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Research on Earthquake Disasters and Gender in China (2003–2023)

Jing LI¹ and Junko OTANI²

Abstract

In Japan, the topic of "Disasters and Women" emerged after the 1995 Great Hanshin-Awaji Earthquake. Although Japan, being disaster-prone, has extensive research on disasterrelated subjects, studies exploring women's perspectives in disaster contexts are still in their infancy. Sociological research in Japan on "Disasters and Women" has concentrated mainly on vulnerability theory, examining the harm that women endure and the roles they assume in disaster prevention and recovery. With regard to harm to women, prior studies have underscored issues unique to women during evacuation, such as health issues, unequal caregiving responsibilities during disasters, rooted in gender roles, domestic violence, and sexual violence. In China, significant seismic events such as the 2008 Sichuan Earthquake, the 2010 Yushu Earthquake, the 2013 Lushan Earthquake, and the 2014 Ludian Earthquake have occurred in a country not previously known for such incidents. Although research on earthquakes and disasters has become more common in China, studies focusing on gender remain scarce in this fi eld. This study reviews the literature on earthquake disasters and gender in China, sourced from the China National Knowledge Infrastructure, for the period 2003 to 2023. By doing so, we aim to discern the research trends in studies related to earthquake disasters and gender in China.

Key words: disasters; earthquake; women; gender; research review; the China National Knowledge Infrastructure (CNKI)

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1. Introduction

Disasters expose gender constructs not clearly distinguishable in normal times. The concept of "gender," which emerged during the second feminist movement in the 1960s, has been widely adopted and established by women's studies and gender researchers since the 1970s (Ueno 2006). The concept of "sex" pertains to biological categories, whereas gender is related to social and cultural categories. Adopted at the Fourth World Conference on Women (hereinafter, the Beijing Conference) held in Beijing in 1995, the Beijing Declaration and Platform for Action proposed a process of "mainstreaming a gender perspective" to achieve gender equality. Enarson and Morrow (1998) have conducted pioneering research in disaster and gender studies using various approaches from anthropology, sociology, and so forth. According to Yang (2021), "Conventional disaster research from a gender perspective has generally emphasized women's vulnerability, but recent studies have also focused on women's agency and disaster countermeasures from a women's perspective" (p. 308).

In disaster-prone Japan, the 1995 Great Hanshin-Awaji Earthquake occurred in the same year as the Beijing Conference, resulting in the theme of "Disasters and Women" garnering significant attention (Aikawa 2006). Japan has since progressed via various legal reforms, backed by the Convention on the Elimination of All Forms of Discrimination against Women and the Basic Law for a Gender-Equal Society. As a disaster-prone country, Japan has accumulated considerable research on disasters. However, disaster research from the perspectives of women and gender remains relatively underdeveloped (Asano & Tendo 2021). Sociological research on "disasters and women" in Japan has focused on the damages suffered by women and the role of women in disaster prevention and reconstruction. Concerning women's victimization, previous studies have highlighted health problems specific to women, especially in terms of women's shelters, gender-based uneven distribution of care responsibilities unique to disasters, domestic violence, and sexual violence. Research has also been conducted on the roles played by women, including various support activities performed by women after disasters and practical activities such as women's leadership training in disaster prevention.

Meanwhile, the 2008 Sichuan Earthquake confirmed that major earthquakes can occur in China, which had not previously been known as an earthquake country. Although research on earthquakes and disasters in China expanded rapidly after the 2008 Sichuan Earthquake, only a few studies have been conducted on earthquake disasters and gender in China (Hu 2010). Accordingly, this study summarizes papers published in the Chinese academic literature system in the last two decades and clarifies the trends in research on earthquake disasters and gender in China.

2. Research Methods

For this study, we extracted papers on earthquake disaster recovery and gender in China published on the China National Knowledge Infrastructure (CNKI)¹⁾ and examined the research trends reflected

by the relevant papers. The search covered all literature published between 2003 and 2023. In Chinese, "gender" is translated as "社会性别." When extracting the targets from the CNKI, we conducted three searches using the following keywords: "earthquake" (地震), "gender" (性別), "women" (女性), and "men" (男性). The subject search with "earthquake" and "sex" yielded 111 papers containing these keywords in the abstract; "earthquake" and "women" yielded a total of 98 papers, while "earthquake" and "men" yielded a total of 50 papers. Based on these results, we entered the basic information of the collected data into Microsoft Excel to eliminate duplicates, manually re-extracted literature discussing "earthquake disasters and gender," and excluded papers for which the full text was unavailable, producing a final sample of 40 papers.

3. Thematic Analysis and Discussion of the Literature

The 40 papers cover the 2008 Sichuan Earthquake, the 2010 Yushu Earthquake, the 2013 Lushan Earthquake, and the 2014 Ludian Earthquake. Table 1 summarizes the titles and keywords.

Table 1. Papers examined in this study

Authors (year of publication)	Title (Japanese translation by the	Keywords
	authors)	
Zhang et al. (2010)	Sichuan dizhen zaiqu renyuan	Psychological health of disaster
	xinli zhuangkuang de diaocha	victims, sex, education level
	yanjiu [Investigation & Study of	
	Psychological Status of the Victims	
	in the Earthquake-Stricken Areas of	
	Sichuan]	
Zhang et al. (2021)	Qingshaonian chuangshang hou	Nine years after the Sichuan
	yingji zhang'ai zhengzhuang yu	Earthquake, middle school students,
	wangluo chengyin zhengzhuang de	association between PTSD
	guanxi: chengfa min gansixing he	symptoms and Internet addiction
	gudu gan de zhongjie ji xingbie de	symptoms, gender
	tiaojie [The Relationship between	
	Posttraumatic Stress Disorder	
	Symptoms and Internet Addiction	
	Symptoms in Adolescents: The	
	Mediating Role of Sensitivity to	
	Punishment Stimuli and Loneliness	
	and the Moderating Role of Gender]	
You et al. (2010)	Sichuan dizhen zaihou Abazhou	Kindergarten, elementary, and
	zhongxiaoxue jiaoshi xinli	middle school teachers; PTSD
	chuangshang yanjiu baogao	Kindergarten, elementary, and

	[Research Report on the	middle school teachers; PTSD
	Psychological Trauma of Primary	symptoms; social support
	and Secondary School Teachers in	
	Aba Prefecture After the Sichuan	
	Earthquake]	
Liu et al. (2010)	5.12 Wenchuan dizhen qianhou	Disaster victims, depressive
	zaiqu jiaolv yiyu zhang'ai bingren	symptoms, sex comparison,
	zhengzhuang duibi yanjiu [Control	comparative study
	Study on Symptom of Anxiety and	
	Depression Disorder before and	
	after 5·12 Wenchuan Earthquake]	
Li et al. (2010)	Chengdu, Deyang diqu dizhen	Disaster area, elderly people,
	8 ge yue hou laonianren yiyu	depressive state
	zhuangkuang ji qi xiangguan	
	yinsu [Depression status and	
	related factors of elderly victims in	
	Chengdu and Deyang 8 monthsafter	
	the Wenchuan earthquake]	
Xiang et al. (2010)	Wenchuan dizhen zaiqu 1960	PTSD symptoms, women, rural
	ming zhongxuesheng chuangshang	students, ethnic minorities
	hou yingji zhang'ai zhengzhuang	
	diaocha [Prevalence of post-	
	traumatic stress disorder symptoms	
	among middle school students after	
	Wenchuan earthquake]	
Zhang et al. (2009)	Wenchuan da dizhen jixing	ASD, Wenchuan Earthquake,
	yingji zhang'ai jianchu lü ji	survival
	xiangguan yinsu de diaocha yanjiu	
	[Investigation on the Prevalence	
	of Acute Stress Disorder and Its	
	Influencing Factors After a Violent	
	Earthquake in Wenchuan]	
Lei et al. (2009)	Dizhen zaiqu jumin shehui zhichi	Social support, Deyang City,
	zhuangkuang fenxi [Social support	Mianzhu City, Shifang City,
	among residents in earthquake	Hanwang Town, women, men
	area]	
Wang et al. (2009)	Dizhen zaiqu jumin chuang	Qingchuan County, disaster victims,
	shang yingji zhang'ai diaocha	PTSD, women, mental health care
	[Posttraumatic stress disorder	
	after earthquake in Wenchuan]	

Zhao et al. (2009)	Wenchuan dizhen ji zhong zaiqu	PTSD surveys, women, men, social
	shequ jumin chuangshang hou	support
	yingji zhang'ai fasheng lü ji	
	yingxiang yinsu [Prevalence	
	and Related factors for PTSD in	
	Community Residents after the	
	Wenchuan Earthquake]	
Zhao et al. (2009)	Wenchuan zhenhou yi ge yue	Sense of belonging, social support,
	shouzaizhe xinli yingji zhuangkuang	sense of safety, psychological health
	[Psychological stress condition of	371 3
	earthquake victims one month after	
	the Wenchuan Earthquake]	
Wu et al. (2009)	Zaihou minzhong chuangshang hou	Disaster areas, Mianzhu, mental
(2007)	yingji zhang'ai (PTSD) yu shijian	care, early detection
	chongji liangbiao (IES) de fazhan	cure, curry detection
	he yingyong [Development and	
	Application of PTSD and IES in	
Sh et al. (2000)	Survivors after Disaster]	Commention of the comment
Shen et al. (2009)	Dizhen zaiqu Mao xian chengren	Counseling, therapy, women,
	zhenhou jixing yingji xinli fanying	psychological health
	ji ganyu yanjiu [Study on the Post-	
	Earthquake Acute Stress Psychic	
	Reaction and Intervention Effects	
	of Adults in Maoxian Which was a	
	Worst-hit Area]	
Gao & Xue (2009)	Dizhen zaihou zhuanyi shangyuan	PTSD, women, transferred injured
	de chuangshang hou yingji zhang'ai	persons
	de fashen ji qi yingxiang yinsu	
	[Occurrence of Post Traumatic	
	Stress Disorder and its Related	
	Factors in Transfer of Wounded	
	Persons after Earthquake]	
Xu et al. (2010)	Wenchuan da dizhen hou ertong ji	ASD, children, long-term care, sex
	xing yingji zhang'ai jianchu lü ji	
	xiangguan yinsu de diaocha yanjiu	
	[Investigation on the Prevalence in	
	Children of Acute Stress Disorder	
	and Its Influencing Factors After a	
	Violent Earthquake in Wenchuan]	
	1	<u> </u>

Shen et al. (2010)	Mao xian chengqu dizhen	Disaster areas, Mao County
Shell et al. (2010)	zaimin zhenhou 7–9 zhou PTSD	residents, PCL-C, DSM-R, PTSD
	zhengzhuang fanying diaocha	formative period
	[Survey on PTSD Symptomatic	
	Response of Victims from the Town	
	of Mao County 7 to 9 Weeks after	
	the Earthquake]	
Qi et al. (2010)	Wenchuan dizhen nanxing	Male rescue vehicle, PTSD, relief
	jiuyuanzhe chuangshang hou	efforts
	yingji zhang'ai weixian yinsu	
	yanjiu [Study on Risk Factors of	
	Post-traumatic Stress Disorder in	
	Male Rescuer in the Wenchuan	
	Earthquake]	
He & Chen (2010)	Dizhen jizhong zaqu xiaoxue jiaoshi	Qingchuan Country elementary
	de chuangshang hou yingji zhang'ai	school teachers, PTSD, relatives
	diaocha [Investigation of PTSD	
	of the Primary School Teachers in	
	The Disaster Areas after Violent	
	Earthquake]	
Wei (2011)	Dizhen zaiqu nongcun liushou yu	Disaster areas, rural children, girls,
	feiliushou xueqian ertong tizhi	boys, physical ability
	zhuangkuang bijiao [Comparison of	
	physical constitution between left-	
	behind and non left-behind children	
	in disaster area of earthquake]	
Zheng et al. (2011)	Dizhen hou qingshaonian jiaolv	Youths, Dujiangyan City, women,
	de tezheng ji yingxiang yinsu	men, residence, influencing factors
	yanjiu [Study on Symptoms	
	and Correlates of Anxiety	
	Disorder among Adolescents after	
	Earthquake]	
Liu et al. (2011)	Shaanxi Lüeyang xian jumin dizhen	Disaster awareness, men, women,
	zaihai gan zhi yanjiu [Research on	education, media
	the resident's perception difference	
	of the Earthquake Disaster in	
	LueYang Shaanxi Province].	
	Xianyang Shifan Xueyuan Xuebao	
	[Journal of Xianyang Normal	
	University]	
	Omversity	

Qi et al. (2011)	Wenchuan dizhen nanxing	Mala resquere PTSD symptoms
Qi et al. (2011)		Male rescuers, PTSD symptoms,
	jiuyuanzhe chuangshang hou	PLC-C
	yingji zhang'ai weixian yinsu	
	yanjiu [Study on Risk Factors of	
	Post-traumatic Stress Disorder in	
	Male Rescuer in the Wenchuan	
	Earthquake]	
Hu et al. (2011)	Wenchuan dizhen Qingchuan	Disaster areas, Qingchuan District,
	zaiqu ertong qingshaonian	children, youths, psychological
	jingshen jibing liuxing bingxue	health
	diaocha [Epidemiological Survey	
	on Adolescent Mental Illness in	
	Qingchuan Earthquake Disaster	
	Area	
Yang (2011)	Dizhen zaihou Qinghai sheng	Qinghai Yushu Tibetan Autonomous
	Yushu Zangqu zhongxuesheng xinli	Prefecture, middle school students,
	yingji qiangdu de diaocha yanjiu	psychological health, sex
	[Investigation of Psychological	
	Stress Intensity Among Middle	
	School Students in Yushu Tibetan	
	Area of Qinghai Province After the	
	Earthquake]	
Du et al. (2012)	5.12 Wenchuan da dizhen hou 24 yue	Elementary school students, psycho-
	zaiqu xiaoxuesheng xinli jiankang	logical health, disaster areas, Peng-
	zhuangkuang diaocha [Research	zhou, family injury level, mental
	on the Mental Health of Pupils 24	health care
	Months a er 5.12 Earthquake]	
Liu et al. (2012)	Dizhen zhongzaiqu sangshi zinü	Victims who lost their children,
,	zhe de chuangshang hou yingji	women, men, PTSD
	zhengzhuang 2 nian suifang [Post-	,,
	traumatic stress symptoms among	
	bereaved parents in severely damaged	
	, , ,	
	earthquake area: A 2-year follow-up	
Vu et al. (2012)	study] Dizhen hou 26 ge yue zaiqu gao	High school students, quality of life
Xu et al. (2012)		High school students, quality of life,
	san xuesheng shengming zhiliang	psychological health, men, women
	diaocha [Study on Life Quality of	
	Disaster Area Students in Senior	

	High School 26 Months after the	
	Wenchuan Earthquake]	
Yang (2014)	Wenchuan dizhen 5 nian hou zaqu	Social support use, men, female,
	jumin shehui zhichi xianzhuang	minors
	[Social Support of Residents from	
	Disaster Area Five Years Later after	
	Wenchuan Earthquake]	
Zhao et al. (2016)	Yunnan Ludian zhen hou	Yunnan, disaster zone, youth
2.1.00 00 01.1 (2010)	qingshaonian xinli jiankang	psychological health, material
	zhuangkuang ji qi yingxiang	support, psychological support
	yinsu [Mental health situation	support, psychological support
	and its influencing factors among	
	adolescents after earthquake in	
	Yunnan Ludian]	
Cheng et al. (2020)	Lushan diqu zhenhou 3 nian	Lushan Earthquake, youth,
Cheng et al. (2020)	_	
	qingshaonian jiaoly xiangguan	psychological health, women
	qingxu zhangai ji qi fengxian yinsu	
	[Prevalence of multiple anxiety	
	disorder and associated factors	
	among adolescents three years after	
- 1 (2020)	Ya'an Earthqhake]	
Yang et al. (2020)	Dizhen shouzai qunzhong san nian	Ludian Earthquake, disaster zone,
	hou chuangshang hou chengzhang	Longtoushan Town, PTSD, social
	he xiangguan yinsu xian kuang	support, women
	diaocha [A cross-sectional study of	
	the status of posttraumatic growth	
	and related factors of the affected	
	people three years after earthquake]	
Li et al. (2008)	Dizhen zaihou juzhu zhangpeng	Life in shelters, sex life, psy-
	jumin xing shenghuo zhuangkuang	chological health, women
	yu jiaolv guanxi [Study on sex	
	activity and its relationship with	
	anxiety among residents dwelling in	
	tent after earthquake]	
Zhang et al. (2012)	Yushu dizhen hou xingcunzhe	Yushu Earthquake, PTSD, life
	de chuangshang hou yingji	satisfaction, women, ethnic
	zhengzhuang, shenghuo manyi du	minorities
	yu jiji qinggan / xiaoji qinggan	
	I .	1

	traumatic symptoms,life satisfaction	
	and positive affect, negative	
	affect in survivors after the Yushu	
	earthquake]	
Zhuang et al. (2010)	Dizhen shouzai nongmin zhudong	Housing reconstruction, partici
	canyu zhufang chongjian de	pation in reconstruction activi-
	yingxiang yinsu fenxi [Analysis	ties, farmers, sex
	of Influencing Factors for	
	Disaster-Affected Farmers'	
	Active Participation in Housing	
	Reconstruction]	
Pei (2011)	Xing, funü chongquan yu jiti	Gender, disaster zone, grassroots
	liaoshang—guanyu Sichuan dizhen	organizations, women's em-
	zaiqu cixiu xiaozu de ge'an yanjiu	powerment, reconstruction activities
	[Sex, Women's Empowerment,	powerment, reconstruction activities
	and Collective Healing—A Case	
	Study on Embroidery Groups in the	
An et al. (2018)	Sichuan Earthquake Disaster Areas] Shehui zhichi dui zhenhou	Middle school students, social
All et al. (2016)		
	ingshaonian chuangshanghou	support, severely affected areas
	yingji zhangai he chuang	
	shanghou chengzhang de yingxiang:	
	Ziwo xiaonenggan de zhongjie	
	zuoyong [The Relationship between	
	Social Support, Posttraumatic Stress	
	Disorder and Posttraumatic Growth	
	among Adolescents after Wenchuan	
	Earthquake: Understanding the Role	
	of Self-efficacy]	
Wu et al. (2018)	Wenchuan dizhen 8.5 nian hou	Youths, physical and mental health,
	qingshaonian shenxin zhuang	life satisfaction
	kuang yanjiu [Investigation on	
	Mental Health State of Adolescents	
	after 8.5 Years of Wenchuan	
	Earthquake]	
Zheng (2015)	Wenchuan dizhen zaiqu xue	Disaster areas, Qingchuan, PTSD,
	sheng chuangshang hou yali	sex, school year
	fanying diaocha [Post-traumatic	
	stress disorder among students after	
	Wenchuan Earthquake in China]	

Shang & Liu (2012)	Nüxing—diyi zaihái de wuxing	Traditional concepts, gender roles,
	liliang [Women: The Invisible Force	disaster prevention knowledge
	Against Disasters]	
Yu et al. (2014)	Ziran zainan qingjing xia de	Gender, vulnerability, women's
	xingbie yanjiu: huigu yu qianzhan	health
	[A Gender Perspective of Natural	
	Disaster: Past and Future]	

Source: Created by the authors.

These publications can be divided into three main categories: (i) research on gender differences in the psychological effects of earthquakes on their victims; (ii) research focused on gender-related issues in relief activities and shelter living; (iii) research on women's empowerment in the reconstruction process.

3.1. Gender Differences in the Psychological Effects of Earthquakes on Their Victims

Among the publications examined in this study, the most common type focused on gender differences in the psychological health and recovery of earthquake victims. The subjects of these studies included regular earthquake victims, elementary school students, middle school students, elderly individuals, and elementary and middle school teachers. Investigating the psychological states of victims of the Sichuan Earthquake, Zhang, Peng, et al. (2010) found that all the victims had psychological disorder reactions, with more than half in need of psychological support. Striking differences in psychological health by gender and education level were also identified, suggesting that women are more likely to respond adversely to disaster events and that the risk of adverse response tends to be lower the higher an earthquake victim's education level. Meanwhile, in a survey of PTSD symptoms among elementary and middle school teachers in Aba Prefecture, You, Zhang, et al. (2010) found that women had more severe symptoms than men. Li, Kuang, et al. (2010) studied depressive symptoms in 390 older adults living in earthquake-affected areas in Chengdu and Deyang eight months after the Sichuan Earthquake. Their results showed that depressive symptoms in older adults remained severe even eight months after the event, with 30.3% of respondents exhibiting depressive symptoms. The findings of the aforementioned studies suggest that psychological interventions after disasters ought to focus on women, individuals with low levels of education, and those who continue to work in agriculture.

Other articles included a study of 1,960 middle school students who were victims of an earthquake (Xiang, Xiong, et al. 2010), an analysis of PTSD in children (Xu, Zhang, et al.), and an examination of the relationship between sex life and psychological health at shelters (Li, Wang, et al. 2010). Meanwhile, Lei, Zhao, Tang, et al. (2009) conducted a questionnaire survey and interviews with 290 residents in areas affected by the Sichuan Earthquake and analyzed the material and emotional support available to them. Thus, they found that men are less likely than women to receive emotional support and that men's psychological health is strongly influenced by their family relationships. They emphasized that

emotional support is important for the health and psychological recovery of women and men.

3.2. Challenges for Relief Activities and Shelters

In the wake of the Sichuan earthquake, several female earthquake victims were refused aid from male helpers and medical staff, especially in remote and economically underdeveloped ethnic minority areas, resulting in delayed relief and treatment (Hu 2010). Moreover, at the time of the Sichuan Earthquake, there were no separate toilets for men and women in the temporary shelters, resulting in women refraining from drinking water and using the toilets at night to avoid sharing toilet facilities with men. Moreover, power shortages in the shelters and the lack of public bathing facilities increased the risk of sexual violence. Makeshift shelters turned into places where men exercise power and control over women, suppressing their voices through latent threats of violence. According to Hu (2010), this power structure is rooted in power relations between men and women, such that the earthquake-associated stress places an additional burden on women. Li, Wang et al. (2008) conducted a questionnaire survey and interviews to investigate the sex lives of earthquake victims evacuated to temporary housing. Results showed that some of those evacuated after the Sichuan Earthquake continued to have sex lives, indicating that an appropriate sex life may alleviate anxiety after a disaster. In particular, findings suggested the need to focus on the sex lives of women between the ages of 40 and 49.

3.3. Gender in Earthquake Reconstruction Activities

As shown above, most of the literature on earthquake disasters and gender in China is psychological, with many conducting quantitative studies using a PTSD survey scale. Few sociological studies have been conducted from a gender perspective. Among them, Hu (2010) has elucidated the unequal distribution of relief resources due to household registration issues, as well as the restrictions on reconstruction activities due to traditional gender roles. However, surveying the residents of five villages in a disaster area regarding their participation in housing reconstruction activities as well as the background factors, Zhuang, Zhang, et al. (2010) found no significant correlation between the factors associated with participation in post-earthquake housing reconstruction activities and sex. Rather, results showed a positive relationship with education level. Working from an anthropological and sociological perspective, Pei (2010) conducted a two-year study examining women's reconstruction activities and an embroidery group in Wenchuan County after the Sichuan Earthquake through participant observations, focus groups, and individual interviews. Focusing on the life stories of three women, she examined disasters and women's empowerment. Her analysis revealed how the women had been able to increase their household incomes through their embroidery group activities, enjoying more economic rights at home than they had before the earthquake. Joining the embroidery group also enabled them to acquire political rights. In this respect, the women's embroidery group was advertised as a model for village reconstruction, giving women the right to speak up, which they had previously not been allowed to do. The development of the embroidery group also served to increase organizational growth, enhance negotiations and collaboration with external organizations and groups, and foster the

leadership capacity of its members. Moreover, members of the embroidery group developed close relationships, second only to family relationships.

Pei's (2010) research touches on two points relatively overlooked in previous studies of women's reconstruction activities. First, the motivations of the women participating in embroidery group activities were strongly correlated with their work experience before the earthquake. Some of the women had worked outside the province before the earthquake, returning to Sichuan after marriage and generally performing duties related to raising livestock and farming. Such domestic work is called "play" (Sichuan dialect: 要). According to Pei, female earthquake victims with such migrant experiences tended to soften and idealize these experiences, strongly influencing their subsequent participation in reconstruction activities. Thus, their active participation in women's recovery efforts constituted an attempt to overcome traditional gender roles, motivating them to transform into "career women." Second, although women gained economic and political rights through these activities, their daily lives and activities continued to be shaped by their "sexual relationships" with their husbands, ex-husbands, and partners. In this regard, Pei (2010) argued that the women engaged in these reconstruction activities wanted their husbands to know what they were doing and approve of them, underscoring how their value as women was strongly influenced by their sexual relationships. These themes are seldom discussed in the existing research.

Meanwhile, in Japan, numerous studies have explored women's handicrafts and group activities after earthquakes. Women's participation in such activities tends to be discussed in terms of "mental health" and "economic significance." For example, Hori (2019) conducted an interview survey with four women who began organizing free embroidery initiatives in the areas affected by the Great East Japan Earthquake in 2014, finding that the significance of such handiwork lay in the provision of opportunities for women to express experiences and thoughts that are difficult to verbalize. As such, the site of handiwork was transformed into "a space of intimate relationships where women can chat with each other with peace of mind," providing opportunities to talk about their experiences.

4. Conclusion

This study summated and examined the Chinese literature on earthquakes and gender published in the CNKI, an online service for Chinese academic literature, from 2003 to 2023. In China, research on the Sichuan Earthquake that incorporates a gender perspective has tended to focus on gender-related issues in relief activities and shelters and women's empowerment in the reconstruction process, with most studies examining gender differences in the psychological impact of earthquakes. In other words, most studies emphasize the vulnerability of women to earthquakes, with only a few studies taking the perspective of women's agency. Research examining women's participation in embroidery activities after an earthquake focused on the women's pre-earthquake work experiences and the relationships between women participating in reconstruction activities and men, neither of which have received significant attention from scholars, suggesting new trends for future research. As Yang (2021) notes,

"While the majority of studies highlight what women experience in disasters and portray them as normal victims and in need of male protection, they do not explore the deeper links between gender inequality and male-dominated social structures" (p. 308). Essentially, research on disasters and gender must explore gender relationships at a deeper level.

In this study, we focused on analyzing and discussing papers published on the CNKI, an online service for Chinese academic literature. However, many researchers outside of China have written about disasters and earthquakes in the country. For example, edited by Otani Junko, *Learning from the Sichuan Earthquake: Building Community and "Chinese-Style Resilience" Amid Reconstruction* (2011) systematically analyzes the Sichuan Earthquake from the perspectives of NGOs, older victims, disaster tourism, and disaster prevention education. In the future, we want to clarify issues related to disasters and gender by comparing the viewpoints of researchers in China and elsewhere.

Notes

1) The CNKI is a database of all Chinese literature published since 1984. The CNKI contains various databases, including academic journals, important newspapers, doctoral and master's dissertations, papers from important academic conferences, foreign language literature, and statistical data.

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