



## Health consequences of domestic violence against women in Serbia

### Zdravstvene posledice porodičnog nasilja nad ženama u Srbiji

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#### Abstract

**Background/Aim.** Domestic violence against women is a significant public health problem resulting in serious health and social consequences, for women and their families. The aim of this study was to analyze the sociodemographic characteristic of women who were exposed to domestic violence, as well as the impact of violence on women's health.

**Methods.** Data from cross-sectional study from the 2013 National Health Survey in Serbia were used analyzing 6,320 women aged 20–75 years. Univariate and multivariate logistic regression analyses were implemented to assess the association of exposure to domestic violence against women with sociodemographic characteristics, as well as with selected health indicators and health risk behaviors. **Results.** Out of total number of examined women, 307 (4.9%) reported that they experienced physical and/or psychological violence in the last 12 months. Divorced or separated women, poor women and women with poor social support had greater odds for exposure to domestic violence. Women who had experienced domestic violence were less likely to

perceived their health as good than women who had not experienced domestic violence [adjusted odds ratio (AOR) = 0.47; 95% confidence interval (CI) = 0.32–0.71], and more likely to report severe or very severe pain (AOR = 2.41; 95% CI = 1.74–3.33), stress and pressure exposure (AOR = 2.62; 95% CI = 1.89–3.64) and depression (AOR = 3.24; 95% CI = 2.08–5.03). Exposure to violence was also associated with the use of sleeping pills or sedative (AOR = 2.21; 95% CI = 1.67–2.93), with frequent use of alcohol (AOR = 1.42; 95% CI = 1.08–1.86) and abortion (AOR = 3.11; 95% CI = 1.48–6.54). **Conclusion.** Women, victims of domestic violence are more likely to have physical and mental disorders compared to women who are not victims of domestic violence. Violence prevention demands a multi-sectoral approach, in which the health sector has a central role that includes early identification and recognition of abuse, appropriate care as well as documenting and reporting violence.

**Key words:** battered women; domestic violence; health; risk factors; socioeconomic factors; women.

#### Apstrakt

**Uvod/Cilj.** Nasilje nad ženama u porodici je značajan javno-zdravstveni problem koji ostavlja ozbiljne zdravstvene i socijalne posledice po žene i njihove porodice. Cilj rada bio je da se analiziraju sociodemografske karakteristike žena koje su bile izložene porodičnom nasilju, kao i uticaj nasilja na zdravlje žena. **Metode.** Za potrebe istraživanja korišćeni su podaci Nacionalne studije istraživanja zdravlja stanovnika Srbije iz 2013. godine koja predstavlja studiju preseka na uzorku od 6 320 žena starosti 20–75 godina. Povezanost izloženosti nasilja sa socio-demografskim karakteristikama žena kao i sa zdravstvenim indikatorima i faktorima rizičnog ponašanja analizirana je korišćenjem modela univarijantne i multivarijantne logističke regresije. **Rezultati.** U toku poslednjih 12 meseci, 307 (4,9%) žena je bilo izloženo fizičkom i/ili psihičkom nasilju u porodici. Razvedene i razdvojene

žene, siromašne žene, kao i žene sa slabom socijalnom podrškom, češće su bile izložene nasilju. Žene koje su bile žrtve nasilja u porodici ređe su procenjivale svoje zdravlje kao dobro u odnosu na žene koje nisu bile žrtve nasilja u porodici [adjusted odds ratio (AOR) = 0,47; 95% confidence interval (CI) = 0,32–0,71], češće prijavljivale teške ili jako teške telesne bolove (AOR = 2,41; 95% CI = 1,74–3,33), izloženost stresu i pritisku (AOR = 2,62; 95% CI = 1,89–3,64) i bile depresivne (AOR = 3,24; 95% CI = 2,08–5,03). Žene žrtve nasilja u porodici češće su koristile lekove za spavanje ili za smirenje (AOR = 2,21; 95% CI = 1,67–2,93), alkohol (AOR = 1,42; 95% CI = 1,08–1,86) i češće su imale namerne prekide trudnoće (AOR = 3,11; 95% CI = 1,48–6,54) u odnosu na žene koje nisu bile žrtve nasilja u porodici. **Zaključak.** Žene žrtve nasilja pokazuju češće poremećaje u sferi fizičkog i psihičkog zdravlja u odnosu na žene koje nisu žrtve nasilja u porodici. Prevencija nasilja zahteva multisektorski pristup, u

kome zdravstveni sektor ima centralnu ulogu koja podrazumeva ranu identifikaciju i prepoznavanje nasilja, adekvatnu pomoć, kao i dokumentovanje i prijavljivanje nasilja.

**Ključne reči:**

**nasilje nad ženama; nasilje, porodično; zdravlje; faktori rizika; socijalno-ekonomski faktori; žene.**

## Introduction

Violence against women is a significant public health problem, as well as a fundamental violation of women's human rights. According to the World Health Organization (WHO) domestic violence is one of the most widespread forms of violence against women. The prevalence is high, and there are serious physical and mental health, as well as social consequences, for women and their families<sup>1</sup>.

Domestic violence is defined as "all acts of physical, sexual, psychological or economic violence that occur within the family or domestic unit or between former or current spouses or partners, whether or not the perpetrator shares or has shared the same residence with the victim"<sup>2</sup>. Victims of domestic violence are mainly women, but also other family members such as children and elderly. The perpetrator is a part of the victim's domestic environment: husband, intimate partner, former intimate partner, family member or friend<sup>3</sup>. However, the most common form of domestic violence is intimate partner violence (IPV) against women<sup>1,4,5</sup>.

A 2013 analysis conducted by WHO in over 80 countries, showed that almost one third (30%) of all women who have been in a relationship have experienced physical and/or sexual IPV. The prevalence ranges from 23.2% in high-income countries to 37% in the Eastern Mediterranean region and the South-East Asia region. Globally, as many as 38% of all murders of women are committed by their intimate partners<sup>1</sup>.

IPV against women can be analyzed either as psychological, physical, sexual, violence, or any combination of these<sup>3</sup>. Terms: "domestic violence", "intimate partner violence", "battering", "wife/spouse/partner abuse" are often used interchangeably<sup>6,7</sup>. Domestic violence does not describe a single violent event, but rather a complex system of abuse that has adverse consequences to women's health and well-being of children. Being exposed to family violence as a child presents an important risk factor for later engagement in unhealthy behaviour, as well as in perpetrating or experiencing violence in adulthood<sup>8,9</sup>.

The WHO acknowledges the association between violence and adverse consequences for health, as shown in numerous studies conducted worldwide<sup>1,5</sup>. IPV has been associated with several short and long-term health consequences including injuries, mental health problems, substance and alcohol abuse, psychosomatic diseases, noncommunicable diseases, sexual and reproductive health disorders (including unwanted pregnancy and abortion) and death (homicide or suicide)<sup>1,10-12</sup>.

Domestic violence demands serious monitoring especially in countries in transition that face the consequences of previous wars and economic crises such as poverty, unemployment, social insecurity and rises in violence in society. The situation of this problem remains largely unrecognizable due to

the lack of routine data collection, causing the absence of necessary intervention by the society<sup>13</sup>. Domestic violence is considered a hidden problem associated with social stigma, self-blame, fear from perpetrator and acceptance as a norm in some societies<sup>4,14,15</sup>. Women who have been victimized find it hard to share their experiences and seek help. Physicians are often the first contact persons in case of domestic violence. Therefore, it is important that medical personnel is trained to identify abuse early, providing victims with the necessary treatment, and referring women to appropriate and informed care<sup>3,4,10</sup>. The aim of this study was to analyze the socio-demographic characteristic of women who were exposed to domestic violence, as well as the impact of violence on women's health.

## Methods

### *Study design and sampling*

Data for this study were obtained from the 2013 National Health Survey of the Serbian population (without Kosovo and Metohia), carried out by the Ministry of Health of the Republic of Serbia. A stratified two-stage sample was used to provide statistically reliable estimate of a larger number of variables that indicate the health of a population. In the first stage, a total of 670 census circles were selected. The second stage units were selected from the household list (10 households and three reserve) using the simple random sample without replacement. Out of total, 10,089 households were randomly selected and 6,500 of them agreed to participate in the survey (response rate 64.4%). Of 16,474 registered household members, aged 15 years and over, 14,623 were interviewed giving a response rate of 88.9%. Ethical standards applied in this study were in compliance with the international standards, Helsinki Declaration (World Medical Association Declaration of Helsinki) and Directive of the European Parliament on Protection of Individuals with regard to the Processing of Personal Data (Directive 95/46/EC), and specific legislation in Serbia. All respondents were informed about the purpose of the study and agreed to participate. Three types of questionnaires were used: self-administered questionnaire, face-to-face questionnaire and household questionnaire<sup>16</sup>. Out of total, 13,756 respondent completed questionnaires giving a response rate of 94.1%. For the purpose of this study we analyzed data on 6,320 women aged 20–75 years.

### *Study variables*

Women were considered exposed to domestic violence if they reported having experienced physical and/or psychological violence in the last 12 month. Domestic violence was determined from two following questions: "Were

you exposed to any physical violence in the family during the last 12 months?" and "Were you exposed to any psychological violence (insults, humiliation, contempt, mockery, extortion) in the family during the last 12 months?" Variables included sociodemographic characteristics: age, type of settlement, marital status, education, material status (Wealth Index), employment status and social support. According to the Wealth Index (Demographic and Health Survey Wealth Index) respondents were classified into three socioeconomic groups or quintiles: rich (richer and the richest class), middle and poor (poorest and poorer)<sup>17</sup>. Employment status was divided into two categories: employed and unemployed/inactive (retired, students, housewives, unable to work and other inactive). Social support was measured using the Oslo-3 Social Support Scale (OSS-3) with three questions. It covers different fields of social support by measuring the number of people, the respondent feels close to, the interest and concern shown by others, and the case of obtaining practical help from others. The OSS-3 scores were divided into three categories: poor support (score 3–8), moderate support (score 9–11) and strong support (score 12–14)<sup>18</sup>. All health-related indicators were self-reported, and only ever-partnered women (women who were ever married or lived with a partner) were included in this part of the analysis. Self-perceived health was grouped into three categories: good (very good or good), fair, and poor (poor or very poor). Women were asked whether they experienced in the last 4 weeks: pain (no pain/mild pain, moderate pain, severe/very severe pain), and whether they felt tense or stressed/under pressure. To assess the presence of depressive disorders in the last 2 weeks the eight-item The Patient Health Questionnaire depression scale (PHQ-8) was used. A total score of 0 to 4 represents no significant depressive symptoms; score of 5 to 9 represents mild depressive symptoms; and score  $\geq 10$  represents depression<sup>19</sup>. Alcohol consumption in the last 12 months was categorized as frequent (once a week or more frequent), moderate (2–3 times per month or less), and non-drinkers (did not consume). Women were also asked to confirm or decline whether they were using sleeping pills or sedatives (no, uses sleeping pills or sedatives, uses both types of pills) and whether they had an abortion in the last 12 months.

### *Statistical analysis*

Univariate and multivariate logistic regression analyses were used to assess the association of exposure to domestic violence against women with sociodemographic factors. Selected health indicators and risk behavior among women according to exposure to domestic violence were first examined using  $\chi^2$  tests, then, in order to determine the impact of domestic violence as an independent variable on health, univariate as well as seven multivariate logistic regression models was implemented. Dependent variables (health condition and risk behavior) were transformed into dichotomous variables. Models included eight independent variables: domestic violence, age, type of settlement, marital status, edu-

cation, wealth index, employment status and social support. Data was weighted in order to be more representative for the Serbian population in 2013. We calculated the association through odds ratio (OR) with 95% confidence intervals (CI). The probability,  $p < 0.05$ , was taken as the minimum level of significance. All the statistical analyses were performed with the SPSS, 21.0 statistical package.

### **Results**

Out of the total number examined women 307 (4.9%) reported that they experienced physical and/or psychological violence in the last 12 months (1.4% were exposed to physical and 4.4% to psychological violence). However, 432 (6.8%) women did not answer the questions about domestic violence and response rate was 93.2%.

The sociodemographic characteristics of women who were exposed to domestic violence in the last 12 months are shown in Table 1. The results of the univariate logistic regression analysis indicated that the exposure to domestic violence was neither associated with women's age nor with type of settlement. However, domestic violence was significantly associated with marital status, as well as education, material status, employment status and social support. A multivariate logistic analysis showed the consistency of the association of marital status, material status and social support with exposure to domestic violence among women, while association with education and employment status could not be shown. Divorced or separated women were more likely to be exposed to domestic violence (OR = 2.97; 95% CI = 1.66–5.31) compared to women who never married or never lived with a partner and the odds were higher than for married women (OR = 1.90; 95% CI = 1.19–3.04). Poor women were more likely to be exposed to domestic violence compared to rich ones (OR = 1.58; 95% CI = 1.13–2.19) and women with poor social support compared to those with strong social support (OR = 2.54; 95% CI = 1.77–3.64).

Ever-partnered women who were exposed to domestic violence in the last 12 months, reported significantly more health problems and risk behaviors than women who were not exposed to violence (Table 2). Every fourth (25.5%) woman exposed to violence perceived their health as poor ( $p < 0.001$ ), and every third (31.3%) woman reported that in the last 4 weeks had severe or very severe pain ( $p < 0.001$ ). In the last 4 weeks, 83.4% of women exposed to violence were under stress or pressure ( $p < 0.001$ ), 23.3% had mild depression symptoms and 12.0% had depression ( $p < 0.001$ ). More than one-third (36.0%) of woman exposed to violence used sleeping pills or sedatives in the last 12 months, and 14.3% used both of these drugs, which was significantly more in comparison with women who were not exposed to violence ( $p < 0.001$ ), while the use of alcohol was slightly higher among women who were exposed to violence ( $p = 0.057$ ). Further, abortions over the previous year, were more reported by women exposed to violence (6.5% vs. 1.7%;  $p = 0.001$ ).

**Table 1****Sociodemographic characteristics of women exposed to domestic violence in the last 12 months**

Sociodemographic characteristics	Total number	Abused women, n (%)	Univariate analysis		Multivariate analysis	
			OR (95% CI)	<i>p</i>	OR (95% CI)	<i>p</i>
Age group (years)						
20–34	1,367	61 (4.5)	1.00		1.00	
35–49	1,590	86 (5.4)	1.25 (0.90–1.74)	0.183	1.02 (0.71–1.45)	0.932
50–75	2,931	160 (5.5)	1.28 (0.95–1.73)	0.099	0.95 (0.67–1.34)	0.767
Type of settlement						
urban	3,407	170 (5.0)	1.00		1.00	
rural	2,481	137 (5.5)	1.13 (0.89–1.43)	0.318	0.87 (0.65–1.15)	0.323
Marital status						
never married/never lived with a partner	779	24 (3.1)	1.00		1.00	
married/ living with a partner	3,942	214 (5.4)	1.92 (1.26–2.94)	0.002	1.90 (1.19–3.04)	0.007
widowed	804	36 (4.5)	1.64 (0.96–2.78)	0.069	1.39 (0.76–2.53)	0.288
divorced/separated	363	33 (9.1)	3.30 (1.93–5.66)	0.001	2.97 (1.66–5.31)	0.001
Education						
university degree	1,047	43 (4.1)	1.00		1.00	
secondary school	3,147	163 (5.2)	1.33 (0.94–1.87)	0.107	1.02 (0.65–1.58)	0.942
primary school	1,694	101 (6.0)	1.58 (1.09–2.28)	0.016	1.10 (0.77–1.59)	0.589
Wealth index						
rich	2,286	99 (4.3)	1.00		1.00	
middle	1,221	47 (3.8)	0.90 (0.63–1.29)	0.582	0.88 (0.61–1.28)	0.515
poor	2,381	161 (6.8)	1.64 (1.27–2.13)	0.001	1.58 (1.13–2.19)	0.007
Employment status						
employed	1,805	75 (4.2)	1.00		1.00	
unemployed/inactive	4,083	232 (5.7)	1.39 (1.06–1.81)	0.016	1.29 (0.96–1.75)	0.091
Social support (OSS-3)						
strong support	2,029	81 (4.0)	1.00		1.00	
moderate support	3,282	165 (5.0)	1.27 (0.96–1.67)	0.092	1.24 (0.94–1.63)	0.131
poor support	577	61 (10.6)	2.83 (1.98–4.03)	0.001	2.54 (1.77–3.64)	0.001

OR – odds ratio; CI – confidence interval.

OSS-3 – Oslo-3 Social Support Scale.

**Table 2****Health consequences of ever-partnered women according to exposure to domestic violence during the last 12 months**

Health indicators/risk behaviors	Exposure to domestic violence		<i>p</i>
	yes n (%)	no n (%)	
Self-perceived health			
good	106 (39.1)	2,231 (48.7)	0.001
fair	96 (35.4)	1,577 (34.5)	
poor	69 (25.5)	768 (16.8)	
Pain			
no pain/mild pain	108 (39.7)	2,401 (52.4)	0.001
moderate pain	79 (29.0)	1,429 (31.2)	
severe/very severe pain	85 (31.3)	750 (16.4)	
Filing tense or stressed/under pressure			
no	45 (16.6)	1,639 (35.8)	
yes	226 (83.4)	2,937 (64.2)	
Depressive disorder			
no depressive symptoms	172 (64.7)	3,867 (85.0)	0.001
mild depressive symptoms	62 (23.3)	498 (10.9)	
depression	32 (12.0)	188 (4.1)	
Sleeping pills/sedative use			
no	135 (49.7)	3,123 (68.2)	0.001
uses sleeping pills or sedatives	98 (36.0)	1,051 (22.9)	
uses both types of pills	39 (14.3)	406 (8.9)	
Alcohol consumption			
non-drinkers	157 (60.1)	2,845 (65.1)	0.057
moderate	79 (30.3)	1,260 (28.8)	
frequent	25 (9.6)	268 (6.1)	
Abortion			
no	145 (93.5)	2,693 (98.3)	0.001
yes	10 (6.5)	46 (1.7)	

**Table 3**  
**Association between exposure to domestic violence and health consequences among ever-partnered women in the last 12 months**

Health indicators/risk behaviors*	OR		AOR <sup>†</sup>	
	OR (95% CI)	<i>p</i>	AOR (95% CI)	<i>p</i>
Self-perceived health as good	0.53 (0.38–0.72)	0.001	0.47 (0.32–0.71)	0.001
Presence of severe/very severe pain	2.45 (1.80–3.32)	0.001	2.41 (1.74–3.33)	0.001
Filing tense or stressed/under pressure	2.79 (2.02–3.86)	0.001	2.62 (1.89–3.64)	0.001
Depression (PHQ ≥ 10)	3.78 (2.52–5.68)	0.001	3.24 (2.08–5.03)	0.001
Use of sleeping pills or sedative	2.14 (1.64–2.81)	0.001	2.21 (1.67–2.93)	0.001
Frequent alcohol consumption	1.23 (0.96–1.59)	0.106	1.42 (1.08–1.86)	0.012
Abortion	4.04 (2.00–8.17)	0.001	3.11 (1.48–6.54)	0.003

\***Dependent variables: self-perceived health as good vs. poor, presence of severe and very severe pain vs. no pain, filing tense or stressed/under pressure - yes vs. no, depression vs. no depressive symptoms, frequent alcohol consumption vs. non-drinkers, use of sleeping pills or sedative - yes vs. no, and abortion - yes vs. no; †Adjusted for age, type of settlement, marital status, education, wealth index, employment status and social support.**

**OR – odds ratio; CI – confidence interval; AOR – adjusted odds ratio; PHQ – Patient Health Questionnaire.**

Exposure to domestic violence during the last 12 months among ever-partnered women was significantly associated with a number of adverse health outcomes and risk behaviors (Table 3). Women who had experienced domestic violence were less likely to perceive their health as good than women who had not experienced domestic violence [adjusted OR (AOR) = 0.47; 95% CI = 0.32–0.71], and were more likely to report severe/very severe pain (AOR = 2.41; 95% CI = 1.74–3.33), stress and pressure exposure (AOR = 2.62; 95% CI = 1.89–3.64) and depression (AOR = 3.24; 95% CI = 2.08–5.03). Exposure to violence was also significantly associated with the use of sleeping pills or sedatives (AOR = 2.21; 95% CI = 1.67–2.93) and with the frequent use of alcohol (AOR = 1.42; 95% CI = 1.08–1.86). Women who were exposed to violence were more likely to have an abortion compared to those who were not exposed to violence (AOR = 3.11; 95% CI = 1.48–6.54).

## Discussion

Our study showed that 4.9% of women aged 20–75 were exposed to physical and/or psychological violence in the family in the last 12 months (1.4% physical and 4.4% psychological violence). According to the results of the 2006 National Health Survey in Serbia, the percentage of exposure to physical violence in the last 12 months was 1.28%, which is similar to our result<sup>20</sup>. Unfortunately, the data are not completely comparable due to the different age limit of women, and also psychological violence was not included in that study.

The WHO Multi-Country Study on Women's Health and Domestic Violence (WHO-VAW Study) documented the widespread nature of IPV, with lifetime prevalence of physical and/or sexual partner violence among women ranging from 15% in Japan to 71% in Ethiopia. In most countries, between 15% and 30% (total range 4%–54%) of the women reported this violence within 12 months prior to the study<sup>10</sup>. According to the results of WHO-VAW Study conducted in Belgrade, 23.7% of women aged 15–49, experienced physical and/or sexual IPV at least once in their lifetime

and 3.7% of women have experienced it in the last 12 months<sup>13</sup>.

In Europe (European Union Member States), one in five women (22%) has ever experienced physical and/or sexual IPV and 4% have experienced it in the past year. The rates of partner violence for lifetime prevalence range from 30%–32% in Finland, Denmark and Latvia to 13% in Austria, Croatia, Poland, Slovenia and Spain. The experience of physical and/or sexual partner violence in the past 12 months range from 6% in Belgium, Bulgaria, Greece, Hungary, Italy, Romania and Slovakia, to some 2% in Estonia, Poland, Slovenia and Spain<sup>21</sup>.

There are many studies related to domestic violence and their number is constantly increasing<sup>5</sup>. Unfortunately, comparison of results is difficult between different countries and the range in these figures illustrates not only possible real differences in prevalence rates among settings, but also differences in definitions of violence, study methodologies, as well as cultural differences pertaining to respondents' willingness to disclose acts of violence<sup>6, 11, 22</sup>.

Studies find that psychological violence is more prevalent than physical or sexual IPV and that it also has significant health consequences<sup>23, 24</sup>. However, it is more rarely assessed in quantitative studies than physical and sexual IPV, and its definitions vary considerably<sup>4, 12, 20</sup>. Surveys indicate that physical violence in intimate relationships is almost always accompanied by psychological abuse. In addition, psychological violence by partners is highly correlated with physical violence and is an important long-term predictor of physical violence at the early stages of marriage<sup>9</sup>. Results of the study "Mapping family violence against women" from 2010, which was conducted on a representative sample of 2,500 women aged 18–75 in Serbia, showed that the most frequent form of violence in last 12 months is psychological (31.8%), followed by physical (10.1%) and economical (11.4%), while the less frequent is sexual violence (1.2%)<sup>9</sup>.

According to the results of this study, exposure to domestic violence was not significantly associated with the age of women. The same results were obtained in the 2006 National Health Survey<sup>20</sup>. However, the WHO-VAW Study and many other researches showed that in almost all parts of the

world partner violence occurs in younger women and this pattern may reflect that physical violence mostly appears at an early stage of a partner relationship<sup>10, 24, 25</sup>. Consistent with other studies, our results indicate that divorced or separated women in comparison with married ones have a greater chance of being exposed to violence by a partner<sup>8, 24, 26</sup>. These results suggest that there is a possibility that married women are underreporting domestic violence, and that divorced/separated women are most probably more willing to disclose domestic violence than married women. Conclusively, domestic violence can be an important reason for marriage dissolution<sup>8, 24, 27</sup>. In our results, exposure to violence among women showed an association with material status and social support, while association with education and employment status was significant only in univariate regression analysis. On the other hand, numerous previous researches suggest that education has a protective effect for women on IPV risk<sup>25-29</sup>. Women with higher education probably have a greater opportunity of choice in partners and more ability to decide whether to marry or not, as well as to negotiate greater autonomy and control of resources within the marriage<sup>10</sup>. Employment status and financial autonomy are also probably protective factors against IPV exposure<sup>10, 15, 30</sup>. In developed countries, economic independence protects women and allows them to leave a violent partner<sup>3, 14, 25, 27</sup>. In numerous studies, higher socioeconomic status is generally associated with lower levels of physical and/or sexual partner violence<sup>20, 26, 31</sup>. On the other hand, some researches showed that the wealth of a household has an inconsistent and often nonlinear relationship with the experience of violence<sup>3, 8</sup>.

The findings that women with poor social support have a greater chance of exposure to violence have been confirmed in other studies<sup>24, 29</sup>. Studies confirmed that victims' social contacts were controlled by their partners<sup>12</sup>. The WHO defined the following behavior by a woman's partner as: restricting contact with her family of birth and friends; controlling her access to health care; accusing her of being unfaithful etc. The proportion of women reporting one or more of these behaviors by their partner varied from 21% in Japan to almost 90% in the United Republic of Tanzania<sup>10</sup>.

Authors also include other characteristics of women who are associated with partner violence such as: sexually abused as a child, unwanted first sexual intercourse, poor self-esteem, having a mother who was beaten by her partner, etc.<sup>24, 26, 28, 29</sup>. On the other hand, studies also indicate that the majority of factors associated with IPV against women are factors related to the male partner (alcohol consumption, being less educated, infidelity, his personal experiences of violence in childhood, aggressive behaviour towards other men, his mother was abused by mother's partner, etc.)<sup>23, 24, 28, 29</sup>.

In our study, significant associations of exposure to domestic violence among ever-partnered women with self-perceived poor health, as well as specific health problems and risk behaviors: severe or very severe body pain, stress and pressure, depression, use of sedative or sleeping drugs, frequent use of alcohol and abortion were found. This is consistent with the findings of the current studies which showed that experience of physical or psychological IPV was

significantly associated with self-reported poor health and a range of adverse physical, mental, sexual and reproductive health outcomes<sup>10, 12, 23, 26, 32</sup>.

Health consequences of domestic violence against women were well documented. Compared with women who never experienced IPV, women who experienced IPV were more likely to report pain (whole-body pain, chronic neck or back pain, chest pain, headache, migraines, abdominal pain, pelvic pain), difficulties with walking or daily activities, an increase in disability days and overall disability, memory loss, dizziness, problems seeing even with glasses<sup>8, 11, 12, 20, 23, 32, 33</sup>, injuries, gastrointestinal disorders (spastic colon, frequent ingestion, constipation or diarrhoea), high blood cholesterol, heart disease, heart attack, arthritis, stroke, asthma<sup>12, 23, 31-33</sup>, gynecological problems, vaginal discharge, foot oedema, eczema<sup>8, 10, 11, 20, 31</sup>.

Some investigations showed that women who had experienced partner violence had an increased risk of mental health disorder, anxiety, mood disorder, posttraumatic stress disorder (PTSD), beginning to stammer or stutter, insomnia and chronic mental illnesses including depression<sup>22, 23, 30, 32-36</sup>. Studies also showed that women who had experienced IPV (physical, sexual or both), were significantly more likely to have suicidal ideas or attempted suicide than nonabused women<sup>11, 32, 34</sup>.

IPV has been associated also with health risk behaviors: smoking, marijuana use, heavy or binge drinking, risk factors for human immunodeficiency virus (HIV) or sexually transmitted diseases<sup>31, 36</sup>. There is plentiful evidence of the association between alcohol use and domestic violence, particularly around IPV perpetration by men<sup>23, 28, 29, 36, 37</sup>. There is also clear evidence that women with histories of violence consume more alcohol<sup>31, 35, 37</sup>. However, the causal direction of the linkage between alcohol consumption by women and their experiences of IPV is less clear. Alcohol use can be both a cause and a consequence of experiencing violence<sup>37</sup>. The WHO-VAW Study showed that in all the investigated sites odds of IPV were higher in relationships where one or both partners had problems with alcohol<sup>26</sup>. In Serbia, frequent use of alcohol was reported by 11% of women who have experienced physical and/or sexual violence. Alcohol abuse by partners in Serbia was at third place on the list of reasons for violence with 23.8% (at first place – without any reason 28.2% and at second place – jealousy with 24.2%)<sup>13</sup>. Our findings are in accordance with the majority of studies showing association between the exposure to violence and tranquilizer/sedative use, antidepressant use and prescription pain pill use<sup>12, 32-34</sup>. The study in Belgrade also showed that women reporting physical violence and/or sexual violence committed by partners were more often using sleeping medication (11.3%), pain killers (21.3%) or antidepressants (3.9%) compared to women not reporting violence<sup>13</sup>.

Different types of injuries could be the result of a violent event and, directly or indirectly, endanger a woman's life or cause fatal outcome<sup>1, 4</sup>. Under the WHO-VAW Study, in seven out of ten countries participating, over 15% of ever-injured women reported that injury had happened more than five times ever in her life<sup>11</sup>. In Belgrade, injuries as a result

of violence were reported by 28.8% of women and, among them, every third one (35.8%) has been injured more than five times<sup>13</sup>.

IPV is a strong risk factor for unintended pregnancy and abortion across a variety of settings. Our results showed that women exposed to violence had a more than three times higher chance of an abortion compared to women without such an experience, which is consistent with other studies<sup>10, 22, 33</sup>. Within the study conducted in Belgrade, 20.7% of women exposed to physical and/or sexual violence had a spontaneous miscarriage and 65.0% had an abortion (compared to 45.6% of women not experiencing violence)<sup>13</sup>.

The violence is often hidden within family and partner relations, and is quite difficult to be documented. In Serbia, 78.2% of women exposed to violence never asked for help from competent institutions regarding physical and/or sexual violence. Women who experienced violence often deny such experience due to fear of the perpetrator<sup>4, 13</sup>. Strict application of legal provisions regulating this field<sup>38</sup>, as well as proper training of the police, the judicial sector, social and health care providers are a necessary precondition to early detection of domestic violence, as well as adequate and due help to victims. The role of a healthcare professional is particularly relevant and important in addressing domestic violence. Health providers, in most cases, do not consider domestic violence as part of their competencies. Therefore, it is necessary to be trained to recognize violence, react adequately as well as document and report violence. Further implementation of the Special Protocol for the Protection and Treatment of Women Victims of Violence from the Ministry of Health of the Republic of Serbia is particularly important in order to protect women from violence<sup>4</sup>.

#### *Limitation of the study*

We used data from the National Health Survey which may not have been sensitive for measuring domestic vio-

lence. Even though the self-administered questionnaire was used, it is likely that exposure to domestic violence among women was underreported in this study (6.8% of women did not answer the question related to the exposure to domestic violence). Finally, as the study was cross-sectional, we are not able to draw any conclusions about cause and effect. Despite this limitation, using data from the National Health Survey we were able to assess a larger context in which violence takes place, and also the association between domestic violence and health. A special advantage is that the results are based on data from a nationally representative population sample, which provides reliable statistical analysis.

#### **Conclusion**

This study was shown the association of domestic violence against women with adverse health outcomes. Violence prevention demands a wide public health response and the health sector has a central role. The practical implications of our findings are relevant to physicians. Results indicate that special attention should be paid by physicians in recognising all symptoms, physical and mental health disorders that might indicate exposure to violence as well as documenting violence. This study also offers important results that can be especially useful to policy-makers.

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#### R E F E R E N C E S

1. *World Health Organization*. Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and nonpartner sexual violence. Geneva: World Health Organization; 2013.
2. *Council of Europe*. Convention on Preventing and Combating Violence against Women and Domestic Violence; Istanbul, 11. V 2011. [cited 2017 Apr 19]. Available from: <http://https://rm.coe.int/168008482e>
3. *Flury M, Nyberg E, Riecher-Rössler A*. Domestic violence against women: Definitions, epidemiology, risk factors and consequences. *Swiss Med Wkly* 2010; 140: w13099.
4. *Ministry of Health Republic of Serbia*. Special Protocol for The Protection and Treatment of Women Victims of Violence. Belgrade; 2010. [cited 2017 Apr 27]. Available from: <http://www.zdravlje.gov.rs/downloads/Zakoni/Ostalo/ProtokolMZRSZaZastituIPostupanjeSaZenamaKojeSuIzlozeneNasilju.pdf> (Serbian)
5. *World Health Organization*. Global status report on violence prevention 2014. Geneva: World Health Organization; 2014.
6. *Krantz G, Garcia - Moreno C*. Violence against women. *J Epidemiol Community Health* 2005; 59(10): 818–21.
7. *Azhar Z, Sobail M M, Yasin G, Mahmood B, Mushtaq SK*. Exploring socio-economic factors behind domestic violence against women in Sargodha district. *Int J Asian Soc Sci* 2012; 2(9): 1617–26.
8. *Kishor S, Johnson K*. Profiling Domestic Violence – A Multi-Country Study. Calverton, Maryland: ORC Macro; 2004.
9. *Babović M, Ginić K, Vuković O*. Mapping family violence in central Serbia. Belgrade: SeConS; 2010. (Serbian)
10. *World Health Organization*. Multi-country study on women's health and domestic violence against women: Summary report of initial results on prevalence, health outcomes and women's responses. Geneva: World Health Organization; 2005.
11. *Ellsberg M, Jansen HA, Heise L, Watts CH, Garcia-Moreno C*. WHO Multi-country Study on Women's Health and Domestic Violence against Women Study Team. Intimate partner violence and women's physical and mental health in the WHO multi-country study on women's health and domestic violence: an observational study. *Lancet* 2008; 371(9619): 1165–72.

12. Coker AL, Davis KE, Arias I, Desai S, Sanderson M, Brandt HM, et al. Physical and mental health effects of intimate partner violence for men and women. *Am J Prev Med* 2002; 23(4): 260–8.
13. Otašević S. Violence in intimate partner relationships and health. Belgrade: Autonomous Women Center; 2005. (Serbian)
14. Al Dosary AH. Health impact of domestic violence against Saudi women: Cross Sectional Study. *Int J Health Sci (Qassim)* 2016; 10(2): 165–73.
15. Trinh OT, Oh J, Choi S, To KG, Van Do D. Changes and socio-economic factors associated with attitudes towards domestic violence among Vietnamese women aged 15–49: findings from the Multiple Indicator Cluster Surveys, 2006–2011. *Glob Health Action* 2016; 9(1): 29577.
16. The Institute of Public Health of Serbia "Dr Milan Jovanović Batut". Results of the National Health Survey of the Republic of Serbia 2013. Belgrade: Official Gazette; 2014
17. Rutstein SO, Johnson K. The DHS Wealth Index. DHS Comparative Reports No. 6. Calverton, Maryland, USA: ORC Macro; 2004.
18. Boen H, Dalgard OS, Bjertness E. The importance of social support in the associations between psychological distress and somatic health problems and socio-economic factors among older adults living at home: a cross sectional study. *BMC Geriatr* 2012; 12: 27.
19. Kroenke K, Strine TW, Spitzner RL, Williams JB, Berry JT, Mokdad AH. The PHQ-8 as a measure of current depression in the general population. *J Affect Disord* 2009; 114(1–3): 163–73.
20. Djikanovic B, King EJ, Bjegovic-Mikanovic V. Gender Differences in Health Symptoms Associated with the Exposure to Physical Violence in Family: Data from the 2006 National Health Survey in Serbia. *J Fam Viol* 2013; 28: 753–61.
21. European Union Agency for Fundamental Rights. Violence against Women: an EU-wide survey. Main results. Luxembourg: Publications Office of the European Union; 2014.
22. Pallitto CC, García-Moreno C, Jansen HA, Heise L, Ellsberg M, Watts C. WHO Multi-Country Study on Women's Health and Domestic Violence. Intimate partner violence, abortion, and unintended pregnancy: results from the WHO Multi-country Study on Women's Health and Domestic Violence. *Int J Gynaecol Obstet* 2013; 120(1): 3–9.
23. Coker AL, Smith PH, Bethea L, King MR, McKeown RE. Physical health consequences of physical and psychological intimate partner violence. *Arch Fam Med* 2000; 9(5): 451–7.
24. Nyberg L, Taft C, Enander V, Krantz G. Self-reported exposure to intimate partner violence among women and men in Sweden: results from a population-based survey. *BMC Public Health* 2013; 13: 845.
25. Tetikcok R, Ozer E, Cakir L, Enginyurt O, İscanli MD, Cankaya S, et al. Violence towards women is a public health problem. *J Forensic Leg Med* 2016; 44: 150–7.
26. Abramsky T, Watts C, Garcia-Moreno C, Devries K, Kiss L, Ellsberg M, et al. What factors are associated with recent intimate partner violence? Findings from the WHO multi-country study on women's health and domestic violence. *BMC Public Health* 2011; 11: 109.
27. Mavrikion PM, Apostolidou M, Parlalis SK. Risk factors for the prevalence of domestic violence against women in Cyprus. *Soc Sci J* 2014; 51(2): 295–301.
28. Owusu Adjah ES, Agbemafle I. Determinants of domestic violence against women in Ghana. *BMC Public Health* 2016; 16: 368.
29. Djikanovic B, Jansen HA, Otašević S. Factors associated with intimate partner violence against women in Serbia: a cross sectional study. *J Epidemiol Community Health* 2010; 64(8): 728–35.
30. Ferrari G, Agnew-Davies R, Bailey J, Howard L, Honarth E, Peters TJ, et al. Domestic violence and mental health: a cross-sectional survey of women seeking help from domestic violence support services. *Glob Health Action* 2016; 9(1): 29890.
31. Centers for Disease Control and Prevention (CDC). Adverse health conditions and health risk behaviors associated with intimate partner violence—United States, 2005. *MMWR Morb Mortal Wkly Rep* 2008; 57(5): 113–7.
32. Macy RJ, Ferron J, Crosby C. Partner violence and survivors' chronic health problems: informing social work practice. *Soc Work* 2009; 54(1): 29–43.
33. Carbone-López K, Kruttschnitt C, Macmillan R. Patterns of intimate partner violence and their associations with physical health, psychological distress, and substance use. *Public Health Rep* 2006; 121(4): 382–92.
34. Rees S, Silove D, Chey T, Ivancic L, Steel Z, Creamer M, et al. Lifetime prevalence of gender-based violence in women and the relationship with mental disorders and psychosocial function. *JAMA* 2011; 306(5): 513–21.
35. Machisa MT, Christofides N, Jenkes R. Mental ill health in structural pathways to women's experiences of intimate partner violence. *PLoS ONE* 2017; 12(4): e0175240.
36. Reingle JM, Jennings WG, Connell NM, Businelle MS, Chartier K. On the pervasiveness of event-specific alcohol use, general substance use, and mental health problems as risk factors for intimate partner violence. *J Interpers Violence* 2014; 29(16): 2951–70.
37. Devries KM, Child JC, Bacchus LJ, Mak J, Falder G, Graham K, et al. Intimate partner violence victimization and alcohol consumption in women: a systematic review and meta-analysis. *Addiction* 2014; 109(3): 379–91.
38. The Law on Prevention of Domestic Violence. Official Herald of the RS, No. 94/2016. (Serbian)

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