

Information Communication Technologies and Intimate Partner Violence in China

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Abstract

Although a substantial number of studies have investigated factors that influenced intimate partner violence (IPV), very few have assessed the connection between the use of information and communication technology (ICT) and such violence. Using survey data collected from over 400 women in a large Chinese city, this study explored how the involvement of various ICT-related activities affects Chinese women's experiences with psychological, physical, and sexual abuse. We found that some forms of media usage and online activities, such as times spent on paper books and Internet and browsing entertainment and sports news as well as watching movies and TVs online, were linked to a higher or lower likelihood of being a victim of IPV. Feelings of loneliness and helplessness were associated with more IPV victimization experiences. Married women were less likely to experience IPV, whereas working women were subject to greater IPV.

Keywords

intimate partner violence, information communication technology, China, online activity, media use, psychological well-being

Introduction

Intimate partner violence (IPV) is a serious social problem worldwide, and China is no exception. The definitions around this phenomenon vary across cultures. The term *domestic violence* is most commonly used in Chinese societies, which refers to the use

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of violence such as beating, restraints, harms, or forcible restrictions on physical liberty to commit injurious acts against family members (Zhu, 2015). It is estimated that one third of women worldwide have experienced violence in their intimate partner relationships (García-Moreno et al., 2013). In China, the national prevalence of physical violence was estimated at around 34% (Parish, Wang, Laumann, Pan, & Luo, 2004), and studies conducted in various parts of China (including both rural and urban areas) reported comparable lifetime prevalence (Fulu et al., 2013; Xu et al., 2005). IPV victimization is associated with increased odds of negative health consequences such as depressive symptoms, substance use, chronic disease, mental illness, sexually transmitted diseases, and other health problems (Campbell et al., 2002; Carbone-López, Kruttschnitt, & Macmillan, 2006; Coker et al., 2002).

The main purpose of this study is to assess the impact of using information and communication technology (ICT) on Chinese women's experience of IPV. ICT refers to the use of computer for "digital playing, writing, e-mailing communication, Internet surfing, and mobile phone" (Punamäki, Wallenius, Nygård, Saarni, & Rimpelä, 2007, p. 569). Past studies have investigated the connections between a wide array of factors and the occurrence of IPV, including demographic characteristics (e.g., age, gender, income, race/ethnicity, and education), neighborhood and community characteristics (e.g., community cohesiveness and willingness to intervene with a neighbor), exposure to IPV in family of origin (e.g., experience of childhood abuse and witness of parental IPV), partners' behaviors (e.g., alcohol and drug use and depression), relationship situations (e.g., separated and divorced status and cohabitation), and developmental characteristics (e.g., social and emotional support and social bonds; Breiding, Black, & Ryan, 2008; Capaldi, Knoble, Shortt, & Kim, 2012).

As ICT has become an essential element of everyday life, researchers have started to explore the linkage between the use of ICT and IPV. Recent research has documented various effects of ICT use on IPV, such as the positive effects of ICT use in reintegrating victims of IPV into society (Dimond, Fiesler, & Bruckman, 2011) and debunking justifications of IPV against women (Cardoso & Sorenson, 2017), as well as the negative effects of ICT use in facilitating cyber dating abuse and stalking/control (Draucker & Martsolf, 2010; Hand, Chung, & Peters, 2009; Patton et al., 2014; Southworth, Finn, Dawson, Fraser, & Tucker, 2007; Zweig, Dank, Lachman, & Yahner, 2013). No existing studies, however, have examined the effects of ICT use on women's experience of physical, sexual, and psychological abuse in an established intimate relationship.

In China, the government's plans and policies have promoted an exponential increase in the use of ICT, which is most evidenced in the growth of Internet users and mobile phone users (EUSME Center, 2015). In 2016, about 700 million Chinese people reported having Internet access (Internet Live Stats, 2016) and 89% of the population own a mobile phone (Statista, 2016). Given such a rich ICT environment in China, its potential connection to the IPV problem deserves greater research attention.

Based on survey data collected from a major city in southern China, this study explored how the involvement of various ICT-related activities affects Chinese women's experiences with psychological, physical, and sexual abuse. This study extends

our understanding about IPV risk factors in a Chinese context. It furnishes practical implications for advocates and victims as to how to use electronic communication technology tactics to address IPV, and broader policy implications as for how to use this information to improve the understanding of telecommunication-based safety plans and intervention with IPV victims and survivors.

Literature Review

The Growth of Information Communication Technologies

With the explosion of electronic communication technology, social media/networking sites have fostered a new social interaction environment (Draucker & Martsolf, 2010). In this study, we define ICT use as the use of any electronic devices (including computers, cell phones, or tablets) to access the Internet. In the United States, it is estimated that 83.8% of households had computer ownership, and 74.4% of all households reported Internet use in 2013 (Thom & Camille, 2014). China has the highest number of Internet users worldwide. More than 50% of Chinese people, which is about 700 million, have Internet access (Internet Live Stats, 2016), which exceeds the population of Europe. Mobile phone is also globally adopted. Almost 92% of the U.S. adults own a cell phone, 67% of which own a smartphone (Lee & Kathryn, 2015). In China, the number of people using mobile phone has been skyrocketed, with 89% of the population owning a mobile phone (Statista, 2016). About 95.1% of Internet users get access to the Internet using mobile devices (Emarketer.com, 2017). In the United States, approximately 90% of the mobile phone owners are “frequently” carrying their mobile phones, and mobile phones play an irreplaceable role in one’s daily life communication (Lee & Kathryn, 2015). In the world, there are 2.8 billion active social media users in 2017 (Hutchinson, 2017). It is estimated that 28% of Internet users follow at least one social media sites, such as Facebook, YouTube, Twitter, Pinterest, LinkedIn, and Reddit. In China, 43% of total Chinese population access social media platforms on a daily basis (Statista, 2016). Social media have also been widely adopted by sexual assault and domestic violence organizations for violence prevention and advocacy in the United States (Sorenson, Shi, Zhang, & Xue, 2014).

About 93% American adults receive news on the Internet either via mobile or desktop (Pew Research Center, 2017a), and 43% of which often get news online either from websites/apps or social media (Pew Research Center, 2017b). Research about multimedia shows that sports news is one of the most requested topics on the Internet and many people are sports fans and they read almost everything about sports. In addition, among different topic areas, about 73% Facebook users see entertainment news and 57% of Facebook users see sports news, which are ranked the most common news that people see on the site (Pew Research Center, 2014). Twitter users than their counterparts on Facebook are more likely to report seeing news on the topic of sports (70% vs. 55%) and comparable on the topic of entertainment (Pew Research Center, 2015).

Information Communication Technologies and IPV

Existing research, albeit limited, reveals both positive and negative impacts of ICT involvement on IPV. ICT was used to support victims for combating domestic violence and sexual assault (Dimond et al., 2011). A study of 20 countries showed that the more ICTs (radio, computer, phones, or mobile phone) in the household, the more likely for woman (between 15 and 49 years of age) to disapprove wife beating (Cardoso & Sorenson, 2017). It is possible that ICTs influence women's values and norms by providing new information on the Internet (Cardoso & Sorenson, 2017). Dimond and colleagues (2011) interviewed female IPV survivors about their experience with ICT and found that survivors chose to post daily life pictures to feel connected to their friends and family, and also used cell phone for support. Survivors found it useful to learn computer skills and join social networking sites when their abusers do not have such skills. These findings show that ICTs can be used for support in an abused intimate relationship, especially sites like Facebook which provides a connection between IPV victims and their family and friends. In addition, researchers have used social media to predict the consequences of domestic violence on mental health to inform the development of technology-based violence intervention (Liu et al., 2018).

On the contrary, studies also question the risks of ICTs on intimate relationships because Internet provides a new space where violence can occur, such as cyber dating violence and harassment, and in particular among teens and adolescents (Draucker & Martsof, 2010; Patton et al., 2014). Abusers can use electronic communication technology tools to monitor, frighten, or control their victims (Southworth et al., 2007). Due to the anonymity of some online social media sites, people are exposed to an unmonitored environment, which increases the hostility in interpersonal interactions and exposure to violence (King, Walpole, & Lamon, 2007; McKenna & Bargh, 2000). In the United States, more than a quarter of youth reported being victimized in the form of cyber dating abuse in the previous 12 months, and females were twice as likely as males to be victims of sexual cyber dating violence (Zweig et al., 2013). Adolescent girls are particularly at a heightened risk of sexual violence, but prevention efforts to create an awareness of personal safety in online spaces for those at risk are lacking (Berson, Berson, & Ferron, 2002). Dimond and colleagues (2011) also show that mobile phone messages are one prominent way in which abusers could communicate victims in a terrible way. Facebook is also used by abusers to harass and threaten their partners, such as posting messages on their pages. Woodlock (2017) surveys advocates and victims and shows that various ICTs (e.g., phones, tablets, computers, and social networking websites) are often used by perpetrators to stalk their intimate partners. These findings bring concerns about the negative effects of telecommunication technology on intimate violence.

Other Risk Factors of IPV

A number of demographic characteristics were found to be consistently predictive of women's experience of IPV. Women's marital status was closely related to their

experience of IPV. In fact, many divorces were the culminated outcome of IPV (Zlotnick, Johnson, & Kohn, 2006). Around the world, ever-partnered women between the age of 35 and 39 years were at the greatest risks of IPV (García-Moreno et al., 2013), although other life-course events such as cohabitation, pregnancy, and child rearing also contributed to this outcome. Higher socioeconomic status (SES), including higher educational attainment and employment, tended to lower women's risks of experiencing all kinds of IPV (Abramsky et al., 2011; Capaldi et al., 2012; Chan, 2014; Chan, Brownridge, Tiwari, Fong, & Leung, 2008; Coker et al., 2002; Jewkes, 2002; Xu et al., 2005), as higher SES signified women's financial independence and thus enabled self-empowerment in interacting with male partners (Jewkes, 2002).

Mental disorders such as depression and low self-esteem were found to be prevalent among women who experienced IPV. Victims of IPV were more likely to develop depressive symptoms and lower self-esteem after IPV victimization (Ansara & Hindin, 2011; Zlotnick et al., 2006). While depression and low self-esteem may be the negative psychological consequences of experiencing violence, many studies (including one conducted in China) also found them to be significant predictors of IPV victimization (Chan, 2014; Lehrer, Shrier, Gortmaker, & Buka, 2006; Papadakaki, Tzamalouka, Chatzifotiou, & Chliaoutakis, 2009; Whiting, Simmons, Havens, Smith, & Oka, 2009). In fact, studies have suggested that low self-esteem was an apparent psychological characteristic of *both* IPV perpetrators and victims (Boney-McCoy & Sugarman, 1999; Logan, Walker, Jordan, & Leukefeld, 2006; Papadakaki et al., 2009). In addition, low self-esteem was most strongly associated with *physical* abuse, in comparison with sexual and emotional abuse (Papadakaki et al., 2009).

The lack of social support is another important predictor of women's experience of various types of IPV (Capaldi et al., 2012; Chan, 2014; Denham et al., 2007; Jewkes, 2002). Scholars posited that social support empowered women and thus fended them off potential victimization from intimate partners at the very outset (Jewkes, 2002). Mild forms of victimization, such as controlling behaviors, may be prevented from developing into more serious abuse. Quasi-experimental research in the social work literature also suggested that increasing social support was an effective intervention strategy for women suffering from IPV (Tiwari et al., 2010).

In brief, evidence is mixed as to the impact of ICTs use and the occurrence of IPV. Furthermore, we know very little about the impact of ICT on IPV in Chinese societies. Contributing to a very limited body of literature on ICT use and IPV, this study investigated the association between ICT use and different types of IPV victimization in China, with survey data collected from 600 women resided within in a Chinese metropolitan.

Method

Research Site

Data used in this study were collected from a large metropolitan in southern China. In 2014, the city had a population of approximately 10.8 million across 10 of its

administrative districts. Each city district has a government-funded *Family Violence Intervention Center* established to protect the rights of women and children by preventing and handling family violence and promoting family values. Under these Centers, there are a total of 83 community stations that are staffed by specialists, whose main responsibilities are monitoring family-related issues at the community level, such as keeping records of reported family violence incidence and help-seeking activities from victims (or potential victims) of domestic violence. The central district of the city, which had approximately 1.5 million residents, was selected as the research site of this study because of the researcher's familiarity with the district and connections with local officials.

Data Collection and Sample

Based on a survey instrument designed to elicit information related to IPV, a research team conducted face-to-face survey interviews with two groups of women in the sample district. The first group consisted of 300 women. They were randomly selected from 421 women who were divorced or in the divorce process and reported their domestic violence victimization to either the specialist in their community or directly to the district *Family Violence Intervention Center* during the 1-year period between May 1, 2013, and April 30, 2014. The second group included 300 married women who did not report domestic violence victimization to the Center (but some may have actually experienced IPV), and were neighbors of these divorced (or in the divorce process) women who reported victimization. When several women neighbors existed to a certain woman reporting violence, the one who lived nearest was chosen. This matching method considered that these neighbors tended to share a high degree of socioeconomic similarities with those who reported their IPV incidents. The total initial sample thus was comprised of 600 women who were between the age of 20 and 60 years.

Research staff interviewed the respondents in their home in the absence of their ex-husbands or current spouses. The respondents were informed of the nature and purpose of the research project, and that participation was completely voluntary and could be terminated at any time. Any identifiable information about the respondents was later removed from the original files, and the data were entered by research staff and kept in the research center securely and confidentially. For the purpose of this study, a final sample of 446 was generated after identifying the analytic variables and dropping unusable and cases with missing values.

Measures

The dependent variables were constructed based on a series of questions asking respondents whether they experienced certain acts of IPV. As shown in Table 1, 24 survey items were relevant to measure respondents' experience with four types of IPV, including physical violence, psychological violence, controlling behaviors, and sexual violence. These scales were developed based on the Revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996), as well as previous

Table 1. Factor Analysis Differentiating Dependent Variables (N = 466).

Variables and items	Factor		
	1	2	3
Physical violence			
Throwing objects at you	0.74		
Pushing, scratching, hitting	0.75		
Slapping	0.65		
Kicking, biting, punching		0.69	
Burning with cigarette		0.77	
Tying limbs up		0.81	
Continuously kicking and/or punching		0.80	
Threatening or stabbing with knives, and so on		0.79	
Strangling, pushing head into water, suffocating with pillows		0.89	
Pushing down staircases, force feeding poison, pouring acid and gasoline		0.88	
Psychological violence			
Talking ill about you	0.66		
Complaining about you	0.75		
Humiliating or cursing	0.73		
Throwing objects	0.44		
Threatening to kill	0.47		
Hurting pets or destroying loved objects	0.62		
Threatening with actions or facial expressions	0.74		
Controlling behaviors			
Restricting interaction with friends of the opposite sex			0.84
Restricting interaction with friends of the same sex			0.81
Restricting interaction with family members			0.69
Suspecting or accusing of infidelity			0.66
Following/stalking			0.63
Sexual violence			
Forcing sexual activities			
Eigenvalues	9.46	3.22	1.46
Percent of variance explained	24.39	23.58	16.29

Note. Response categories for survey items are (0) *never*; (1) *rarely*; (2) *sometimes*; and (3) *often*. Only factor loadings (pattern matrix coefficients) > .40 were displayed.

studies operationalizing Straus's scales to the social context of China (e.g., Lin, Sun, Wu, & Liu, 2016; Tiwari et al., 2007). The response categories for these items included *never* (0), *sometimes* (1), *often* (2), and *all the time* (3). Factor analyses with 23 items (excluding the one item measuring sexual violence) were conducted to assess the internal consistency and discriminant validity within and among physical abuse, psychological abuse, and controlling behaviors. Three factors were extracted from the 23

items (see Table 1). Factor 1 consisted of seven psychological abuse and three physical abuse (reflecting relatively moderate abuse) indicators. Factor 2 was represented by seven more severe physical abuse indicators, and Factor 3 was represented by five controlling behavior items. These analytic results signal not only categorical difference between types of IPV but also distinction in gradations of severity. Taking both conceptual and analytic consistency into consideration, the 24 items were operationalized into four dependent variables, namely, psychological and moderate physical abuse, severe physical abuse, controlling behaviors, and sexual abuse. Items in each of the first three groups were added up to create summative scales as dependent variables for this study. The last dependent variable, sexual abuse, is an ordinal variable, ranging from 0 to 3, and was dichotomized into a dummy variable with 0 representing no experience of sexual violence and 1 representing having experienced sexual violence.

The independent variables used in this study can be categorized into two groups: (a) media use and (b) online activities. The “media use” group consists of five variables. Four of them assessed the frequency of media use, including TV, radio, newspapers/magazines, and paper books (ranging from 1 = *never*, 2 = *occasionally*, 3 = *often*, and 4 = *every day*). The last variable measured the amount of time respondents spent online per day (from 1 = *less than 1 hr*, 2 = *1-2 hr*, 3 = *3-4 hr*, 4 = *5-6 hr*, to 5 = *over 7 hr*).

The next group “online activities” is comprised of 11 dummy variables, assessing whether the respondents used the Internet to browse political news; browse entertainment or sports news; browse forums, blog or Weibo (the Chinese equivalent of Twitter), WeChat (the most important app in China); shop online; watch online movies, shows, or videos; Skype or other instant message chatting; receive and send emails; participate in stock exchange; and job hunt online.

Two groups of variables were controlled. Three variables reflected respondents’ psychological well-being. Respondents’ *self-esteem* was measured by five items: “I’m an able person,” “I’m a valuable person,” “I’m a person with many strong suits,” “I know who I can turn to protect my rights,” and “I am good at convincing other people to accept my opinion.” Respondents’ *interpersonal skills* were constructed based on the following four items: “I will insist in doing what I think is right,” “I know how to get along with people,” “I can clearly express my thoughts,” and “I will ask for help when I need it”. Finally, *loneliness and helplessness* were measured by “I often feel lonely,” “I often feel unfortunate,” and “I often feel helpless.” Responses to these items varied from *strongly disagree* (1) to *strongly agree* (4).

Demographic characteristics included marital status, age, education, local *hukou* (household registration), and employment status. Marital status was coded as a dummy variable with 1 representing married. Both divorced women and women in the divorce process (i.e., the first group of sample women) were coded as 0. *Hukou* and employment status were also coded as dichotomous variables with 1 representing local *hukou* (i.e., have household registration in the sample city) and employed. Age was measured in actual years. Education was measured by an ordinal variable varying from 1 to 6 (1 = graduated elementary education, 2 = graduated middle school, 3 = graduated high

school, 4 = graduated with associate degree, 5 = college graduate, and 6 = had post-graduate education).

Descriptive statistics for all variables were reported in Table 2. All additive scales have acceptable internal consistency, with a Cronbach's alpha greater than .7. Multicollinearity diagnostics indicated no problem with multicollinearity, with all Variation Inflation Factors lower than 3.

Analysis

Preliminary analysis found that all dependent variables were highly skewed and overly dispersed, violating the assumption of equal dispersion for ordinary least squared regression. As a result, negative binomial regression (for psychological and moderate physical violence, severe physical violence, and controlling behavior) was selected for multivariate analysis. Binary logistic regression was used for sexual abuse as it was a dummy variable. All statistical analyses were performed in SPSS 21. The omnibus tests for all of the models were significant at the .01 level, suggesting that each model explains a significant amount of variability in the dependent variables (see Table 3 for likelihood ratio chi-squares).

Results

Frequency Distributions

Table 2 displays the descriptive statistics of all analytic variables. The prevalence of severe physical violence is 11.7% ($M = .44$, $SD = 1.87$), psychological and mild physical violence is 66% ($M = 4.3$, $SD = 5.00$), controlling behavior is 59.2% ($M = 2.84$, $SD = 2.04$), and sexual violence measured by the dichotomized variable is 33% ($M = 0.33$, $SD = 0.47$). Psychological and mild physical violence was the most common form of IPV among Chinese female respondents, followed by controlling behavior and sexual violence.

Looking at background characteristics, more than 50% of the respondents were married ($M = 0.53$, $SD = 0.50$), the average age of the respondents was 39 ($M = 38.39$, $SD = 7.84$), the average level of education was high school graduate ($M = 3.29$, $SD = .86$), 53% ($M = 0.53$, $SD = 0.50$) had local *hukou*, and 77% ($M = 0.77$, $SD = .42$) of the respondents were employed.

In terms of media use, 61% ($n = 365$) of respondents watch TV very often, and only 19% ($n = 113$) often listen to radio. Nearly 45% ($n = 268$) of respondents read paper newspaper and magazines frequently every day, and only 35.2% ($n = 211$) of them read paper books very often. When it comes to online activities, 58% ($M = 0.58$, $SD = 0.49$) reported using the Internet for browsing political news, 20% ($M = 0.20$, $SD = 0.40$) for browsing entertainment and sports news, 14% ($M = 0.14$, $SD = 0.34$) for discussion forums, 16% ($M = 0.16$, $SD = 0.37$) for using blogs or Weibo, 60% ($M = 0.60$, $SD = 0.49$) for using WeChat, 30% ($M = 0.30$, $SD = 0.46$) for online shopping, 38% ($M = 0.38$, $SD = 0.49$) for movies or TV shows, 32% ($M = 0.32$, $SD = 0.47$) for instant

Table 2. Descriptive Statistics for Variables in Regression Analysis (N = 466).

Variables	M	SD	Range	α
Dependent variables				
Psychological and moderate physical violence	4.30	5.00	0-26	.91
Severe physical violence	0.44	1.87	0-18	.91
Controlling behavior	2.84	3.04	0-13	.84
Sexual abuse	0.33	0.47	0-1	—
	Frequency	%		
Independent variables				
Media use				—
TV				—
Occasionally	233	38.8		
Often	365	60.9		
Radio				—
Occasionally				—
Often	483	80.5		
Newspapers and magazines	113	18.8		
Occasionally				—
Often	329	54.8		
Paper books	268	44.7		
Occasionally	380	63.3		
Often	211	35.2		
Time spent online/day				—
Less than 1 hr	64	10.7		
1-4 hr	335	55.8		
More than 5 hr	87	14.5		
	M	SD	Range	
Online activities				
Political and economic news	0.58	0.49	0-1	—
Entertainment and sports	0.20	0.40	0-1	—
Discussion forums	0.14	0.34	0-1	—
Blogs or Weibo	0.16	0.37	0-1	—
WeChat	0.60	0.49	0-1	—
Online shopping	0.30	0.46	0-1	—
Movies or TV shows	0.38	0.49	0-1	—
Instant messages	0.32	0.47	0-1	—
Browsing and emails	0.28	0.45	0-1	—
Online stock trading	0.02	0.13	0-1	—
Job hunting	0.03	0.16	0-1	—
Control variables				
Psychological well-being				
Self-esteem	14.81	2.13	7-20	.79
Interpersonal skills	12.31	1.81	6-16	.81

(continued)

Table 2. (continued)

Variables	<i>M</i>	<i>SD</i>	Range	α
Loneliness and helplessness	6.18	1.72	3-12	.79
Background characteristics				
Married	0.53	0.50	0-1	—
Age	38.59	7.84	22-60	—
Education	3.29	0.86	1-6	—
Local <i>hukou</i>	0.53	0.50	0-1	—
Employed	0.77	0.42	0-1	—

messages, 28% ($M = 0.28$, $SD = 0.45$) for browsing general information and emails, 2% ($M = 0.02$, $SD = 0.13$) for online stock trading, and 3% ($M = 0.03$, $SD = 0.16$) for job hunting. WeChat was clearly the lead method in terms of online activities, followed by using Internet for political news and movies or TV shows.

Multivariate Regression

Table 3 reports the results from multivariate regression analysis. Two variables in the group of media use stand out. Reading paper books is significantly associated with a lower frequency of psychological violence ($B = -0.19$, $SE = 0.10$, $p < .05$), controlling behavior ($B = -0.20$, $SE = 0.10$, $p < .05$), and sexual abuse ($B = -0.81$, $SE = 0.20$, $p < .01$), whereas spending time online is positively associated with experiencing these three types of IPV ($p < .01$). Neither reading paper book nor spending time online predicts the experience of severe physical abuse.

As for participation in online activities, the most consistent predictor is browsing entertainment and sports news, which lowers the likelihood of experiencing physical ($B = -1.87$, $SE = 0.75$, $p < .01$) and psychological violence ($B = -0.44$, $SE = 0.16$, $p < .01$) as well as controlling behavior ($B = -0.46$, $SE = .16$, $p < .01$). Online shopping ($B = -1.32$, $SE = 0.59$) and WeChatting ($B = -1.20$, $SE = 0.42$, $p < .01$) also reduce the experience of severe physical violence. Watching movies or TV shows is negatively related to sexual abuse ($B = -0.66$, $SE = 0.27$, $p < .05$), but is positively connected to severe physical abuse ($B = 0.98$, $SE = 0.46$, $p < .05$). Participating in online discussion forums was found to be predictive of sexual abuse ($B = 0.84$, $SE = 0.35$, $p < .05$).

Among variables representing psychological well-being, feelings of loneliness and helplessness were linked to higher levels of psychological violence ($B = 0.19$, $SE = 0.03$, $p < .01$), severe physical violence ($B = 0.33$, $SE = 0.12$, $p < .01$), and controlling behaviors ($B = 0.12$, $SE = 0.03$, $p < .05$). In addition, higher self-esteem is associated with a higher frequency of severe physical abuse ($B = 0.24$, $SE = 0.10$, $p < .05$) and controlling behavior ($B = 0.04$, $SE = 0.03$, $p < .05$).

Finally, four out of the five background characteristics exerted a significant effect on at least one type of violence. Married women were less likely to experience

Table 3. Multivariate Regressions on Four Types of IPV Victimization (*N* = 466).

Variables	Psychological abuse ^a		Severe physical abuse ^a		Controlling behavior ^a		Sexual abuse ^b	
	B	SE	B	SE	B	SE	B	SE
Media use								
TV	0.05	0.07	0.46	0.26	0.09	0.08	0.31	0.16
Radio	-0.04	0.09	-0.04	0.28	0.06	0.09	0.03	0.18
Newspapers and magazines	-0.07	0.09	0.02	0.31	0.05	0.10	0.18	0.20
Paper books	-0.19*	0.10	-0.41	0.31	-0.20*	0.10	-0.81**	0.20
Time spent online	0.05**	0.07	0.19	-0.31	0.18**	0.07	0.45**	0.13
Online activities								
News	-0.19	0.12	0.07	0.40	-0.01	0.12	-0.12	0.25
Entertainment and sports	-0.44**	0.16	-1.87**	0.75	-0.46**	0.16	-0.17	0.33
Discussion forums	0.09	0.18	1.01	0.66	0.24	0.18	0.84*	0.35
Blogs or Weibo	0.13	0.17	-0.23	0.57	0.12	0.17	0.52	0.33
WeChat	-0.13	0.13	-1.20**	0.42	0.12	0.13	0.25	0.27
Online shopping	0.22	0.15	-1.32*	0.59	0.08	0.15	0.30	0.30
Movies or TV shows	0.10	0.13	0.98*	0.46	-0.17	0.13	-0.66*	0.27
Instant messages	0.03	0.13	-0.02	0.44	-0.17	0.13	0.02	0.25
Browsing and emails	0.13	0.13	0.56	0.45	-0.03	0.13	0.05	0.28
Online stock trading	0.09	0.49	1.64	1.51	0.48	0.48	0.02	1.05
Job hunting	-0.14	0.36	-0.73	1.19	0.02	0.38	0.97	0.70
Psychological well-being								
Self-esteem	0.03	0.03	0.24*	0.10	0.04*	0.03	0.01	0.07
Interpersonal skills	-0.03	0.04	-0.22	0.12	-0.06	0.04	-0.03	0.08
Loneliness and helplessness	0.19**	0.03	0.33**	0.12	0.12**	0.03	0.08	0.07
Background characteristics								
Married	-0.56**	0.12	-0.82	0.44	-0.20	0.12	-0.87**	0.25
Age	0.01	0.01	-0.01	0.03	-0.01	0.01	0.02	0.02
Education	-0.11	0.08	-0.42	0.24	-0.17*	0.08	-0.17	0.16
Local hukou	0.02	0.14	0.15	0.46	-0.15	0.14	-0.72**	0.28
Employed	0.24	0.15	1.53**	0.51	0.30*	0.15	0.22	0.31
Likelihood ratio chi-square	98.68		81.88		72.79			122.50

Note. OR = odds ratio.

^aResults derived from negative binomial regression.

^bResults obtained from binary logistic regression.

**p* < .05

***p* < .01

psychological abuse ($B = -0.56$, $SE = 0.12$, $p < .01$) and sexual abuse ($B = -0.87$, $SE = 0.25$, $p < .01$), compared with their unmarried counterparts. Employed women were subject to a higher level of severe physical abuse ($B = 1.53$, $SE = 0.51$, $p < .01$) and controlling behavior ($B = 0.30$, $SE = 0.15$, $p < .05$), compared with their unemployed counterparts. Less educated women were more likely than better educated ones to experience controlling behavior ($B = -0.17$, $SE = 0.08$, $p < .05$). Women with local *hukou* status were less likely to become victims of sexual abuse ($B = -0.72$, $SE = 0.28$, $p < .01$).

Discussion

Although ICT plays an important role in people's daily lives in the information age, its impact on the problem of IPV remains under-investigated. Drawing upon survey data collected from Chinese women in a major city, this study attempted to fill the gap in our current knowledge by investigating how the use of ICT may affect women's experience with common types of domestic violence. Several major findings surfaced from our data analysis.

First, time usage on traditional and contemporary forms of information sources affects women's experiences with IPV. Specifically, Chinese women who were active paper book readers were less likely to become victims of IPV, while those who spent more time online have a higher rate of IPV victimization. Our findings appear to support the good habit of reading paper books in minimizing negative life events and more importantly confirm the potential detrimental impact on family relationships (Romero-Ruiz et al., 2017). Indeed, one may speculate that excessive usage of Internet may reduce quality family time and face-to-face communication, disturbing family relationships and causing strain among couples or even breeding violent confrontations toward each other. It is also possible that women victims choose to spend more time online to avoid further conflict with their partners after being abused. Future research should investigate the impact of ICT on the relation processes among family members and intimates preferably using qualitative approaches and longitudinal data.

Second, Chinese women's specific choices of online activity have an effect on their IPV victimization. We found that browsing online entertainment and sports news is consistently associated with lower levels of violence. One possible explanation is that the media frames victim blaming in the news, which is likely to influence women's perceptions and definitions about IPV and subsequently impact their actual IPV experience. The news media not only reflects what are happening in the world and also plays a substantial role in shaping public perceptions and public policy of social issues (Carll, 2003; Gillespie, Richards, Givens, & Smith, 2013). Media is a potential socializing agent to help create public's perception about IPV (Carlyle, Slater, & Chakroff, 2008). Extant literature shows that news media tends to focus on blaming the victims and their behaviors prior to the incident and the portrayal signals patriarchal beliefs about the gender roles in the family by citing the personal responsibility of the victim (Berns, 2001; Bullock, 2007; Bullock & Cubert, 2002). High profile domestic violence cases

involving NFL players, NBA stars, boxers, and celebrities are frequently discussed on social media (Xue, Chen, & Gelles, 2017), a phenomenon that can be similarly found in China. When athletes and celebrities could easily avoid proper punishment for IPV, such media exposure may lower women's willingness to challenge male authority and fortify their belief that men are justified to abuse their partners in certain circumstances, leading them less likely to view certain behaviors as abusive (García-Moreno, Jansen, Ellsberg, Heise, & Watts, 2006) and subsequently a lower likelihood of reporting IPV victimization (Xue et al., 2016).

Interesting thought, our findings also show that watching online movie and TV shows is positively predicting severe physical assault and associated with lower rates of sexual abuse. As traditional patriarchal beliefs discourage women from having education and entertainment, women's engagement in movie and TV watching online probably triggers certain sentiment and feeling among men, resulting in more incidents in severe psychological abuse, but fewer in sexual abuse. Such a difference might be attributed to a greater consensus among men and women regarding whether or not certain sexual behaviors as violent or abusive, which is primarily learned from movie and TV watching (Brown, Childers, & Waszak, 1990). Our findings elucidate the complexity between various types of online activities and IPV. More studies are clearly needed to further elaborate the measurement of online activities by tapping into the actual content of these events.

Third, women's psychological well-being is linked to their rate of IPV experience. Women with greater levels of feeling of loneliness/helplessness and self-esteem were more likely to subject to higher rates of certain types of IPV victimization, such as severe physical abuse and controlling behaviors. Although past studies have revealed certain psychological conditions associated with IPV victims such as depression and low self-esteem (Loke, Wan, & Hayter, 2012), our findings echo a line of research showing that IPV victims displayed comparable or no significant different levels of self-esteem with non-victims (e.g., see Soldevilla, Feixas, Varlotta, & Cirici, 2014). One may also suspect that women's relative status and power balance with their spouse could mediate the relationship between self-esteem and IPV victimization. Indeed, we found that higher levels of self-esteem were associated with greater severe physical abuse and sexual abuse, which are inconsistent with past findings on IPV victimization in China and other countries (Chan, 2014; Lehrer et al., 2006; Papadakaki et al., 2009; Whiting et al., 2009). Baumeister, Smart and Boden (1996) posit that high self-appraisal combined with an ego threat can lead to violence. Those who consider themselves as superior beings might turn to aggressive when their favorable views about themselves are questioned and challenged. Chinese women with high degrees of self-esteem might be less willing to adjust their self-appraisals and thus are more likely to pose a threat to male privilege and authority that rooted in Chinese society, which could trigger severe physical violence and controlling behaviors from the male partners. Future research should continue to assess the connection between women's psychological well-being and their likelihood of IPV experience by taking into account possible mediating influences.

Finally, Chinese women's experience with IPV varied by their background characteristics. Married women experienced few incidents of psychological and sexual abuse

than their unmarried counterparts, but the two groups did not differ in their experience of severe physical abuse and controlling behavior. It seems that marriage status may change the equation of people's relationship, leading women to lower risk of certain types of IPV but not others. We also found that employment status mattered, with employed women having greater levels of IPV victimization. Relating to the link between women's psychological conditions and IPV, employed women's potential higher status in the family may bring stronger jealous and resentment from their husbands, which may breed violence against the women. More studies should be conducted to investigate the effects of individual characteristics as well their interrelated relationships on IPV experience.

Concededly, this study has several limitations. First, the scope of this study is limited to women in one metropolitan area in southeastern China, thus limiting the generalizability of its findings to China as a whole. Future studies should include rural samples and analyze the urban–rural differences. Second, the survey used in this study only documented lifetime prevalence without capturing past-year or past-month prevalence, which could be influenced by a distinctive set of factors. A better designed instrument should allow researchers to disentangle the prevalence and type of IPV across different time frames. Third, the questionnaire we used does not include “reading e-books online” as one type of online activity, which has become very common among Internet users. We suggest future studies to add “reading e-books online” to the instrument to further assess the impact of “reading” on IPV victimization. Last, the sample consisted of women only, shedding little light on gender differences in risk factors of offending and victimization. A study of both women and men involving in abusive relationships would likely to generate useful information on IPV causes and consequences.

This study has nevertheless made unique contributions to the existing literature by identifying the possible linkages between patterns of ICTs use and vulnerability of various types of IPV that were never fully analyzed in the IPV literature in China. Given the association of online news, use of social media and time spent online with prevalence of IPV, it is worth investigating further about how the online media have covered IPV cases in China perhaps through content analysis and in-depth interviews. In addition, an experiment design is preferred to investigate the impact of the online news on the victims as well as perpetrators' perceptions about IPV. Future studies should further investigate the purpose of using Internet or media by victims as well as perpetrators, such as whether the victims of IPV use media or Internet to seek help, or whether offenders use media or Internet to extend their impacts and controlling behaviors on the victims. Our study serves as a preliminary analysis to understand the connection between technology and IPV in China, but more research attention is warranted to further investigate this issue.

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