

Assessment of domestic violence against women and its impact on mental health: a population-based cross-sectional study



Kadına yönelik aile içi şiddetin ruh sağlığı üzerindeki etkisinin değerlendirilmesi: toplum tabanlı kesitsel bir çalışma

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Abstract

This study investigates the prevalence and predictors of domestic violence against women (VAW), with a particular focus on cultural factors that commonly encountered locally. It also examines the impact of VAW and these cultural factors on women's mental health. The cross-sectional study was conducted with the 659 women aged 15-49 years residing in the city center of Ağrı, between February 15-March 15, 2024. Domestic Violence Against Women Scale and the Depression Anxiety and Stress Scale-21 were used to measure VAW and mental health outcomes, respectively. Pearson correlation analyses used as preliminary analysis, and hierarchical linear regression analyses were used to identify predictors of VAW and mental health outcomes. The findings revealed 23.5% of women self-reported exposure to physical violence, and 31.4% of participants reported experiencing non-physical forms of domestic violence. Hierarchical linear regression analyses revealed that arranged marriage ($\beta=0.181$), and living in an extended family ($\beta=0.097$) predicted VAW among cultural factors. Additionally, low husband's education level ($\beta=0.230$), low family monthly income ($\beta=0.105$), and history of psychiatric illness ($\beta=0.330$) individual and familial factors that predicted VAW. Analyses regarding predictors of mental health outcomes revealed that domestic VAW, history of psychiatric illness and age difference with spouse strongly predicted women's all mental health outcomes. Additionally, high husbands' age predicted anxiety, and high husbands' education level predicted depression, stress, and total DASS scores. The finding of this study underscore efforts to reduce violence against women and ensure mental well-being of women requires a comprehensive approach that considers the individual, familial, and cultural factors.

Keywords: Domestic violence, women, mental health, culture, Türkiye

Özet

Bu çalışmada, özellikle yerel olarak yaygın olarak karşılaşılan kültürel faktörlere odaklanarak, kadına yönelik aile içi şiddetin (KYŞ) yaygınlığı ve belirleyicileri araştırılmıştır. Ayrıca, KYŞ'nin ve bu kültürel faktörlerin kadınların ruh sağlığı üzerindeki etkisi incelenmiştir. Kesitsel tipteki çalışma, 15 Şubat-15 Mart 2024 tarihleri arasında Ağrı il merkezinde ikamet eden 15-49 yaş aralığındaki 659 kadınla yürütülmüştür. KYŞ ve ruh sağlığı semptomlarını ölçmek için sırasıyla Kadına Yönelik Aile İçi Şiddet Ölçeği ve Depresyon Anksiyete ve Stres Ölçeği-21 kullanılmıştır. Ön analiz olarak Pearson korelasyon analizleri kullanılmış, KYŞ ve ruh sağlığı semptomlarının yordayıcılarını belirlemek için hiyerarşik doğrusal regresyon analizleri kullanılmıştır. Bulgular, kadınların %23,5'inin fiziksel şiddete maruz kaldığını, %31,4'ünün ise fiziksel olmayan türde aile içi şiddet yaşadığını ortaya koymuştur. Hiyerarşik doğrusal regresyon analizleri, kültürel faktörler arasında görücü usulü ile evlilik ($\beta=0,181$) ve geniş ailede yaşamının ($\beta=0,097$) KYŞ'yi belirlediğini ortaya koymuştur. Ayrıca, eşin eğitim düzeyinin düşük olması ($\beta=-0,230$), ailenin aylık gelirinin düşük olması ($\beta=-0,105$) ve psikiyatrik hastalık öyküsünün olması ($\beta=0,330$) KYŞ'yi öngören bireysel ve ailevi faktörler olarak bulunmuştur. Ruh sağlığı sonuçlarının öngörücülerine ilişkin analizler, aile içi KYŞ'nin, psikiyatrik hastalık öyküsünün ve eşle yaş farkının kadınların tüm ruh sağlığı sonuçlarını (depresyon, anksiyete, stres) güçlü bir şekilde belirlediğini ortaya koydu. Ayrıca, eş yaşının yüksek olması kaygıyı, eş eğitim düzeyinin yüksek olması ise depresyon, stres ve toplam DASS puanlarını belirledi. Bu çalışmanın bulguları, KYŞ'yi azaltma ve kadınların ruhsal iyilik hallerinin sağlama çabalarının bireysel, ailevi ve kültürel faktörleri dikkate alan kapsamlı bir yaklaşım gerektirdiğini vurgulamaktadır.

Anahtar Kelimeler: Aile içi şiddet, kadın, ruh sağlığı, kültür, Türkiye

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Introduction

Violence against women (VAW) is a critical issue that affects societies worldwide. It is not only a grave human rights violation but also poses a significant public health challenge. The consequences of such violence are far-reaching, impacting the physical and mental well-being of women as well as affecting children and families. This violence can take many forms, including physical, sexual, and psychological abuse by intimate partners, family members, acquaintances, or even strangers. However, violence by a spouse or intimate partner is the most prevalent form of VAW globally (1). It is estimated that approximately 39% of femicides are committed by spouses or intimate partners (2). World Health Organization reported that nearly one-third of women worldwide experience this issue, and highlighting the urgent need for action (1).

The prevalence of VAW varies significantly depending on the location and culture. Studies conducted on different communities have shown that the prevalence of VAW ranges from 27% to 83%, attributed to cultural differences (3). A recent comprehensive meta-analysis indicated that globally, 27% of women/girls aged 15-49 years have experienced violence (4). Another meta-analysis focusing on low and lower-middle-income countries has revealed that 39% of women aged 15-49 years have experienced physical violence at some point in their lives (5). A systematic review in Türkiye reported that the prevalence of women experiencing violence at any point in their lives ranged from 14.4% to 93% (6). Another review, covering studies from 2016 to 2021, reported that the prevalence of VAW varied between 14.1% and 43% (7). Both studies showed significant variations in the prevalence of VAW. The heterogeneity is largely attributed to

conceptual or methodological differences such as the quality of the study, the type of measurement tool used, the sampled group of women (e.g., those who have been in a relationship before, only currently in a relationship, or all women), the included age group, and whether current or previous partners were included. Additionally, regional and cultural factors are also reported to play a role in these differences (4). According to the last national study, approximately 38% of women aged 15-59 years in Türkiye have been subjected to physical or sexual violence by their spouses or partners at some point in their lives (8). Identifying effective public health interventions to prevent VAW requires understanding individual, familial, and cultural risk factors. Numerous studies in Türkiye have shown that younger age (9), low level of education (9, 10), the partner's low educational attainment (9-11), low income (10-12), and unemployment (12, 13) were socioeconomic factors linked to VAW. However, studies examining cultural factors like early marriage, living family type, marriage type, and age differences between spouses were limited, and existing studies investigated one or two of these variables; not all of them investigated together. A study conducted in Isparta investigated early marriage and age differences with spouse, and no significant connection were found between these variables and VAW (11). In contrast, Basar and Demirci found that women living in extended families had higher domestic violence than women living in nuclear families (14). A study conducted in the Eastern Anatolia Region identified early marriage increased VAW (15).

VAW has far-reaching consequences beyond direct physical harm to women's health. One of the most significant and long-lasting impacts of violence is observed in the realm of mental health

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(16). Numerous studies have found that exposure to domestic VAW was associated with common mental challenges like depression, anxiety, and stress (16-18). A recent meta-analysis conducted in low and middle-income countries found that women who experienced partner violence had approximately twice the risk of depression compared to those who did not (18). However, studies have also shown that not every individual exposed to domestic violence will develop psychological difficulties (19). Therefore, it is crucial to investigate the effects of other risk and protective factors on mental health in conjunction with violence.

This study aimed to determine the prevalence of domestic VAW aged 15-49 years and the associated factors, particularly cultural factors that are frequently encountered locally, including early marriage, age differences with the spouse, living in extended families, and arranged marriage. Additionally, the study investigated the effects of domestic violence and these cultural factors on common mental health disorders (depression, anxiety, stress). The impact of one or a few of these variables on domestic VAW was investigated in the literature. However, to our knowledge, no study has examined all four variables together and their effects on mental health. Therefore, the findings of this study will fill this gap in the literature and provide valuable insights for developing effective policies and interventions to combat violence against women and enhance their mental well-being.

Material and Method

Participants and Procedure

This cross-sectional study was conducted with the married women aged 15-49 years living in the city center of Ağrı located in Türkiye, between February 15–March 15, 2024. The sample size was determined using a formula for single population proportion (20). A recent study conducted by Akalin and Ayhan in Türkiye reported prevalence of domestic violence among women was 35.5% (13). Based on prevalence of this study, assuming 5% deviation and 95% power sample size was calculated to be 354. Considering the data losses, and to increase the representative power of the

population, the study was performed with 659 women. Unfortunately, due to various challenges such as financial constraints, transportation issues, and difficulties in obtaining data, a random sample of the city could not be obtained. However, we made efforts to ensure the participation of women from diverse socio-economic backgrounds. In order to achieve this, seven Family Health Centers in Ağrı were included in the study. Data collection was carried out through face-to-face surveys conducted by four trained interviewers. These interviewers visited the Family Health Centers at specific intervals, distributed questionnaires to women who visited the centers for any reason and willingly participated in the study, and then collected the completed questionnaires under observation. Additionally, for illiterate women, the interviewers read out the questions and recorded their responses. The study received ethical approval from the Research Ethics Committee at Ağrı İbrahim Çeçen University (E-95531838-050.99-89769). Additionally, written permission was secured from the Governorate of Ağrı Provincial Health Directorate to conduct the research (E-68990128-799-228395859). Additionally, at the start of the study, participants were provided with an explanatory consent form outlining the study's aim, highlighting the voluntary aspect of involvement, and notifying them of their right to withdraw whenever they wished. After obtaining verbal consent, the participants were given the questionnaire.

Measures

Socio-demographic information form

This form is designed to gather information regarding women and their family's sociodemographic characteristics such as age, husband's age, education level, husband's education level, age at marriage, type of marriage, family income level, family type, family size etc. Additionally, the form included characteristics related to domestic VAW as a self-report, such as being exposed to physical violence, being exposed to other types of violence other than physical violence, and who subjected the violence etc. Lastly, the form also included some factors related to mental health, such as history of mental illness, family history of mental illness, and need for mental health services.

The Domestic Violence Against Women Scale (DVAW)

The Domestic Violence Against Women (DVAW) scale, developed by Kılıç in 1999, is designed to assess domestic violence committed by husbands against women. It comprises 50 items across five sub-dimensions: physical, emotional, verbal, economic, and sexual violence. Responses are rated on a Likert-type scale from 1 to 3, with options of “never,” “sometimes,” and “always.” The total score obtained from the scale indicates the level of domestic violence experienced by women. Scores range from 50 to 150, with higher scores indicating greater levels of violence experienced. The scale has demonstrated strong reliability, with a Cronbach alpha coefficient of 0.94 for all items (21), and in the referenced study, it was calculated as 0.95.

The Depression Anxiety and Stress Scale (DASS-21)

The DASS-21 is a widely used tool for assessing symptoms of depression, anxiety, and stress. Developed by Lovibond and Lovibond in 1995, the scale consists of 21 items with a 4-point Likert-type scoring (0=never, 3=always). The scale includes three sub-dimensions: depression, anxiety, and stress, with 7 items for each scale. The result of the assessment is multiplied by two to standardize it with DASS-42. The scores for depression, anxiety, and stress are categorized as follows; DASS- D: normal (0–9), mild depression (10–12), moderate depression (13–20), severe depression (21–27), extremely severe depression (28–42); DASS-A: normal (0–6), mild anxiety (7–9), moderate anxiety (10–14), severe anxiety (15–19), extremely severe anxiety (20–42); and DASS- S: normal (0–10), mild stress (11–18), moderate stress (19–26), severe stress (27–34), extremely severe stress (35–42) (22). The Turkish adaptation by Sarıçam et al. (2018) was employed in this study. Cronbach's alpha internal consistency coefficients was found 0.87, 0.85, and 0.81, and test-retest reliability coefficients was found 0.68, 0.66, and 0.61 for depression, anxiety and stress respectively (23). In this study, the internal consistency coefficients for the depression, anxiety, and stress were recorded as 0.89, 0.85, and 0.82, respectively.

Statistical analysis

The SPSS software, version 25.0, was utilized for data analysis. Skewness, kurtosis values, and histogram charts were used to assess the normal distribution of the data. Firstly, Pearson correlation coefficient analyses were utilized as preliminary analysis to understand the relationships between the domestic VAW score, total DASS-21 score, DASS-21 sub dimensions' scores (depression, anxiety and stress) and independent variables including age, husbands' age, education level, husbands' education level, having children, family monthly income level, age differences with husband, age at marriage, type of marriage, and type of family. Variables with a significant p-value ($p < 0.05$) in correlation analyses for each dependent variable underwent further examination using hierarchical linear regression analyses to determine the predictors of domestic VAW, DASS-21, DASS-D, DASS-A, and DASS-S separately.

To determine the determinants of domestic VAW, independent variables were divided into two groups: cultural variables and individual-familial variables. In the first step of the hierarchical multiple regression analyses, cultural variables (Age difference with husband's, type of marriage, age at marriage, and type of family) included in the model. In the second step, individual-familial variables (education level, husbands' age, husbands' education level, family monthly income, and history of psychiatric disorder) were added to the model. Although the woman's age was found to be significant in the correlation analysis, it was not included in the model because it showed a high correlation with the husband's age (the husband's age was preferred because it had a higher level of significance, $p < 0.001$). Additionally, determinants of total DASS-21 score, and DASS-21 sub dimensions' scores were also conducted with two steps separately. In the first step of models all variables significant in correlations analysis except from domestic VAW included in the models. In the second step, the domestic VAW scale score was added to the models.

The analysis of independent variables revealed that the tolerance and variance inflation factor (VIF) values were within the expected range

across all models. This indicates that there is no multicollinearity present among the independent variables. Additionally, the Mahalanobis' distance test revealed that there were no multivariate outliers at the significance level of $p < 0.001$. The significance level for all analyses was established at 0.05.

Results

General characteristics of the study population

The mean age was 33.95 ± 7.7 years, and most of the women had secondary school or lower education level (%60.4). Regarding monthly family income, 61.2% of participants reported medium level, and 31.6% reported high levels. The age difference

between the women and their spouses varied from 0 to 21 years, with an average difference of 4.84 years. Additionally, approximately 10.9% of the women lived with their spouses' parents in extended families (Table 1).

The data presented in Table 2 illustrates the prevalence of depression, anxiety, and stress among the women. According to the DASS-21 scale cutoff points, it was found that 41.1% of the participants experienced various levels of depression, 45.2% of the participants exhibited various levels of anxiety, and 44.1% of the participants showed various levels of stress. The study population's mean score for the total DASS-21 was calculated to be 30.5 (SD=26.7).

Table 1: Sociodemographic characteristic of the participants

Variables	Category	n	%
Education level (n=656)	Illiterate	105	16.0
	Literate with no formal education	68	10.4
	Primary/secondary school	223	34.0
	High school	127	19.3
	University	133	20.3
Husband's education level (n=656)	Illiterate	17	2.6
	Literate with no formal education	32	4.9
	Primary/secondary school	254	38.7
	High school	201	30.6
	University	152	23.2
Having children (n=655)	Yes	585	89.3
	No	70	10.7
Number of children (n=580)	1	122	21.0
	2	113	19.5
	3	121	20.9
	4 and more	224	38.6
Self-reported family monthly income level (n=655)	Very low	38	5.8
	Medium	401	61.2
	High	207	31.6
	Very high	9	1.4
Type of marriage (n=642)	Arranged marriage	415	64.6
	Marriage with love	227	35.4
Age at marriage (n=658)	<18 years	121	18.4
	≥18 years	537	81.6
Type of family (n=657)	Nuclear	576	87.7
	Extended	72	10.9
	Single parent	9	1.4
History of mental illness (n=653)	Yes	27	4.1
	No	626	95.9

Self-reported mental health (n=653)	Very good	45	6.9
	Good	275	42.1
	Average	272	41.6
	Bad	50	7.7
	Very bad	11	1.7
Previously need any psychological help (n=652)	Yes	110	16.9
	No	542	83.1
Variables	Mean	SD	Range
Age (years)	33.95	7.72	18-49
Husbands' age (years)	38.70	9.08	18-68
Age at marriage (years)	20.61	3.78	14-36
Age difference with husband (years)	4.84	3.57	0-21
Number of household	5.1	2.19	2-15

SD: Standard deviation

Table 2: Prevalence of depression, anxiety and stress among participants (DASS-21)

Severity of disorders	Depression		Anxiety		Stress	
	n	%	n	%	n	%
Normal	368	58.9	347	54.8	353	55.9
Mild	43	6.9	34	5.4	146	23.1
Moderate	105	16.8	89	14.1	86	13.6
Severe	54	8.6	57	9.0	36	5.7
Extremely severe	55	8.8	106	16.7	11	1.7
Mean (SD)	9.9 (10.4)		9.4 (9.2)		11.4 (9.3)	
Total DASS-21 score, Mean (SD)	30.5 (26.7)					

SD: Standard deviation; DASS-21: The Depression Anxiety and Stress Scale

Table 3 presents the women's self-report for exposure to domestic violence, the source of violence, and the total and subcategories of the domestic VAW scale scores. The findings revealed approximately 23.5% of women self-reported exposure to physical domestic violence after married. The most common perpetrators were

husbands (50.2%), mothers-in-law (24.3%), and sisters-in-law (12.4%). Furthermore, nearly 31.4% of participants reported experiencing non-physical forms of violence. The respondent's mean score for the total domestic VAW scale was calculated to be 67.6 (± 15.6).

Table 3: Presence of domestic violence among women

Variables	Category	n	%
Physical violence (n=651)	Yes	153	23.5
	No	498	76.5
Physical violence source (n=251)*	Husband	126	50.2
	Mother-in-law	61	24.3
	Sister-in-law	31	12.4
	Father-in-law	18	7.1
	Brother-in-law	15	6.0
Any other violence except from physical violence (n=647)	Yes	203	31.4
	No	444	68.6

Experiencing violence types (n=329)*	Verbal violence	170	51.7
	Psychological violence	114	34.6
	Economic violence	27	8.2
	Sexual violence	18	5.5
Variable	Category	Mean (SD)	Range
Domestic Violence Against Women Scale	Physical violence	11.2 (2.7)	10-30
	Emotional violence	16.0 (4.7)	10-30
	Verbal violence	12.0 (2.8)	10-28
	Economic violence	15.1 (3.5)	10-29
	Sexual violence	13.6 (3.6)	10-29
	Total	67.6 (15.6)	50-136

* Can choose more than one option, Percentages were calculated based on the total number of responses.

Predictors of Domestic Violence Against Women

Pearson correlation findings showed that age ($r=0.098$, $p<0.05$), husband's age ($r=0.145$, $p<0.001$), and age difference with husband ($r=0.158$, $p<0.05$) were positively correlated with the domestic VAW score, while the woman's education level ($r=-0.170$, $p<0.001$), husband's education level ($r=-0.296$, $p<0.001$), and family income level

($r=-0.169$, $p<0.001$) were negatively correlated with domestic VAW. In addition, a positive relationship was found between the scores for domestic VAW and being under 18 years of age at first marriage ($r=0.095$, $p<0.05$), being married through an arranged marriage ($r=0.210$, $p<0.001$), living with parents in an extended family ($r=0.096$, $p<0.05$), and having a history of psychiatric illness ($r=0.387$, $p<0.001$) (Table 4).

Table 4: Pearson correlation analysis towards associated factors with domestic violence and mental health

Parameters	DASS-Total	DASS-D	DASS-A	DASS-S	VAW
	r	r	r	r	r
DASS-Total (0-112)	-	0.947***	0.919***	0.935***	0.613***
DASS-D	-	-	0.798***	0.836***	0.588***
DASS-A	-	-	-	0.797***	0.562***
DASS-S	-	-	-	-	0.559***
Age (18-49 years)	0.044	0.008	0.096*	0.010	0.098*
Husbands' age (18-68 years)	0.112**	0.074	0.165***	0.076	0.145***
Age difference with husband	0.183***	0.166***	0.205***	0.162***	0.158***
Education level (1-5)	-0.018	-0.006	-0.044	-0.006	-0.170***
Husband's education level (1-5)	-0.125**	-0.101*	-0.142***	-0.091*	-0.296***
Self-reported family monthly income level (1-4)	-0.128**	-0.121**	-0.137**	-0.142***	-0.169***
Having children (no=1, yes=2)	0.029	0.009	0.012	0.045	-0.010
Age at marriage (1=18 years and above, 2= under 18 years)	0.004	0.023	0.048	0.017	0.095*

Type of marriage (with love=1, arranged=2)	0.077	0.050	0.124**	0.064	0.210***
Type of family (nuclear=1, extended=2)	0.091*	0.107**	0.057	0.076	0.096*
History of psychiatric disorder	0.316***	0.288***	0.319***	0.287***	0.387***

*: $p<0.05$; **: $p<0.01$; ***: $p<0.001$

DASS: The Depression Anxiety and Stress Scale; DASS-D: DASS-depression; DASS-A: DASS anxiety; DASS-S: DASS stress; VAW: The Domestic Violence Against Women Scale

Hierarchical linear regression analyses were conducted to determine the factors influencing domestic VAW (Table 5). The first step of the regression model was revealed arranged marriage ($\beta=0.181$, $p<0.001$), and living in an extended family type ($\beta=0.097$, $p<0.05$) predicted domestic VAW among cultural factors. These variables explained 6.2% of variance in domestic VAW score. The second step of the regression model was revealed that living in extended family ($\beta=0.080$, $p<0.05$), low

husband's education level ($\beta=-0.230$, $p<0.001$), low family monthly income level ($\beta=-0.105$, $p<0.01$), and had history of psychiatric illness ($\beta=0.330$, $p<0.001$) predicted VAW. However, type of marriage was not statistically significant, although it was significant in the first step. These variables explained 22.4% of variance in domestic VAW score. This step led to a significant improvement in R^2 , explaining an additional 16.2% of the variance.

Table 5: Hierarchical linear regression to determine the predictors of domestic violence against women

Characteristics	Domestic Violence Against Women Scale			
	Step-1		Step-2	
	B	β	B	β
Variable related cultural issue				
Age difference with husband's	0.330	0.077	0.245	0.057
Type of marriage (with love=1, arranged=2)	5.694	0.181***	1.806	0.057
Age at marriage (1=under 18 years, 2=18 years and above)	-0.616	-0.016	1,946	0.051
Type of family (nuclear=1, extended=2)	4.584	0.097*	3.758	0.080*
Individual and familial characteristics				
Education level (1-5)	-	-	0.783	0.068
Husband's age	-	-	0.050	0.030
Husband's education level (1-5)	-	-	-3.560	-0.230***
Self-reported family monthly income level (1-4)	-	-	-2.645	-0.105**
History of psychiatric disorder	-	-	24.049	0.330***
Constant	56.501***	-	48.128***	-
R^2	0.062		0.224	
Adjusted R^2	0.055		0.211	
R^2 Changed	0.062		0.162	

*: $p<0.05$; **: $p<0.01$; ***: $p<0.001$

B: Standardized Coefficient, β : Unstandardized Coefficient

Predictors of Depression, Anxiety and Stress

Pearson correlation findings showed that husband's age ($r=0.112$, $p<0.01$), and age difference with husband ($r=0.183$, $p<0.001$) were positively correlated with the total DASS score, while the husband's education level ($r=-0.125$, $p<0.01$), and family income level ($r=-0.128$, $p<0.01$) were negatively correlated with total DASS score. In addition, a positive relationship was found between the scores of the total DASS and living in extended family ($r=0.091$, $p<0.05$), and having a history of psychiatric illness ($r=0.316$, $p<0.001$). However, no relationship was found between total DASS scores and women age, women education level, having children, age at marriage, and type of marriage. In regarding DASS sub-dimensions' analysis revealed that age, husbands' age, and being married by arranged marriage (vs. marriage with love) were positive correlated only with anxiety scores ($r=0.096$, $p<0.05$, ($r=0.165$, $p<0.001$, and $r=0.124$, $p<0.01$), while living in extended family (vs to nuclear) was positively correlated only with depression score ($r=0.107$, $p<0.05$). All other variables result in line with total DASS results with difference r and p values (Table 4).

Hierarchical multiple linear regression analyses were utilized to determine the factors that predict depression, anxiety, stress and total DASS scores. The first step results showed that low family monthly income level predicted anxiety ($\beta=-0.104$, $p<0.05$), stress ($\beta=-0.111$, $p<0.01$), and Total DASS scores ($\beta=-0.086$, $p<0.05$), but not depression ($\beta=-0.077$, $p>0.05$). Additionally, had history of psychiatric illness predicted depression ($\beta=0.283$, $p<0.001$),

anxiety ($\beta=0.326$, $p<0.001$), stress ($\beta=0.300$, $p<0.001$) and total DASS scores ($\beta=0.299$, $p<0.001$). Furthermore, high age differences with husband's predicted depression ($\beta=0.140$, $p<0.01$), anxiety ($\beta=0.130$, $p<0.01$), stress ($\beta=0.119$, $p<0.01$), and total DASS scores ($\beta=0.135$, $p<0.001$). These variables explained approximately 12%, 17%, 13%. And 14% of variance in depression, anxiety, stress and total DASS scores respectively. In the second step, had a history of psychiatric disorder and high age differences with husband predicted total DASS score and all sub-dimensions of the scale with different p and β values in line with first step. In this step, interestingly high husbands' age predicted anxiety ($\beta=0.099$, $p<0.001$), and high husbands' education level predicted depression ($\beta=0.106$, $p<0.01$), stress ($\beta=0.100$, $p<0.01$), and total DASS scores ($\beta=0.088$, $p<0.05$), although both of them were not significant in the first step. Additionally, family monthly income was not predicted any dependent variable in this step. Domestic VAW, which included in the second step, strongly predicted depression ($\beta=0.088$, $p<0.001$), anxiety ($\beta=0.088$, $p<0.001$), stress ($\beta=0.088$, $p<0.001$), and total DASS ($\beta=0.088$, $p<0.001$). This step resulted in a significant improvement in R^2 , explaining an additional 23.5%, 19.0%, 20.7%, and 24.6% of the variance of depression, anxiety, stress and total DASS scores respectively. Type of family not predicted depression and total DASS, and type of marriage not predicted anxiety score in both steps of regression although they were significant in correlation analysis (Table 6).

Table 6: Hierarchal Linear Regression to determine the predictors of depression, anxiety, stress and total DASS-21 health

	Total DASS-21		Depression		Anxiety		Stress	
	B	β	B	β	B	β	B	β
Step-1								
Husband's age	0.040	0.014	-	-	0.081	0.083	-	-
Husband's education level (1-5)	-0.758	-0.028	-0.026	-0.002	-0.490	-0.052	-0.092	-0.010
Self-reported family monthly income level (1-4)	-3.853	-0.086*	-1.371	-0.077	-1.592	-0.104*	-1.776	-0.114**
History of psychiatric disorder	38.369	0.299***	14.435	0.283***	13.731	0.326***	12.981	0.300***

Age difference with husband's	1.005	0.135**	0.410	0.140**	0.338	0.130**	0.311	0.119**
Type of family (nuclear=1, extended=2)	4.096	0.050	2.425	0.075	-	-	-	-
Type of marriage (with love=1, arranged=2)	-	-	-	-	-1.023	-0.054	-	-
R ²	0.138		0.123		0.170		0.128	
Adjusted R ²	0.128		0.115		0.161		0.122	
R ² Changed	0.138***		0.123***		0.170***		0.128***	
Step-2								
Husband's age	0.023	0.008	-	-	0.097	0.099*	-	-
Husband's education level (1-5)	2.395	0.088*	1.145	0.106**	-0.576	-0.062	-0.958	0.100**
Self-reported family monthly income level (1-4)	-1.521	-0.931	-0.433	-0.024	-1.039	-0.068	-1.070	-0.069
History of psychiatric disorder	16.661	0.130***	6.127	0.120**	5.929	0.141***	4.929	0.114**
Age difference with husband's	0.704	0.095*	0.293	0.105**	0.247	0.095*	0.302	0.518***
Type of family (nuclear=1, extended=2)	0.741	0.009	1.207	0.037	-	-	-	-
Type of marriage (with love=1, arranged=2)	-	-	-	-	-1.436	-0.076	-	-
DVAW Scale	0.976	0.556***	0.373	0.540***	0.290	0.503***	0.302	0.518***
R ²	0.384		0.358		0.361		0.335	
Adjusted R ²	0.376		0.351		0.352		0.329	
R ² Changed	0.246***		0.235***		0.190		0.207***	

*: $p < 0.05$; **: $p < 0.01$; ***: $p < 0.001$

B: Standardized Coefficient, β : Unstandardized Coefficient

DASS: The Depression Anxiety and Stress Scale; DVAW: The Domestic Violence Against Women Scale

Discussion

This study examined the prevalence of domestic VAW and associated factors, especially the relationship between cultural factors and violence. In addition, the effects of VAW and other factors on women's mental health were examined. The study revealed that VAW was prevalent among women, and it was influenced by the both cultural issues (arranged marriages and living in extended families), and individual-familial characteristic of women (low husband's education, low family monthly income, and had history of psychiatric illness). Furthermore, the study found that VAW has a profound impact on women's mental health, emerging as one of the strongest predictors. Other

factors, including age difference with the husband, husband's age and education, family income, and psychiatric history, were also found to influence women's mental well-being.

In this study, it was determined that about one-third of the women (31.4%) reported experiencing non-physical violence, while roughly one-fourth (23.5%) reported being victims of physical violence in the family. Spouses were the most frequent perpetrators of physical violence, but violence from mothers-in-law, sisters-in-law, and other relatives were also prevalent. Studies in Türkiye and worldwide generally indicated that the rates of VAW differ significantly due to cultural as well as methodological and design variances in research

(4, 5, 7). In an online study conducted by Akalın and Ayhan with women aged 18-59 years during the COVID-19 pandemic, the occurrence of VAW was observed to be 35.5% (13). A systematic review in Turkey from 2022 indicated that the rate of VAW ranged from 14% to 43% (7). The results of our investigation align with these findings. However, a meta-analysis in Türkiye from 2016 reported that violence rates among women were at 57.2% (12). Additionally, according to the 2014 National Domestic Violence Against Women Survey in Turkey, the rate of physical violence in Northeastern Anatolia, including Ağrı province, was found to be 38.6% (8). Although these older studies indicated higher prevalence rates, they date back to 8-10 years. In Türkiye, initiatives such as “The Strategy Paper and Action Plan on Women’s Empowerment (2018-2023)” adopted by the Ministry of Family and Social Service, as well as the increase in women’s participation in education and social life over time, may have contributed to a reduction in VAW (24). The multivariate analysis findings emphasize that domestic VAW influenced by the both cultural issues, and individual-familial characteristic of women. The first step analysis, focusing on cultural variables, showed that women who are in arranged marriages and living in extended families are more likely to experience domestic violence. Interestingly, while age difference with husbands and age at marriage showed statistical significance in correlation analyses, they did not predict domestic VAW in the multivariate analysis. The research by Kotan et al. identified a link between family type and physical VAW, but no relationship between age at first marriage and such violence (25). Additionally, another study found that women living in extended family structures are more likely to experience domestic violence, but did not establish a direct link between age disparities and violence, align with our findings (11). Another study found that women who enter into arranged marriages are more likely to experience violence due to gender roles and traditional family dynamics (9). These results are consistent with the outcomes of this study. However, contrary to our findings, there are also studies that found that early marriage and the age gap between spouses could potentially increase violence against women by causing a power imbalance in favor of

women (15, 26).

In the last step; individual-familial characteristics added to model. These variables resulted in a notable increase in R², accounting for an additional 16.2% of the variance. Results showed that low husband’s education, low self-reported family monthly income, and had a history of psychiatric disorder were predicted domestic VAW. However, women’s education level and husband’s age did not predict domestic VAW although they were statistically significant in correlation analyses. The studies highlighted that an increase in both the woman’s and the spouse’s level of education significantly reduces the likelihood of VAW (9, 10). In this study, a spouse’s education level was found predictor of VAW, while the woman’s education did not show the same significance. This may be due to a strong correlation between both partners’ education levels. In Eastern societies, where men traditionally hold more power in relationships, the spouse’s education level emerges as a more influential factor in preventing violence. In this study, it was not surprising that low family income and a history of psychiatric illness were found to be linked with VAW, and this is consistent with the literature (11, 12, 18).

The relationship between spouse education level and mental health of women has been a topic of interest in various studies. Some studies have found a positive association between higher education levels and positive mental health (27), while others have found no relationship between the two variables (28, 29). In this study, the correlation analysis, consistent with existing literature, revealed that high spouse’s education level was negatively correlated with depression, anxiety, stress, and total DASS scores. However, multivariate analyses showed that while no relationship was initially found between spouse’s education status and mental health outcomes in the first step, the high level of spouse education was later identified as a risk factor for determining mental health outcomes when violence was taken into account in the second step. This finding may be attributed to the high educational difference between spouses. Although we did not consider the spouse education difference as an independent variable in this study, the education level of women was found to be

much lower than that of their spouses. A systematic review study also found that an increase in the educational difference between spouses had a negative effect on the mental well-being of spouses (30). The high educational difference, especially when it disadvantages women, may contribute to feelings of weakness among women and increased domination and pressure within the relationship, ultimately negatively affecting women's mental well-being.

Low income and low socioeconomic status have been found to be associated with poor mental health outcomes in many studies, including meta-analysis studies (31, 32). Although the finding in the first model is consistent with the literature, this significance disappears after violence is added in the second model. The possible reason for this is that the effect of low income on women's mental health may be due to violence. In other words, low income leads to family unrest and VAW, and violence results in poor mental health among women.

The study found that having a previous psychiatric diagnosis is a predictor of all mental health outcomes (depression, anxiety, stress, and total DASS score). This finding is supported by both general population studies and those focusing specifically on women (33-35). A cohort study similarly found that psychiatric history was a predictor of the occurrence of depressive or anxiety disorder within 2 years (36). These findings align with expectations, given that individuals with a prior history of psychiatric disorders are more susceptible to relapse, and stress can trigger with new episodes (35).

Age difference with spouse was associated with depression, anxiety, stress, and total DASS score in both models. Consistent with our findings, a recent national study in Korea found that women who were ≥ 10 years older or younger than their husbands had 1.72, 1.77, 2.24, and 1.69 times higher risks of perceived stress, experiencing depression, having a diagnosis of depression, and having suicidal ideation (37). The research indicates that there is a link between age difference in spouses and women's mental health, which may also affect marital satisfaction and divorce rates. A study in USA have shown that a larger age gap

between spouses is associated with higher divorce rates (38). Another study showed that women in poor marital relationships experience more severe depressive symptoms compared to those in higher marital satisfaction (39). These findings suggest that addressing women's mental health in couples with significant age differences could potentially improve marital satisfaction and reduce the likelihood of divorce.

In this study, the strongest factor determining women's mental health was domestic VAW. VAW alone contributed between 19% and 24.6% in explaining mental outcomes. This finding aligns with existing global research that consistently underscores the link between exposure to VAW and the onset of mental health issues (18, 40). A recent comprehensive cohort study highlighted that incidence rate of any mental illness was 14.9 per 1000 person-years among individuals not exposed to violence. In contrast, this rate escalated to 46.6 per 1000 person-years among those who had experienced violence. It has been emphasized that violence increases the incidence of mental illnesses by approximately 2.8 times (40). Meta-analysis studies also have supported these results (18, 41). The findings of this study reinforce the understanding that violence has a profound effect on women's mental health, highlighting the urgent need for comprehensive public health strategies to mitigate and ultimately prevent VAW.

The present study has several limitations that should be considered. Firstly, as a cross-sectional study, it does not allow for the establishment of causal relationships. Secondly, while efforts were made to include women from diverse sociocultural backgrounds by gathering data from all family physician centers in Ağrı, the inability to use a random sampling method due to various challenges limits the generalizability of the findings. Additionally, all data collected were self-reported, which may lead to biases such as recall bias and social desirability bias. Lastly, the study provides a general analysis of the link between VAW and their mental health, without delving into specific studies or employing a person-centered approach. Despite these limitations, the study is highly significant as it addresses the prevalence of violence against women, an essential social concern, and its

impacts on mental health within a community sample. Furthermore, the research will make a valuable contribution to the literature by examining the influence of cultural factors on both violence against women and their independent effects on mental health.

Conclusions

This study found that several factors that contribute to the high prevalence of VAW. Individual and familial factors play a significant role, with spouse's low education level, a history of psychiatric illness, and low family income being associated with increased violence. Additionally, cultural elements further exacerbate the situation; living in an extended family and being in an arranged marriage are common practices in the area studied, and these cultural norms are linked to higher rates of violence. The research also highlights the high prevalence of mental health challenges including depression, anxiety, and stress among women, identifying violence as a significant determinant of these symptoms. Beyond violence, other factors influencing poor mental health include a history of psychiatric illness, low family income, and a substantial age gap with spouse. Interestingly, even after addressing violence, a high level of education in the spouse emerged as a potential contributor to poor mental health outcomes. In conclusion, addressing VAW requires a comprehensive approach that considers the individual, familial, and cultural factors. Efforts to reduce VAW and ensure well-being of women should include promoting education, economic empowerment, and mental health support, while also being mindful of cultural contexts. In addition, more studies are needed in different socio-cultural environments to better understand the individual, familial and cultural risk factors affecting violence and to implement effective public health practices against them.

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