

DETERMINANTS OF DOMESTIC PHYSICAL VIOLENCE AGAINST WOMEN IN TURKEY

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Abstract

Purpose of the study: This study aims to determine the factors affecting the exposure of women in Turkey 15 years of age and older to physical violence by their husband/intimate partner.

Methodology: In this study, the micro-data set of the "Research on Domestic Violence against Women in Turkey" conducted by Hacettepe University Institute of Population Studies in 2008 and 2014 was used. In this data set, the data of 18518 women aged 15 and over were used, 11722 in 2008 and 6796 in 2014. Factors affecting women's physical violence were determined using binary logistic and probit regression analysis. This study focuses on the physical violence of the husband/partner, which is the most common type of domestic violence against women.

Main Findings: The variables of survey year, region, education level, individual income, marital status, health status, the number of children, and being exposed to violence from first degree relatives are seen to be significant. According to the results obtained, the expected probability of exposure to physical violence women who were subjected to economic, verbal, and sexual violence by their husbands/intimate partners was more than 39.8%, 127.35%, and 83.68%, respectively.

Applications of this study: The study outcome indicate that important steps to reduce domestic physical violence against women in Turkey should be taken. In order to prevent new cases of abuse, coordinated efforts to raise awareness of the problem of domestic physical violence against women will encourage action.

Novelty/Originality of this study: In this study, factors affecting the exposure of women in Turkey, 15 years old and older, to physical violence by their husband/intimate partner were identified. In the study, the socio-demographic and economic characteristics of women and to what extent the various risk factors related to husband/intimate partners were critical for the women's exposure to physical violence.

Keywords: *Domestic Violence, Physical Violence, Violence Against Women, Binary Logistic Regression, Turkey.*

INTRODUCTION

Violence is defined by the World Health Organization (WHO) as the intentional use of physical force or power, threatened or actual, against another person that either result in or has a high likelihood of resulting in injury, death, and/or psychological harm. Violence is a serious public health problem that arises in all areas of human life and is gradually increasing in the world (Lee et al., 2015). Violence against women is a very complex and challenging social problem. Domestic violence is one of the most common forms of violence against women and is a major burden on women around the world (Kabir et al., 2018; Kyu & Kanai, 2005). All such domestic behavior, including threats, pressure, and control that cause victims physical, sexual, economic, and psychological harm or suffering, can be called domestic violence. Victims of domestic violence can include women, children or relatives living together perpetrated by partners sharing or not sharing the same house. While women are most exposed to this type of behavior in families, this violence, which leads to devastating effects, is often aimed at trivializing women and leaving them aside (Alan et al., 2016). The United Nations (1993) defined violence against women, whether it happened within the public space or in private life, as an action that causes the woman to be damaged physically, mentally, socially, sexually, and/or economically; to suffer, to have her honor tarnished; to lose her self-esteem; and to be subject to continuous discrimination. Violence against women is commonly classified as emotional, physical, psychological, economic, and sexual (Watts & Zimmerman, 2002).

According to the reports by the World Health Organization that assert that violence against women is a violation of women's rights, approximately one-third of women in the world (30%) have been exposed to physical and/or sexual violence perpetrated by the men with whom they have forged close ties throughout their lives. 38% of the murders of women were also reported to be perpetrated by male intimate partners with whom the women had close relationships (EU, 2014).

Among the determinants of both women's exposure to physical violence and the risk of physical violence perpetrated by men are conflict or dissatisfaction in the relationship, male dominance in the family, economic stress, men having more than one wife/intimate partner, and inequality in educational attainment, specifically when the woman has a higher education level than her husband/intimate partner (García-Moreno et al., 2005). Furthermore, when the communal and social factors affecting physical violence against women were examined, studies show that gender inequality, social

norms (especially attribution of masculinity to sovereignty and aggression), poverty, the low social and economic status of women, weak legal sanctions against husband/intimate partner violence, restrictive or unequal divorce and marital laws including lack of civil rights of women and broad social acceptance of violence as a way of resolving the conflict, are among these factors ([Chan, 2009](#)).

Studies shows that the prevalence of women who exposed to violence in Turkey and the world is high ([García-Moreno et al., 2005](#); [WHO, 2014](#)). This study aimed to determine the factors that affect the risk of exposure of women in Turkey age of 15 and older to physical violence by their husbands/intimate partners by using the micro dataset of "the National Research on Domestic Violence Against Women in Turkey". This study also aimed to determine to what extent the socio-demographic and economic characteristics of the women and the various risk factors related to the husband/intimate partners were crucial in the exposure of women to physical violence. The reason for using the data from the National Research on Domestic Violence Against Women in Turkey survey is that it reflects the whole country and is a study that paves the way for international comparison and thus sheds light on national requirements.

LITERATUR REVIEW

Studies indicate that some of the determinants related to the likelihood of the perpetration of physical violence by men against their wives/intimate partners are determined as young age with those men who have a low education level, who have witnessed or experienced violence during childhood, who have used alcohol and drugs in a detrimental fashion, who have personality disorders, who see violence as acceptable (for example, to feel that beating his wife/partner is acceptable for a man), and/or who have exploited his wife/partner in the past ([Abramsky et al., 2011](#); [Heise & Garcia-Moreno, 2002](#)). Determinants linked with the likelihood of women being subjected to physical violence in different environments by their husbands/intimate partners include the woman's low education level, exposure to violence between parents, experience of sexual abuse during childhood, viewing violence as acceptable, and/or exposure to other forms of abuse ([Abramsky et al., 2011](#); [Heise & Garcia-Moreno, 2002](#); [Johnson & Das, 2009](#); [WHO/LSHTM, 2010](#)).

Studies indicate that fallacious beliefs about gender roles and violence leads to husband/intimate partner violence. For example, beliefs such as "A man has the right to power over a woman and is socially superior.", "A man has a right to discipline a woman physically for 'wrong' behavior.", "A woman must tolerate violence to keep her family together.", and "There are times when a woman deserves to be beaten." are seen as the roots of violence against women ([Swart et al., 2002](#); [WHO/LSHTM, 2010](#)).

A study conducted in Manisa province, Turkey, found that the rate of domestic violence against women is high and that women are most exposed to physical violence of a type of violence. In addition, the study also found that women do not perceive many of the behaviors of their partners as violence, and the most important factor that causes this condition is social status ([Sen & Bolsoy, 2017](#)). A study in Ankara Province found that 54.6% of the women participating in the study had low levels, 38.4% had moderate levels and 7% had high levels of domestic violence ([Efe & Ayaz, 2010](#)).

In studies conducted in Turkey, risky factors that cause violence against women between husbands and partners have been investigated. In one study, the prevalence of exposure to physical violence was highest in the 45-54 age group, compared to the lowest in the 15-24 age group ([Akar et al., 2010](#)). However, another study indicated that the frequency of abuse by young women is higher than in other age groups ([Kocacik et al., 2007](#)). The relationship between marital age, type of marriage and violence between husbands and partners has been studied in some studies. Studies have shown that women who experience marriage and sexual intercourse at a young age are more likely to be subjected to violence ([Akyüz et al., 2008](#); [Şahin & Şahin, 2003](#)). There are studies in the literature show a positive relationship between the number of children and the violence of the husband / partner ([Akyüz et al., 2008](#); [Kocacik et al., 2007](#); [Şahin & Şahin, 2003](#); [Şahin et al., 2010](#)). In a study of pregnant women, it has been reported that abused pregnant women have more than one child and have a longer marriage period than non-abused women ([Şahin & Şahin, 2003](#)). A study found that violence is increasing in unwanted pregnancies ([Karaoglu et al., 2006](#)). In addition, some studies have highlighted the increased risk of domestic violence among women living with extended families ([Akar et al., 2010](#); [Tokuç et al., 2010](#)).

Studies have shown that low levels of education are an important risk factor for husbands/partners violence in Turkey ([Akar et al., 2010](#); [Akyüz et al., 2008](#); [Efe & Ayaz, 2010](#); [Karaoglu et al., 2006](#); [Kocacik & Dogan, 2006](#); [Kocacik et al., 2007](#)).

Another factor that causes husband/partner violence against women is the employment status of both women ([Kocacik & Dogan, 2006](#); [Tokuç et al., 2010](#)) and their partners ([Efe & Ayaz, 2010](#); [Karaoglu et al., 2006](#); [Naçar et al., 2009](#)). Studies have found that the unemployment of women and their partners is an important factor that causes violence. In addition, studies have found that the level of violence is inversely proportional to the economic level of families ([Akyüz et al., 2008](#); [Karaoglu et al., 2006](#); [Kocacik & Çağlayandereli, 2009](#); [Kocacik & Dogan, 2006](#); [Kocacik et al., 2007](#); [Şahin et al., 2010](#); [Tokuç et al., 2010](#)).

A democratic family environment helps to educate individuals who demonstrate self-confidence and self-respect. However, childhood trauma can lead to post-traumatic stress, low self-esteem, self-protection and difficulties in cooperating with others and to avoid cooperating with others, various health problems, alcohol and drug use ([Şahin et al., 2010](#)). Some studies in Turkey have also shown association between exposure to childhood violence and the

subsequent involvement of both men and women in abusive relationships ([Akar et al., 2010](#); [Kocacik & Dogan, 2006](#); [Kocacik et al., 2007](#); [Şahin et al., 2010](#)).

In addition, factors such as dissatisfaction with married life ([Guler et al., 2005](#); [Karaçam et al., 2006](#)), watching violent movies ([Akar et al., 2010](#); [Kocacik & Çağlayandereli, 2009](#); [Kocacik & Dogan, 2006](#)), gambling ([Akar et al., 2010](#)), or alcohol are the risk factors for violence against women between husbands and partners ([Akar et al., 2010](#); [Guler et al., 2005](#); [Karaçam et al., 2006](#)).

METHODS

1. Data

In this study, the micro-data set of the "Research on Domestic Violence against Women in Turkey" conducted by Hacettepe University Institute of Population Studies in 2008 and 2014 was used.

In order to determine the different dimensions of violence against women, to determine the causes and to address the need to collect data on this issue, a comprehensive "Research on Domestic Violence against Women in Turkey" was conducted for the first time in 2008. The "Research on Domestic Violence against Women in Turkey" conducted in 2014 is important in terms of reflecting the change in violence against women in the period from the 2008 study to the present. "Research on Domestic Violence against Women in Turkey" is one of the most comprehensive studies conducted nationwide in order to understand the extent, content, causes and consequences of domestic violence experienced by women, as well as risk factors.

A weighted, stratified and multi-stage cluster sampling approach was used in the Research on Domestic Violence against Women in Turkey sample design in Turkey. The main objective of the sample design is to provide estimates of violence against women in the 95% confidence range based on key variables such as age group, educational level and social and economic status, with acceptable accuracy (with accuracy) for the country, 12 regions and urban / rural layers. Within the scope of this research, Turkey is divided into 30 layers to provide country, city / country, 12 regions and 5 regions with estimates. Except for the Istanbul region, which is one of the 12 regions, between 75% and 25% of the population in other regions has been divided into urban and rural layers. Approximately 5% of households in Istanbul have been chosen from rural areas. In the study, settlements with a population of 10.000 and above are urban areas, while settlements with a population of less than 10.000 are rural areas ([DGSW, 2009, 2014](#)).

2. Measures and variables

The research questionnaire was designed to take into account the questionnaires used in the "Multi-Country Study on Women's Health and Domestic Violence against Women" study by the World Health Organization ([DGSW, 2009, 2014](#)).

In the National Research on Domestic Violence Against Women in Turkey, women were asked questions such as: did your husband/intimate partner "slap you in the face or throw something at you to hurt you?" "push you roughly, shove you, or pull your hair?," "punch you or hit you with anything causing pain?," "kick you, drag you, or beat you?," "choke you or burn any part of your body?," and "threaten you with a knife or a gun or use those against you?". The status of women's exposure to violence measured by these questions was used to generate the dependent variable. If the women participating in the study experienced at least one of the aforementioned conditions, they were deemed to have been exposed to physical violence by their husbands/intimate partners; if they had not experienced any of them, then they were deemed to have not been exposed to physical violence. As a result, the dependent variable of the study was the status of the exposure of women to physical violence indicated by 1 if a woman had experienced physical violence and 0 if she had not.

The independent variables mentioned in the study were determined by conducting a literature search. All variables included in the model in the study are categorical variables of the nominal and ordinal scales. Variables related to the socio-demographic and economic characteristics of the women are the survey year, the region, the woman's place of residence, age, the education level, the existence of individual income, marital status, health status, the number of children, and exposure to violence from first degree relative. The factors related to the husband/intimate partner of the women were the education level, the job status, alcohol use status, gambling status, drug use, infidelity, exposure to economic violence, exposure to verbal violence, and exposure to sexual violence.

Ordinal and nominal variables were defined as dummy variables to observe the effects of the categories of all variables to be included in the binary logistic regression and binary probit regression models ([Alkan & Yarbasi, 2020](#)).

3. Statistical analysis

Survey statistics in Stata 15 (Stata Corporation) were used to account for the complex sampling design and weights. Weighted analysis was performed. First, the frequency and percentages of the women participating in the paper were obtained according to whether they had been subjected to physical violence by their husbands/intimate partners. A Chi-square independence test was performed to investigate the relationship between being subjected to physical violence and

the independent variables. After that, factors that affecting exposure to physical violence were determined by using binary logistic regression and binary probit regression analysis.

The Chi-square independence test is also known as the Pearson Chi-square test or the Chi-square test. When variables are categorical, this is one of the most useful tests used to investigate the relationship between variables. Unlike most statistics, the Chi-square (χ^2), not only provides information on the importance of the differences observed, but also provides detailed information on the differences found in the categories from which it originates (McHugh, 2013).

Binary logistic and probit regression are methods of analysis used to study the relationship between the dependent variable and the independent variable(s) in cases where the result (dependent) variable has two options (binary / dicotom). The statistical significance of each independent variable as a risk factor as well as the ability to calculate odds ratio are evaluated in binary logistic regression (Kleinbaum & Klein, 2010; Alkan & Ünver, 2020).

The cumulative logistic distribution function is used in the binary logit model and the cumulative normal distribution function (CDF) is used in the probit model. Although the Logit and probit models have qualitatively similar results, the predicted values of the two models cannot be directly compared. The fact that Normal CDF contains integral calculations is cited as a factor leading to a more widespread use of logistic CDF in practice (Hill et al., 2001).

RESULTS

1. Descriptive statistics and chi-square tests

The findings of the factors that may be effective for women in Turkey being subjected to physical violence are shown in Table 1.

Table 1: Findings on socio-demographic and economic factors that are effective in the case of physical violence of women

Variables	Exposure to physical violence		n (%)	P
	No	Yes		
Survey year				
2008	7167(61.1)	4555(67.1)	11722(63.3)	0,000 ^a
2014	4563(38.9)	2233(32.9)	6796(36.7)	
Region				
West	3716(31.7)	1585(23.4)	5301(28.6)	0,000 ^a
South	1013(8.6)	605(8.9)	1618(8.7)	
Central	2405(20.5)	1776(26.2)	4181(22.6)	
North	1659(14.1)	737(10.9)	2396(12.9)	
East	2937(25.0)	2085(30.7)	5022(27.1)	
Place of residence				
Urban	8582(73.2)	4776(70.4)	13358(72.1)	0,000 ^a
Rural	3148(26.8)	2012(29.6)	5160(27.9)	
Age				
15-24	2193(18.7)	602(8.9)	2795(15.1)	0,000 ^a
25-34	3781(32.2)	2076(30.6)	5857(31.6)	
35-44	2968(25.3)	1923(28.3)	4891(26.4)	
45-54	2066(17.6)	1567(23.1)	3633(19.6)	
55+	722(6.2)	620(9.1)	1342(7.2)	
Education level				
Illiterate	1540(13.1)	1474(21.7)	3014(16.3)	0,000 ^a
Primary school	5319(45.3)	3667(54.0)	8986(48.5)	
Secondary school	1185(10.1)	635(9.4)	1820(9.8)	
High school	2238(19.1)	740(10.9)	2978(16.1)	
University	1448(12.3)	269(4.0)	1717(9.3)	
Existence of individual income				
Yes	2522(21.5)	1437(21.2)	3959(21.4)	0,618
None	9205(78.5)	5347(78.8)	14552(78.6)	
Marital status				
Single	1327(11.3)	106(1.6)	1433(7.7)	0,000 ^a
Married	9940(84.7)	5990(88.2)	15930(86.0)	
Widow/divorced/living separately	463(3.9)	692(10.2)	1155(6.2)	
Health status				
Very good/good	6031(51.4)	2037(30.0)	8068(43.6)	0,000 ^a

Moderate	4489(38.3)	3224(47.5)	7713(41.7)	
Poor/terrible	1207(10.3)	1524(22.5)	2731(14.8)	
The number of children				
No children	2273(19.4)	419(6.2)	2692(14.5)	
One child	2056(17.5)	845(12.4)	2901(15.7)	0.000 ^a
Two or more	7401(63.1)	5524(81.4)	12925(69.8)	
Exposure to violence from first degree relative				
No	10661(90.9)	5707(84.1)	16368(88.4)	
Yes	1068(9.1)	1078(15.9)	2146(11.6)	0.000 ^a

^ap<0.01

Findings related to husband/intimate partner factors that may be effective for the situation in which women were subjected to physical violence are shown in Table 2.

Table 2: Findings on factors related to husband/partner that are effective in the case of physical violence of women

Variables	Exposure to physical violence		n (%)	P
	No	Yes		
Education level				
Illiterate	347(3.0)	384(5.7)	731(4.0)	
Primary school	4350(37.1)	3464(51.1)	7814(42.2)	
Secondary school	1659(14.2)	1033(15.2)	2692(14.5)	0.000 ^a
High school	3144(26.8)	1339(19.7)	4483(24.2)	
University	2217(18.9)	565(8.3)	2782(15.0)	
Job status				
Not working	2054(17.5)	1351(19.9)	3405(18.4)	
Public employment	1845(15.7)	853(12.6)	2698(14.6)	0.000 ^a
Private employment	7819(66.7)	4581(67.5)	12400(67.0)	
Alcohol use status				
No	9591(81.8)	5080(74.8)	14671(79.3)	
Yes	2132(18.2)	1708(25.2)	3840(20.7)	0.000 ^a
Gambling status				
No	11619(99.1)	6505(95.9)	18124(97.9)	
Yes	102(0.9)	281(4.1)	383(2.1)	0.000 ^a
Drug use				
No	11691(99.8)	6723(99.1)	18414(99.6)	
Yes	23(0.2)	59(0.9)	82(0.4)	0.000 ^a
Infidelity				
No	11202(95.6)	5650(83.3)	16852(91.1)	
Yes	514(4.4)	1131(16.7)	1645(8.9)	0.000 ^a
Exposure to economic violence				
No	9284(81.0)	3897(57.6)	13181(72.3)	
Yes	2181(19.0)	2863(42.4)	5044(27.7)	0.000 ^a
Exposure to verbal violence				
No	8934(76.2)	1572(23.2)	10506(56.7)	
Yes	2796(23.8)	5216(76.8)	8012(43.3)	0.000 ^a
Exposure to sexual violence				
No	11276(96.2)	4621(68.1)	15897(85.9)	
Yes	451(3.8)	2163(31.9)	2614(14.1)	0.000 ^a

^ap<0.01

2. Estimation of models

To determine the factors affecting the status of exposure to physical violence by the women who participated in the study, binary logistic regression and binary probit regression models were performed. The estimated model results are given in Tables 3 and Table 4.

In Table 3, the variables of survey year, region, education level, individual income, marital status, health status, the number of children, and being exposed to violence from first degree relatives are seen to be significant.

Table 3: Estimated model outcomes of socio-demographic and economic factors that are effective in the case of physical violence of women

Variables	Binary Logistic Regression				Binary Probit Regression			
	β	Std. Error	95% CI		β	Std. Error	95% CI	
			Lower	Upper			Lower	Upper
Survey year (reference category: 2008)								
2014	-0.156 ^a	0.050	-0.253	-0.058	-0.090 ^a	0.029	-0.146	-0.034
Region (reference category: south)								
West	-0.228 ^a	0.080	-0.383	-0.070	-0.131 ^a	0.046	-0.220	-0.041
Central	0.232 ^a	0.080	0.076	0.390	0.134 ^a	0.047	0.043	0.224
North	-0.170 ^c	0.094	-0.354	0.014	-0.097 ^c	0.053	-0.201	0.008
East	-0.004	0.084	-0.170	0.161	-0.002	0.049	-0.098	0.091
Place of residence (reference category: rural)								
Urban	-0.050	0.052	-0.152	0.053	-0.028	0.030	-0.087	0.031
Age (reference category: 55 +)								
15-24	-0.117	0.130	-0.373	0.140	-0.064	0.076	-0.211	0.083
25-34	-0.070	0.098	-0.260	0.121	-0.036	0.057	-0.146	0.074
35-44	-0.091	0.092	-0.273	0.090	-0.049	0.054	-0.154	0.058
45-54	-0.098	0.092	-0.280	0.084	-0.050	0.053	-0.156	0.056
Education level (reference category: primary school)								
Illiterate	0.260 ^a	0.079	0.106	0.413	0.151 ^a	0.044	0.063	0.240
Secondary school	0.021	0.090	-0.156	0.200	0.016	0.051	-0.087	0.117
High school	-0.294 ^a	0.082	-0.458	-0.131	-0.172 ^a	0.047	-0.266	-0.080
University	-0.501 ^a	0.124	-0.746	-0.258	-0.298 ^a	0.070	-0.434	-0.160
Existence of individual income (reference category: none)								
Yes	0.197 ^a	0.068	0.064	0.330	0.112 ^a	0.039	0.038	0.189
Marital status (reference category: widow/divorced/living separately)								
Single	-1.127 ^a	0.206	-1.530	-0.723	-0.616 ^a	0.114	-0.840	-0.390
Married	-0.234 ^b	0.102	-0.436	-0.034	-0.139 ^b	0.059	-0.253	-0.022
Health status (reference category: poor/terrible)								
Very good/good	-0.416 ^a	0.078	-0.568	-0.263	-0.239 ^a	0.044	-0.326	-0.151
Moderate	-0.133 ^c	0.073	-0.277	0.010	-0.078 ^c	0.042	-0.162	0.005
The number of children (reference category: no children)								
One children	0.280 ^b	0.117	0.051	0.508	0.168 ^b	0.067	0.037	0.298
Two or more	0.568 ^a	0.108	0.358	0.778	0.340 ^a	0.061	0.220	0.460
Exposed to violence from first degree relative (reference category: no)								
Yes	0.294 ^a	0.079	0.140	0.449	0.173 ^a	0.044	0.086	0.261

^ap<.01; ^bp<.05; ^cp<.10

In Table 4, it may be seen that the following variables seem to be significant: the husband/intimate partner's education level, alcohol usage, gambling, drug use, and infidelity and being subjected to husband/intimate partner's economic violence, verbal violence, and sexual violence.

Table 4: Predicted model outcomes for husband / partner related factors that are effective when women experience physical violence

Variables	Binary Logistic Regression				Binary Probit Regression			
	β	Std. Error	95% CI		β	Std. Error	95% CI	
			Lower	Upper			Lower	Upper
Education level (reference category: primary school)								
Illiterate	0.031	0.130	-0.224	0.289	-0.016	0.074	-0.130	0.162
Secondary school	-0.210 ^a	0.076	-0.359	-0.061	-0.116	0.043 ^a	-0.200	-0.030
High school	-0.284 ^a	0.070	-0.420	-0.149	-0.166	0.039 ^a	-0.243	-0.088
University	-0.457 ^a	0.100	-0.653	-0.259	-0.260	0.056 ^a	-0.371	-0.148
Job status (reference category: public employment)								
Not working	0.037	0.093	-0.147	0.219	0.017	0.053	-0.089	0.120
Private employment	-0.004	0.077	-0.153	0.146	-0.009	0.043	-0.093	0.077
Alcohol consumption (reference category: no)								
Yes	0.292 ^a	0.064	0.168	0.419	0.171	0.037 ^a	0.100	0.243
Gambling status (referans: no)								

Yes	0.324 ^c	0.173	-0.016	0.663	0.180	0.010 ^c	-0.013	0.376
Drug use (reference category: no)								
Yes	0.898 ^b	0.424	0.066	1.730	0.496	0.237 ^b	0.330	0.960
Infidelity (referans: no)								
Yes	0.651 ^a	0.086	0.481	0.822	0.371	0.050 ^a	0.274	0.470
Exposure to economic violence (reference category: no)								
Yes	0.584 ^a	0.055	0.477	0.693	0.334	0.032 ^a	0.271	0.398
Exposure to verbal violence (reference category: no)								
Yes	1.912 ^a	0.050	1.813	2.010	1.133	0.029 ^a	1.077	1.191
Exposure to sexual violence (reference category: no)								
Yes	1.447 ^a	0.082	1.283	1.609	0.837	0.047 ^a	0.747	0.928
Constant	-1.646 ^a	0.200	-2.037	-1.254	-0.981	0.114 ^a	-1.207	-0.758

^ap<.01; ^bp<.05; ^cp<.10

In the model, the problem of whether there is multicollinearity between the independent variables was also tested. It is thought that those a having variance inflation factor (VIF) value of five and above cause moderate multicollinearity while having a VIF of 10 and above cause high levels of multicollinearity (Alkan et al., 2020; Alkan & Abar, 2020). According to the VIF results given in Tables 5 and Table 6, there were no variables that lead to multicollinearity problems between the variables.

Table 5: Marginal effects of socio-demographic and economic factors affecting women's exposure to physical violence

Variables	Binary Logistic Regression		Binary Probit Regression		VIF
	Average Elasticity (%)	Std. Error	Average Elasticity (%)	Std. Error	
Survey year (reference category: 2008)					
2014	-10.09 ^a	0.032	-11.13 ^a	0.036	1.04
Region (reference category: south)					
West	-14.84 ^a	0.051	-16.37 ^a	0.057	3.09
Central	14.43 ^a	0.050	15.51 ^a	0.054	2.81
North	-11.06 ^c	0.061	-11.89 ^c	0.067	2.19
East	-0.27	0.053	-0.34	0.059	3.2
Place of residence (reference category: rural)					
Urban	-3.18	0.033	-3.35	0.037	1.12
Age (reference category: 55 +)					
15-24	-7.47	0.084	-7.84	0.091	3.67
25-34	-4.41	0.061	-4.29	0.068	4.37
35-44	-5.85	0.060	-5.88	0.066	3.75
45-54	-6.27	0.060	-6.08	0.066	3.05
Education (reference category: primary school)					
Illiterate	16.08 ^a	0.048	17.35 ^a	0.050	1.37
Secondary school	1.40	0.058	1.81	0.061	1.2
High school	-19.45 ^a	0.056	-21.63 ^a	0.060	1.49
University	-33.84 ^a	0.088	-38.61 ^a	0.097	1.95
Existence of individual income (reference category: none)					
Yes	12.54 ^a	0.042	13.65 ^a	0.046	1.24
Marital status (reference category: widow/divorced/living separately)					
Single	-77.35 ^a	0.150	-81.44 ^a	0.164	3,11
Married	-14.66 ^b	0.062	-15.96 ^b	0.066	2.24
Health status (reference category: poor/terrible)					
Very good/good	-26.68 ^a	0.049	-28.89 ^a	0.051	2.65
Moderate	-8.278 ^c	0.046	-8.90 ^c	0.048	2.37
The number of children (reference category: no children)					
One children	19.27 ^b	0.081	22.46 ^b	0.090	2.82
Two or more	38.01 ^a	0.074	43.66 ^a	0.083	3.78
Exposed to violence from first degree relative (reference category: no)					
Yes	18.52 ^a	0.049	20.51 ^a	0.051	1.04

^ap<.01; ^bp<.05; ^cp<.10; VIF: Variance Inflation Factor

The marginal effects of socio-demographic and economic factors affecting women's exposure to physical violence are given in Tables 5 and 6. According to the binary logistics and probit regression models given in Table 5, the probability

of a woman who participated in the study in 2014 being exposed to physical violence by her husband/intimate partner is less than for a woman who participated in the study in 2008, at rates of 10.09% and 11.13%, respectively.

Sampling was carried out to provide estimates at the level of Turkey, country-wide, urban/rural, 12 regions and 5 regions (west, east, north, south and central) while "Research on Domestic Violence against Women in Turkey" was conducted. Regional and place of residence variables have been included in the model, highlighting regional differences in violence against women. In Table 5, it may be seen that the probability of a woman residing in the western region to be exposed to physical violence by her husband/intimate partner is 14.84% and 16.37% less than for a woman residing in the southern region whereas the probability of a woman residing in the central region to be exposed to physical violence by her husband/intimate partner is 14.43% and 15.51% more than for a woman residing in the southern region. When the education variable is analyzed, it may be seen that the probability of a woman who has never been to school to be exposed to physical violence by her husband/intimate partner is 16.08% and 17.35% more than for a woman who is a primary school graduate while the probability of a woman who graduated from university to be exposed to physical violence by her husband/intimate partner is 33.84% and 38.61% less than for a woman who graduated from primary school.

It may be seen that the probability of a woman with an individual income to be subjected to physical violence by her husband/intimate partner is 12.54% and 13.65% more than for a woman without an individual income, respectively. The probability of a woman who has never married to experience physical violence by a husband/intimate partner is 77.35% and 81.44% less than for a woman whose husband is dead or who is divorced or separated. Additionally, the probability of a married woman to be subjected to physical violence by her husband/intimate partner is 14.66% and 15.96% less than a woman who is a widow or is divorced or living separately.

Table 6 shows goodness of fit measures of models and marginal effects of the factors of the husband/intimate partner that affect women's exposure to physical violence.

Table 6: Marginal effects of factors related to husband/intimate partner affecting women's exposure to physical violence

Variables	Binary Logistic Regression		Binary Probit Regression		VIF
	Average Elasticity (%)	Std. Error	Average Elasticity (%)	Std. Error	
Education level (reference category: primary school)					
Illiterate	1.98 ^c	0.080	1.837	0.086	1.16
Secondary school	-13.39 ^a	0.049	-13.81 ^a	0.052	1.23
High school	-18.32 ^a	0.044	-20.07 ^a	0.049	1.53
University	-29.93 ^a	0.068	-32.35 ^a	0.073	2.11
Job status (reference category: public employment)					
Not working	2,32	0.060	1.987	0.066	2.15
Private employment	-0.27	0.050	-1.048	0.053	2.2
Alcohol consumption (reference category: no)					
Yes	18.55 ^a	0.040	20.57 ^a	0.042	1.17
Gambling status (reference category: no)					
Yes	20.18 ^c	0.103	21.14 ^c	0.110	1.07
Drug use (reference category: no)					
Yes	51.95 ^a	0.217	52.97 ^a	0.216	1.03
Infidelity (reference category: no)					
Yes	39.43 ^a	0.050	41.66 ^a	0.051	1.15
Exposure to economic violence (reference category: no)					
Yes	36.75 ^a	0.033	39.08 ^a	0.037	1.16
Exposure to verbal violence (reference category: no)					
Yes	121.83 ^a	0.033	127.35 ^a	0.036	1.25
Exposure to sexual violence (reference category: no)					
Yes	80.49 ^a	0.039	83.68 ^a	0.038	1.23
Pseudo R ²	0.315		0.315		
Cox-Snell/M	0.339		0.34		
AIC	16470.74		16455.551		
BIC	16751.759		16736.57		
Log-likelihood	-8199.37		-8191.775		
Classification performance	78.94		78.96		
P-value	0.000		0.000		
N	18144		18144		

^ap<.01; ^bp<.05; ^cp<.10; VIF: Variance Inflation Factor

According to binary logistics and probit regression models, the likelihood of a woman whose husband/intimate partner has a university graduate to experience physical violence is 29.93% and 32.35% less, respectively, than a woman whose husband/intimate partner is a primary school graduate. In Table 6, it may be seen that probability of a woman whose husband/intimate partner is a primary school graduate to experience physical violence is 13.39% and 13.81% less, respectively, than a woman whose husband/intimate partner is not even a primary school graduate.

It is seen that the probability of a woman who is cheated on by her husband/intimate partner to experience physical violence is 39.43% and 41.66% more, respectively than for a woman whose husband is faithful. According to Table 6, a woman who is exposed to the economic violence of her husband/intimate partner is 36.75% and 39.08% more likely to experience physical violence, respectively. It is seen that the probability of a woman who is subjected to her husband/intimate partner's verbal violence to experience physical violence is 121.83% and 127.35% more, respectively. Similarly, the probability of a woman who is subjected to her husband/intimate partner's sexual violence to experience physical violence is 80.49% and 83.68% more, respectively.

DISCUSSION

Violence against women, which is an increasing public health problem around the world, is associated with psychosocial, cultural, mental, and economic factors. In this study, factors affecting the exposure of women in Turkey, 15 years old and older, to physical violence by their husband/intimate partner were identified. In the study, the socio-demographic and economic characteristics of women and to what extent the various risk factors related to husband/intimate partners were critical for the women's exposure to physical violence.

It was determined in the study that the educational status of women was critical for exposure to physical violence. It was concluded in the study that the probability of exposure to physical violence decreased as the level of education increased. Similar result was obtained in other study ([Castro et al., 2017](#)). One of the most important risk factors in violence against women was the low education level of the women ([Hossain & Khan, 2015](#)). As the education level of women decreased, the rates of exposure to violence increased ([Sen & Bolsoy, 2017](#)). While one out of every five women with a higher education level was subjected to violence, one out of every two women with a lower education level was subjected to violence. It was observed that educated women have more resources to recognize and end a malignant relationship ([Flake, 2005](#)). Increasing the education levels of women in general will improve their skills, employability, and, therefore, socio-economic levels. Thus, it will lessen the risks of exposure to violence ([Lee et al., 2015](#)).

In the study, it was found that the educational status of the husband/intimate partner was critical for women's exposure to physical violence. In the study, it was concluded that the probability of a woman being subjected to physical violence decreases as the education level of her husband/intimate partner increases. Similar result has been obtained in other study ([Naçar et al., 2009](#)). In a study performed in Ghana, the high education level of husbands/intimate partners was stated to have a protective effect against violence ([Adjah & Agbemafle, 2016](#)). ([Adjah & Agbemafle, 2016](#)). In research carried out in India, it was indicated that the high level of education of both the woman and her husband/intimate partner could be an important factor in diminishing violence against women ([Kumar et al., 2005](#)).

In the study, it was determined that women who have an individual income are more likely to be subjected to physical violence. Similar result was obtained in other study ([Kabir et al., 2019](#)). Some studies determined that women with individual incomes are less likely to be exposed to physical violence than women without an income ([Kocacik et al., 2007](#); [Panda & Agarwal, 2005](#)). In these studies, the low probability of women being subjected to physical violence was explained by being economically independent.

Regional and place of residence variables have been included in the model, highlighting regional differences in violence against women. It was determined in the study that the region where the women reside is critical in women being subjected to physical violence. It was revealed in studies performed in Turkey that the frequency of physical violence against women varied according to the geographic regions they lived in ([Abramsky et al., 2011](#)).

It was discovered in the study that the women whose husband/intimate partner used alcohol were subject to more physical violence. There is study in the literature where similar result was obtained ([Adjah & Agbemafle, 2016](#)). One study indicated that the women whose husband/intimate partner used alcohol were subjected to physical violence approximately two times more than women whose husband/intimate partner did not use alcohol ([Paul, 2016](#)).

It was determined in this study that women whose husbands/intimate partners gambled experienced more physical violence. Similar result was obtained in other study ([Paul, 2016](#)). In the study, women whose husbands/intimate partners used drugs were discovered to have been subjected to more physical violence. Similar result was obtained in other study ([Rubenstein et al., 2020](#)).

It was determined in the study that the variable of the number of children was critical for the physical violence against women. It was concluded that, as the number of children increased, so did the likelihood of physical violence. Approximate result was obtained in other study ([Awang & Hariharan, 2011](#)). In another study carried out in Turkey, it

was discovered that women who are subjected to physical violence the least were those without a child, and in families with seven to eight children, physical violence was found to have increased 6.5 times ([Kocacik et al., 2007](#)).

One of the variables that was critical in women being subjected to physical violence was health status. It was concluded that the probability of physical violence decreased as the health status of women improved. Similar result was shown in other study ([Mathur et al., 2018](#)).

One of the attention-grabbing results of the study is that marital status was critical for women being subjected to physical violence. It was discovered that the likelihood of being subjected to physical violence by their husbands/intimate partners of never married and married women was less than for those who were widowed, divorced, or living separately. In a study conducted in Cyprus, married women were found to have the lowest risk factor for physical violence ([Mavrikiou et al., 2014](#)). In a study conducted in Peru, it was determined that women keeping company with a man but not married to him experienced more physical abuse than married women ([Castro et al., 2017](#)).

Women being exposed to violence from first degree relatives was a determinant for being exposed to more physical violence. Approximate result was attained in other studies ([Gebara et al., 2019](#)). It was also determined that women who were cheated on by their husbands/intimate partners were more likely to experience physical violence. Other studies reflect a similar result ([Abramsky et al., 2011](#)).

Other types of violence were also critical for women being subjected to physical violence. It was determined that women who were subjected to economic violence from their husbands/intimate partners experienced more physical violence. Economic violence is at the core of many types of violence that women are subjected to. Economic violence is considered a form of domestic violence that affects women's lives and livelihoods ([Ayuwat & Sananikone, 2018](#)). It is also considered economic violence that the income earned by women is usurped, misused or consumed by their husbands ([Adams et al., 2008](#)). When women are economically subjugated, they are exposed, to a large extent, to violence physically, psychologically, sexually, and economically ([Gökkaya, 2011](#)). In one study, it was found that the husband/intimate partner who perceives the woman to be earning more money than him as a threat resorts to violence to undermine this perceived threat ([İçli, 1994](#)).

CONCLUSION

In this study, women, especially those with a low education level, whose husbands/intimate partners drank alcohol, gambled, or used drugs; who were subjected to physical violence from their first degree relatives; whose husbands/intimate partners were unfaithful; who had an individual income; who had a high number of children; who were subjected to economic, verbal, and sexual violence from their husbands/intimate partners; and who had a poor health status were in the risk group in terms of experiencing physical violence from their husbands/intimate partners. These results are significant in terms of being a source of information for establishing policies and programs for the prevention of violence against women. At the same time, this study can be a significant guide in determining the priority groups in the planned initiatives.

It is very important for the institutions and organizations who are active in this issue to take joint action in the prevention of physical violence against women by a husband/intimate partner, which is accepted as a multi-dimensional and complex phenomenon.

LIMITATIONS AND STUDY FORWARD

Since this variables required for statistical analysis consist of variables that exist in the dataset, secondary data is the data used in the study. Furthermore, because the information is cross-sectional, it is impossible to deduce the exact causal relationship between physical violence against women. In this study, the extent of physical violence of the husband / partner from the types of domestic violence was discussed. The dimensions of sexual violence, psychological violence and economic violence can also be studied in future studies. Consequently, violence against women can be investigated by other people in the family.

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AUTHORS' CONTRIBUTIONS

ÖA conceived and led the design and development of the study proposal. ÖA and ŞÜ supervised data collection, led the data analysis and drafting the manuscript. ŞÜ made substantial contributions to the conceptualization and design of the study, data interpretations and writing the manuscript. All authors read and approved the final version of the manuscript.

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