

The Characteristics of Husbands and Violence Against Women in Wuhan, China: A Cross-sectional Study

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Abstract

Objective. To understand the prevalence of domestic violence (DV) in Wuhan, China, to explore the correlation between domestic violence and husbands.

Methods. A cross-sectional study was conducted in a community health center in Wuhan from June 2015 to December 2015. Participants were 1015 women who came to the center for gynecological examination. They were assessed using WHO violence against women instrument to evaluate the prevalence of domestic violence. Chi-square test, Wilcoxon rank test and unadjusted and adjusted logistic regression analysis were used to analyze the possible risk factors of domestic violence.

Results. The prevalence of domestic violence was 29.36% (298/1015). The risk factors included heavy physical labor ($OR=3.56$, 95%CI:1.63~7.78), long-term drinking ($OR=1.61$, 95%CI:1.20~2.16), overweight or obesity ($OR=1.38$, 95%CI:1.02~1.88) and long-term smoking ($OR=1.02$, 95%CI:1.01~1.04). Protective factors were higher education ($OR=0.78$, 95%CI: 0.66-0.93).

Conclusion. The prevalence of domestic violence in women from Wuhan, China was common. We might decrease the occurrence of the possible risk factors of domestic violence to control it.

Introduction

Violent behaviors perpetrated by men against women have been an unfortunate element of life experiences of different civilizations across history. Domestic violence is often caused by a husband, ex-husband, boyfriend, or ex-boyfriend, so it is also called intimate partner violence (IPV)^{1,2}. It includes physical violence, psychological violence and sexual violence. 90% of the perpetrators were husbands³. The incidence of domestic violence among women of childbearing age is concentrated at 7% to 35.0% in the United States and other developed countries^{4,5,6,7,8}. In relatively underdeveloped countries such as Ethiopia (78.0%), Nigeria (35.9%) and India (41.0%), the incidence of domestic violence is higher^{9,10,11}. In China, the literature shows that the incidence of domestic violence in urban areas is concentrated at 11.3%~45.1%^{12,13,14}. It can be seen that under the premise of a large population base, the number of women suffering from domestic violence is large, and considering that influenced by Chinese traditional thinking, some women are reluctant to disclose the facts, which will lead to a higher incidence of actual domestic violence. Domestic violence is caused by several complicated factors, including social demographic characteristics, behavioral habits, marital status, and so on. These factors contributed to the formation of male violence in the family directly or indirectly. Lower female literacy and shorter marital duration are risk factors for domestic violence¹⁵. Husband lower level of education, husband smoking and lower family income are risk factors for domestic violence, shorter marital duration are protective factors¹⁶. There are regional differences in the occurrence of domestic violence and its risk factors, which may be related to the socio-cultural environment and economic status of each region. In order to effectively reduce the incidence of domestic violence, it is necessary to combine local realities and reduce the various risk factors obtained from local investigations, thus effectively reducing the

incidence of domestic violence. At present, community studies about the correlation between domestic violence and husbands based on women sample are rare in China. This study provide theoretical basis for later evaluation, prevention and intervention work of domestic violence through the analysis of the correlation between domestic violence and husbands based on women sample in Wuhan.

Methods

Study design

A cross-sectional study was conducted in a community health service center in Wuhan from June 2015 to December 2015. Participants were married women aged 20-60 who came to the center for gynecological examination. In total, 1015 women participated in the investigation. The survey was conducted by trained investigators, including Zhiqiang Wang, Leilei Wang and Lifeng, with an anonymous, self-administered questionnaire. Trained investigators of the research team guided respondents through the process of survey completion and check-out.

Variables and measuring tool

"Husband" is defined as legally married. Partners other than legally married husbands were not included in the assessment. Husband demographic characteristics: including age, education, BMI, professional types, monthly income, marital status and family types. Husband behavior characteristics: including personality, playing CARDS/mahjong, gambling, smoking and drinking. According to the WHO regulation, 1997"continuous or cumulative smoking for six months or more consecutive" is defined as smoking. Drinking was defined as drinking more than or equal to once or twice a week, a small amount of alcohol during an occasional gathering was defined as not drinking. Playing CARDS/mahjong was defined as playing CARDS or mahjong once or more times for the past year. Age was categorized as 20-29, 30-39, 40-49, and ≥ 50 years. Education was categorized as \leq primary school, junior high school, high school, junior college, and \geq college. Family types were categorized as multigenerational family, a couple, a couple and a child, a couple and more than one child. Personality of husbands was categorized as extrovert, middle type and introvert, obtained by asking the women. If husbands were also interviewed, then judged by themselves. Professional types of husbands was categorized as mental work, light manual labor, moderate manual labor, heavy manual labor, mental and physical labor and unemployed. Monthly income was categorized as <1000, 1000-1999, 2000-2999 and ≥ 3000 yuan. BMI, marital status, playing CARDS/mahjong, gambling, smoking and drinking were dichotomized.

The WHO Violence Against Women Instrument (VAWI) was applied. The instrument was designed by the World Health Organization (WHO). This questionnaire was developed for use in different countries, including China, Bangladesh, Thailand and other Asian countries and to be cross-culturally appropriated¹⁷. The scale was made up of 20 items. Psychological violence was assessed with 1-5 items, physical violence was assessed with 6-11 and 15 items, sexual violence was assessed with 12-

14 items. As long as there was an answer was "yes" of 1-15 items, the respondent was judged to be suffered domestic violence with current partner or any previous partner. 2-15 items were used to assess whether the domestic violence occurred within 1 year or for a lifetime. The scale was used in Shanghai and Fuzhou, China for domestic violence investigations¹⁸⁻¹⁹. The questionnaire was reported to have good reliability and validity in China.

Sample size estimates

The incidence of domestic violence in Wuhan is 28.32%²⁰. The calculation formula of the epidemiological cross-sectional study sample size is $n = t_{\alpha}^2 \times [P(1-P)/d^2]$, $\alpha=0.05$, $t_{\alpha} \approx 2$, $d=0.1P$, and the required sample size is 1,013. Consider that there may be some invalid questionnaires, so add another 5% of the sample. A total of 1,064 questionnaires were distributed in this survey, and 1,015 were valid questionnaires, accounting for 95.4% of the questionnaires.

Data analysis

Continuous variables were described as mean±standard deviation (SD) and tested with rank sum test, since the continuous variables were far from the normality, the rank sum test will be much more efficient²¹, so the continuous variables were all tested by rank sum test; Categorical variables were described as proportion (%) and tested with Chi-square test or Fisher's exact probability. Finally, multiple logistic regression was used to assess the association between domestic violence and situations of husbands, while adjusting for confounders. Separate models were run with each situation of husbands as the dependent variables; domestic violence were the primary independent variables, and age, marital status, playing CARD/mahjong and gambling were confounding variables. The odds ratios (OR) and 95% confidence intervals (CI) were estimated from the multiple logistic regression models. All *P* values were two-tailed with a significant level of 0.05. Statistical analyses were carried out using SAS version 9.4 (SAS Inc., Cary, NC).

Patient involvement

No patients were involved in developing the research question or the outcome measures, nor were they involved in planning the design, recruitment to and conduct of the study. No patients were asked to advise on the interpretation or writing up of results. There are no plans to disseminate the results of the research to study participants.

Results

The prevalence of domestic violence

The prevalence of domestic violence was 29.36% (298/1015). Table 1 shows the prevalence of domestic violence by women and husband characteristics. Women with husbands in the age group of 40-50 years (34%) had higher prevalence of domestic violence than other age groups. Domestic violence was reported

by a higher percentage of low literacy (52.38%) compared to education (14.42%). Women with husbands engaged in heavy physical labor (54.05%) prone to have higher prevalence of domestic violence than other groups. The prevalence of domestic violence was greater among women with husbands like playing cards (40.8%) and gambling (39.20%) than it was among non-gamblers (27.75% and 27.98%). A higher proportion of smokers (33%) and drinkers (35.15%) reported domestic violence than non-smokers (23.89%) and non-drinkers (24.21%). Women whose husbands had short stature, experiences of long-term smoking and experiences of long-term drinking tended to have higher prevalence of domestic violence than those whose husbands had high stature, experiences of short-term smoking and short-term drinking ($P=0.019$, $P<0.001$ and $P<0.001$).

The incidence prevalence of all kinds of domestic violence

All kinds of domestic violence are shown in table 2. The incidence prevalence of psychological violence (28.28%) was the highest among them. The form including neglect, insult, threat and so on. The second is physical violence, the incidence prevalence was 6.6%. It includes slapping, pulling hair, punching, etc. The incidence prevalence of sexual violence (3.55%) is the lowest, including compulsory action and so on.

Association between domestic violence and situations of husbands

Association between domestic violence and situations of husbands are shown in Table 3, adjusted for age, marital status, playing CARD/mahjong and gambling. The distribution of no domestic violence was different from domestic violence with respect to age, marital status, playing CARD/mahjong and gambling ($P<0.01$). After adjusted for possible confounding variables, hard physical laborers ($OR=3.56$, 95%CI: 1.63-7.78) and drinkers ($OR=1.61$, 95%CI: 1.20-2.16) were more likely to report domestic violence. Long-term smoking was associated with increased odds of domestic violence ($OR=1.02$, 95%CI: 1.01-1.04). Being overweight or obese were associated with increased odds of domestic violence ($OR=1.38$, 95%CI: 1.02-1.88). High education level were associated with decreased odds of domestic violence ($OR=0.78$, 95%CI: 0.66-0.93).

Discussion

Women whose husbands with lower education, heavy manual labor, long-term alcohol drinking, overweight or obesity and long-term smoking were liable to domestic violence.

Women whose husbands with higher education had a lower risk of suffering from domestic violence ($OR=0.78$, 95%CI: 0.66-0.93). Barnawi FH and colleagues¹⁶ reported that lower education of husbands was a risk factor for domestic violence. The lower educational levels of husbands, the more tend to use violence to solve the problem. And low degree of culture was usually on behalf of its low status of social and economic. These factors were all easy to cause family violence.

This study indicates that Women whose husbands with heavy physical labor were liable to domestic violence ($OR=3.56$, $95\%CI: 1.63-7.78$). Compared with the mental labor, engaged in heavy manual labor of men prefer to use simple and arbitrary manner to solve family conflicts. And negative emotions caused by job burnout may be brought to the home, failing to care about his wife, irritability, resulting in the occurrence of domestic violence.

Husband with binge drinking can lead to emotional and sexual violence to his wife after marriage²². As a mood enhancer, alcohol can enhance the person's sense of anger and frustration. Binge drinkers may be dependent on alcohol, lack of communication with family and get less family support, so these factors may lead to family conflicts occur easily. Previous studies have found that alcohol dependence and family violence often occur at the same time²³. In addition, alcohol dependence has obvious correlation with violent attacks²⁴. It also suggests that the control of alcohol consumption and the frequency of alcohol intoxication were very important to the prevention and control of domestic violence.

After the search in Pubmed, CNKI and Wan fang database, the correlation between body mass index and domestic violence are not found in domestic violence related factors research at present. This research showed that the constitution of husbands and the close degree of obesity were associated with domestic violence, but the reason remained to be further research.

Husband smoking is a risk factor for domestic violence^{25,26}, Smoking was considered to be a way to relieve stress. However, heavy smoker used to rely on smoking to resolve anguish and formed a kind of depressive personality. And once this personality breakout can lead to domestic violence.

To sum up, the prevalence of domestic violence in women from Wuhan, China was common. We might decrease the occurrence of the possible risk factors of domestic violence to control it. There was a strong correlation between domestic violence and husband situation. Domestic violence was related to the husband cultural level, professional, alcohol and tobacco habit and husband body mass index. Family violence prevention needs to improve husband cultural quality and bad living habits. The limitations of this study include the following aspects: firstly, as a result of the limitation of conditions, the questionnaire survey was only carried in a community health service center. It makes conclusion extrapolation was restricted. Secondly, this study belongs to the cross-sectional survey, the occurrence of domestic violence and husband situation were obtained at the same time, so it is impossible to judge the causal relationship between them. Finally, some of the items in the scale were sensitive, some respondents had scruples when answering questions and the truth of the answer was not guaranteed.

Strengths And Limitations Of This Study

- Community studies about the correlation between domestic violence and husbands based on women sample are rare in China.
- The questionnaire survey was only carried in a community health service center.
- This study belongs to the cross-sectional survey, so it is impossible to judge the causal relationship.

- Some of the items in the scale were sensitive, some respondents had scruples when answering questions and the truth of the answer was not guaranteed.

Declarations

Ethics declarations

Ethics approval and consent to participate

This study was approved by the Institutional Ethical Review Board (IRB) of School of Public Health, Tongji Medical College, Huazhong University of Science and Technology. Informed consent was obtained from all participants. All methods in the present study were performed in accordance with the relevant guidelines and regulations.

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Availability of data and materials

The datasets generated and/or analysed during the current study are available from the corresponding author upon reasonable request.

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Author Contributions

C.X.N. designed and wrote the manuscript. Y.Y.F. performed the investigation and analysed data. L.R.Z. supervised the project and wrote the manuscript.

Consent for publication

Written informed consent for publication was obtained from all participants.

Competing interests

The authors declare no competing interests.

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Tables

Table1 The prevalence of domestic violence by women and husband characteristics

	No domestic violence n (%)	domestic violence n (%)	Chi-square (Z)	Pvalue
Age, years			14.57	0.002
20-29	93(84.55)	17(15.45)		
30-39	193(71.75)	76(28.25)		
40-49	264(66.00)	136(34.00)		
>=50	167(70.76)	69(29.24)		
Marital status			7.71	0.006
First marriage	705(71.28)	284(28.72)		
widowed/divorced	12(46.15)	14(53.85)		
The number of the son			15.29	0.001
0	300(76.53)	92(23.47)		
1	395(67.99)	186(32.01)		
>=2	22(52.38)	20(47.62)		
Family environment			10.04	0.018
Modern community	358(74.74)	121(25.26)		
Reconstruction of urban Village	39(69.64)	17(30.36)		
The old city	284(65.59)	149(34.41)		
Urban-rural fringe	36(76.60)	11(23.40)		
Family types			12.42	0.015
Multigenerational family	194(73.76)	69(26.24)		
A couple	60(67.42)	29(32.58)		
A couple and a child	366(72.91)	136(27.09)		
A couple and more than one child	79(62.20)	48(37.80)		
Urban-rural fringe	36(76.60)	11(23.40)		
Domestic housing structure			13.14	0.004
self-built	22(53.66)	19(46.34)		
one rooms and one hall	50(60.24)	33(39.76)		
two rooms and one hall	409(70.88)	168(29.12)		

three rooms and one hall	236(75.16)	78(24.84)		
Education			23.95	<0.001
≤Primary school	10(47.62)	11(52.38)		
Junior high school	204(64.76)	111(35.24)		
High school	275(70.33)	116(29.67)		
Junior college	139(75.54)	45(24.46)		
≥college	89(85.58)	15(14.42)		
Professional types			25.19	0.001
Mental work	157(79.70)	40(20.30)		
Light manual labor	72(72.73)	27(27.27)		
Moderate manual labor	255(65.89)	132(34.11)		
Heavy manual work	17(45.95)	20(54.05)		
Mental and manual labor	191(74.32)	66(25.68)		
unemployed	25(65.79)	13(34.21)		
Income/m, yuan			7.09	0.312
<1000	23(63.89)	13(36.11)		
1000-1999	46(67.65)	22(32.35)		
2000-2999	183(69.85)	79(30.15)		
3000-3999	210(71.67)	83(28.33)		
4000-4999	93(68.89)	42(31.11)		
≥5000	135(76.70)	41(23.30)		
Do not know	27(60.00)	18(40.00)		
BMI			3.89	0.049
Normal or underweight	532(72.38)	203(27.62)		
Overweight or obese	185(66.07)	95(33.93)		
Personality			2.34	0.310
extrovert	7(58.33)	5(41.67)		
middle type	641(71.38)	257(28.62)		
introvert	69(65.71)	36(34.29)		

Playing CARDS/mahjong			9.00	0.003
No	643(72.25)	247(27.75)		
Yes	74(59.20)	51(40.80)		
Gambling			6.66	0.010
No	641(72.02)	249(27.98)		
Yes	76(60.80)	49(39.20)		
Smoking			9.76	0.002
No	309(76.11)	97(23.89)		
Yes	408(67.00)	201(33.00)		
Drinking			14.59	<0.001
No	407(75.79)	130(24.21)		
Yes	310(64.85)	168(35.15)		
Height (cm)	172.30±5.17	171.60±5.10	-2.34	0.019
Weight(kg)	69.41±9.24	70.47±10.37	0.95	0.341
Smoking years	8.99±10.13	12.49±11.28	4.63	<0.001
Drinking years	6.83±9.42	9.97±10.68	4.71	<0.001
Total	717(70.64)	298(29.36)		

Table2 The incidence prevalence of all kinds of domestic violence

Domestic violence categories	<i>n</i>	%
Physical violence	67	6.60
slapping/throwing things	52	5.12
push/pulling hair	46	4.53
punching	35	3.45
kick/drag/beaten	33	3.25
choking/burning	2	0.20
Threatened to use a knife	2	0.20
Psychological violence	287	28.28
Prevent seeing friends	12	1.18
limit contact with family	9	0.89
Always want to know where is wife	60	5.91
Neglect/indifference	175	17.24
Be angry with wife if talk with other men	32	3.15
Doubt infidelity	8	0.79
needed husband permission to go to the hospital	21	2.07
insult	125	12.32
Putting wife in front of others	28	2.76
Intimidation by some behavior	119	11.72
Threatened to harm someone wife care about	16	1.58
Sexual violence	36	3.55
compulsory action	32	3.16
don't want to have sex since afraid of husband	9	0.89
Let wife do shame about sex	9	0.89

Table 3 Multiple logistic regression models for relationship between domestic violence and situations of husbands

Factors	estimate of	Standardization of	Chi- square	P value	AOR 95%CI
	parameter	parameter estimates			
Husband Education	-0.247	-0.135	8.141	0.004	0.78 0.66- 0.93
Husband profession					
heavy physical labor mental work	1.269	0.131	10.123	0.002	3.56 1.63- 7.78
Husband drinking years	0.478	0.132	10.227	0.001	1.61 1.20- 2.16
Husband BMI					
Overweight or obese: Normal or underweight	0.325	0.080	4.321	0.038	1.38 1.02- 1.88
Husband smoking years	0.021	0.123	9.462	0.002	1.02 1.01- 1.04

Note: Adjusting for marital status, the number of the son, family environment, family types and domestic housing structure.