	52.97%	46.53%	10.89%	38.61%	1.48%	25.74%	1.98%

 $\chi^2$ -test:  $p=0.07$ , \*\* $p=0.01$ , \*\*\* $p=0.05$ , \*\*\*\* $p=0.26$ , + $p=0.06$ , ++ $p=0.37$ , +++ $p=0.09$ , ++++ $p=0.002$ **TABLE 11**  
INTAKE OF DAIRY PRODUCTS, FAT AND OIL

N=202	DAIRY PRODUCTS		FAT		OIL	
	1–2 times a week*	3 and more times a week**	1–2 times a week***	3 and more times a week+	1–2 times a week++	3 and more times a week+++
Prior the intervention	5.94%	8.41%	12.37%	12.87%	0.49%	16.83%
After the intervention	6.43%	9.90%	9.90%	7.42%	0.49%	12.37%

 $\chi^2$ -test: \* $p=0.41$ , \*\* $p=0.30$ , \*\*\* $p=0.21$ , + $p=0.03$ , ++ $p=0.35$ , +++ $p=0.10$

**TABLE 12**  
DEMOGRAPHIC DATA

Age	<50	50–59	60–69	≥70
Total N=124	N=25	N=28	N=48	N=23

Around 70% (86/124) women, examined, had uncompleted or completed primary school. In elderly women (≥ 60), the proportion grows up to 87,3% (62/71) (Table 13).

**TABLE 13**  
EDUCATION

	Noncompleted/ completed primary school	Vocational trade	High school	Without answer
Total N=124	N=86	N=30	N=5	N=3
< 60 years N=53	N=24	N=24	N=5	N=0
≥ 60 years N=71	N=62	N=6	N=0	N=3

More than half (70/124 or 56,45%) of interviewed women did not have a check within previous 5 years. In elderly groups (≥ 60), over three quarters of them (54/71 or 76%) were checked up more than 5 years ago. Women of fertile age (<50) tend to visit gynecologist more regularly, as 18/25 or 72% of them visited gynecologist within the previous 2 years (Table 14).

**TABLE 14**  
LAST GYNECOLOGICAL EXAMINATION

	<1 year	1–2 years	2–5 years	>5 years
Total N=124	N=17	N=16	N=22	N=70
< 50 years N=25	N=16	N=2	N=2	N=5
50–59 years N=28	N=1	N=9	N=7	N=11
≥ 60 years N=71	N=0	N=5	N=13	N=54

Majority of interviewed women answered that they have no need at all to have a checkup, otherwise they visit their gynecologist only in an emergency (Table 15). This is especially pronounced in elderly groups (≥60). Distinct from the Croatian Health Survey 2003 data, organizational difficulties, including: traveling distance, waiting times and expenses, were not pointed out as the main problem of the lack of motivation for visiting gynecologist (Table 15).

More than half of interviewed women (65/124 or 52,4%) had at least one artificial abortion during the life. Data show reduction in the participation of repeated abortion (2 and more times) in younger age groups (<50) (Table 16).

**TABLE 15**  
MOTIVATION FOR VISITING GYNECOLOGIST

	No need at all	Have the problem	Organizational difficulties
Total N=124	N=47	N=50	N=27
< 50 years N=25	N=3	N=15	N=7
50–59 years N=28	N=10	N=7	N=11
≥ 60 years N=71	N=34	N=28	N=9

**TABLE 16**  
ARTIFICIAL ABORTION

	0	1	2	3 and more
Total N=124	N=59	N=22	N=28	N=15
< 50 years N=25	N=11	N=10	N=4	N=0
≥ 50 years N=99	N=48	N=12	N=24	N=15

The coverage by screening against breast cancer is low, as 66,9% (83/124) women have never been underwent mammography. Only 23,4% (29/124) of them were checked up within previous 5 years. There is a tendency to take mammography in the period early after the menopause (9/28 or 32% women aged 50–59 years were underwent mammography within the previous 5 years, in comparison to 15/71 or 21% women aged 60 years and more) (Table 17).

**TABLE 17**  
MAMMOGRAPHY

	Never	<2 years	<5 years	> 5years
Total N=124	N=83	N=23	N=6	N=11
< 50 years N=25	N=20	N=3	N=2	N=0
50–59 years N=28	N=19	N=6	N=3	N=0
≥ 60 years N=71	N=44	N=14	N=1	N=11

A large proportion of asked women said that their health, after coming back to their homes, changed for the worse. This is even more strongly expressed in those from the age groups younger than 60 years (expected to be more healthy) than in those from the older age groups (60 years and more) (expected to be less healthy) (Table 18).

More than 60% (77/124 or 62%) of interviewed women do not see prospects for their children in places of coming back. Such standpoint is especially indicative for women from the village Laslovo, where the Hungarian ethnic community takes place (Table 19).

**TABLE 18**  
SELF-ASSESSED CHANGE IN HEALTH

	Better or unchanged	Worse
Total N=124	N=43	N=46 (37%)
<60 years N=53	N=17	N=20 (37.7%)
≥60 years N=71	N=26	N=26 (36.6%)

**TABLE 19**  
PROSPECTS FOR CHILDREN

	Satisfied	Not satisfied
Total N=124	N=38	N=77
Ernestinovo N=49	N=19	N=28
Laslovo N=34	N=6	N=31
Dalj N=41	N=13	N=18

## Discussion

### Part I

In order to evaluate health-related quality of life in post-war Croatia, the population-based Health Survey was performed in 2003. This was the first step in planned health care reform. The assumption was that the quality of life in the areas directly affected by war must be lower than in the rest of Croatia<sup>4</sup>. The Survey, assessing health of returnees in places of the Osijek-Baranja County from which residents escaped during war operations, has simultaneously been conducted. The hypothesis was that the community of refugees-returnees is highly vulnerable group of the population for health deterioration, because of adaptation stress in complex ethnical, social and environmental circumstances<sup>2</sup>.

Although based on self-assessed method, survey data, in general, indicated high prevalence of cardiovascular disease and its risk factors in Croatia, Slavonia and among returnees (Table 1). Higher prevalence of diabetes and cardiovascular diseases, including: angina pectoris, myocardial infarction, »weak heart« and stroke, was noted in Eastern Region, in comparison to the whole of Croatia. The biggest disparity was found in relation to stroke (Table 1). Hypertension is established as the main risk factor for stroke<sup>10</sup>. Having in mind similar demographic structure and the fact that almost the same rate of hypertensive patients in Slavonia take medications for high blood pressure as in the whole of Croatia (76,3% and 78,9% respectively, data are not shown in the results), we can allow for other factors, probably those of psycho-social origin, which may underlie this disparity<sup>11</sup>.

Analysis of the health-status of returnees indicated even more prominent problem in concerns to cardiovascular disease and its risk factors within this population group (Table 1, fields colored in grey). All the more so when takes into account the fact that lower proportion of aged people (65+) participated in the sample of returnees, in comparison to the demographic structure of the

whole of Slavonia and Croatia (Table 2). Data show that as much as 28% returnees are aware of having high blood pressure, 10,5% of them know for elevated blood glucose and 22,6% complain about heart-related disorders, which are all values above those registered in the whole region of Slavonia and/or Croatia (Table 1). Low participation of subjects with stroke could be explained by the lower proportion of aged people in the sample of returnees, which is also of a minor size (Table 1 and 2).

Returnees are in the lowest percentage covered by screening on cardiovascular risk factors, general preventive examinations and against cancer, except for breast and cervical cancer (Table 3). The latter could be the result of the activities of the City of Osijek League Against Cancer on primary prevention and early detection of cancer<sup>12</sup>.

Considering high prevalence of cardiovascular risk factors, along with low coverage of the population of returnees by preventive examinations, increase in cardiovascular incidents, in this population, seems to be possible in near future (Table 1 and 3).

Based on such results, it has been brought to our attention that the implementation of more intense preventive measures are needed, especially within returnees' communities.

### Part II

Recognizing diabetes and cardiovascular diseases as the main health problem among returnees, the research team of the Project, in collaboration with the Osijek Health Center, local communities' governments and primary health care physicians who work in places with returnees, introduced the comprehensive program of measures aimed at decreasing risk factors, early detection and secondary prevention of these disorders.

At the beginning, free glucose tests were organized, with subsequent healthy lifestyles advice session. In order to evaluate the short-term outcomes of such intervention, respondents were checked for health parameters: serum glucose and BMI, twice – prior the intervention and six months after the intervention. They were also interviewed, in order to recognize whether the intervention influenced their eating and other lifestyle habits. Total of 232 adult persons responded, mostly from older age groups (50 years and over). As much as one third of them (31.8%) had elevated serum blood glucose (≥6.5 mmol/L) and around 40% of them were obese (BMI ≥30). Simultaneous appearance of these two impairments, in this setting, is in accord with the widely accepted fact about obesity as the main risk factor which leads to glucose intolerance and diabetes<sup>13</sup>.

The results of the examination generally show that the single counseling aimed at changing lifestyles could be effective as a measure for decreasing cardiovascular risk factors in highly risk population, as lower average values of the health parameters: BMI and serum glucose, were recorded in examinees six months after the intervention, when compared to earlier values (Table 4). Follow-up is needed to show whether such positive effects of the intervention may be sustained for a longer. The re-



sults raised from the large-scale studies indicate that life-style advice sessions have beneficial effects on a large set of cardiovascular risk factors, leading to the long-term positive outcomes on the reduction of the overall cardiovascular morbidity<sup>14</sup>.

However, the selection of examinees in categories, according to the starting values of their health parameters, brought to our attention the fact that particular subgroups of persons can be less sensitive (less adherent) to education intervention, than some others (Table 5 and 6). Thus, the intervention had a weak effect in patients with clinically well established/long-lasting diabetes (serum glucose values  $\geq 8.5$  mmol/L) (Table 5). This is in accord with the widely accepted fact that counseling for changing lifestyles is more feasible in managing people at high risk for diabetes, than in the secondary prevention of patients with clinically established diabetes<sup>15</sup>. Cases with newly diagnosed diabetes, in our examination, were referred to their physicians on further surveillance and medical treatment, which could contribute to the success of the intervention in the subgroup of respondents with serum glucose concentrations  $>7.0 < 8.5$  mmol/L (Table 5). According to our results, outcomes with variable effects could be expected in persons with mildly elevated serum glucose concentrations (serum glucose concentrations  $\geq 6.0 \leq 7.0$  mmol/L, with starting values within the upper side of the normal range) (Table 5). This category of serum glucose values fits well to the stage of glucose metabolism impairment known as »glucose intolerance«<sup>15</sup>. Namely, subjects from this group are rather heterogeneous, concerning to the stage of their self-control in eating and other intrapersonal factors, such as: readiness for changing, self-respect, emotions and household conditions<sup>16–18</sup>. Taking all these into account, we are able to conclude that the counseling must be as much as possible individually oriented, especially in this (high-risk) group of subject. In the close relation to this, our results show that overweight persons ( $BMI \geq 25 \leq 30$ ) could be more adherent to health education, than really obese ones ( $BMI \geq 30$ ), which may depend on differences in their self-efficacy to change (Table 6). According to this, it is recognized that many psychological and behavioral factors, such as: weight loss efficacy, stage of change, perceived stress, emotional eating, binge eating frequency, feeling deprived, angry, upset while dieting, food cravings while dieting etc., strongly influence the baseline BMI values and are to be considered in the diabetes prevention programs<sup>18</sup>.

The intervention really did affect the lifestyle habits of examinees, mostly in terms of increased physical activity, rather than in the changing of their eating habits (Table 7 and 8). Their dietary patterns were also changed (Table 9–11). These all might have positive influence on the diabetes onset delay, even independently from the effect on weight reduction. In regard to this, recent findings indicate that dietary pattern, including high-fiber and low-fat eating, may reduce the incidence of diabetes in high-risk persons, characterized by overweight and impaired glucose tolerance<sup>19,20</sup>.

By using self-assessing food-frequency questionnaire, we realized that diet of returnees is characterized by low

cereal fiber and fish intake and higher saturated fat and red meat (pork) intake – a dietary pattern which may increase the risk of diabetes<sup>21,22</sup>. Under the influence of the intervention, their dietary pattern partially changed. However, reduced pork-meat intake was not replaced by increased intake of other type of meat (Table 9–11). This could be explained by poverty and low finances of returnees, as they use meat mainly from house-breeding. Based on such results, we could recognize that financial circumstances of the target population should be taken into account when plan the intervention. Besides that, recent findings imply that dietary intervention programs aimed at learning people how to prepare their meals properly and how to make them more tasteful – should be included in the diabetes prevention programs<sup>23</sup>.

This action may serve as an example showing that co-ordinated action of health workers and local communities' governments is needed for successful implementation of the health care programs. We suggested local Health Committees to be founded, as the organizational form for integrated action and cross-talk between health workers and community's leaderships.

Based on the results of our examination, a large set of health education activities were undertaken, with the aim to inform the population about risk factors for diabetes, the socio-economic aspects of its serious complications and the medical treatment. Workshops were organized for the general population, in order to learn people how to prepare their meals according to the principles of healthy diet and about other aspects of healthy living. By organized action of the public nursing service, education programs for diabetic patients have been implemented in the form of small group work and individually guided sessions in their homes. The cooperation of family medicine teams, the public nursing service and workers of the Home Care Institutions, in giving the palliative care for terminally ill patients, in their homes, has also been improved. In Ernestinovo, a village of research, the Home for old people has recently been inaugurated.

A special attention has been paid on the promotion of health among the young and primary school children. Workshops about the psychosocial background of stages of the change were organized in schools. Children learned about how to become aware of different stages of decision making and how to shift from the contemplation stage to the stage of readiness for action. By the assistance of the Scout Club »Javor«, from the City of Osijek, several branches were founded in places with returnees aimed at building up of positive values among the young.

### Part III

According to survey data, done in the first part of the Project, only 35% women, in the returnees population, had a gynecologist<sup>2</sup>. Interviewed women pointed out traveling distance and expenses as the main obstacles to visit their gynecologist. Paradoxically, data showed better coverage of the returnees' population by screening against cervical and breast cancer, in comparison to the whole Eastern Region and Croatia (Table 3). The latter

could be reflective of intense activities of the City of Osijek League Against Cancer on the implementation of programs for prevention and early detection of cancer<sup>12</sup>.

In order to compensate lack of the gynecological service in places with returnees, we organized, by the support of the Osijek Health Center, gynecological examinations for all women interested in. Taking advantages of that occasion, we interviewed women who responded the action. In such way, we could recognize that older post-menopausal women (aged 50 years and more), who have not been checked up for a long, responded the best (Table 12, 14 and 17). Otherwise, they do not visit gynecologist, or take a mammography periodically, not so much because of the organizational difficulties, as because they are not aware of the advantages of doing so (Table 15). This may be in a close relationship to their low educational and informational level (Table 13). The same reason, at least partially, probably may explain why women in the age before the menopause (<50) takes arteficial abortion as the main way of the contraception (Table 13 and 16). (Only two women out of total 25, younger than 50, takes contraceptives; not shown in the results).

Even more than a third of them (37%) reported the change in their self-perceived health as worse, after coming back to their homes (Table 18). This is visible for women under 60 years of age (37,7%), likewise for those from older age groups (60 years and over) (36,6%) (Table 18). Question concerns to children prospects showed us that the projection in future is an important aspect of individual well-being, indicating that economic programs of development and programs of social and health-care support should be simultaneously implemented (Table 19). Building the bridge between communities of different ethnic background and equality for all minority groups will diminish distrust and strengthen the efforts of all participants in the local community life. Based on such findings, the research team of the Project, by assistance of psychiatrists, organized workshops for younger people with the aim to learn them how to become tolerant and unselfish and to fortify values such as: honesty, respectability, compassion and empathy, in social relationships.

Considering the results of the research, we have intensified education activities, by informing the community about the cancer risk factors, the necessity of recognizing of the first symptoms of disease, self-examination methods and early detection methods. For that purpose, in the collaboration with the City of Osijek League Against Cancer, a number of brochures were issued and distributed everywhere. The aim was to prepare the population of these areas for the successful implementation of the National Program of cancer prevention and early detection<sup>12,24</sup>. The Program started in October 2006, first of all in the Osijek-Baranja County, with the program of early detection of breast cancer<sup>25</sup>. The response-rate in the County reaches around 60%, above average for Croatia as the whole. The plan also includes bringing a mammograph in places with returnees and establishing two gynecological teams to be a part of the permanent care.

### »Turning back«

Besides distinct positive effects on the implementation of many useful programs and measures in health care and other social fields, the outcomes of the Project could be viewed in a more larger context.

The results of the Project clearly showed that the primary health care should be deeply integrated in the local community life and developed together with other sectors of vital importance, such as economy, municipal services, education and social support. Programs of the health care service should be specifically adapted, with respect to local social and cultural context and specific needs of particular subgroups of the residents. The primary health care physicians and their teams, being in the close contact with the population, are to be the key element of the system. They are able to detect problems and should be relatively independent in their function to coordinate all actors necessary for the initiating the action. It does imply rather dynamic model of the primary health care, based on solidarity and other internal resources and oriented towards health promotion, primary prevention and integration of care.

There are many other positive outcomes of the Project, e.g. health professionals had the opportunity to acquire new information and skills, to improve their ability to think scientifically and to develop their creativity and research-oriented attitudes. Exactly, three researchers of our team took the scientific degree. A number of publications have been issued. Several postgraduate courses for the primary health care physicians entitled: »Improvement in the chronic patient quality of life through implementation of new skills and knowledge«, »Procedure and communication with patients in need of palliative care«, »Cancer issues in primary health care« and »Malignant pain therapy«, have been organized. The City of Osijek League Against Cancer has provided important support<sup>12</sup>. In cooperation with »The Academy of Medical Sciences of Croatia« and the City of Osijek League Against Cancer, symposium has been held about use of carbohydrates in diet of children at nurseries in the region of Osijek.

In order to allow family doctors to get quickly new scientific information, necessary for critical problem-solving, the Osijek Health Center, which has continuously been providing support for the Project, have supplied all surgeries in the region of the City of Osijek by computer's equipment and the Internet-lines. In collaboration with the City of Osijek League Against Cancer, the research team of the Project has initiated the opening of the web-site: [www.prevenecijaraka.net](http://www.prevenecijaraka.net), to ensure massive approach to information about cancer prevention, early detection, treatment and rehabilitation and to help a direct communication between primary health care doctors and the Oncology Center of the Clinical Hospital in Osijek<sup>12,26</sup>.

It has been recognized that palliative care is the important part of the integrated care<sup>27,28</sup>. Moreover, the general standpoint is that palliative care should be coordinated and guided by the primary health care physicians' teams. An argue for the establishing of the Hospice Center in the City of Osijek, has recently been initiated.

Experiences, acquired by long-term activities on primary prevention and early detection of cancer in the Osijek-Baranja County, were presented in the World Cancer Congress, held in Washington, USA, in 2006<sup>12</sup>. In order to exchange experiences with health professionals from other countries, a group of primary health care physicians have attended the Health Care Study in palliative care, organized by the University of Groningen and Maastricht, the Netherlands, including visits to the Hospice Institutions in the town of Delf and Raemond<sup>29</sup>.

By personal efforts of a leader of the Project, professor Zdravko Ebling, the Osijek-Baranja County was, in 2003, admitted to membership of the European network of health regions »*Tipping the balance towards primary health care*«. This is an international organisation which encourages sharing good practice and stimulates debate across nations, allowing for the diversity of member nations<sup>30</sup>. Its intentions are to support community participation and professional skills development in primary health care, based on »*Health For All*« principles, as a global strategy for this century<sup>9</sup>.

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## PSIHOSOCIJALNI ASPEKTI MJERA USMJERENIH KA SMANJENJU UČESTALOSTI KRONIČNIH BOLESTI U POPULACIJI POVRATNIKA OSJEČKE REGIJE U HRVATSKOJ

### SAŽETAK

Uočivši visoku prevalenciju Diabetes mellitus-a i kardiovaskularnih poremećaja i slabu pokrivenost preventivnim pregledima u populaciji povratnika, u Osječkoj regiji, pokrenuli smo aktivnosti za rano otkrivanje i bolje liječenje kroničnih bolesti. Poduzete mjere su se bazirale na javnozdravstvenim metodama rada, kao što su: edukacija, solidarnost i samo-odgovornost. Posebna pažnja je data psihosocijalnim aspektima zdravstvenih problema. Konkretno, organizirana je besplatna akcija kontrole glukoze u krvi, uz istovremeno savjetovanje o zdravom načinu života. Postalo nam je jasno da bi takve intervencije trebale biti što više individualno usmjerene, uzimajući u obzir mnoge osobne i socijalne značajke pojedinca. Također su organizirani i ginekološki pregledi za sve zainteresirane žene. Tom prilikom, žene su anketirane, s ciljem da se stekne uvid u njihove motive i prepreke pri odlasku na preventivne preglede, kao i u probleme pri adaptaciji. Konačno, ukratko su analizirani pozitivni ishodi Projekta i stavljani u širi društveni kontekst.