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Research Article

# Effective Intervention in Domestic Violence in Chinese Communities: An Eight-Year Prospective Study

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## Abstract

**Background:** Domestic violence is increasing in China. To explore the effective intervention, we intervened three large independent Chinese communities with different approaches over an eight-year period from 2005 to 2012, with a fourth independent community as a peer control.

**Methods:** The intervention approaches included the psychological intervention with traditional Chinese culture characteristics, the social governance and the poverty relief. The statistical analysis was performed in 2017.

**Results:** We found that while the prevalence of domestic violence kept growing in the control community, it significantly declined in the other three target communities. Among these intervention approaches, the social governance was the most effective, whereas it resulted in the lowest happiness index.

**Conclusion:** This continuous, long-period, prospective and large-scale study showed that these approaches could significantly reduce domestic violence.

***Keywords:*** *Domestic Violence; Intervention; Chinese Communities; Prospective Study; Social Governance*

## Introduction

Before 2000, "domestic violence" (DV) was still a fresh concept for many Chinese, although it is common in their society with a long history [1]. In the past 4000 years, China was a slavery and then feudalism society. Even in the modern society, there are still many remnants of the traditional feudal autocratic beliefs and values in the Chinese culture. Inside the families, this tradition requires that children must obey their parents and women must serve the needs of their husbands. If they violate this tradition, they might get either verbal abuse or corporal punishment. A number of such families suffer seriously from critical violence, serious injury, disability, or even death [2,3]. For a longtime, domestic violence has only been regarded as a family affair, protected by family privacy and other traditional values; and as a result, it is beyond the social and governmental concern, and beyond the coverage of the modern law until 2016 [4-6].

During 2001-2002, we completed the first large-scale population-based epidemiological investigation on the domestic violence in China using a multi-stage stratified sampling method [7]. In a random sample of 9451 households with 32,720 subjects, 1533 households had a history of domestic violence, and the lifetime prevalence was 16.2%; 1098 households had a history of domestic violence in the preceding year, and the 1-year prevalence was 11.6% [8,9]. It can be inferred that at least 50 million households in China had ever suffered from domestic violence during 2001-2002, and this number keeps increasing [5,10].

To investigate the risk factors for domestic violence, we have ever conducted a series of researches in biology, sociology and psychology. We found that domestic violence was familial; and domestic violence with certain personality traits in the families with high genetic load had a positive but weak relationship with the MAOA^VNTR, COMT^Val158Met and 5-HTTLPR polymorphisms [11,12]. We also found that the traditional culture-related perception towards domestic violence was the most significant social psychological risk factor for domestic violence [13]. For example, 79.9% of the respondents accepted or conditionally accepted domestic violence, and even 57.2% of the victims had no dissent from that kind of behaviors [14]. Apparently, the traditional Chinese culture is still the core spirit in modern Chinese mentality and behaviors, and the spirit includes the vestiges of the feudal autocratic beliefs and values. In addition, we found that the economic status, unemployment, alcohol abuse, gambling behaviors, mental illness and physical disability were the risk factors for domestic violence as well [15-20].

To explore the ways to prevent and intervene the domestic violence on the basis of our previous findings, we carried out an eight-year-long (from 2005 to 2012), laborious, costly and large-scale prospective intervention study on four large Chinese communities. The specific treatments on the corresponding risk factors in distinct communities were conducted based on the hypothesis that the effectiveness of such treatments could be anticipated. The effects of these expected effective treatments on domestic violence were assessed.

## Materials and Methods

### Study area and design

The study began in 2004. Four experimental communities (i.e. Communities A, B, C, and D) were selected, which are located in the central (A), northern (B), western (C) and southern (D) areas of Hunan province, China, respectively. These four communities were independent of one another. Any two of them are about 80km to 500km apart, each with a population of about 20 - 50 thousands. Communities A, B and D are located in urban and C is located in rural area.

In 2004 - 2005 (called baseline group), we contacted with the persons in charge of the four target communities and explained the aims of the study and got their support. At the beginning of the study, we first completed the survey in order to get the baseline data about the prevalence of domestic violence (DV) within the past 12months, the attitudes towards DV and individual income in the four communities. Twenty interviewers, including postgraduate students in our research group and local mental health staff, conducted this baseline survey. All interviewers had one day training for universal questioning and understanding the questionnaire. A random cluster sampling method was used to identify the study households within the four communities. A combination of multiform clue survey and face-to-face interview procedures were adopted [7,9]. To address the issue regarding the respondents' tendency in underreporting DV, interviewers obtained supplemental information from additional sources such as the respondents' colleagues, community leaders, relatives, and neighbors. The family members contacted at the time of the survey were informed that the survey was entirely voluntary and confidential and invited to finish the questionnaire immediately. Each household need finish at least one questionnaire. In the case with low education level who could not understand the contents of the questionnaire, the interviewer explained and filled out the questionnaire according to respondents' verbal answers. The questionnaire was anonymous and took approximately several minutes to complete and generally was collected on the spot. At least two thousand households were needed in each community.

After the baseline survey, we adopted differently-oriented prevention and intervention approaches (include one control with no intervention) in these four experimental communities from 2005 to 2012.

In 2012 - 2013 (called follow-up group), we conducted the same survey in these four communities, using the same method and the same interviewers as in baseline. In addition to the original questionnaire, we added the index of well-being questionnaire in this survey. The prevalence of DV was calculated by assessing the past 12-month report. The questionnaire was remained anonymous and took approximately several minutes to finish. In order to be in accordance with the baseline survey, 16 of the same interviewers in baseline were recruited again. They got the same training for universal questioning and understanding the questionnaire.

## Prevention and intervention background and practice

### Psychological intervention

In Community A, we adopted the psychological intervention approach related to the Chinese traditional culture, which was called the Chinese Taoist cognitive psychotherapy (CTCP) [21,22]. This psychotherapy has been collected into the Handbook of counseling and psychotherapy in an international context [23] and Asian Healing Traditions in Counseling and Psychotherapy [24] and adopted by the Chinese immigrant communities in USA [25,26].

Our previous study showed that CTCP had effects on relieving stress, adjusting psychosomatic state, perfecting coping style, and improving mental health effectively [21,25]. The corresponding author, Prof. Yalin Zhang, one of the two founders of CTCP [21,27], provided the procedural and academic support that assured the intervention implementation. The research about CTCP has got a grant support from Science and Technology Support Projects from Ministry of Science and Technology of China - "Standardizing and modeling ten types of psycho-counseling and psychotherapy in China" (No. 2009BAI77B07). CTCP ranked the top of the ten.

CTCP was an indigenous psychotherapy. The principles of CTCP are grounded on the Chinese traditional Taoist culture, i.e. Taoism. The CTCP was developed by a combination of Taoism with modern American cognitive therapy technique. The fundamental belief is the 32-character Taoist formula from "Taoist Bible" written by Lao Tzu, one of the greatest philosophers in ancient China. The CTCP involves five basic components, summarized as 'ABCDE techniques', which has been published in details elsewhere [21,22]. They are A: Actual stress factors; B: Belief and value system; C: Conflict and coping style; D: Doctrine direction and practice; E: Effect evaluation and reinforcement.

In this study, stage A was used to assist the respondents in identifying and analyzing the actual stressors and factors associated with their opinion differences and domestic violence. The identification of stressors was based primarily on subjective experience rather than the objective stressful events.

Stage B was applied to evaluate the belief system and the attitude towards DV, and then analyze their interaction. An individual's cognitive appraisal of an event plays an important role in mediating stressors and determining subsequent emotions and behaviors. The cognitive set is in turn dependent on his/her beliefs. Changes of beliefs will alter the emotions and behaviors. Through this stage, we helped the respondents to identify the gap between his/her subjective needs and objective reality, to analyze the rationality of their needs according to their reality, and the rationality of the negative attitude towards DV if he had.

Based on the appraisal of actual stressors and belief system, stage C analyzed the respondents' psychological conflicts and their coping styles. Since objective reality is such that an individual's needs are never entirely met, one either has to change reality or abandon some of the needs. If neither of these is feasible, psychological conflicts will take place and the individual has to resort to coping strategies. Domestic violence was suggested as one of the negative coping styles employed to solve their opinion differences in family. The relative usefulness of the coping methods was discussed and recommended in this step.

Stage D was the core of CTCP. After the complementary roles of Taoism were explained, the 32-character Taoist formula was interpreted word by word to the respondents in the hope that its spirit was assimilated in the context of his/her psychological conflicts and

coping styles. The first eight characters comprise the sentence 'li er bu hai, wei er bu zheng'. It was interpreted as benefiting without hurting others and acting without striving. The second set of eight characters comprises the sentence 'shao si gua yu, zhi zu zhi zhi'. It involved restricting selfish desires, learning to be content, and knowing how to let go. The third set of eight makes up the sentence 'zhi he chu xia, yi rou sheng gang'. It was interpreted as being in harmony with others and being humble, using softness to defeat hardness. The final set of eight characters forms the sentence 'qing jing wu wei, ren qi zi ran'. This sentence was the central belief of Taoism. It suggested that a person should maintain tranquility, act less, and follow the laws of nature. In this step, the respondents must understand and put the principles into practice in daily life. A diary of practice was kept and was used to re-discuss the doctrine in the context of the respondent's psychosocial difficulties.

To continually practice the new concepts and coping styles to solve the problems was needed in stage E. The respondents were asked to summarize and discuss his/her experiences. The therapist encourages him/her to point out any obstacles and to strengthen the treatment effects.

Note: The five stages were flexibly divided into more than five sessions. The stages, mostly D and E, were repeated after the first cycle was completed.

The ultimate goal of CTCP in the study was to let the respondents gradually understand the philosophy and wisdom of life and correct the negative attitudes towards DV, to help them set up the philosophy of enjoying the transcendent quiet, understanding the wisdom, and following the nature of the law.

We employed a "Trinity" psychological intervention strategy carefully, which meant the combination of psychological group-education, family-counseling as well as individual-psychotherapy. It was a set of intervention strategy from the plane to the point, from the metaphysics to the physics, and embedded layer by layer.

Psychological group-education was practiced by the lectures about the Chinese Taoist traditional culture hold in the community. The main topics were the wisdom and art of Taoism in how the individuals get along with nature, and how the individuals get along with society, in order to criticize the customs of autocratic feudal thinking, and to set up the sense of human right that everyone is equal. The lectures were open freely to all the residents in the community, held by the offices, schools, companies or residential sub-districts. The audiences ranged from several hundred in each lecture. Prof. Yalin Zhang or related researchers gave the lecture 2 - 3 times a year. White ribbon was worn if one thought by themselves that they had got the Taoist philosophy and changed the autocratic feudal thinking about DV. The white ribbon was also used as a symbol of anti-domestic violence.

Family-counseling was offered to the families with positive DV history. Based on the practice of CTCP, we helped to identify the autocratic feudal thinking in the families, to advocate the equality among the family members, to change the negative concept towards DV, and to improve the interaction mode between family members. Besides the counseling in the target family alone, we also conducted the group family counseling with CTCP regularly. Each group included about 10 families with at least 2 persons in each family to participate. Every group had 6-8 sessions. At the first session, the instructors introduced themselves, explained the character and aim of the group, and helped the members know each other. The aim of the whole group was to think, understand and practice about the concept came from the old sage beliefs, such as "harmony", "water benefits everything", "man is an integral part of nature", "follow the law of nature", followed by discussing and interacting stage by stage according to CTCP. At last, a brief summary was asked for every family. One to two instructors participated in each time. The group was led by the postgraduates, lecturers, or doctors who were familiar with CTCP.

Individual psychotherapy was offered to the perpetrators and victims, and the high-risk individuals. First, those who were interested in participating should apply for the treatment. Next, the psychotherapist took the information and made decision on whether the treat-

ment was necessary. Then, he discussed with the client and set a treatment schedule together. The therapy proceeded stage by stage according to CTCP. The aim of the treatment was to correct the misconception, study how to manage the emotion and behavior, and improve the coping style. The duration of the treatment was from 12 to 16 times, and usually once a week.

All of the lecture, psycho-counseling and psychotherapy were free (supported by several research grants listed in the acknowledgment); the contact information of the researcher was publicized. At the same time, the advertising for the lecture and the study consisted of flyer was posted on local community bulletin boards. The subjects who wanted to take part in counseling or psychotherapy needed to make an appointment with the researcher. At the end of each session, subjects were notified that if they would participate in a study on improving family harmony and get the counseling and psychotherapy. All the participants were voluntary. Individuals who agreed to participate had both oral and written informed consent. The postgraduates and local staffs were placed in this community regularly to implement the study during the study.

### Social governance intervention

In community B, as a counselor, we designed a three-level prevention and intervention system for DV that had been adopted by the authority. The system was organized by the local government, and implemented by several social administrative agencies. This strategy had got support from China Medical Board of America in New York and National Social Science Foundation of China.

The three-level prevention and intervention system consisted of community, street committee and the unit of residential sub-district. Every level had an exclusive organization of prevention and intervention of DV. It was consisted of the administration, justice department, police, lawyer, women's federation, local primary care and the neighborhood committee. Each division had different function, and coordinated with each other.

The first level was called as Committee of Counselor. The leader of the local government was responsible for it. It consists of individuals working in Civil Administration Department, Public Security Bureau, Women's Federation, as well as lawyers, psychiatrists, psychologists, and other medical professionals. The mission of this committee was to provide planning and counseling, to coordinate the different divisions of the system such as living, social assistance, social stabilization, social security including anti-domestic violence, and to suggest schemes to provincial government.

The second level was called as Street Committee. It had a comprehensive management office, which was in charge of local social affairs and security. It had medical care center, temporary shelter, legal consultancy service, emergency of 110 and medical-emergency of 120 services (same as 911 services in the US), and "moral court". The Street Committee received appeal from the residents directly, coped with various issues such as helping to get job, applying for the living assistants, taking care of the sick, the elderly, and the patient with mental illness, and coping with the emergency; educating, placing, handling or combating the person with gambling, drug abuse and law breaking; and providing the legal consultation, short period of economy relief and temporary medical care. They reported to the superior and asked for support and instruction when needed.

The third level was the units of local offices, schools, companies and residential sub-districts, which subordinated to the Street Committee. Every unit established several Mutual Help Groups (MHGs), which was the basic organization of the system, and each had several neighbors and relatives (mostly the grandpas and grandmas). The MHGs scattered all over the community. They wore a special red armband and patrolled around the community. Door to door services identified which family had the sick or new unemployment, and which one needed care. The services included providing help, launching assistances, or finding volunteers. They also went to door right away to stop drinking, gambling (mostly playing Mah-jongg, one of the gambling game in China), or domestic violence. They managed it on the spot. In case the problem could not be solved, they usually arranged a residents' meeting or a "moral court" for further consideration, until

the client was sincerely convinced and reconciled. In the serious cases, the enforcement department, police, women's federation would come forward to intervene.

Additionally, MHGs developed various activities irregularly, such as small party, the purpose of which was to share experiences on solving family problems, provide professional information and mutual support, post slogans as "Anti-Fire, Anti-Theft, Anti-Domestic violence" on local community bulletin boards, post educational propaganda regularly of law knowledge and news in the community about building harmony community and preventing domestic violence, write and play drama about anti-domestic violence and praise model families in the community. Up to date, this community B was named as the "Chinese model community" by National Women's Federation, and put forward the slogan of "Zero Domestic Violence Community" (www.china.com.cn/city/txt/2005-12/10/content_6056704.htm).

### Economic intervention

Community C is located in a remote mountain area with ethnic minority. It was the state-level poverty-stricken area in China. Farming is their main income source; and the people usually need farming from sunrise to sunset. They lived in extreme hardship, with far behind education and medication condition. According to the governmental document of China's rural poverty alleviation and development programs (2001-2010) and the report of farmers' burden of target management assessment from the people's government of Xiangxi autonomous prefecture office of Hunan province launched from China Agricultural and Economy Information Network (news.sina.com.cn/2004-08-25/17564137039.shtml), we appealed and assisted the local government and all sectors to get strong support. At the end of the study, community C had a great improvement: the community has accessed to the highway, household has accessed to the electricity, the production and possessing of the crops has expanded, and the actual income has increased. There were various government money subsidies and preferential policies, such as subsidies for food, fine seed, farm machinery, household appliance, and the subsidy for the lodging fee and living expenses for extremely poor students. The cash subsidies were given to the households directly. Additionally, the various policies were given, such as the free text book for the poor students, the tax-free policy for the peasant and the pension (55 Yuan per month) for the elderly who was older than 60. Also, there was a favorable policy on the medication for the local peasant. Moreover, most young adults went out of the village to coastal cities for working and making money. They sent back about average 20,000 Yuan to home per year (www.lm.gov.cn/DataAnalysis/content/2009-11/20/content_288803.htm). Therefore, the actual income of the peasant in this community now consisted of three sources: 1. farming income; 2. various subsidies and preferential policies; and 3. money from outside workers.

The poverty reduction program in this area was given close attention by the government. In May 25-27, 2012, former Premier Wen Jiabao gave a special trip to this area to inspect the poverty alleviation and development work, and to have a good understanding of local residents' production and life.

### Peer control

Community D, as a peer and blank control community, had no specific intervention related to domestic violence but natural development.

### Questionnaire

The survey questionnaire used in baseline consisted of demographic data, DV screening questions and the attitudes towards DV. In follow-up survey, besides questions used in baseline, we add the Index of Well-being questionnaire.

### Demographic data

Demographic data were regarded as age, gender, year of education, and household size.

### DV screening questions

A list of abusive behaviors was presented followed by the questions regarding their personal experiences with DV: "Is there any kind of the following behaviors between the members of your family within the past 12 months?". The types of behaviors on the list were as follows: (i) verbal insults, (ii) physical beating with bare hands, such as slapping, grabbing, shoving, choking, biting, kicking, punching, or hair-pulling, (iii) physical beating with implements, such as binding, whipping, burning, etc., (iv) destroying the furniture when angry with family members, (v) causing suffering through such acts as forcing someone to do heavy labor, using threats or intimidation, limiting food and/or clothing, forcibly restricting one's personal freedom, or forbidding contact with individuals outside the family, (vi) physical neglect or abandonment, (vii) sexual assault, (viii) murder, or (ix) other violent behaviors.

### The attitudes towards DV

It was assessed through such questions: "Do you agree that to solve some family problems the behaviors listed above could be conducted? What are your attitudes towards DV?" The answers are divided into two catalogues, and marked by scores of 1, and 2, respectively. "1" = negative attitude, including unconditionally accepting DV, or conditionally taking it into consideration; "2" = positive attitude, refers to not accept DV.

### Index of well-being

The Chinese version of Index of Well-being questionnaire was revised from the version of Campbell., *et al.* (1976). It was administrated for measuring the satisfactions of quality of life. It is a self-reported questionnaire with 9 short items rated from 0 to 7 on the basis of the degree of satisfactions of life from "0" = not at all to "7" = extremely. This instrument has been shown to be a reliable and valid questionnaire for use in a variety of populations in China [28].

In this paper, the prevalence of any type of DV within the past 12months was calculated by household, that is, the sampling unit was the household. The attitudes towards DV, the index of well-being and demographic data were calculated by individuals. All subjects gave written informed consent in accordance with the Declaration of Helsinki, which was one of the most laborious components of this study. The protocol was approved by the IRB of Central South University, China.

### Statistical analyses

SPSS 19.0 statistical software was used for statistical analysis. Data were reported on 12-month prevalence rates. The attitudes towards DV and the index of well-being among 4 selected communities were calculated and compared in this study. 12-month prevalence rates of DV and the proportions of the negative attitudes towards DV in different communities in baseline and follow-up were compared using Pearson $\chi^2$ tests. Univariate analysis was conducted to explore the differences of the index of well-being among 4 communities in follow-up group after controlling for the age, gender and year of education of the respondent individuals.

## Results

### Demographic characteristics

Table 1 showed the demographic characteristics of the respondents. In baseline group, a total of 9700 households were surveyed in the four communities; among them, 9196 households (94.8%) finished at least one questionnaire. In follow-up group, a total of 9538 households were surveyed in the four communities; among them, 9069 households (95.1%) finished at least one questionnaire. In individual level, 13795 subjects completed the questionnaire in baseline, and 16324 completed it in follow-up group.

The comparison of the 12-month prevalence of DV between baseline and follow-up in the four communities (See figure 1).

| | Baseline | | | | Follow-up | | | |
|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | A | B | C | D |
| Household(no.) | 2326 | 2124 | 2411 | 2335 | 2411 | 2210 | 2192 | 2256 |
| Respondents(no.) | 3438 | 3186 | 3858 | 3313 | 4814 | 3757 | 4595 | 3158 |
| Mean age (yrs) | 37.0 ± 14.9 | 41.8 ± 14.1 | 44.6 ± 13.7 | 40.5 ± 12.6 | 46.3 ± 19.4 | 43.0 ± 17.5 | 46.6 ± 17.5 | 38.1 ± 10.3 |
| **Gender (%)** | | | | | | | | |
| Male | 57.4 | 51.7 | 51.6 | 61.2 | 53.2 | 50.2 | 42.6 | 44.2 |
| Female | 42.6 | 48.3 | 48.4 | 38.8 | 46.8 | 49.8 | 57.4 | 55.8 |
| Mean education(yrs) | 10.8 ± 3.8 | 10.6 ± 4.1 | 4.3 ± 3.4 | 11.3 ± 4.0 | 10.1 ± 4.1 | 11.2 ± 3.9 | 6.3 ± 3.4 | 11.8 ± 4.0 |
| Mean household size (no.) | 3.4 ± 1.0 | 3.3 ± 1.0 | 4.5 ± 1.2 | 3.3 ± 0.9 | 3.3 ± 1.2 | 3.5 ± 1.4 | 4.8 ± 1.5 | 3.5 ± 1.0 |

***Table 1:*** *Demographic variables.*

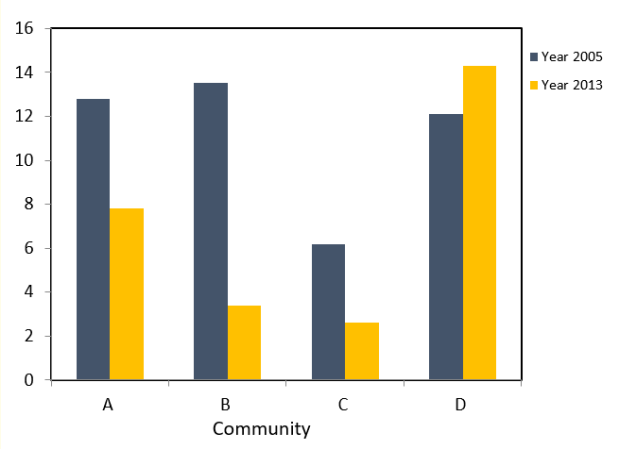


***Figure 1:*** *Alteration of the prevalence of domestic violence (DV) in past 12 months at baseline and follow-up study. [Note: *** P < 0.001, for A, B and C; * P < 0.05 for D].*

In Community A, after 8-year psychological intervention by the Taoist cognitive therapy, the 12-month prevalence of DV significantly decreased [12.8% vs. 7.8%, $\chi^2$(df=1) = 32.327, P < 0.001].

In Community B, after 8-year social governance, the 12-month prevalence of DV decreased most [13.5% vs. 3.4%, $\chi^2$(df=1) = 152.858, P < 0.001], and this community had turned to be a model in China, stepping forward to develop a "zero-violence" one.

Community C was a remote and isolate village, it went out of the poverty at the end of this study. The occurrence of DV was reduced significantly [6.2% vs. 2.6%, $\chi^2$(df=1) = 34.414, P < 0.001].

In Community D, we offered no intervention. The DV in this community kept growing [12.1% vs. 14.3%, $\chi^2$ (df = 1) = 4.599, P < 0.05], consistent with the trend in other communities across this nation.

The proportions of negative attitude towards DV between baseline and follow-up in the four communities (See figure 2).

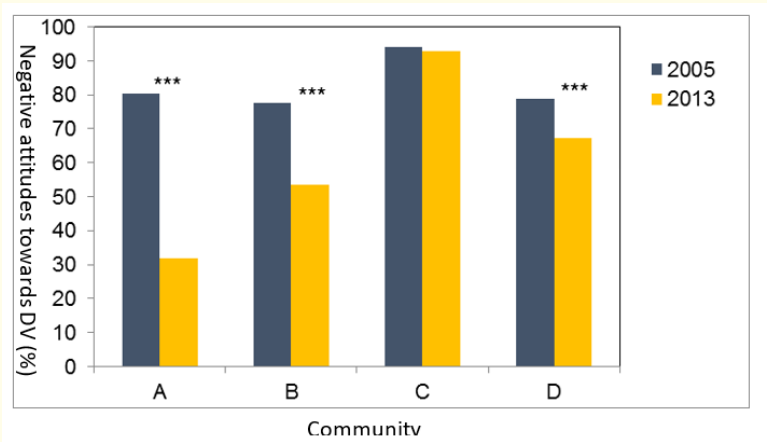


***Figure 2:*** *Alteration of the proportions of negative attitude to domestic violence (DV) before and after study. [Note: *** P < 0.001].*

In Community A, the percentage of the people who rationalized DV significantly decreased [80.4% 31.8%, $\chi^2$(df = 1) = 951.716, P < 0.001]. In Community B, the proportions of negative attitude towards DV significantly decreased from 77.7% to 53.6% [$\chi^2$(df = 1) = 438.558, P < 0.001]. Community C, the traditional culture-related perception towards DV remained unchanged [94.2% vs. 92.8%, $\chi^2$(df = 1) = 3.724, P = 0.054]. Community D, with no intervention, the proportions of negative attitude towards DV also significantly decreased [78.8% vs. 67.4%, $\chi^2$(df = 1) = 107.692, P < 0.001].

## The index of well-being in four communities in follow-up group

The index of well-being in four communities was different significantly [F(df = 3) = 3.976, P = 0.027]. LSD tests showed that the score of Community C was higher than that of Community B and Community D (both P < 0.05) (See figure 3).

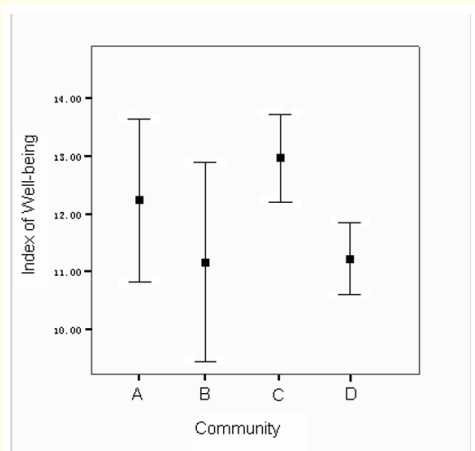


***Figure 3:*** *Mean scores of the index of well-being in follow-up group were significantly different among four communities. [Note: Error bars indicate 2.0 SD around means].*

## Discussion and Conclusion

The growing domestic violence has become a serious issue in modern Chinese society. It might be related to quicker pace of modern life, stronger competition, larger scale of migration, and unfair resource re-allocation that generated more stress and affected the motion and temper. This growth warns us that improving the people's quality of life and removing the dross of the Chinese traditional cultures is urgent.

In Community A, the traditional Chinese culture was one risk factor for domestic violence. Thus, we used the "Chinese Taoist cognitive psychotherapy" [21,22], a psychological intervention tool for moral education, to correct the people's misconceptions in rationalizing domestic violence. The traditional Chinese culture has been widely and deeply rooted in the Chinese mind; however, it is a mixture of moral and immoral components, and the domestic violence, a kind of immoral social habit reflecting the patriarchal beliefs, is just one of its immoral components. We combined the traditional culture-related knowledge with the modern cognitive psychotherapy techniques to develop a "Chinese Taoist cognitive psychotherapy" [21,22] as an education tool, in order to reconstruct the morality and culture in Community A. The culture-related knowledge was majorly based on the ancient Sage "Laoist's Morality Bible", incorporating the core sense of the old sage beliefs such as "harmony is the most precious", "water benefits everything", and "following the rule of nature". The reconstruction was realized by psychological group education, family counseling, as well as individual psychotherapy. This reconstruction aimed to change the patriarchal beliefs and feudal autocracy misconceptions, wipe out the immoral customs, and popularize the concepts of equality and human right. In our study, we demonstrated the efficacy of the Chinese Taoist cognitive therapy on domestic violence, which did not only indicate that cognitions influenced behaviors, but also that the traditional Chinese culture could renew itself constantly.

In Community B, the law and order out of control, unemployment, alcohol abuse, gambling behaviors, mental illness and physical disability were risk factors for domestic violence. Thus, we used the comprehensive social governance as a social intervention tool. We designed a three-level prevention and intervention system for domestic violence. This system was organized by the local government, involving the juries, police, women's federation [Women's Federation is a federal agency whose mission is to represent and safeguard women's rights and interests, and promote the equality of gender], and the neighborhood committees. In China, the neighbors call each other like family members, such as "grandpa, grandma, uncle, aunt, brother and sister", but not the names directly, which increases the legitimacy and probability of their active intervention as the first response to the neighborhood violence. Each section in this system was led by a full-time staff who was responsible for coordination. This system aimed to assist the community in finding job opportunities, fighting against gambling, preventing from alcohol abuse, taking care of the patients, the elderly, the weakness and the disabled people, guarding the psychiatric patients, maintaining the social order, compromising the domestic disputes, and monitoring the domestic violence. The first response to domestic violence was done by neighbors and relatives who were responsible to be present on site at the first moment. The second response to domestic violence was done by the community meetings or a "moral court", in case of failure of the first response. The third response was done by the women's federation, police, or jury for those most serious cases. This system was designed to stop each domestic violence case by enforcement. Furthermore, the local government could offer effective intervention by solving various issues related to employment, security and healthcare, and educated, compromised, punished or even combated the perpetrators of domestic violence.

Community C was a remote and isolate village with simple personal relationship and self-sufficient residents. Most youth immigrated outside for better life, and thus this community had a lower prevalence of domestic violence than others at baseline. This also was a minority community located in a remote and isolate mountainous area. It had been defined as a poverty community at national level by the government due to its long-term dropping out of the national mainstream in economic development. The poverty was one of the most significant risk factors for domestic violence. We found that the people in poverty were more sensitive to and self-satisfied with economic improvement. Thus, we used the economic improvement as a social intervention tool. We assisted this community in keeping up with the mainstream or even exceeding the average rate of national economic development. Over the study period, the economic status of this

community was improved significantly under the financial support from government and foundations. It went out of the poverty at the end of this study, furnished with highways, power supplies, new family houses and various appliances (www.hntj.gov.cn). It was found in this community that significant improvement of economic status significantly reduced the occurrence of domestic violence and enhanced the happiness index, which suggested that, in addition to the aforementioned cognition and social governance, economic status affected behaviors too. However, we did not establish the three-level prevention and intervention system and offer the psychological intervention in this community, the traditional culture-related perception towards domestic violence remained unchanged.

We also noted that despite the economic levels of the four communities had been dramatically improved, the happiness index was not synchronized in all communities. The per capita income in Community C was far lower than other communities (See table 2), but the happiness index was the highest. The per capita income in Community B was highest and the prevalence of domestic violence was lowest, however, the happiness index was the lowest. It should be further researched.

| Communities | Year 2004 (Yuan) | Year 2012 (Yuan) | Added value (Yuan) | Growth rate (%) |
|---|---|---|---|---|
| A | 8602 | 20614 | 12012 | 140 |
| B | 8056 | 26451 | 15331 | 190 |
| C | 1602 | 3763 | 2632 | 135 |
| D | 8567 | 19405 | 10838 | 127 |

***Table 2:*** *The average per capita incomes per year in 2004 and 2012 in the four communities.*
***Note:*** *Yuan is Chinese dollar (Ren min bi). The income data in 2012 were obtained in 2013.*

In summary, we found that the prevalence of domestic violence keeps growing in modern Chinese society. This growth can be interrupted by the psychological intervention, economic improvement and social governance.

## Limitations of the Study

Unlike studying the small samples in labs, many confounding factors in large and open communities are impossible to be controlled ideally, which included, for example, to randomize and carry out the treatments blindly, to control the quality of experiment by partly duplication, or to set more control communities. Despite these difficulties, we have conducted this study with our best efforts including huge amount of labor and funds available and maximizing the population sizes as possible as we can.

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## Conflict of Interest

The authors declare no conflict of interest

## Author Contributions

Cao Y, Guo G, Zhang Y, Mao Q, Sun S, Yang H, Zhang YL and Luo X contributed to the formulation of overarching research goals and aims and the writing, reviewing, and editing of the article. Cao Y, Guo G, Sun S, Yang H and Zhang Y provided the resources (patients and data). Cao Y and Luo X conducted the study and performed the analysis. Zhang YL secured funding for the current study. Cao Y, Zhang YL and Luo X are responsible for the overall content as guarantors.

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