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Cultural or Institutional? Contextual Effects on Domestic Violence against Women in Rural China

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Abstract

Domestic violence against women is a critical social problem due to its long-lasting harmful effects on women's health and wellbeing. Previous studies have examined the individual and household-level determinants of domestic violence, yet there remains limited research on the effects of community-level factors, especially in rural China. To address this research gap, this study investigated the relationship between cultural and institutional factors and the risk of domestic violence against women in this context. Drawing data from the nationally representative China Women Social Status Survey (CWSS), multilevel modelling was used to identify the significant contextual factors and their interaction effects on domestic violence. Both cultural and institutional factors in a community are associated with the risk of domestic violence against women. Moreover, institutional measures are significantly related to the risk of domestic violence where patriarchal cultural norms are dominant. Findings revealed the importance of changing the patriarchal norms and promoting gender equality in combatting domestic violence in rural China.

Keywords Domestic violence · Contextual effect · Rural China · Gender · Multilevel modelling

Domestic violence against women is an enduring public health issue and social problem worldwide. Evidence has shown that it has detrimental effects on victims' physical, mental, and sexual health (Campbell 2002; Wang 2006; Sarkar 2008), endangering the wellbeing of individuals and the stability of families, communities, and societies (Fineman 2013; Holt et al. 2008). As in other countries, the prevalence of domestic violence in China cannot be ignored (WHO, 2019). A nationwide survey conducted by the All-China Women Federation showed that more than a quarter of women have suffered domestic violence at least once in their lifetime, although a number of offences may go unreported (Yang et al. 2019). Domestic violence against women in rural China is more serious than in urban areas due to patriarchal traditions and gender inequality (Xu and Ye 1999). Given the

prevalence of domestic violence and its far-reaching negative effects, more in-depth empirical research is needed to understand its determinants in rural China.

Previous studies have primarily examined the risk factors of domestic violence against women at the individual and family levels (Goode 1971; Jewkes 2002; Vyas and Watts 2009). Recently, guided by the social-ecological model, research has shed light on its contextual factors, suggesting that community and societal factors have a significant influence on the prevalence of domestic violence (Heise 1998; Kiss et al. 2012; Linos et al. 2013). However, the majority of these studies have been conducted in Western contexts, and empirical research in China is still nascent (Tu and Lou 2017; Xiao and Feng 2014; Zhao and Zhang 2017). Most Chinese studies have been confined to analyses of policies and laws, theoretical discussions on the prevention, and examining the prevalence and determinants of domestic violence based on small samples (Hou et al. 2011; Zhang and Zhao 2018). In particular, little research has investigated the risk factors of domestic violence at the community and societal levels.

Considering rural China's social, cultural, and political background, this study focuses on two types of contextual factors related to domestic violence: firstly, *cultural factors*, that is, the gender-related cultural norms and values that



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permeate communities and shape people's attitudes and behaviors. Traditionally, the Chinese family is patrilineal and hierarchical, with the husband assuming the highest authority. Women are expected to be obedient to their husbands, and men were traditionally entitled to discipline their wives (Liu and Chan 1999). Although gender equality has been increasingly widely accepted, traditional gender norms still regulate spousal relationships in rural communities.

Secondly, institutional factors, namely, formal state-led measures (law, regulation, governmental organizations) associated with domestic violence will be investigated. Consistent with the communist political tradition, the state has treated the establishment of women's rights and gender equality as a political task (Leggett 2017; Palmer 2007). Since the 1990s, the government has strengthened its legislative efforts to combat domestic violence, and, in 2015, previous incremental changes were finally translated into the enactment of the Anti-domestic Violence Law, marking a watershed for state action on domestic violence. At the operational and organizational level, the All-China Women Federation (ACWF) functions as a state agency and executive body, reaching down to each rural village and urban community to carry out state-led programs and campaigns to promote gender equality and domestic violence intervention (Wang 2016).

Given the unique cultural and political background, both cultural factors and institutional factors should be taken into account in understanding domestic violence in rural China. Nevertheless, few studies have examined the effects of contextual factors in China. To address this research gap, this study aims to investigate the relationship between cultural and institutional factors and the risk of domestic violence against women in rural China. Findings from this study will provide insights to support policymakers and social workers in future interventions to mitigate or prevent domestic violence.

The Chinese Context

Cultural Context of Domestic Violence in China

The patrilineal system is the foundation of traditional Chinese family and gender relations. Embedded within the agricultural mode of production, the emphasis of male lineage endowed men with more authority in the family and entitled them to inherit family wealth, whilst married women were considered as their parents' and then their husbands' property (Hu and Scott 2016). Confucian ethics further codify the unequal gender relations via the "three obediences", in which a woman should submit to her father when unmarried, husband, then son when her husband passes away, constitutes the basic moral principle for women (Zhao and Zhang 2017). This traditional social code somewhat justifies husbands' rights to

discipline their wives and dismisses wife beating as a crime (Liu and Chan 1999).

Moreover, conjugal relationships are recognized as pertaining to the private sphere in China, leaving limited space for public intervention (Zhao and Zhang 2017). For example, two Chinese proverbs state, "Even the wisest judge cannot adjudicate family disputes" and, "Don't wash your dirty linen in public", perpetuating the norm that wife beating is a private affair. The popular belief that "beating is love, and scolding is intimacy" further depicts domestic violence as normal in family life, downplaying its seriousness (Xu et al. 2001). The advocacy of "family harmony" encourages people to hide "disharmony" at home to save "face"; women are obliged to tolerate abuse for the unity and reputation of their family (Han 2017; Zhang and Zhao 2018). Additionally, the traditional "male-breadwinner" gender norm ties women to their husbands' for financial support (Hu and Scott 2016; Liu and Chan 1999). These beliefs and values prevent women from reporting the violent behaviors of their spouses to the police (Zhao and Zhang 2017).

Legal and Policy Context of Domestic Violence in China

Institutional efforts to combat domestic violence have been increasing since the 1990s. In legal and judicial spheres, the Chinese government has enacted several laws and regulations to prohibit domestic violence. In 1992, the National People's Congress issued the Law of the Protection of Rights and Interests of Women, which was the first fundamental law in China designed specifically to promote gender equality and Women's rights (Cook 1995). Although this law criminalized the maltreatment of women, it did not target domestic violence directly. In 1995, when Beijing held the fourth United Nations' World Conference on Women, domestic violence began to be widely recognized as a public issue (Mo 2006). National legislative effort against domestic violence was introduced in 2001 when the amended Marriage Law explicitly defined and outlawed domestic violence (Zhao and Zhang 2017). A significant breakthrough was made in 2015 when the Anti-domestic Violence Law was enacted by the State Council. For the first time, domestic violence was clearly defined as not only physical and psychological abuse but included other forms of violence (verbal abuse, restriction on freedom). This law also provided national guidelines for punishment and prevention methods (Leggett 2017; Zhao and Zhang 2017).

Apart from legal development, the central government has also implemented policies and funded public services to support the reduction of domestic violence. The ACWF and local women's federations play a vital role in implementing antidomestic violence policy and promoting gender equality. As a multi-tiered mass organization, the ACWF is led by the



Chinese Communist Party and functions as a state agency, and its anti-domestic violence actions are state-led and institutionally implemented (Leggett 2017; Yang et al. 2019). Specifically, it has contributed to policy development and the organization of public awareness campaigns to educate the community about domestic violence laws and regulations. In communities and villages, local women's federations perform administrative responsibilities and provide other related social services, including anti-domestic violence hotlines, shelters, and legal counselling (Chen 2012; Mo 2006).

Several studies have theoretically discussed the ACWF's role in the intervention of domestic violence (Chen 2007; Sui 2017); however, there remains a lack of empirical studies evaluating their effectiveness in protecting women's rights. Some qualitative case studies have investigated the role of local women's federations in countering domestic violence in Chongqing and Huai'an and found that due to the norms of saving "face", the domestic violence reporting rate remains low, constraining the federations' ability to provide support (Chen 2012; Sui 2017). Moreover, educational intervention on domestic violence policies was not conducted effectively in some communities. This is because of the lack of funding, workforce, and adequate legal and counselling knowledge, limits the capacity of local women's federation to provide necessary services (Sui 2017). The different local implementation might influence the effects of legal and institutional efforts in combating domestic violence.

Literature Review

Previous research has primarily been guided by the social-ecological model which relates contextual factors to domestic violence (Heise 1998). Of these contextual factors, community-level socioeconomic factors, including unemployment, poverty, and deprivation, have received more attention (Ackerson and Subramanian 2008; Kiss et al. 2012; Koenig et al. 2006), yet cultural and institutional factors have not been fully explored.

Effects of Cultural Factors on Domestic Violence against Women

Among the few studies investigating the cultural factors associated with domestic violence against women, the majority have explored the role of patriarchal culture in domestic violence yet there is a lack of consensus on how to measure such factors (Bicchieri 2006; Clark et al. 2018; Koenig et al. 2006; Vieraitis et al. 2007).

From a feminist perspective, violence against women is an explicit expression of patriarchal dominance (Dobash and Dobash 1979). Although in most countries wife beating is no longer legal, it still persists as patriarchal norms

continuously shape people's relationships and behaviors (Lawson 2012). Some studies have assessed the relationship between the level of gender inequality and the risk of domestic violence against women. Ackerson and Subramanian (2008), for example, used the women-to-men ratio of the state human development score as a proxy for gender equality and found it partly explained the differential rates of intimate partner violence among neighborhoods and states in India. Elsewhere, evidence from the U.S. showed no significant effect of the relative socioeconomic status of men and women (or gender inequality) or patriarchal culture on the county-level female homicide rate (Vieraitis et al. 2007).

Some studies have explored relevant cultural factors associated with domestic violence (Benebo et al. 2018; Clark et al. 2018). As social norm theory posits, social norms shape and constrain individuals' behavior through a set of social expectations, social enforcement, and the punishment of behaviors deviating from these rules (Bicchieri 2006). Early studies focused specifically on the social norms surrounding wife-beating: evidence from the U.S., Europe, North India, and Nigeria all showed that condonation of violence towards women exacerbates the risk of domestic violence (Benebo et al. 2018; Koenig et al. 2006; Linos et al. 2013; Salazar et al. 2003). In contrast, social norms that sanction violent behaviors can prevent domestic violence: research in a rural area of Sichuan Province in China found that social support is a protective factor against intimate partner violence (Hou et al. 2018). Recent studies have advanced beyond wife-beating norms to examine other gender norms that might relate to domestic violence against women, including men's control over female behaviors, the acceptability of traditional gender roles, stigma and shame associated with divorce or being unmarried (Benebo et al. 2018; Clark et al. 2018).

Although most empirical studies have confirmed that cultural factors impact violence against women, such factors are heterogeneous in different societies; therefore, their measurement must be tailored to the local context. Studies on the effects of cultural factors on domestic violence in China remain scarce, and there has not been appropriate measurement of cultural factors in the Chinese context.

Effects of Institutional Factors on Domestic Violence

Two research streams are relevant to the relationship between institutional factors and domestic violence: firstly, guided by deterrence theory, criminological studies have examined the effects of various legal interventions on the risk of domestic violence. Secondly, studies drawing from social work, public policy, and economics have evaluated the effects of various social policies and programs aimed at female empowerment.

Deterrence theory posits that appropriate legal penalties and formal sanctions will discourage illegal behaviors by increasing the perceived cost of committing a crime and



providing negative incentives for 'rational' people (Pate and Hamilton 1992; Zimring et al. 1973). The effect of legal measures on the risk of violence against women has not been consistent in previous studies. Zeoli and Webster (2010) used a time-series design and suggested that laws mandating the arrest of domestic violence misdemeanants and higher police staffing levels reduce the risk of intimate partner homicide. However, one U.S. study found that formal arrest has no overall effect on the risk of domestic violence but produces a deterrent effect on employed suspects who face higher social costs (Pate and Hamilton 1992).

Research on domestic violence services and social policies has not reached consensus on their effects in reducing domestic violence, either. In rural Bangladesh, increasing women's membership in a credit program was found to effectively reduce the risk of domestic violence, with the beneficial effects also extending to non-members residing in the same village (Schuler et al. 1996). However, the protective effect of membership in these groups varies and is only significant in less culturally conservative areas (Koenig et al. 2003).

One study in India, highly relevant to the current research, investigated the effect of women's political representation on crimes against them and revealed that the increase in female representation in local government leads to a significant rise in documented crime against women (Iyer et al. 2012). However, this increase was a consequence of higher reporting of domestic violence rather than increases in the total incidence of crime. Based on the mandated political representation system in India, the study also demonstrated that a larger representation in local councils was more effective in increasing reports of crimes against women than the presence of females in higher-level leadership positions. In sum, the research on the effects of institutional factors on the risk of domestic violence has not yielded definitive conclusions, and there remains a lack of research focusing on the Chinese institutional system and its impact on domestic violence.

The Relationship between Cultural and Institutional Factors

Cultural and institutional factors are interrelated (Salazar et al. 2003), and their interaction may provide us with further insights to understand the contextual determinants of domestic violence. However, most research on domestic violence has neglected the connection between them. The replacement hypothesis, which posits that legal control takes effect where informal control is weak (Sherman et al. 1992), informed the current research. Two arguments underpin this hypothesis: firstly, formal control can deter delinquent behaviors when "drifters" are not bonded to conventional society (Matza 1967). Secondly, as an individual's behavior is already regulated by norms or stigma where social control is strong, formal control is, to some degree, redundant in such communities

(Grasmick and McLaughlin 1978). On the other hand, some empirical findings suggest that institutional factors have more impact on communities where informal control is strong (Pate and Hamilton 1992). Given these conflicting findings, more evidence is needed to explore the interactions of cultural and institutional factors and their influence on domestic violence.

In sum, this study, guided by the social-ecological model, attempts to investigate the contextual determinants of domestic violence in rural China. From a review of the literature, we found a lack of consensus about the effects of cultural factors on the risk of domestic violence due to different measurements and research settings. Meanwhile, institutional factors (other than legislative change), as well as the interaction effect between cultural and institutional factors, have received less consideration in analyses of domestic violence against women, especially in China. Three hypotheses were therefore tested in the current study:

- (1) Patriarchal culture is associated with a higher risk of domestic violence against women;
- (2) Implementing institutional measures aimed at promoting gender equality is associated with a lower risk of domestic violence against women;
- (3) The impact of institutional measures on domestic violence against women is more pronounced in communities with a patriarchal culture.

Methods

Data Source

This study drew data from the third wave of China's Women Social Status Survey (CWSS), conducted jointly by the ACWF and the National Statistics Bureau of China in 2010. Adopting multi-stage PPS sampling, the main survey comprised a total of 83,940 men and women aged between 18 and 65 years from 31 provinces. The survey collected detailed information on demographic characteristics, socioeconomic status, family members and, importantly, experiences of domestic violence. The CWSS also included a community survey answered by officials in each sampled community, covering community-level characteristics. These include geographical and socioeconomic contexts, gender-equality programs, and the gender structure of the village leadership, providing valuable information to assess the effects of contextual factors on domestic violence. However, the inadequacy of questions related to culture and gender norms might limit the operationalization of cultural factors in this study. Consistent with our research purpose, only married women living in rural communities were included in our sample. The final analysis



sample comprised 14,040 women from 2939 villages after cases with critical data missing were excluded.

Measures

Domestic Violence The CWSS questionnaire distinguished six types of violence: the restriction of activity, economic control, beating, verbal insults, being neglected for several days, and sexual abuse. Our main dependent variable was the prevalence of long-term domestic violence, derived from the question, "Have you experienced any type of violence during your married life?". A dichotomous variable was created based on the response, which equaled 1 if a respondent occasionally, sometimes, or frequently experienced any form of listed domestic violence and 0 if they had never experienced violence during married life. To further examine the result's robustness, we constructed other variables measuring domestic violence: (1) the intensity of long-term violence (intensity score), calculated by totaling the rank-ordered responses to the six types of domestic violence (0 = never, 1 = occasionally, 2 = sometimes, 3 = frequently) with a range from 0 to 18; (2) prevalence of short-term violence, which considered domestic violence experiences during the past six months (0 = no,1 = yes); and (3) prevalence of physical abuse (beating, restriction of activity, sexual abuse) (0 = no, 1 = yes), focusing on serious violence.

Cultural Factors Cultural factors were specified as gender norms formed in a community over a long time. We used married women's right of inheritance as an indicator of cultural factors since, from a feminist perspective, inheritance rights reflect a community's gender norms (Rao 2008). Although according to *China's Law of Succession*, "males and females are equal in their right to inheritance", the system operates variously in different communities due to the influence of social norms. This variable was derived from a question in the community survey, regarding "whether a married daughter can inherit the family property like her brothers in local practice in this community" and was treated as a dichotomous variable (1 = yes, 0 = no).

Women's employment status and choice of occupation are closely related to gender norms and levels of gender equality, too (Vieraitis et al. 2007). In rural China, fewer women work in non-agricultural sectors compared with men. One important reason for this is that traditional gender norms constrain women's economic behaviors and urge most of them to do farm and house chores rather than paid work (Li 2001). This variable was measured by officials' responses to the question, "What is women's most important source of income in this village?" and classified into three categories: (1) cropping and livestock, (2) non-agricultural work as migrant workers, and (3) non-agricultural and other work inside the village.

Institutional Factors Institutional factors refer to support or protection provided by State-based actors, especially in the form of law, regulation, policy, or educational activities and political participation. The CWSS questionnaire collected information about the frequency of information campaigns on the *Law on the Protection of Rights and Interests of Women* in the community. Three choices were offered in the questionnaire: None, once or twice, and at least three times. Given that information campaigns are a political task and few communities chose none, this was recoded as a dichotomous variable with 0 equaling once or twice and 1 indicating at least three times to increase the sensitivity of the predictor.

To promote gender equality in the political field, China's central government takes measures to increase women's political participation, stipulating that there should be female officials in each village committee. Female leadership in local government also links to women's political empowerment in the community; therefore, we also analyzed the percentage of women in the village committee. As variation of this percentage was small (around 90% of the communities had less than 30%), we created a binary variable that equaled 1 if the percentage was more than or equal to 20% and zero otherwise.

Covariates Community-, individual-, and household-level variables that were theoretically related to domestic violence were also included. According to the family violence approach, demographic and sociodemographic indicators of structural inequality influence the propensity for domestic violence (Anderson 1997); therefore, age and the respondents' and their husbands' years of education were included as continuous variables. Resource theory suggests that men who lack other means of power are more likely to resort to violence to achieve a balance within relationships (Goode 1971). Accordingly, based on the question, "Who contributes more to the family financially?", a relative measure of economic resource in the family was created, with 1 representing the couple contributing equally, 2 representing the husband's greater contribution, and 3 signifying the wife contributed more. Vyas and Watts (2009) found that increasing women's economic resources empowers wives and reduce the risk of being abused. Ownership of a house and land are dichotomous proxies of women's empowerment status. Women's occupations were also included as a categorical variable with the following categories: (1) non-agricultural job, (2) agricultural job, (3) non-employed. At the household level, we included the length of marriage and the number of children, both of which are continuous variables, in the analysis.

Statistical Analysis

Multilevel models were employed due to the two-level hierarchical structure of the dataset, with 14,050 women at level one nested in 2932 communities at level two. As the outcome



variable was dichotomous, logistic multilevel models were adopted to differentiate the variance between individual and contextual levels.

Firstly, a random intercept model with only individual predicators was fit as a baseline model to estimate the effects of individual-level characteristics on the risk of domestic violence, serving as a comparison to fully adjusted models. The functions were:

$$\log\left[\frac{p_{ij}}{1-p_{ij}}\right] = \beta_{0j} + \beta_{mj} \sum X_{mij}$$
 (1)

$$\beta_{0j} = \gamma_{00} + \mu_{0j} \tag{2}$$

$$\beta_{mj} = \gamma_{m0} \tag{3}$$

Equation (1) is the level-one model whose units are individuals, where p_{ij} denotes the domestic violence probability of individual i living in community j, and X_m represents individual characteristics. At level two, we treated the intercept as random and the effect of contextual factors as fixed (equation (2) and (3)), where β_{0j} is the mean outcome for level-two community j, and β_{mj} is the partial association between individual characteristics and the outcome variable, both adjusted for differences among individual characteristics. The component γ denotes the fixed effect with the average intercept across communities, γ_{00} , and the average regression slope across communities, γ_{m0} . Lastly, μ_{0j} denotes the random effect at level two controlling for the individual variables.

Secondly, contextual variables were added to the level-two function to understand the effect of cultural and institutional factors on the risk of domestic violence (equation (4)). X_n represents the institutional variables. Accordingly, r_{0n} is the effect of X_n on domestic violence. Interaction between different community-level variables was also added to the models to investigate the mechanism of the contextual effect.

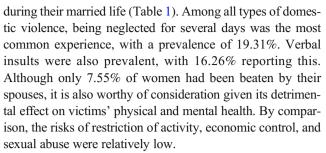
$$\beta_{0j} = \gamma_{00} + \sum r_{0n} X_{nj} + \mu_{0j} \tag{4}$$

To test the robustness of the result, alternative measures of domestic violence (intensity of long-term violence, prevalence of short-term violence, and prevalence of long-term physical abuse) were estimated with the same set of models. As the intensity score was treated as a continuous variable, a linear multilevel modelling approach was adopted.

Results

Descriptive Analysis

We first investigated the prevalence of long-term domestic violence in rural China. Of the 14,050 married women in our sample, 28.83% had experienced domestic violence



Sample characteristics are displayed in Table 2 (columns 2 and 3), including individual characteristics and cultural and institutional factors. Columns 4 and 5 present the descriptive statistics of women who had experienced domestic violence. The preliminary examination of the relationship between individual and contextual predictors and domestic violence risk was conducted via a t-test. Victims and their husbands averaged 6.5 and 8.4 years of education, respectively, which was less than their counterparts. However, the mean length of victims' marriages was 19.8 years, and their mean number of children was 1.99, both significantly higher than the rest of the sample. Additionally, the proportion of victims that did non-agricultural work, owned a house, and contributed equally to the family, were significantly lower than women who had never experienced domestic violence.

At the community level, 29.5% of the victims lived in communities where women cannot inherit money or property. 15.9% of the victims' communities organized information campaigns on the law regarding women's interests and rights less than three times during the survey year. 6.3% lived in communities where women's major source of income is non-agricultural work inside the villages. These percentages were significantly lower than those of women who had not experienced domestic violence. However, multivariate and multilevel analyses are needed to test the results above with other variables being controlled for.

Multilevel Analysis

To understand the contextual effects, multilevel logistic models on the risk of domestic violence were estimated (Table 3). Model 1 included only individual-level variables. Compared with women who had never experienced domestic violence, victims were more likely to have lower educational levels, fewer children, and less likely to own a house. In terms of spousal relationships, longer marriages, husbands' lower educational levels, and less equality in the economic contribution to the family all led to a higher risk of domestic violence against married women. Participating in nonagricultural work had no significant relationship with the outcome variable; however, being unemployed was associated with a lower risk of domestic violence.

The highlight of this research is the effect of contextual level variables on the risk of domestic violence. Model 2



Table 1 summary statistics of the prevalence and intensity of domestic violence

Variable	Mean/proportion	Standard Deviations
Prevalence of long-term domestic violence	0.288	0.453
Activity restriction	0.021	0.143
Economic control	0.034	0.181
Beating	0.076	0.264
Verbal insults	0.163	0.369
Being neglected	0.193	0.395
Sexual abuse	0.024	0.153
Prevalence of short-term domestic violence	0.142	0.349
Prevalence of long-term physical abuse	0.097	0.296
Intensity of long-term domestic violence	0.306	0.957

included four contextual variables. As for the institutional variables, results showed that women in a community holding more information campaigns had 17.5% lower odds of experiencing domestic violence in married life than the

reference group, though the significance level was marginal. However, the proportion of female officials in the village committee did not a have significant relationship with the risk of domestic violence.

Table 2 summary statistics of married women in rural China and by experience of domestic violence (DV)

Level 1 Descriptive Statistics

	All sample		DV victims		
Variable	Mean/proportion	Standard Deviations	Mean/proportion	Standard Deviations	
Age	41.619	10.405	41.790	9.998	
Length of marriage	19.387	10.565	19.812**	10.311	
Years of education	6.922	2.645	6.518***	2.653	
Years of husband's education	8.559	2.633	8.374***	2.660	
Number of children	1.849	0.917	1.986***	0.949	
Relative economic contribution to the family					
Husband contributes more	0.707	0.455	0.737***	0.440	
Wife contributes more	0.049	0.215	0.052	0.222	
Couple contribute equally	0.244	0.429	0.210***	0.407	
Occupation					
Non-agricultural work	0.243	0.429	0.222***	0.416	
Agricultural work	0.726	0.446	0.760***	0.427	
Non-employed	0.031	0.173	0.019***	0.135	
Ownership of a house	0.334	0.472	0.317**	0.465	
Ownership of land	0.773	0.419	0.785^{*}	0.411	
Level 2 Descriptive Statistics					
	All sample		DV victims		
Variable	Mean/proportion	Standard Deviations	Mean/proportion	Standard Deviations	
Women's inheritance right	0.346	0.476	0.295***	0.456	
Information campaign	0.180	0.384	0.159***	0.366	
Female political representation	0.290	0.454	0.267***	0.443	
Major source of income for women					
Cropping and livestock	0.840	0.366	0.857***	0.351	
Non-agricultural work as migrant workers	0.080	0.271	0.080	0.272	
Non-agricultural work inside the village and others	0.080	0.229	0.063***	0.056	

Notes: The asterisks in the column of DV victims indicate the significance level of the T-test between DV victims and non-victims. *p < .05, **p < .01, ***p < .001



Table 3 Results of multilevel analysis of the effect of individual and contextual variables on the risk of domestic violence

Domestic Violence	Model 1	Model 1		Model 2		Model 3	
	OR.	SE	OR.	SE	OR.	SE	
Fixed effect							
Individual-level							
age	0.979**	0.008	0.981*	0.008	0.981*	0.008	
Length of marriage	1.014^{+}	0.008	1.013+	0.008	1.013+	0.008	
Years of education	0.932***	0.010	0.936***	0.010	0.936***	0.010	
Years of husband's education	0.978*	0.010	0.978*	0.010	0.978*	0.010	
Number of children	1.198***	0.039	1.182***	0.039	1.182***	0.039	
Relative economic contribution to the family $(1 = Coup$	le contribute equa	ally)					
Husband contributes more	1.246***	0.078	1.235***	0.077	1.234***	0.077	
Wife contributes more	1.338*	0.161	1.337*	0.161	1.333*	0.160	
Occupation (1 = non-agricultural work)							
agricultural work	0.990	0.067	0.968	0.067	0.966	0.067	
Non-employed	0.531***	0.095	0.531***	0.095	0.531***	0.095	
Ownership of a house	0.843**	0.051	0.845**	0.051	0.846**	0.051	
Ownership of land	1.109	0.077	1.074	0.075	1.075	0.075	
Community-level							
Information campaign			0.825^{+}	0.087	0.712*	0.098	
Women's inheritance right			0.683***	0.058	0.637***	0.061	
Female political representation			0.919	0.082	0.916	0.081	
Major source of income for women $(1 = \text{cropping and } 1)$	ivestock)						
Non-agricultural work as migrant workers			1.027	0.149	1.023	0.149	
Non-agricultural work inside the village and others			0.684*	0.108	0.697*	0.110	
Information campaign × Women's inheritance right					1.422^{+}	0.303	
Intercept	0.592*	0.049	0.717	0.179	0.731	0.183	
Random effect:	Coef.	SE	Coef.	SE	Coef.	SE	
Variance component	4. 600 date	0.040	4 (04)	0.040	4. 600 title	0.075	
Intercept	1.632***	0.049	1.621***	0.049	1.620***	0.049	
Number of individuals		14,050		14,050		14,050	
Number of communities		2932		2932		2932	

Notes: p < .1, p < .05, p < .01 ***p < .001

In terms of cultural variables, the odds of women experiencing domestic violence were 31.7% lower for those living in communities where they have the right of inheritance than those in communities where they do not. Those living in communities where most women do non-agricultural work inside the village had a 31.6% lower risk of exposure to domestic violence compared with those who live in communities where female income was accrued mainly from cropping and livestock farming. The results indicated that some of the community-level cultural and institutional factors considered in this study are related to the risk of domestic violence against women.

According to the replacement hypothesis, whether institutional measures will take effect might depend on the community's cultural norms. To investigate the interaction

effect between cultural and institutional variables, an interaction term was added in Model 3. Only two significant contextual factors in Model 2 were considered: information campaigns and inheritance rights. To fully present the interaction effect in nonlinear models, we further calculated the predicted probability of experiencing domestic violence for the four combinations of information campaigns and the right of inheritance variables. In communities where women did not have inheritance rights, results showed holding more information campaigns on women's rights laws was significantly associated with a lower probability of women experiencing domestic violence (Fig. 1). However, the relationship was not significant in communities where women already had this right. This suggests that information campaigns might be more effective in



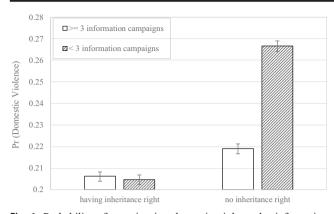


Fig. 1 Probability of experiencing domestic violence by information campaign and women's right of inheritance in the communities

communities where gender norms are more traditional and patriarchal.

The variance component provided information regarding the between-community variability in the risk of domestic violence. In Model 1, the intercept variance was 1.632 and significantly deviated from 0, meaning the community difference was substantial. Therefore, contextual effects are important in understanding the risk of violence against women. After adding the contextual factors, the variance reduced by 0.7%, indicating that the cultural and institutional variables can explain part of the observed community difference. However, the intercept variances in Models 2 and 3 were substantial, indicating that between-community variability remains unexplained. Other contextual factors, especially the social norms related to the acceptance of violent behavior, might account for some of the contextual effects.

Sensitivity Analysis

Sensitivity analyses involved replacing the dependent variable (prevalence of long-term domestic violence) with three other domestic violence measures: (1) prevalence of short-term domestic violence, (2) prevalence of long-term physical abuse, and (3) intensity of long-term domestic violence. As the intensity score was estimated by linear multilevel modelling rather than logistic models, the regression coefficient is presented (rather than the odds ratio as in Models 1–5). Results for each model are displayed in Table 4.

The results for right of inheritance were consistent with Models 1–3, suggesting that women in communities where they have inherence rights had significantly less risk of experiencing short-term domestic violence and physical abuse and experienced domestic violence less frequently. These results corroborate the previous finding that in communities with a less patriarchal culture, the prevalence and intensity of domestic violence are lower.

However, the effects of information campaigns were not significant in these models, which might indicate that their influence on violent behavior is not sensitive in the short-term. This state-led measure might not affect serious violent behaviors and the frequency of abuse against women; Yet, due to the low number of women reporting short-term domestic violence and physical abuse, caution should be taken when interpreting these results.

Discussion

By employing multilevel analysis, this study investigated the effect of contextual factors on the risk of women experiencing domestic violence in rural China. Given rural China's social, cultural, and political background, our analysis focused specifically on the influence of cultural and institutional factors on domestic violence against women, which have not been fully explored in previous studies. The study's three hypotheses were partly supported by the results. Firstly, cultural factors related to patriarchal culture (women's right of inheritance, women's major income source) were related to a higher risk of domestic violence. Secondly, one institutional factor holding more information campaigns on women's rights was found to be associated with a lower risk of experiencing domestic violence. Moreover, institutional effects were especially significant in communities with a patriarchal culture, consistent with the replacement hypothesis. Overall, the random effects of the multilevel models showed that there is significant geographical variation in the prevalence of domestic violence. The evidence from China further supports the ecological framework for gender-based violence, which implies that both formal and informal social structures that impinge on an individual's immediate settings influence individual daily behaviors, including violence against women (Belsky 1980; Heise 1998).

Information campaigns are a common community-based prevention against domestic violence. Particularly in China, disseminating gender equality policies is a major task for local women's federations to control domestic violence (Mo 2006). Our findings suggest that organizing campaigns aimed at raising people's awareness of women's rights more frequently is effective in reducing the risk of violence against women during their married lives. This supports deterrence theory, which suggests that educating the community about women's rights may remind the public of the legislative consequences of committing domestic violence and, thus, prevent such conduct. Information campaigns can also be viewed as a precursor to norm change (Salazar et al. 2003) - state-led campaigns may influence underlying gender norms and strengthen the social control of violence against women through social sanctions. Future research could investigate the pathway(s) linking stateled policies, social norms, and their effect in controlling gender-based violence.



Table 4 Results of multilevel analysis of the effect of individual and contextual variables on other measures of domestic violence

	Model 4		Model 5		Model 6	
	Short-term		Physical abu	se	Intensity score	;
Fixed effect	OR.	SE	OR.	SE	Coef.	SE
Individual-level						
age	0.983^{+}	0.010	0.963**	0.011	0.001	0.002
Length of marriage	0.998	0.010	1.023+	0.012	-0.005*	0.002
Years of education	0.975^{+}	0.013	0.894***	0.014	-0.014***	0.003
Years of husband's education	0.986	0.012	0.964**	0.013	-0.005	0.003
Number of children	1.142***	0.045	1.271***	0.054	0.037***	0.010
Relative economic contribution to the family $(1 = Couple)$	e contribute equal	lly)				
Husband contributes more	1.140^{+}	0.086	1.194*	0.106	-0.003	0.019
Wife contributes more	1.076	0.162	2.108***	0.328	0.160***	0.038
Occupation (1 = non-agricultural work)						
agricultural work	0.941	0.079	1.337**	0.134	-0.001	0.022
Non-employed	0.596*	0.131	0570*	0.156	-0.091^{+}	0.049
Ownership of a house	0.990	0.071	0.938	0.076	-0.011	0.018
Ownership of land	1.048	0.087	1.028	0.100	-0.008	0.021
Community-level						
Information campaign	0.780	0.120	0.959	0.154	-0.017	0.039
Women's inheritance right	0.652***	0.070	0.817^{+}	0.093	-0.061*	0.027
Female political representation	0.891	0.089	0.958	0.101	-0.025	0.025
Major source of income for women $(1 = \text{cropping and liv})$	vestock)					
Non-agricultural work as migrant workers	0.813	0.135	1.305	0.219	0.004	0.042
Non-agricultural work inside the village and others	0.697*	0.125	0.889	0.174	-0.056	0.043
Information campaign × Women's inheritance right	1.497^{+}	0.356	1.229	0.304	0.052	0.059
Intercept	0.215***	0.065	0.210**	0.074	0.480***	0.077
Random effect:	Coef.	SE	Coef.	SE	Coef.	SE
Variance component						
Intercept	1.585***	0.059	1.497***	0.068	0.449***	0.011
Residual					0.845***	0.006
Number of individuals		14,050		14,050		14,050
Number of communities		2932		2932		2932

Notes: p < .1, p < .05, p < .01

Another institutional factor, female representation in village committees, did not show a significant protective effect against domestic violence. This finding may at first appear counterintuitive, considering that women's political representation links to their decision-making power and is often recognized as a means of achieving greater equality (Coffé and Bolzendahl 2010). A possible explanation is the low variation found in this variable: the mean percentage of women in village committees was only 15.1%. Though we tried different operationalizations of this variable, the lack of variation could not be fully prevented. Moreover, political representation does not necessarily translate into decision-making power. In a system of mandated quotas, female leaders may be appointed as a political gesture, rather than to represent women's rights per

se, and men's voices might still be more influential in local committees' resource allocation and agenda-setting. Previous research has also noted that quotas placing women in counterstereotype positions could reinforce stereotypes and incite backlash, nullifying the gains of having a female leader (Rudman and Fairchild 2004). Additionally, we tested whether having more female leaders was related to the frequency of gender equality information campaigns; yet no significant difference was found. The findings suggest that, beyond increasing women's political participation, it is important that female leaders, once elected, better represent the policy interests of the majority of women. Meanwhile, the social norm that leadership is a masculine activity must be challenged to enhance the efficacy of female leadership.



By comparison, cultural factors at the community level yielded more consistent associations with the risk of domestic violence against women. Our results suggest that women living in communities that accept female inheritance are less likely to suffer from domestic violence. Sensitivity analysis showed that, when using alternative measures of domestic violence, the effects of women's inheritance rights are still significant. Although women have the legal right of inheritance in China, in reality, the practice depends heavily on local social norms. From the feminist perspective, the gendered nature of inheritance rights is rooted in rural China's patriarchal culture, which gives precedence to males in property rights and other family matters (Hu and Scott 2016). Moreover, this culture legitimates violence against women and undermines both institutional and social control of this crime. It is conceivable that only in communities where the social norms are less patriarchal and traditional, women's safety, health, and wellbeing are more likely to be ensured. The results emphasize the link between patriarchal social norms and domestic violence, highlighting the need to confront deeply embedded patriarchal norms and further promote gender equality.

Domestic violence was also found to be associated with community-level norms regarding women's employment and occupations. In communities where women's major source of income came from non-agricultural work inside the village, their risk of domestic violence was lower. Unlike the individual-level female employment status, this contextual measurement is more a representation of gender norms regarding labor division. In rural China, women are traditionally confined to the home and less likely to seek paid work (Hu and Scott 2016), whilst non-agricultural jobs are more accessible for women in egalitarian context. Women having nonagricultural jobs might further promote gender equality by challenging the traditional female role of dependency and gradually reshaping gender expectations. However, this argument might be weakened by the paradoxical finding that in communities where most women's major source of income is non-agricultural migrant work, the risk of experiencing domestic violence is not significantly lower than others. This might be because the effect of female's who work outside the village on challenging the traditional gender norms may not impact their village. Additionally, selection effects might exist, whereby women who remain living in a community where most women migrate to other cities might be more disadvantaged and, therefore, more vulnerable to domestic violence.

Lastly, the effects of cultural and institutional factors are not fully independent. This is supported by the interaction effects found in this study: only in communities where the inheritance norm was more traditional, was holding more women's rights information campaigns associated with a lower risk of domestic violence. Yet in a less patriarchal community, the effects of information campaign were limited. This result further confirms the replacement hypothesis and indicates the importance of disseminating gender equality and domestic violence policies in culturally traditional and patriarchal regions.

After examining the role of cultural and institutional factors with the sensitivity analysis, this study suggests that changing rigid gender norms should be positioned at the center of domestic violence prevention. Though formal institutions are enforced by authorities, their efficacy depends heavily on how they are implemented and perceived by local people, which is highly moderated by attitudes and values. Ultimately, the overarching cause of domestic violence lies in the norm of male entitlement over women, which condones violence against them. In this light, our findings suggest that both local and state-led efforts are needed to lead a normative change towards gender equality.

Implications

The results from this study have several policy implications for legislators, women's federations and social workers. Beyond enacting policies targeted at domestic violence, information campaigns are needed too, so to maximize public understanding of policy changes. However, given the embeddedness of patriarchal culture, educational programs aimed at promoting gender equality and women's rights can also contribute to creating a safer environment for women. Lastly, the interaction effects of cultural and institutional factors suggests that intervention campaigns and empowerment programs should be targeted at communities with patriarchal gender norms to increase the effectiveness of prevention efforts.

Limitations

Several limitations remain in our study. First, due to the cross-sectional nature of the data, this study cannot examine the causal relationships between the contextual variables and the risk of domestic violence. Future studies can assess the causality using a longitudinal design or the method of instrumental variables. Second, the measurement of cultural and institutional factors is limited by the questions in the survey. For instance, the data collection was before the implementation of the *Anti-domestic Violence Law*. Thus, this study is unable to estimate the effect of this specific law targeting at domestic violence. Additional information is needed to operationalize the contextual variables more comprehensively. Third, the self-reported measure might underestimate the risk of domestic violence. As Iyer et al. (2012) suggested, this measurement error is not fully exogenous to the effects of contextual



variables. Therefore, caution should be taken in interpreting these results.

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Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

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