



# Religion Affiliation and Depression Risk: Factory Workers Working in Hi-Tech Companies in Shanghai, China

Liwen Hou<sup>1</sup> · Patrick Leung<sup>2</sup> · Monit Cheung<sup>2</sup> · Yongxiang Xu<sup>1</sup>

Published online: 16 March 2019

© Springer Science+Business Media, LLC, part of Springer Nature 2019

## Abstract

This study examines factors contributing to depression among migrant factory workers in Shanghai. A survey was designed with mental health questions under a framework explaining: (1) social capital, (2) migratory stress, and (3) mental health consequences. With a return rate of 98.3%, 1966 individuals completed the survey. Only 11.1% of the respondents indicated having a religious affiliation. The findings are not surprising about the relationship between trust, economic condition, and depression. However, it is surprising to find that *not* having a religious affiliation is significantly connected to better mental health. The effect of religious beliefs should be examined as a trust factor to remove the barrier of perceiving religion as an added stressor.

**Keywords** Religious support · Depressive symptoms · Chinese factory workers · HSCL-25 · Trust and conflict

Over the past three decades, China has been reforming its economic policy to encourage and support the free market. This economic initiative aims to increase revenues through import and export businesses that require the hiring of a high number of factory workers. The country's GDP has since been rapidly growing and reached its first peak of 12.68% in 2006 and 14.16% in 2007 (National Bureau of Statistics

---

✉ Monit Cheung  
mcheung@uh.edu

Liwen Hou  
houwen2004@126.com

Patrick Leung  
pleung@uh.edu

Yongxiang Xu  
yongxiangxu@ecust.edu.cn

<sup>1</sup> School of Social Work and Public Administration, East China University of Science & Technology, 130 Meilong Road, Shanghai 200237, China

<sup>2</sup> Graduate College of Social Work, University of Houston, Houston, TX 77204-4013, USA

of China 2016). Since then, followed by its steady economy growth (10.45% GDP in 2010) and the skyrocketed standard of living, a major Chinese newspaper, *China Youth Daily*, reported in October 2011 that more than 80% of employees have had job-related health problems in China. These employment-connected data showed that 78.9% of these respondents suffered from stress, 59.4% experienced feelings of fear or anxiety, and 36% had self-reported depressive symptoms (*China Youth Daily* 2011). According to the China Association of Mental Health reported in Xinhua Health News (2012), nearly 30 million patients were diagnosed with depressive symptoms in 2012. The World Health Organization (2014) also found that depression is a leading mental health concern worldwide and will likely reach a visible high in 2020—meaning this global phenomenon will be presented as a major health problem also affecting the workforce in China.

## Depression in China

In China, depression has been recognized as a public health issue that can affect workforce stabilization and employee morale, particularly among the migrant workers who went through migratory changes after leaving their rural hometowns for employment in large urban cities (Chu et al. 2013; Mou et al. 2011; Wong et al. 2010). In Shenzhen, China, a survey of 4280 migrant workers revealed a 21.4% depression prevalence rate that was primarily connected to the respondents' ethnic minority status, short-term work intensification status, and long working hours (Mou et al. 2011). Wong et al. (2010) who studied 582 migrant workers in Shenzhen found that financial stress and the lack of a social life could significantly predict negative mental health. Using a different data set from their Shenzhen study, Chu et al. (2013) concurred with these factors and supported that the implementation of an early intervention program with social activities could prevent mental health problems among migrant workers. Based on a study by Cheung et al. (2016) empirically supporting the size of a city as a contributing factor to depression, the current study aims to target factory workers in another large city in China to validate the results from the Shenzhen studies. It focused on mental health with attention on how trust, physical health, and religion may be connected to depression. At the time when this study started, very few studies addressed the impact of religion in China on migrant workers' mental health. For building a needs assessment survey, a literature review was conducted to capture the relationships between the contributing factors to better mental health among migrant workers in China.

## Migrant Workers' Mental Health and Depression

Recent research in China has emphasized the importance of studying mental health solutions among vulnerable groups such as migrants from rural to urban work places. Some studies addressed the quality-of-life needs of factory workers to cope with cultural adjustment difficulties, unmet needs when accessing resources to establish a social life, and views on government support and subsidy in housing

arrangements and for their children's education (Chu et al. 2013; Mou et al. 2011; Wong et al. 2010; Zhu et al. 2012). However, very few studies directly addressed the mental health of factory workers who have been the core labor force helping to increase the country's GDP. With a focus on these migrant workers' mental health, this study designed a survey based on the previous literature on depression as related to: (1) social capital, (2) migratory stress, and (3) mental health consequences.

### **Social Capital and Mental Health**

When migrant workers move from rural to urban areas, their primary motivation is to seek employment for the improvement of marketable skills and investments for increasing their human capital. However, migration comes with a cost, particularly related to social exclusion and opportunity cost leading to weak social capital such as not proficient in language use in an English-dominant environment (Hyypä and Mäki 2001). As social capital is connected to human capital investment (Putnam 2000), previous findings have focused on two factors: (1) attributional factors, that is, the impact of social network, social participation, and social trust (Abbott and Freeth 2008; Phongsavan et al. 2006), and (2) dimensional factors, that is, the direct influences of social capital on one's physical and mental health (De Silva et al. 2005; Harpham et al. 2004). Social support can be gained from work and religion-affiliated relationships that generate trust.

### **Work Relationships**

In China, Gao et al. (2014) found among 2796 workers that poor mental health was associated with the lower quartile of personal social capital. As a single significant variable, social capital was tested to effectively improve the mental health status of the individuals who resided in a closely-knitted social system (Wu et al. 2015). With its connection to work-related distress management, social capital is highly connected to working hours and social support (Wen et al. 2017).

### **Religion-Affiliated Relationships**

In the USA, Pirutinsky et al. (2017) proposed to use an individual's self-assessment tool to measure both the positive and negative relationships between religious beliefs and mental health. More recently, Howell et al. (2019) interviewed 412 college students and found a linkage between religiosity and lower depression. Chen et al. (2012) analyzed the religious studies in China from a historian perspective as these studies made a connection between religion and the psychological state of Chinese people. They found a positive correlation between religiosity and one's biological well-being, but they were surprised to find that people with a religious orientation tended to have a lower level of mental health than that of the nonreligious people. The complexity of measuring the religious impact on mental health cannot be explained solely in terms of religiosity but also societal and cultural influences.

## Trust

Essentially, trustful relationships within support networks are significantly related to adequate mental health (Wong et al. 2008). Nevertheless, previous studies on the effects of social trust on mental health were conducted with the assumption of cultural homogeneity (Abbott and Freeth 2008) because the measure of the “social” aspect is always connected to an individual’s unique cultural background. In China, Hu (2014) used data from the Chinese general social survey (CGSS) in 2005 to analyze the relationships between social participation, types of trust, and mental health. The data showed that *in-group trust*, as defined as relationship building with an identifiable person or a group of people, is related to mental health stability, while *out-of-group trust*, as established on the basis of inner feelings toward others, is not necessarily connected to a social group. Chu et al. (2013) found that migrant workers searched for in-group trust due to being away from their primarily formed social life, or out-of-group trust due to experiencing social isolation. Thus, for those working in distant places away from their primary social network, the trust-building process is rather slow because of the mentality that one must first establish a good employment path as their future living standard will determine their trustworthiness.

In 2008, some China scholars conducted intensive research to address how social capital might lead to positive impacts on mental health (Wong et al. 2008; Yu et al. 2008; Zhao 2008). Specifically, Yu et al. (2008) utilized multilevel statistics to demonstrate the significant influence of individual capital and collective psychological capital on urban residents’ mental health. Noted with generalizability limitations, Yu et al. (2008) suggested that an individual’s trust gained through interactional relationships, when assessing its impacts on psychological health, might not be perceived as more important than the collective psychological capital. On the aggregate, people’s mental health levels vary in reference to the differences found based on their neighborhood characteristics. Zhao (2008) researched the differences between urban and rural residence and found that a person’s view of social network development could be connected to mental health improvement. Afterward, Zhu and Yao (2015) used the data from the 2010 CGSS to further test whether social trust is residence based. They concluded that city residents’ health status could be impacted by their perceived social trust.

In Shanghai, He et al. (2010) further examined social support among migrant workers and found it a significant factor leading to urban migrants’ stress reduction. On the contrary, Liu et al. (2011) surveyed 4000 residents in the Pearl River Delta Region and found that social network had little effect on migrant workers’ mental health. Zhang (2012) showed it was the combination of individual capital and collective psychological capital that helped shape people’s mental health. Their studies showed that relationship trust, family trust, and institutional trust could impact city residents’ physical and mental health. As a reference, social capital as measured by social trust, social network cohesiveness, and social support was included as a variable in the current study.

## Migration and Mental Health

Studies on migration and mental health can be referenced to two developmental phases. In the early phase, studies showed that human migratory behavior and migration experience had significant influences on mental health (Barrett 2000). As *migration* was often used as an independent variable, many studies during this time focused on the events and behaviors during the migration process, specifically the social network for migrants and the effect of migration on financial and mental health. The process of immigration can cause tremendous stress, which is called “immigration-induced syndromes” (Christodoulou, 2009). In other words, pressure from cultural adjustment and stress coping could cause mental health breakdown that eventually lead to unemployment. In 2011, Liu studied the relationships between migratory stress and social and economic mobility, work experience, financial stress, and employment pressure. Initially, it was found that migrants’ mental health was impacted by their lack of effort to integrate, i.e., being blamed for not taking the initiative to be integrated. Later, research found that it was the social exclusion variable that explained the lack of social integration, i.e., being rejected by a newly joint social group or community due to their migration status and differences. When social exclusion took place, it imposed a negative impact on the individual’s mental health and created a negative experience due to community disempowerment. In other words, living in a community with a high level of social exclusion could lead migrant workers to experiencing more difficulties in social integration and employment. Many studies have communicated about the importance of migratory stress that has led to physical and mental health challenges (He et al. 2010; Wong et al. 2008).

Furthermore, migration affects people’s mental health on different levels. The macrosystem settings on the labor mobility and legal framework continue restricting migrant workers’ mental health. Chan and Zhu (2003) emphasized that factories in China were formed by an employee disciplinary system and the factory workers are mandated to work in an environment with tight rules and controls. Therefore, their mental health needs are typically not fulfilled. Fan (2004) proposed a concept of migrant labor regime to analyze the effects of migrant workers’ mental health based on the labor issues. The study found out that the exploitative migrant labor regime together with household registration (*Hukou*) system decided the conditions of migrant work and the practice of deducting wages, which further influenced mental health of migrant workers. Moreover, Liu (2011) believed that the migrant labor regime formed by the Chinese government, local government, and private companies would be the major factor affecting the migrant workers’ mental health. Zheng (2010) discovered that migrant workers generally experienced rapid mental health problems after losing their labor rights. Zheng (2010) also believed that labor rights, the factory system, the labor system, and the Chinese traditional union organization were key supportive factors associated with workers’ mental health restoration.

The uniqueness of the factory system may be a root cause of the workers’ mental health problem because it includes the uncertainties in labor supplies and self-protection mechanisms. Shen (2006) used the case of Foxconn to analyze the concept of fragmented authoritarianism and the mental health situations among workers

who worked stressfully in a socially isolated working environment. In a study about migrant workers' mental health from the perspective of labor rights, Liu et al. (2011) discovered that overtime work, poor working environment, and stressful environment were factors involved in migrant workers' mental health.

## Factors Impacting Employees' Mental Health

Mental health studies on employees have found that the influencing factors were complex with two major directions. The first direction addressed what social variables are related to migrant workers' demographics. For example, Xiao (2009) utilized the self-directed search (SDS), Society Cognitive Rational Scale, and a social factors questionnaire to conduct a survey on 1437 migrants from five provinces. Results showed that mental health problems among migrant workers were more prominent than the local workers. Having mental health problems had a significant correlation with social adaptation, the reality of the situation, psychosocial support, effective use of social resources, the extent of the respect for others, and social cognition. Regression analysis also showed that social adaptation, the extent of the respect for others, and the degree of self-concept had a significant effect on psychological health levels. Yang and Hu (2016) utilized the data of CGSS in 2005 from urban and rural residents. Analysis was done using the factorial analysis of variance, linear regression model, demographics, and dimensional analysis to evaluate the factors that could predict psychological health. The residents' psychological health level had a significant correlation with demographic details such as gender, age, education, marital status, and income. However, political standing and residency accounts were not significant factors. After controlling the respondents' basic demographic variables, the data showed that neighborhood relationship, the level of trust, community participation, and participation in political affairs had a significant effect on psychological health.

A second direction for this study was related to employees' mental health as connected to workplace factors. Li et al. (2007) researched marital status among migrant workers; being single or having an employed spouse is a major predictor of having a good level of mental health. In addition, being a high-income worker who has good physical health or relationship with colleagues is also significantly related to positive mental health. Wong et al. (2008) studied migrant workers in Shanghai and discovered that gender, marital status, occupation, and pressure were significantly related to mental health. Wang et al. (2007) specifically studied the Guangxi female sex workers and found significant correlations between sexual coercion, suicidal ideation, and attempted suicide. The data showed that mental health problems were correlated with sexual abuse and general abuse in the workplace. The study from Wong et al. (2008) showed that social companionship support had a significant impact on mental health. The research on the workers at the offshore drilling platform of PetroChina Company Limited discovered that controlling for demographics (age, education, marital status, and the years working at sea), there was a presence of significant interaction effect between the workers' mental health and internalizing behavior (Chen et al. 2009).

In summary, research studies have addressed the work environment as an influential factor on mental health. Most studies were designed based on a theoretical context regarding the cultural and environmental impact. There is still a need for research to compare the mental health status between factory workers with religious beliefs and those without, after they obtained a first job after migration. The goal of this study is to examine religious, health and mental health factors that may have contributed to the risk of having depression among factory workers who have recently migrated to Shanghai for employment.

## Method

### Research Site

As a municipality with provincial status after 1927, Shanghai has been a fast-growing special economic zone that attracts massive influxes of migrants from other provinces on a daily basis. Shanghai was chosen to study because it is a special economic zone city with a population of 14.4 million and an additional estimate of 9.8 million migrant workers (Shanghai Government Website 2017). This study aims to provide further evidence to influence policy changes so that factors for early depression detection and treatment can be incorporated in programs delivered in large cities where migrant workers must learn how to protect themselves against aversive environments and seek early support to prevent having depression.

This study first identifies the prevalence of depression among the factory workers in one industrial park in Shanghai and its contributing factors. From December 2014 to April 2015, four researchers and ten volunteers recruited from a Bachelor of Social Work (BSW) program distributed surveys face to face in a large industrial park in Shanghai. The survey was written in Chinese and approved by the institutional review board at the researchers' university, with a consent explaining the purpose of the study, anonymity, and voluntary participation. The target industrial park which encompasses more than 2500 Chinese and international enterprises is an export processing center established by the Development Research Center of the State Council of China since the 1980s. It enhances the economic development and the high technology development in China. The park is a hub of multiple industries, especially the electronic communications, materials science, biomedicine, aerospace, environmental protection with new energy, supporting research on automobiles and other development and technology industries. More than 20 higher education institutions and 120 research and development organizations were located in this park. This centralized location attracts well-educated people to develop their career path with complex and interactive industries and subsequently fosters human resources and enhances technological contributions to the country's industrial synergistic growth.

## Measures

Dawson (2018) suggested that mental health be specifically defined, stating “whether mental health is positively related, negatively related or unrelated to religion is determined by the criteria used to assess it” (p. 45). The survey instrument in this study was designed in Chinese with demographic questions, specific mental health questions related to trust, and depressive symptoms as measured by the Hopkins Symptoms Checklist 25 (HSCL-25). The HSCL-25 comprises 25 questions (10 on anxiety and 15 on depression) with a four-point Likert-type response scale ranging from 1 = *not at all* to 4 = *extremely*; an average of 1.75 or higher is regarded as symptomatic (Parloff et al. 1954). The HSCL-25 has been previously tested to be reliable among Asian research subjects, with coefficient alphas of .89 for the anxiety subscale and .92 for the depression subscale (Lhewa et al. 2007), then translated to Chinese, tested, and used in a Chinese immigrant study (Leung et al. 2012). For analysis purposes, depression was coded into a dichotomous variable with 0 = *not having depressive symptoms* and 1 = *having depressive symptoms*. Independent variables include: religiously affiliated (0=no, 1=yes), trust most people (0=no, 1=yes), trust in their parents (0=low to 10=high), trust in local government (1=low to 5=high), social conflict likelihood (1=absolutely likely to 5=absolutely unlikely), health status (1=poor to 5=excellent), and prediction of future living condition (1=greatly decline to 5=greatly improve).

## Findings

### Demographics

Surveys were distributed to 2000 workers. With a return rate of 98.3%, 1966 individuals returned the survey. Among the respondents, 43.3% (847) were males and 56.7% (1108) were females. Data showed that the majority of the respondents (96%) were within the age range of 19–45 years. Among these respondents, 57% were married, 51% were Shanghainese, and 73% had a college degree or higher. The majority of the respondents (88.9%) indicated that they did not have a religious affiliation at the time of filling out this survey (see Table 1).

### Depression Prevalence and Bivariate Analyses

Overall, 18.4% of the respondent workers indicated they had depressive symptoms, a higher prevalence than the 17.4% rate among Chinese Americans (Leung et al. 2012). Binary regression model was used to further analyze the impact of the social, work and mental health factors on depression (see Table 2).

First, age, gender, and marital status of the respondents did not show significant connections to the presence or absence of depressive symptoms. Bivariate statistics were employed to analyze the relationship between depression and all independent

**Table 1** Demographics of survey respondents ( $n = 1966$ )

Items	Variable	<i>N</i>	%
Sex	Male	847	43.3
	Female	1108	56.7
Marital status	Single	806	41.3
	Married	1116	57.2
	Cohabitant	16	.8
	Divorced	13	.7
	Widowed	1	.1
Household registration	Shanghaiense	993	50.8
	Non-Shanghaiense	960	49.2
Education	High school, technical school	198	10.2
	Associate degree	325	16.7
	Bachelor	987	50.8
	Graduate school or above	433	22.3
Age	Mean = 31.15 (SD = 7.097)		
	Range = 19–77 years old		
	<i>N</i> = 1924		

variables. A significant negative relationship was found between having depression and having religious affiliations ( $X^2 = 7.545$ ,  $df = 1$ ,  $p = .006$ ). Another nominal variable, trust in most people, was also found positively and significantly related to depression ( $X^2 = 50.565$ ,  $df = 1$ ,  $p < .001$ ). Significantly, positive significant relationships were also found between depression and six continuous independent variables: social conflict likelihood, health status, trust in parents, prediction of future living condition, and trust in local government ( $p < .001$  in  $t$  test results in Table 3).

These significant variables were entered into a logistic regression model. Seven of these variables are further tested to be predictive factors contributing to having depressive symptoms among the workers in this industrial park. As shown in Table 4, the respondents with religious affiliations are 1.003 times more likely than those without religious affiliations to develop depressive symptoms. Although it is commonly believed that peaceful mind comes from being religious, the respondents in this study with no religious affiliations were less likely to have depressive symptoms. Those respondents who were religiously affiliated experienced depressive symptoms possibly because of stressing over certain aspects or restrictions of their religious beliefs, particularly when they were in places not permitting religious freedom or allowing religious assembly.

The data show that there are multiple associations between mental and physical health. Poor physical condition is a risk factor that affects a person's mental health (Lin and Ensel 1989). Based on the logistic regression results, those with better health as indicated in one level up in the 5-point health status scale will decrease the likelihood of having depression by 18.8%. In other words, those respondents perceived as having excellent health are less likely to develop depression.

As previously stated, many studies show that trust levels influence mental health. The logistic regression results found that if a factory worker experienced one less

**Table 2** Descriptive statistics on independent variables (N = 1949)

Variables	N	%
<i>Religion affiliation</i>		
0 = No	1702	88.9
1 = Yes	212	11.1
<i>Trust in most people</i>		
0 = No	293	17.1
1 = Yes	1420	82.9
<i>Physical health (mean = 3.56, SD = 1.008)</i>		
1 = Poor	24	1.2
2 = Fair	263	13.5
3 = Good	676	34.7
4 = Very good	571	29.3
5 = Excellent	415	21.3
<i>Prediction of future living level</i>		
1 = Greatly decline	41	2.3
2 = Slightly decline	33	1.9
3 = Unchanged	342	19.6
4 = Slightly improve	734	42.0
5 = Greatly improve	597	34.2
<i>Social conflict (mean = 2.56, SD = .900)</i>		
1 = Absolutely likely	119	6.9
2 = Possible	870	50.1
3 = Not sure	419	24.1
4 = Possibly not	308	17.7
5 = Absolutely unlikely	21	1.2
<i>Trust in local government (mean = 3.47, SD = .997)</i>		
1 = Low trust	75	4.3
2 = Little trust	182	10.5
3 = Not sure	559	32.3
4 = Some trust	677	39.1
5 = High trust	237	13.7
<i>Trust in parents (mean = 9.58, SD = 1.093)</i>		
Range 0–10; N = 1735		
(0 = low, 10 = high)		

level of intergroup conflict, as indicated by advancing one point in the 5-point scale, the likelihood of this person having depression would be reduced by 14.2%. When these factory workers feel a high level of trust in their parents, in the local government, and in most people, their likelihood of having depression will be reduced by 19.7, 27.6, and 57.5%, respectively. From the “trust” standpoint, these workers seem to have a positive interpersonal relationship and perceive that expanding trust toward the general public would definitely help improve their mental health. In addition, these workers would feel less depressed if they think their standard of living will be

**Table 3** Contributing factors to depression: bivariate analyses

Independent variable	Dependent variable	<i>N</i>	Mean	SD	<i>t</i> ***
Trust in local government (1–5, 5 = high trust)	Depression	278	2.86	1.13	6.680
	No depression	1231	2.42	.943	
Trust in parents (0–10, 10 = high trust)	Depression	276	9.32	1.616	–5.033
	No depression	1234	9.66	.833	
Future living condition (1–5, 5 = greatly improved)	Depression	278	2.19	.980	5.142
	No depression	1235	1.89	.856	
Social conflict (1–5, 5 = most unlikely)	Depression	287	2.39	.928	–4.308
	No depression	1257	2.66	.957	
Health status (1–5, 5 = excellent)	Depression	303	2.65	1.062	3.998
	No depression	1341	2.4	.968	

\*\*\**p* < .001

**Table 4** Contributing factors to depression: logistic regression analysis

Variables	B	S.E.	Wald	Df	<i>p</i>	Exp (B)
Religion affiliation (1 = yes; 0 = no)	.694	.214	10.552	1	.001	2.003
Social conflict (1–5)	–.153	.087	3.064	1	.080	.858
Health status (1–5)	–.208	.075	7.693	1	.006	.812
Trust in parents (0–10)	–.219	.060	13.448	1	.000	.803
Future living condition (1–5)	–.232	.080	8.443	1	.004	.793
Trust in local government (1–5)	–.323	.074	18.763	1	.000	.724
Trust in most people (1 = yes; 0 = no)	–.856	.169	25.670	1	.000	.425
Constant	4.277	.712	36.044	1	.000	72.058

$\chi^2 = 115.249$ ,  $df = 7$ , Nagelkerke  $R^2 = .128$ ,  $p < 0.001$

improved over the next 5 years. It also found that feeling one level more positive (as indicated in a five-point scale) about the factory worker's future living condition will reduce the likelihood of this worker having depression by 20.7%. Thinking positively about one's future is good medicine for maintaining mental health.

## Discussions

A surprising finding is that not having a religious affiliation is significantly connected to better mental health among these migrant workers. This finding also corresponds to other research showing that religious affiliations may become a stressor and risk factor to depression or suicide (Ding & Xiao 2010; Lawrence et al. 2016; Wang & Han 2009; Zhang et al. 2016). In a recent publication, Hu et al. (2017) analyzed secondary data from the Chinese General Social Survey 2010 and found that disclosure of religious beliefs could be a stressor that affected one's mental health. They explained that having affiliated to a religion was not seen as a social status in

China. They also suggested further research be conducted to explain why Chinese people did not use religion as a psychological shield against life adversity. However, this explanation requires additional empirical evidence to testify whether religion is indeed a source of psychological pressure.

In China, religion was not permitted during the era of Cultural Revolution and then started to be passively recognized since the late 1970s (Nanbu 2018). During such time of not having a formal religion institution, the Chinese government stressed the importance of resolving problems according to the country's rules, not based on religious beliefs or other cultural norms. Even with the open policy in China today, the religious followers conform to rules and expectations primarily for the prevention of being negatively sanctioned in their current or reincarnated life. This avoidance behavior as a pessimistic way to resolve conflict is explained partly due to a lack of religious education about the multifaceted functions of religion (Nanbu 2018). Found in this study, the association between depression and having a religious belief can be explained by the perception that the spiritual sanction is returned to punish sinners. Hsu (2016) explained that “Chinese have difficulty comprehending ‘sin’ because of the culture’s long-standing belief in the humanistic potential for self-perfection without any reference to the divine” (p. 105). In a study that promotes cultural diversity and supports the openness of religions in China, Ye (2005) states, “The will and choice of the people cannot be changed; nor can objective law and historical facts” (p. 452). Since this study took place at a time when religious freedom was discussed as a new legislative rule in China, additional research must be conducted to follow-up if having religious beliefs with adequate educational information can enhance one's mental health. It is important to promote religious education so that people will not be fearful about their religious choice.

Dawson (2018) discussed that mental health as connected to religion must be operationalized with specificities. In this study, mental health is specifically measured by having depressive symptoms as measured by a validated HSCL-25 with Asian respondents. If a qualitative interview could be included, it would be helpful to ask the respondents to identify not only their definition of mental health, but also their worries as connected to their religious affiliation (Dawson 2018). These worries should be further studied.

The variables in this study are based on the literature about factory workers' mental health. Caution is suggested as this sample tended to have obtained higher education, but were working intensively in low-pay hi-tech jobs. Although employee assistance programs are being developed in large companies in China, migrant workers may not disclose their religious affiliations even in their counseling sessions. Keeping their psychological distress invert may have led to poor mental health. Surprisingly, this study shows that being religiously affiliated can significantly predict depression. With a high expectation that the economy will be improved, along with higher trust and reduced conflict, many factory workers may feel that they need emotional guidance that does not create additional stressors in their life. Nevertheless, a limitation of this study is that only less than 11% of the surveyed workers reported having affiliated to a religion, which is typical to China's current demographics. This study suggests that the effect of religious beliefs be further examined for improving the provision of support to those who are affiliated with a religion so that being

religious will not be perceived as an added stressor or psychological burden. Hsiao (2016) pointed out that neoliberalist globalization simultaneously produces the social construction of depression. Even though the literature examined not having a marital partner as a risk factor to depression (Barrett 2000; Brown et al. 2005; Chen and Xu 2013; Strohschein et al. 2005), this study shows that these migrant workers identify trust as a concrete reason connected to their depressive feelings. Findings from this study are supportive of the suggestion by Hu and Chen (2012) that mental health concerns among migrant workers must take priority. Specifically, the changing level of depression will need to be longitudinally compared as evidence to demonstrate what factors are to be targeted to facilitate mental health improvement.

## Conclusion

Overall, the predictive factors in the study framework such as trust, good health status, and anticipated economic well-being are positively related to not having depression. However, it is surprising to find that affiliating to a religious belief system is tested as a contributing factor to having depression. Although trust is an important factor determining lower risk of depression, findings also support that the factory workers tend to characterize by not able to establish a social life with their colleagues. From a psychological perspective, positive and optimistic workers tend to have better mental health. In this study, the factory workers' prediction of their future living condition is a factor influencing their mental health. From a social-cultural interaction perspective, how the migrants experience their life in a supportive environment could also affect their mental health (Ai et al. 2016). Feeling supported by harmonious relationships with others in society is an important aspect of improving mental health. In future studies, employee assistance programs can be a bridge to gain trust and a connection to test what may significantly enhance work spirit. The effect of religious beliefs should be examined as a trust factor to remove the barrier of perceiving religion as an added stressor.

**Author's Contributions** LH contributed to the formation of conceptual framework, literature review, SPSS data input and analyses, managing the flow of the entire paper, checking of references cited, final proofread. PL contributed to statistical analyses, reading the entire paper and providing comments, writing particularly in statistical analyses. MC contributed to literature updates, statistical tables, editorial comments in the entire paper, writing particularly in the discussion, conclusion and abstract, and submission of the manuscript. YX contributed to conceptual framework and manuscript preparation.

## Compliance with Ethical Standards

**Conflict of interest** The authors declare that they have no conflict of interest to submit this manuscript to this journal.

**Ethics Statement** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

## References

- Abbott, S., & Freeth, D. (2008). Social capital and health: Starting to make sense of the role of generalized trust and reciprocity. *Journal of Health Psychology, 13*(7), 874–883.
- Ai, A., Appel, H., & Nicdao, E. (2016). Differential associations of religious involvement with the mental health of Asian-American subgroups: A cultural perspective. *Journal of Religion and Health, 55*(6), 2113–2130. <https://doi.org/10.1007/s10943-016-0257-0>.
- Barrett, A. E. (2000). Marital trajectories and mental health. *Journal of Health and Social Behavior, 41*(4), 451.
- Brown, S. L., Bulanda, J. R., & Lee, G. R. (2005). The significance of nonmarital cohabitation: Marital status and mental health benefits among middle-aged and older adults. *Journal of Gerontology, 60*(1), S21.
- Chan, A., & Zhu, X. Y. (2003). Disciplinary labor regimes in Chinese factories. *Critical Asian Studies, 35*(4), 559–584.
- Chen, B., & Xu, Y. (2013). The resilience and mental health of woman migrant labor—Empirical research of 226 woman migrant labors in Shanghai. *Journal of East China University of Science and Technology (Social Science Edition), 1*, 23–31.
- Chen, W. Q., Wong, T. W., & Yu, T. S. (2009). Mental health issues in Chinese offshore oil workers. *Occupational Medicine, 59*(8), 545–549.
- Chen, Y., Wang, J., Weng, H., & Wang, X. (2012). History, present situation, and problems of Chinese psychology of religion. *Pastoral Psychology, 61*(5/6), 641–654. <https://doi.org/10.1007/s11089-011-0399-7>.
- Cheung, M., Nguyen, P., & Leung, P. (2016). City size matters: Vietnamese immigrants having depressive symptoms. *Social Work in Mental Health, 15*(4), 457–468. <https://doi.org/10.1080/15332985.2016.1231156>.
- China Youth Daily. (2011). More than 80% of employees have health problems. Retrieved March 6, 2019 from [http://zqb.cyol.com/html/2011-10/30/nw.D110000zgqnb\\_20111030\\_5-01.htm](http://zqb.cyol.com/html/2011-10/30/nw.D110000zgqnb_20111030_5-01.htm).
- Christodoulou, I. (2009). Immigration-induced syndromes. *International Journal of Health Science, 2*(1), 445–461. <https://doi.org/10.1017/S0021932004006637>.
- Chu, H., Niu, W., Yu, X., Dang, W., Lin, Y., Wu, Z., et al. (2013). Effects of comprehensive mental health education intervention on early identification of depression in floating workers in labor intensive enterprise. *Chinese Mental Health Journal, 27*(7), 483–489.
- Dawson, R. (2018). Is religion good for your mental health? *Way, 57*(1), 45–50.
- De Silva, M., McKenzie, K., Harpham, T., & Huttly, A. S. (2005). Social capital and mental illness: A systematic review. *Journal of Epidemiology and Community Health, 59*(8), 619–627.
- Ding, L.-L., & Xiao, X. (2010). Contrast of religion on patients with mental illness and relatives. *Chinese Journal of Health Psychology, 18*(3), 267–269.
- Fan, C. (2004). The state, the migrant labor regime, and maiden workers in China. *Political Geography, 23*(3), 283–305.
- Gao, J., Weaver, S. R., Dai, J., Jia, Y., Liu, X., Jin, K., et al. (2014). Workplace social capital and mental health among Chinese employees: A multi-level, cross-sectional study. *PLoS ONE, 9*(10), 1–6.
- Harpham, T., Grant, E., & Rodrigues, C. (2004). Mental health and social capital in Cali, Colombia. *Social Science and Medicine, 58*, 226–227.
- He, X., Wong, F. K., & Zeng, S. (2010). Rural urban migration and mental health—Evidence from Shanghai. *Sociological Studies, 1*, 111–129.
- Howell, A. N., Carleton, R. N., Horswill, S. C., Parkerson, H. A., Weeks, J. W., & Asmundson, G. J. G. (2019). Intolerance of uncertainty moderates the relations among religiosity and motives for religion, depression, and social evaluation fears. *Journal of Clinical Psychology, 75*(1), 95–115. <https://doi.org/10.1002/jclp.22691>.
- Hsiao, I.-H. (2016). A sociological analysis of the production of depression: An neoliberalist globalization perspective. *Chinese Journal of Sociology, 32*(2), 1–25.
- Hsu, D. (2016). Contextualising ‘sin’ in Chinese culture: A historian’s perspective. *Studies in World Christianity, 22*(2), 105–124.
- Hu, A. (2014). Social participation, types of trust, and subjective wellbeing: Investigation based on CGSS 2005. *Journal of Social Sciences, 4*, 64–72.

- Hu, A., Yang, X. Y., & Luo, W. (2017). Christian identification and self-reported depression: Evidence from China. *Journal for the Scientific Study of Religion*, 56(4), 765–780. <https://doi.org/10.1111/jssr.12482>.
- Hu, R., & Chen, S. (2012). Social factors influencing peasant workers' mental health. *Chinese Journal of Sociology*, 32(6), 135–157.
- Hyppä, M. T., & Mäki, J. (2001). Individual-level relationships between social capital and self-rated health in a bilingual community. *Preventive Medicine*, 32(2), 148–155.
- Lawrence, R. E., Brent, D., Mann, J. J., Burke, A. K., Grunebaum, M. F., Galfalvy, H. C., et al. (2016). Religion as a risk factor for suicide attempt and suicide ideation among depressed patients. *Journal of Nervous & Mental Disease*, 204(11), 845–850. <https://doi.org/10.1097/NMD.0000000000000484>.
- Leung, P., Cheung, M., & Tsui, V. (2012). Help-seeking behaviors among Chinese Americans with depressive symptoms. *Social Work*, 57(1), 61–71. <https://doi.org/10.1093/sw/swr009>.
- Lhewa, D., Banu, S., Rosenfeld, B., & Keller, A. (2007). Validation of a Tibetan translation of the Hopkins symptom checklist-25 and the Harvard trauma questionnaire. *Assessment*, 14, 223–230.
- Li, I., Wang, H., Ye, X., Jiang, M., Lou, Q., & Hesketh, T. (2007). The mental health status of Chinese rural-urban migrant workers: Comparison with permanent urban and rural dwellers. *Social Psychiatry and Psychiatric Epidemiology*, 42(9), 716–722.
- Lin, N., & Ensel, W. M. (1989). Life stress and health: Stressors and resources. *American Sociological Review*, 54(3), 382–399.
- Liu, L., Zheng, G., & Sun, Z. (2011). Labor rights and mental health: Survey on migrant workers in Pearl River Delta and Yangtze River Delta. *Sociological Studies*, 4, 164–184.
- Liu, Y. (2011). The new generation migrant workers' mental health and influence factors. *Population & Economics*, 188(5), 99–105.
- Mou, J., Cheng, J., Griffiths, S. M., Wong, S. Y. S., Hillier, S., & Zhang, D. (2011). Internal migration and depressive symptoms among migrant factory workers in Shenzhen, China. *Journal of Community Psychology*, 39(2), 212–230.
- Nanbu, H. (2018). Religion in Chinese education: From denial to cooperation. *British Journal of Religious Education*, 30(3), 223–234.
- National Bureau of Statistics of China. (2016). National data: GDP. Retrieved March 6, 2019 from <http://data.stats.gov.cn/search.htm?s=GDP>.
- Parloff, M. B., Kelman, H. C., & Frank, J. D. (1954). Comfort, effectiveness, and self-awareness as criteria for improvement in psychotherapy. *American Journal of Psychiatry*, 3, 343–351.
- Phongsavan, P., Chey, T., Bauman, A., Brooks, R., & Silove, D. (2006). Social capital, socio-economic status and psychological distress among Australian adults. *Social Science and Medicine*, 63(10), 2546–2561.
- Pirutinsky, S., Carp, S., & Rosmarin, D. (2017). A paradigm to assess implicit attitudes towards god: The positive/negative god associations task. *Journal of Religion and Health*, 56(1), 305–319. <https://doi.org/10.1007/s10943-016-0303-y>.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon & Schuster.
- Shanghai Government Website. (2017). Total population. Retrieved March 6, 2019 from <http://www.shanghai.gov.cn/nw2/nw2314/nw3766/nw3783/nw3784/u1aw9.html>.
- Shen, Y. (2006). The social transformation and reformation of Chinese working class. *Sociological Studies*, 2, 13–36.
- Strohschein, L., McDonough, P., Monette, G., & Shao, Q. (2005). Marital transitions and mental health: Are there gender differences in the short-term effects of marital status change? *Social Science and Medicine*, 61(11), 2293–2303.
- Wang, B., Li, X., Stanton, B., Fang, X., Yang, H., Zhao, R., et al. (2007). Sexual coercion, HIV: Related risk and mental health among female sex workers in China. *Health Care for Women International*, 28(8), 745–762.
- Wang, T., & Han, B.-X. (2009). Psychological health of the elderly in Buddhist beliefs and earthquake-stricken areas. *Chinese Gerontology*, 29(10), 1272–1275.
- Wen, M., Zheng, Z., & Niu, J. (2017). Psychological distress of rural-to-urban migrants in two Chinese cities: Shenzhen and Shanghai. *Asian Population Studies*, 13(1), 5–24.
- Wong, F. K. D., He, X., Leung, G., Lau, Y., & Chang, Y. (2008). Mental health of migrant workers in China: Prevalence and correlates. *Social Psychiatry and Psychiatric Epidemiology*, 43(6), 483–489.

- Wong, K., Fu, D., & Chang, Y. (2010). Mental health of Chinese migrant workers in factories in Shenzhen, China: Effects of migration stress and social competence. *Social Work in Mental Health, 8*(4), 305–318. <https://doi.org/10.1080/15332980903217768>.
- Wu, Q., Lu, D., & Kang, M. (2015). Social capital and the mental health of children in rural China with different experiences of parental migration. *Social Science and Medicine, 132*, 270–277. <https://doi.org/10.1016/j.socscimed.2014.10.050>.
- Xiao, H. (2009). Research of the social factors which influence Chinese residents' mental health. *Chinese Journal of Social Medicine, 26*(5), 291–293.
- Yang, J., & Hu, R. (2016). Social capital and the mental health of urban and rural residents. *Social Sciences in Yunnan, 1*, 131–136.
- Ye, X. (2005). China's religions: Retrospect and prospect. *Chinese Journal of International Law, 4*(2), 441–453.
- Yu, H., Huang, Y. G., & Gui, Y. (2008). The influence of social capital on the mental health of urban residents: A multi-level linear model analysis. *World Economic Papers, 6*, 40–52.
- Zhang, F. H., Zhang, L. H., Zhang, W., Wang, R., Zhu, F., & Zhun, G. (2016). Investigation and analysis on depression and anxiety of minority college students in Mainland China. *China Journal of Health Psychology, 24*(8), 1254–1257.
- Zhang, Y. (2012). Individual capital, collective capital and people's mental health. *Zhe Jiang Social Sciences, 10*, 65–72.
- Zhao, Y. (2008). Social network and people's well being in urban and rural areas. *Society, 28*(5), 1–19.
- Zheng, G. (2010). Towards a sociological understanding of employee's mental health. *Sociological Studies, 6*, 201–222.
- Zhu, C.-Y., Wang, J.-J., Fu, X.-H., Zhou, Z.-H., Zhao, J., & Wang, C.-X. (2012). Correlates of quality of life in China rural-urban female migrate workers. *Quality of Life Research, 21*(3), 495–503. <https://doi.org/10.1007/s11136-011-9950-3>.
- Zhu, H., & Yao, Z. (2015). The influence of social trust on health of urban residents. *Urban Problems, 242*(9), 94–98.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.