# HEALTH STATUS, LIFESTYLE, USE OF HEALTH SERVICES, SOCIAL CAPITAL AND LIFE SATISFACTION AS PREDICTORS OF MENTAL HEALTH - COMPARATIVE ANALYSIS OF WOMEN THAT RECEIVE AND DO NOT RECEIVE PUBLIC ASSISTANCE IN CROATIA

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# HEALTH STATUS, LIFESTYLE, USE OF HEALTH SERVICES, SOCIAL CAPITAL AND LIFE SATISFACTION AS PREDICTORS OF MENTAL HEALTH - COMPARATIVE ANALYSIS OF WOMEN THAT RECEIVE AND DO NOT RECEIVE PUBLIC ASSISTANCE IN CROATIA

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## *SUMMARY*

***Background:*** *The connection between socio-economic status and health is documented, yet not fully understood. The goal of this research was to analyze the relationship between socio-economic status, lifestyle and health status, availability of health-care, social capital, and satisfaction with life.*

***Subjects and methods:*** *Subjects were 1117 women aged 25-65 years divided in two groups. Group 1 consisted of women who receive public assistance (N1=591), while Group 2 consisted of women who do not (N2=526). The sample was stratified by random choice into multiple stages based on six regions of Croatia, residential area size, and the age of respondents. Visiting nurses surveyed the deprived population, while in Group 2 self-interviewing was conducted. A questionnaire entitled "Inequalities in health" was used. The respondents participated in this research voluntarily and anonymously.*

***Results:*** *Socially deprived women consume spirits and wine more often ($p<0.001$). There is no difference between groups regarding tobacco consummation. Working women perform significantly less strenuous physical tasks ($p<0.001$). Deprived women are significantly less engaged in physical activities ($p<0.001$). Health conditions in deprived women more commonly limit their physical activity ($p<0.001$). There is a significant difference in utilization of health-care among groups ($p<0.001$). Younger women who are married, with a higher number of household members, a larger income, and with higher education are generally more satisfied with life ($p<0.001$). Although deprived women are significantly less satisfied with their lives, feel less free, are less physically active, and less likely to consume spirits or beer, they are significantly happier than working women ($p<0.001$).*

***Conclusions:*** *Personal health status and lifestyle, access to health-care services, and life satisfaction have a high importance as predictors and protective factors of mental health in women - recipients of state-provided financial welfare.*

***Key words:*** *health status - social capital - mental health - public assistance – women*

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## INTRODUCTION

Health care in Croatia is designed and organized according to the principles of inclusiveness, continuity, and availability, and it is guaranteed with the Health Care Act but also with the highest legal act, the Constitution. Scientific literature has shown for many years now that a successful health policy must take a holistic approach to the individual and/or community and must observe them in their biological and cultural totality. Dahlgren and Whithead (1991) stated that the factors that constitute a lifestyle largely depend on social, environmental, and operating conditions, and that one's health status does not depend on individual choice, but is the result of conditions into which an individual is born, has grown up in, lives, works, and ages.

Already in the 1960s Antonovsky described a lower life expectancy and higher rates of death from all causes of death in lower social classes (Antonovsky 1967). Today, the connection between the socio-economic status (SES) and health is documented, but is not fully understood, and the question remains which dimensions of

SES have the greatest effect on health? Marmot took social capital into consideration in his work, i.e. that the social network is equally as important as education or degree of control over one's own life (Marmot et al. 1991, Marmot 2007). Administrative measures that seemed as a solution to the problem and that were aimed at the physical part of SES variables are not enough because they cannot affect the lifestyle (diet, smoking, alcohol, physical activity) and personality, as well as the ability and way in which an individual response to stress, which is in addition to the presence or absence of family and friends again a reflection of social capital. The mere availability of health care, which is considered to be also a structural limitation, traditionally refers to the health sector as the position from which all problems related to both health and disease can be solved. However, the main levers of health lie outside the health care system - in education, employment, social organization, and material security, and are as important as the biological characteristics of each individual (Bejaković & Kaliterna Lipovčan 2007).

Studies conducted in northern Europe and Croatia have shown that women are generally suffer higher rates of unemployment and are less likely to use health services than what would be necessary with regards to health indicators (Družić-Ljubotina & Kletečki-Radović 2011, Fitzpatrick 2004). Also, socio-economic factors such as education, economic status, and employment, but also family stability have a greater impact on health indicators in women than in men (Družić-Ljubotina & Kletečki-Radović 2011, Družić-Ljubotina 2012, Šućur 2004, 2006). Poverty is particularly reflected in the health of women because in literature it appears as a major source of psychosocial stress, while low SES opportunities are associated with an increased incidence of cardiovascular disease in women (Cabrera C 2005).

The strategy "Health for All 2020" defines inequalities in health as the consequence of disparate living possibilities. It emphasizes that the greatest attention must be devoted to those who have the greatest needs (WHO 2011). As concluded by Bilajac et al., "in a socially deprived population, interventions demand a multi-disciplinary approach, and, with regards to the sensitivity of the population, the best solution is in their own empowerment as a protective factor of mental health" (Bilajac et al. 2014).

The issue of mental health has long been the focus of global social and health interests, and its actuality is manifested in the fact that mental health was included in the UN Sustainable Development Goals in 2015. Namely, this is the first time in history that the UN is committed to the prevention and treatment of non-communicable diseases through a formal platform. Mental health, along with substance abuse, represents a focal point of action, aiming towards physical, mental and social wellbeing (UN 2015). In addition, WHO has defined precisely depression as the topic for the World Health Day 2017. Three target groups are defined as follows: adolescents and young adults, women of childbearing age (particularly following childbirth), and older adults (over 60). The risk of becoming depressed is increased by poverty, unemployment, life events like the death of a loved one or a relationship break-up, physical illness, and problems caused by alcohol and drug use (WHO 2016).

Empowerment and promotion of women's health has a dual role: improving the health of every individual, but also the family. In fact, studies have shown that family is still – regardless of its structure – a place where habits, good and bad, are acquired and that mothers are the ones who are most concerned about the health of family members, diet, and attitude towards the use of health services (Džakula 2009). In this context, a satisfying personal health status, the social capital of the mother, and her satisfaction with life – as protective factors of mental health – are beneficial for the whole family.

By referring to the issue of physical, mental, and social well-being, this paper presents the results obtained by using the questionnaire "Inequalities in health (NUZ-2010)," which deals with the health status, lifestyle, use of health services, social capital, and life satisfaction as predictors of mental health of women who receive social assistance in Croatia.

## SUBJECTS AND METHODS

### Subjects

The sample consisted of N=1117 women aged 25-65 years, citizens of the Republic of Croatia. They were divided into two groups: Group 1 consisted of women who receive social assistance (N1=591), while Group 2 consisted of women who do not receive social assistance (N2=526). The age group was selected so that the majority is of working age. In both groups the sample was stratified by random choice into multiple stages based on six regions of Croatia, residential area size (<2,000; 2,001-10,000; 10,001-100,000; >100,000), and the age of respondents. The regional division was made on the basis of previous research in Croatia (Croatian Health Survey - CHS 2003), while the residential areas of six regions were selected by random choice proportionally to the size of their population. While interviewing both groups, we were guided by the concern about the circumstances in which the respondents live. Therefore, visiting nurses surveyed the population that receives social assistance; Group 2 was created by randomly choosing households where self-interviewing was also conducted. In those cases when more household members were of appropriate age, the respondent was selected according to her last birthday. The difference between the planned and achieved sample was in the range of ±0.2%, depending on the stratifying criteria.

## Method

For the purpose of this research we used a questionnaire entitled "Inequalities in health" (SIDE-2010). It, in addition to certain international indicators validated in a number of foreign studies, includes a number of indicators applied in an earlier national study dedicated to the self-evaluation of health (HZA), which enabled a comparative analysis.

The questionnaire was validated prior to its implementation in accordance with provided guidelines and includes 100 questions divided into several groups. The first group includes questions about biological characteristics, body mass index, blood pressure, anthropological measures, chronic diseases, and current anamnesis that specifies the degree of the impact of the current state of health on everyday life. The second group of questions consists of questions related to the lifestyle (exercise, diet, alcohol consumption, and smoking), and the third group consists of questions related to the utilization of health care, as well as questions that describe the difficulties of using health care. A fourth group of questions is made up of questions for identifying the existence and participation in the social network within the community, i.e. the existence of social capital, and they are reflected in questions about spending time in with friends, ability to rely on one's surroundings, etc., as well as questions about the positive characteristics of health. The fifth group consists of questions about the self-assessment of happiness, life satisfaction, and freedom. The sixth group consists of questions that describe the socio-demographic position of the respondents and are related to age, education, place of residence, and the financial status.

## Ethical aspects

The respondents participated in this research voluntarily and anonymously, where by it was ensured that their right to privacy and contemporary bioethical standards, i.e. four fundamental bioethical principles (personal integrity - autonomy, justice, charity, and safety) would be respected, as well as those arising there from (e.g. privacy, confidentiality, trust etc.) in accordance with the latest revision of the Declaration of Helsinki, the Nuremberg code, and other relevant documents.

Before the respondents took part in the survey in their homes, they were informed about their rights and the goal of the research. They agreed to participate in the research by giving their verbal consent and their anonymity was guaranteed in the way that completed questionnaires are sent to another project team that creates a database after which it is not possible to link together the identity of the respondents and the results.

This research has the approval of the Ethics Committee of the Department of Sociology of the University of Zagreb School of Philosophy, of the Ethics Committee of the University of Rijeka School of Medicine, and the permission of the Ministry of Social Politics and Youth.

## Statistical Analyses

Normality of distribution of continuous variables was tested with the Kolmogorov-Smirnov test. Given that all continuous variables significantly deviate from the normal distribution, median and interquartile ranges are presented as measures of central tendency and variability.

For a statistical significance of the differences of medians of these two continuous variables between two independent categories of nominal variables we used the Mann - Whitney U test, with AUC that is a standardized measure of effect strength. AUC was calculated according to the formula: U/(m*n), where U is the result of the Mann-Whitney test and m and n are the sizes of the two samples.

The independence of the nominal variables was tested with the chi-square test, with a coefficient of association with Cramer's V. In 2x2 tables, we took into account the Yates correction. The level of the statistical significance was determined at 5% ($p<0.05$).

# RESULTS

Of the total number in Group 1 (N1=591), 201 of them (n1=34.1%) are in the highest age group, older than 55 years. Participants in Group 2 (N2=526) are generally between the ages of 45 and 55 years (n2=27.2%). Women in both groups generally come from a residential area of up to 2000 inhabitants (n1=40.1%, n2=39.7), i.e. from the Zagreb region (n1=30.6%, n2=22.6%). Most often there are up to three members in the household (n1=57.9%, n2=50.6%) and the respondents are married (n1=36.9%, n2=70.5%). Respondents in Group 1 have generally been unemployed for more than a year (n1=80%), with incomes lower than 5.000,00 HRK per month (n1=90.9%). Respondents in Group 2 are generally employed full-time (n2=43.2%), with a salary between 5.000,00 and 10.000,00 HRK per month (n2=46%). A third of the respondents in Group 1 have only a completed primary school degree (n1=31%), while more than half of the members in the Group 2 have a high school degree (n2=58.2%). Socio-demographic performances of the respondents are shown in Table 1.

Table 2 contains a descriptive presentation of the results – responses to questions about the consumption of spirits, wine, beer, and tobacco, as well as physical demands at work and physical activity. These variables point to the lifestyle. Women in both groups generally do not drink spirits (n1=77.8%, n2=66.2%), wine (n1=65.7%, n2=51.5%) or beer (n1=64.5% n2=59.1%). A third of them consume tobacco daily (n1=32.7%, n2=29.1%). A third of the respondents in Group 1 are not physically active (n1=31.3%), while this figure is much lower (n2=12.6%) among the members of Group 2. A third in Group 1, and even more members of Group 2, are physically active every day (n1=28.8%, n2=40.4%).

**Table 1.** Socio-demographic characteristics

| | Group 1 (N1=591) | | Group 2 (N2=526) | |
|---|---|---|---|---|
| | n1 | % | n2 | % |
| Age | | | | |
| From 25 to 34 years | 103 | 17.5% | 124 | 23.7% |
| From 35 to 44 years | 132 | 22.4% | 132 | 25.2% |
| From 45 to 54 years | 153 | 26.0% | 142 | 27.2% |
| From 55 to 65 years | 201 | 34.1% | 125 | 23.9% |
| Type of residential area | | | | |
| Village | 293 | 49.6% | 209 | 39.7% |
| City | 298 | 50.4% | 317 | 60.3% |
| Size of residential area | | | | |
| Up to 2000 inhabitants | 237 | 40.1% | 209 | 39.7% |
| 2 001-10 000 inhabitants | 129 | 21.8% | 84 | 16.0% |
| 10 001 - 100 000 inhabitants | 158 | 26.7% | 103 | 19.6% |
| 100 001 and more inhabitants | 67 | 11.3% | 130 | 24.7% |
| Region | | | | |
| Zagreb and suburbs | 181 | 30.6% | 119 | 22.6% |
| North Croatia | 116 | 19.6% | 84 | 16.0% |
| Slavonija | 95 | 16.1% | 81 | 15.4% |
| Lika and Banovina | 29 | 4.9% | 76 | 14.4% |
| Istria, Rijeka, Northern Adriatic and Gorski Kotar | 68 | 11.5% | 82 | 15.6% |
| Dalmatia | 102 | 17.3% | 84 | 16.0% |
| Number of household members | | | | |
| 1 to 3 members | 342 | 57.9% | 264 | 50.6% |
| 4 to 7 members | 217 | 36.7% | 245 | 46.9% |
| 8 to 11 members | 28 | 4.7% | 11 | 2.1% |
| More than 12 members | 4 | 0.7% | 2 | 0.4% |
| Monthly income | | | | |
| From 0 to 5.000,00 HRK | 518 | 90.9% | 172 | 41.2% |
| From 5.001,00 to 10.000,00 HRK | 46 | 8.1% | 192 | 46.0% |
| From 10.001,00 to 15.000,00 HRK | 5 | 0.9% | 36 | 8.6% |
| More than 15.000 HRK | 1 | 0.2% | 17 | 4.1% |
| Marital status | | | | |
| Married | 218 | 36.9% | 371 | 70.5% |
| Unmarried cohabitation | 76 | 12.9% | 11 | 2.1% |
| Unmarried | 126 | 21.3% | 71 | 13.5% |
| Divorced | 76 | 12.9% | 26 | 4.9% |
| Widowed | 95 | 16.1% | 45 | 8.6% |
| Work status | | | | |
| Employed, full time | 9 | 1.5% | 227 | 43.2% |
| Employed, part time | 5 | 0.8% | 11 | 2.1% |
| Unemployed, less than a year | 19 | 3.2% | 20 | 3.8% |
| Unemployed, over a year | 473 | 80.0% | 121 | 23.0% |
| Student | 3 | 0.5% | 7 | 1.3% |
| Retired | 82 | 13.9% | 80 | 15.2% |
| Level of education | | | | |
| Unfinished elementary school | 146 | 24.7% | 11 | 2.1% |
| Finished elementary school | 183 | 31.0% | 83 | 15.9% |
| Unfinished high school | 61 | 10.3% | 26 | 5.0% |
| Finished high school | 175 | 29.6% | 303 | 58.2% |
| Unfinished college degree | 11 | 1.9% | 21 | 4.0% |
| Finished college degree | 9 | 1.5% | 29 | 5.6% |
| Finished university degree | 6 | 1.0% | 48 | 9.2% |

**Table 2.** Lifestyle

| | Group 1 (N1=591) | | Group 2 (N2=526) | | p | $\chi^2$ | Effect |
|---|---|---|---|---|---|---|---|
| | n1 | % | n2 | % | | | |
| Alcoholic beverages consumption (Md and IQR) | 1 | (1-1) | 1 | (1-2) | | | |
| Never | 460 | 77.8% | 348 | 66.2% | <0.001 | - | 0.44 |
| Several times per year | 98 | 16.6% | 126 | 24.0% | | | |
| Two-three times per month | 17 | 2.9% | 37 | 7.0% | | | |
| Once a week | 5 | 0.8% | 13 | 2.5% | | | |
| Two-three times per month | 9 | 1.5% | 2 | 0.4% | | | |
| Every day | 2 | 0.3% | 0 | 0.0% | | | |
| Wine consumption (Md and IQR) | 1 | (1-2) | 1 | (1-2) | | | |
| Never | 388 | 65.7% | 271 | 51.5% | <0.001 | - | 0.43 |
| Several times per year | 119 | 20.1% | 141 | 26.8% | | | |
| Two-three times per month | 38 | 6.4% | 66 | 12.5% | | | |
| Once a week | 19 | 3.2% | 21 | 4.0% | | | |
| Two-three times per month | 18 | 3.0% | 17 | 3.2% | | | |
| Every day | 9 | 1.5% | 10 | 1.9% | | | |
| Beer consumption (Md and IQR) | 1 | (1-2) | 1 | (1-2) | | | |
| Never | 381 | 64.5% | 311 | 59.1% | 0.098 | - | - |
| Several times per year | 108 | 18.3% | 112 | 21.3% | | | |
| Two-three times per month | 61 | 10.3% | 68 | 12.9% | | | |
| Once a week | 21 | 3.6% | 22 | 4.2% | | | |
| Two-three times per month | 16 | 2.7% | 12 | 2.3% | | | |
| Every day | 4 | 0.7% | 1 | 0.2% | | | |
| Tobacco consumption | | | | | | | |
| No | 334 | 56.5% | 331 | 62.9% | 0.066 | 5.440 | - |
| Sometimes | 64 | 10.8% | 42 | 8.0% | | | |
| Every day | 193 | 32.7% | 153 | 29.1% | | | |
| How physically difficult is your job? (Md and IQR) | 5 | (3-5) | 5 | (2-5) | | | |
| Very easy (I mostly sit) | 14 | 2.4% | 90 | 17.1% | <0.001 | - | 0.36 |
| Easy (I mostly walk) | 31 | 5.2% | 54 | 10.3% | | | |
| Moderately difficult | 108 | 18.3% | 109 | 20.8% | | | |
| Strenuous | 31 | 5.2% | 25 | 4.8% | | | |
| I am unemployed | 407 | 68.9% | 247 | 47.0% | | | |
| Physical activity (Md and IQR) | 5 | (1-7) | 5 | (4-7) | | | |
| I am not physically active | 185 | 31.3% | 66 | 12.6% | <0.001 | - | 0.38 |
| Several times per year or less | 51 | 8.6% | 28 | 5.3% | | | |
| Two-three times per month | 47 | 8.0% | 44 | 8.4% | | | |
| Once a week | 43 | 7.3% | 54 | 10.3% | | | |
| Two-three times per week | 72 | 12.2% | 90 | 17.1% | | | |
| Four-five times per week | 23 | 3.9% | 31 | 5.9% | | | |
| Every day | 170 | 28.8% | 212 | 40.4% | | | |

Abbreviations: Md = median; IQR = interquartile range; p = statistical significance of the Mann-Whitney U test; statistical significance of the $\chi^2$ test; effect = AUC for the Mann-Whitney U test; Cramer's V coefficient of association for the chi-square test

The Mann-Whitney U test showed a statistically significant difference between Group 1 and Group 2 in the consumption of spirits and wines ($p<0.001$). Women who do not receive social assistance or are not socially deprived consume spirits and wine more often than women who are socially deprived. However, as we can see from the descriptive presentation of the results, the frequency of consumption of spirits and wine is relatively small in both groups. Also, according to the results, there is a statistically significant difference between Group 1 and Group 2 in the level of physical strenuousness of their work. Women who do not receive social assistance perform significantly less strenuous physical tasks than deprived women ($p<0.001$). Socially deprived women are significantly less engaged in physical activities than women who do not receive social assistance ($p<0.001$). There is no difference between Group 1 and Group 2 with regards to the habit of consuming tobacco and tobacco products ($p=0.066$).

Table 3 shows the impact of the health condition on daily activities. The health condition in half of the respondents in Group 1 rather limits physically demanding

**Table 3.** Impact of health condition on daily activities

| | Group 1 (N1=591) | | Group 2 (N2=526) | | p | $\chi^2$ | Effect |
|---|---|---|---|---|---|---|---|
| | n1 | % | n2 | % | | | |
| It restricts physically demanding activities (e.g. running) | | | | | | | |
| Yes, a lot | 278 | 47.0% | 98 | 18.6% | <0.001 | 132.18 | 0.344 |
| Yes, a little | 162 | 27.4% | 133 | 25.3% | | | |
| No | 151 | 25.5% | 295 | 56.1% | | | |
| It restricts lifting or carrying bags with groceries | | | | | | | |
| Yes, a lot | 210 | 35.5% | 75 | 14.3% | <0.001 | 107.67 | 0.310 |
| Yes, a little | 163 | 27.6% | 99 | 18.8% | | | |
| No | 218 | 36.9% | 352 | 66.9% | | | |
| It restricts climbing the stairs | | | | | | | |
| Yes, a lot | 216 | 36.5% | 80 | 15.2% | <0.001 | 99.08 | 0.298 |
| Yes, a little | 183 | 31.0% | 129 | 24.5% | | | |
| No | 192 | 32.5% | 317 | 60.3% | | | |
| It restricts bending, flection, and kneeling | | | | | | | |
| Yes, a lot | 215 | 36.4% | 78 | 14.8% | <0.001 | 96.24 | 0.294 |
| Yes, a little | 182 | 30.8% | 134 | 25.5% | | | |
| No | 194 | 32.8% | 314 | 59.7% | | | |
| It restricts walking up to 500 m | | | | | | | |
| Yes, a lot | 150 | 25.4% | 39 | 7.4% | <0.001 | 109.31 | 0.313 |
| Yes, a little | 153 | 25.9% | 76 | 14.4% | | | |
| No | 288 | 48.7% | 411 | 78.1% | | | |
| It restricts dressing or bathing | | | | | | | |
| Yes, a lot | 99 | 16.8% | 18 | 3.4% | <0.001 | 87.50 | 0.280 |
| Yes, a little | 114 | 19.3% | 48 | 9.1% | | | |
| No | 378 | 64.0% | 460 | 87.5% | | | |
| It shortens the time needed for an activity | | | | | | | |
| Yes | 289 | 48.9% | 116 | 22.1% | <0.001 | 85.63 | 0.279 |
| No | 302 | 51.1% | 410 | 77.9% | | | |
| It requires reducing the volume of work | | | | | | | |
| Yes | 334 | 56.5% | 151 | 28.7% | <0.001 | 86.47 | 0.280 |
| No | 257 | 43.5% | 375 | 71.3% | | | |
| It prevents the performance of work | | | | | | | |
| Yes | 283 | 47.9% | 123 | 23.4% | <0.001 | 71.16 | 0.254 |
| No | 308 | 52.1% | 403 | 76.6% | | | |
| It causes difficulty in performing common activities (It requires investing additional effort) | | | | | | | |
| Yes | 317 | 53.6% | 148 | 28.1% | <0.001 | 75.43 | 0.258 |
| No | 274 | 46.4% | 378 | 71.9% | | | |

Abbreviations: p = statistical significance of the chi-square test (with Yates correction for 2x2 tables);
effect = Cramer's V coefficient of association

activities (n1=47%), while in one third of the respondents it limits lifting or carrying bags with groceries (n1=35.5%), climbing the stairs (n1=36.5%), and bending and kneeling (n1=36.4%). In half of the respondents in Group 1 the health condition requires reducing the time of an activity (n1=48.9%), reducing the volume of work (n1=56.5%), causes prevention of performing work (n1=47.9%), and requires investment of extra effort in performing common activities (n1=53.6%). The health condition does not prevent half of the members of Group 2 in performing physically demanding activities (n2=56.1%). For most members of Group 2 it does not limit lifting or carrying bags with groceries (n2=66.9%), climbing the stairs (n2=60.3%), bending and kneeling (n2=59.7%). There are no other restrictions or difficulties in 70-80% of respondents in Group 2.

Women who do not receive social assistance have significantly fewer problems in performing physically demanding activities (jogging, strenuous sports, etc.)

than women who are deprived ($p<0.001$; $\chi^2=132.18$, df=2). Women who receive social assistance (deprived groups) often have trouble lifting or carrying bags with groceries than women who do not receive social assistance ($p<0.001$; $\chi^2=107.67$, df=2). Women who receive social assistance often have more trouble climbing the stairs than women in Group 2 ($p<0.001$; $\chi^2=99.08$, df=2). Women who receive social assistance often have difficulty with bending, kneeling or flexion than women who do not receive social assistance ($p<0.001$; $\chi^2=96.24$, df=2). Women who receive social assistance often have trouble walking up to 500 m than women in Group 2 who do not receive social assistance ($p<0.001$; $\chi^2=109.31$, df=2). Women who receive social assistance often have problems with bathing or dressing than women who do not receive social assistance ($p<0.001$; $\chi^2=87.50$, df=2). Women who receive social assistance had to shorten the time normally spent in work due to health reasons more often than women in Group 2 ($p<0.001$; $\chi^2=85.63$, df=1). Women who receive social assistance could often do less work for health reasons than women in Group 2 who rarely have this problem ($p<0.001$; $\chi^2=86.47$, df=1). Women who receive social assistance are more often not able to do some work or other activities for health reasons than women in Group 2 ($p<0.001$; $\chi^2=71.16$, df=1). From all this it is observable that health conditions in women who receive social assistance more commonly limit their physical activity than in women who do not receive social assistance ($p<0.001$; $\chi^2=75.43$).

As for the utilization of health care, 28.5% of the respondents in Group 1 visited a general practitioner more than 10 times, and 32.6% of respondents in Group 2 visited a general practitioner once or twice per year. In Group 1 57.4% of them have visited a specialist, as 57.7% of women in Group 2 have not. As many as 57.8% of the respondents in Group 1 did not visit a dentist even once within the period of one year, and 42,6% in Group 2 visited a dentist between once and four times. A third of the respondents in Group 1 had a Pap-test done within the previous 12 months (33.4%), but also a third of them had a Pap-test done over four years ago (35%). Half of respondents in Group 2 had a Pap-test done within the last 12 months (49.1%). Participants from both groups were not hospitalized (n1=79.7%, n2=90.9%). There is a statistically significant difference in utilization of health care among Group 1 and Group 2 ($p<0.001$). The results are shown in Table 4.

**Table 4.** Utilization of health care

| | Group 1 (N=591) | | Group 2 (N2=526) | | p | $\chi^2$ |
|---|---|---|---|---|---|---|
| | n1 | % | n2 | % | | |
| Frequency of visiting a general physician within one year | | | | | | |
| Not once | 92 | 15.9% | 99 | 19.1% | <0.001 | 24.44 |
| Once or twice | 138 | 23.9% | 169 | 32.6% | | |
| Three to four times | 103 | 17.8% | 83 | 16% | | |
| Between five and ten times | 77 | 13.3% | 74 | 14.3% | | |
| More than ten times | 165 | 28.5% | 90 | 17.4% | | |
| Does not have a chosen doctor | 3 | 0.5% | 3 | 0.6% | | |
| Frequency of visiting a specialist within one year | | | | | | |
| They visited | 339 | 57.4% | 222 | 42.3% | <0.001 | 24.67 |
| They did not visit | 252 | 42.6% | 303 | 57.7% | | |
| Frequency of visiting a dentist within one year | | | | | | |
| Not once | 336 | 57.8% | 219 | 41.9% | <0.001 | 41.25 |
| Once or twice | 140 | 24.1% | 155 | 29.6% | | |
| Three to four times | 40 | 6.9% | 87 | 16.6% | | |
| Between five and ten times | 34 | 5.9% | 37 | 7.1% | | |
| More than ten times | 22 | 3.8% | 20 | 3.8% | | |
| Does not have a chosen dentist | 9 | 1.5% | 5 | 1.0% | | |
| The last Pap-test | | | | | | |
| Within the last 12 months | 145 | 33.4% | 234 | 49.1% | <0.001 | 35.21 |
| Within the last 24 months | 80 | 18.4% | 101 | 21.2% | | |
| Within the last three years | 57 | 13.1% | 46 | 9.6% | | |
| More than four years ago | 152 | 35% | 96 | 20.1% | | |
| Number of hospitalizations within one year | | | | | | |
| Not once | 471 | 79.7% | 478 | 90.9% | <0.001 | 28.82 |
| One or two | 100 | 16.9% | 44 | 8.4% | | |
| Three or more | 20 | 3.4% | 4 | 0.8% | | |

**Table 5.** Connectedness between satisfaction and socio-demographic characteristics

| | Median | IQR | p |
|---|---|---|---|
| Group | | | |
| Does not receive social assist. | 8 | 6-9 | <0.001 |
| Receives social assistance | 5 | 3-7 | |
| Age | | | |
| Between 25 and 34 years | 8 | 5-9 | |
| Between 35 and 44 years | 7 | 5-8 | <0.001 |
| Between 45 and 54 years | 6 | 4-8 | |
| Between 55 and 65 years | 5 | 3-8 | |
| Type of residential area | | | |
| Village | 6 | 4-8 | 0.05 |
| City | 7 | 5-9 | |
| Marital status | | | |
| Married | 7 | 5-9 | |
| Unmarried cohabitation | 6 | 4-8 | |
| Unmarried | 5 | 4-8 | <0.001 |
| Divorced | 5 | 4-8 | |
| Widowed | 5 | 3-8 | |
| Work status | | | |
| Employed | 8 | 7-9 | <0.001 |
| Unemployed | 6 | 4-8 | |
| Level of education | | | |
| Unfinished elem. school | 5 | 3-7 | |
| Elementary school | 5 | 4-8 | <0.001 |
| High school | 7 | 5-9 | |
| College/university degree | 8 | 6-9 | |

Abbreviations: IQR= interquartile range; p = statistical significance of the Mann-Whitney U test; statistical significance of the Kruskal-Wallis test

By analyzing the correlation of life satisfaction and socio-demographic characteristics, younger women who are married, with a higher total number of household members, a larger monthly household income, and with a higher total number of years of schooling are generally more satisfied (Table 5). By comparing the respondents from Group 1 and Group 2 in connection with life satisfaction and the perception of freedom and happiness, health status and lifestyle, women who receive social assistance are significantly less satisfied with their lives, feel less free, are less physically active, and less likely to consume spirits or beer. Nevertheless, they are statistically significantly happier than women who do not receive social assistance (Table 6).

## DISCUSSION

Socio-demographic and socio-economic factors, one's personality (optimism, control over life), and social involvement (social capital) have to be included when discussing one's dimension of health (Chan et al. 2011). Thus, they all represent potential risk- or protective factors in one's (mental) health.

The socio-demographic and socio-economic data of the respondents in both groups in this research support the already existing trends. Research in the field of public health shows that women often outlive men, they more frequently live alone and in more difficult material conditions, which is especially true of older women (Cabrera 2005). According to the Croatian Employment Service, the total number of registered unemployed women in Croatia in the year 2015 was 54.3% (HZZ 2015). According to the Central Bureau of Statistics (CBS), poverty indicators expressed as a rate of risk of poverty in the Republic of Croatia for the year 2015 amounted to 20.5% of the population, of which 16.3% of women and 17.2% of men. The issue of poverty is especially pronounced in older women, and women over 65 are the fastest growing segment of the society. In Croatia, 28.7% of women over 65 years are at risk of poverty, compared to 22.8% of men (DZZ 2015). The main risk factors of poverty in women are their levels of education and financial status, followed by decreased social support, divorce, and a lower socio-economic position (Cabrera 2005). All so far conducted research have shown that in Croatia there is a strong correlation between the level of education and poverty, and that secondary education is in fact the "magic limit." The population with a completed primary school education is usually poorer and secondary education reduces the risk of poverty by one third (Matković & Štulhofer 2006). A third of the respondents in this research have only completed their primary school education. The situation with the members of the control group was significantly better; as many as 62.2% have completed secondary education, while 14.8% have obtained a college or university degree (Table 1). Numerous studies have shown a correlation between levels of formal education and the level of the so-called health literacy (HL), and their impact on health promotion and disease prevention (Baker 2006, McCormack et al. 2010). Education, health, and HL are interconnected and higher levels of education might be promoting better HL and health knowledge (Mirowsky & Ross 1998, Ross & Mirowsky 1999). Educated individuals will be able to better understand the relevant information that will help them to make better health decisions (Baker 2006, McCormack et al. 2010, Kirsch et al. 1993). From the aforementioned it can be concluded that the members of the control group will make better decisions about their health!

The health condition in half of the respondents significantly limits demanding physical activities (47%), reduces the time required for some activities (48.9%), reduces the volume of work (56.5%), prevents the performance of work (47.9%), and requires investing additional effort in performing common activities (53.6%). There is a statistically significant difference compared to the health status of members of the control group, and the above results suggest a lower health status of the respondents. Development of chronic diseases and lower health status of the respondents is supported by the fact that a third of them consume tobacco on a daily

**Table 6.** Connectedness between satisfaction, perception of freedom and happiness, health status and lifestyle

| | Group 1 (N=591) | | Group 2 (N2=526) | | p | AUC |
|---|---|---|---|---|---|---|
| | Md | IQR | Md | IQR | | |
| Life satisfaction | 6 | 3-7 | 8 | 6-9 | <0.001 | 0.32 |
| Freedom | 5 | 4-8 | 7 | 6-9 | <0.001 | 0.32 |
| Happiness | 3 | 2-4 | 2 | 2-2 | <0.001 | 0.24 |
| Physical activity | 4 | 1-7 | 5 | 3-7 | <0.001 | 0.38 |
| Consumption of spirits | 1 | 1-1 | 1 | 1-2 | <0.001 | 0.44 |
| Consumption of wine | 1 | 1-2 | 1 | 1-2 | <0.001 | 0.43 |
| Consumption of beer | 1 | 1-2 | 1 | 1-2 | 0.098 | - |

Abbreviations: Md=median; IQR= interquartile range; p = statistical significance of the Mann-Whitney U test; AUC = effect for the Mann-Whitney U test

basis (32.7%). Also, one third of women surveyed are not physically active (31.3%). The results confirm previous empirical research. Among the research of social roles, health and health behavior among older women in Croatia, it should be noted that the recorded higher risk of cardiovascular diseases as well as increased blood pressure and waist circumference indicate that housewives generally have a less attentive attitude toward health when compared to employed women (Džakula et al. 2007). One explanation for such a lifestyle and health status of the respondents can be found in the aforementioned HL, which is low precisely in patients with chronic diseases (Dukić et al. 2013, Schillinger et al. 2002); more specifically, it is directly linked to a poor health status (Baker et al. 2007). On the other hand, precisely health literacy changes health behavior (Nutbeam 2008), and it is especially important to emphasize this as it opens up room for a public health intervention.

As for the use of health services, almost a third of the recipients of assistance (28.5%) visited a general practitioner more than ten times a year. 57.4% of them visited a specialist. On the other hand, 57.8% of them have not even once visited a dentist during the period of one year, and 42,6% of working women visited a dentist between once and four times. While half of working women (49.1%) had a Pap-test done within the last 12 months, a third of the recipients of assistance (35%) had a Pap-test done more than four years ago, unfortunately, these latest results support the devastating response to the national preventive program of prevention and early detection of cervical cancer. Namely, 310 women/year are affected by this illness in Croatia, and 35% die from it (HZZJ 2017). The obtained results are, despite the time window, similar to the aforementioned study on the health of older women in Croatia, keeping in mind the lower use of public health prevention programs and specialist health care services among housewives, especially preventive breast examinations (Džakula et al. 2007).

"Health for All in 2020 – the new European health policy" defines justice and solidarity as a basis of a healthy population. This also includes equity before the health system. However, socio-economic inequality implies precisely the inequality in the access to and use of health service, which is evident from these results. Health 2020 calls for changes. Specifically, this initiative emphasizes the need for further development of public health systems, capacities, functions, and promotion of public health as a key function in the society by promoting the right to health and health care and the right to participate in decision making related to personal health and that of the society in which people live (Jakab 2011). For the latter, a sufficient level of HL is needed, since it represents the crucial factor for a better utilization of health care (Dukić et al. 2013).

As concluded by Bilajac et al., the strongest predictors of health are individual characteristics: optimism, social interconnectedness, and satisfaction with life. The socio-economic status has no impact on the personal outlook on life; however, it has an impact on the satisfaction with life and the health state load. Life satisfaction, optimism, and social capital have a high importance as protective factors in health (Bilajac et al. 2014). According to the results presented in this paper, younger married women with a higher total number of household members, a larger monthly income, and higher education are more satisfied with life. These results can be put in relation with the results of Ferlander and co-authors (2016), who examined the association between different forms of social capital and self-rated depression in Moscow. More women (48%) than men (36%) reported that they had felt depressed during the previous year. A connection was found between social capital and reported depression only among women. Women who were divorced or widowed or had little contact with relatives had higher odds of reporting depression than those with more family contact. However, women who regularly engaged with people from different age groups outside of their families were also more likely to report depression than those with less regular contact. The authors concluded how social capital can be a mixed blessing for women, and a special

focus should be placed on bridging social relations among women in order to better understand the complex association between social capital and depression in Russia and elsewhere (Ferlander et al. 2016). Ehsan and DeSilva showed in their analysis that individual cognitive social capital protects against developing common mental disorder (Ehsan & De Silva 2015).

Women who receive social assistance have a lower health status and are less likely to consume alcohol, are significantly less satisfied with their lives, feel less free, however, they declare themselves as significantly happier. Similar to this are the conclusions made by Eriksson and Ng that changes in the access to structural social capital over time impact self-rated health (SRH). The structural social capital has complex and gendered effects on SRH and interventions aiming to use social capital for health promotion purposes require an awareness of its gendered nature (Eriksson & Ng 2015). The question might be posed if women are immune to the socio-economic health gradient? Findings show that the span and health from poorest to richest, i.e. the socio-economic gradient, appears stronger for men than for women for all health outcomes other than heart disease (Phillips & Hamberg 2015).

One explanation for happiness, despite a low socio-economic status, could be found in "women's ethics." Women make life decisions in a very concrete way, depending on the context. They thereby try to understand the complexity of human relationships. "Women's ethics" may, therefore, be understood as ethics of interrelationships, whereby they often refer to conscience and emphatically become very involved in the role, emphasize care, concern, and harmony in a relationship (Ford & Lowery 1986, Gibbs et al. 1984, Brabeck 1983). This should be taken into consideration when reviewing mental welfare that relates to positive experiences and feelings such as happiness, joy, excitement, enthusiasm, and satisfaction (Pressman & Cohen 2005). In conclusion, indicators of mental health in women can be of paramount importance for the whole family. The combined effect of preventive programs and improving mental health thus takes on personal, social, and economic dimensions, i.e. a change in the overall position of the individual in the community (Džakula 2009).

### Limitations of the Study

One of the limitations of this research may be the variables for which members of the control group gave their own (self-reported) statements. Therefore, in interpreting the results, special attention should be paid to questions of lifestyle, which could have potentially been answered with bias. Given that women who receive social assistance filled out the questionnaire in the presence of a visiting nurse, the assumption is that in this case the assessments are valid.

## CONCLUSION

In public health interventions, only operating principles of the profession and known curative algorithms are often taken into consideration, while particular cultural and socio-economic characteristics of the population or community are placed in the background. This is especially prevalent in female populations where complex relationships and societal roles can significantly affect the outcomes of interventions. Even when common social dimensions such as education, financial status or employment are considered, those somewhat clandestine and delicate dimensions, such as inclusion, participation, awareness, attitudes or perceptions, should be taken into consideration.

Socio-demographic and socio-economic factors, one's personality (optimism, control over life), and social involvement (social capital) represent potential risk- or protective factors in one's (mental) health. In Croatia, the issue of poverty is especially pronounced in older women, and they represent the fastest growing segment of the society. Also, there is a strong correlation between the level of education and poverty, and secondary education seems to represents the "magic limit." There is a correlation between levels of formal education and the level of health literacy, which are directly connected to one's health status. Attention should be payed to development of chronic diseases and lower health status of women who receive social assistance, the lower use of public health prevention programs and specialist health care services. As emphasized, life satisfaction, optimism, and social capital have a high importance as protective factors in health. Younger married women with a higher total number of household members, a larger monthly income, and higher education are more satisfied with life. Women who receive social assistance have a lower health status and are less likely to consume alcohol, are significantly less satisfied with their lives, feel less free, however, they declare themselves as significantly happier. One explanation for happiness, despite a low socio-economic status, could be found in "women's ethics."

This paper only touches on a few questions and opens up new dimensions in thinking about health and disease, especially the position of the individual within the health system and society as a whole. As already pointed out, the greatest attention must be devoted to those who have the greatest needs. Considering that in our cultural circle the woman's role in maintaining the family, and its social and health benefits, is irreplaceable, precisely female recipients of state-provided financial welfare should be of special interest.

Therefore, it is extremely important to emphasize that personal health status, access to health services, and life satisfaction have a high importance as predictors and protective factors of mental health in female recipients of state-provided financial welfare.

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## *Contribution of individual authors:*

Petra Šuljić - paper concept and design, literature research and review, writing of the paper in general;

Iva Sorta-Bilajac Turina - literature research and review, contribution to Ethical aspects section, contribution to Discussion section;

Željko Sesar - contribution to Results section;

Uroš Šuljić - contribution to Statistical analysis, Results section, Tables design;

Aleksandar Džakula - contribution to Discussion section;

Lovorka Bilajac - literature research and review;

Ksenija Vitale - contribution to the writing of the paper in general;

Vladimir Mićović - team leader, overview of the entire writing process.

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