

The interaction of social capital, life stress index and gender on mental health education for internal migrants: based on the China Migrant Population Dynamics Survey in 2017

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Research Article

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Abstract

Background: The internal migrants(IMs) population faces lots of mental health risks, and the government is actively promoting mental health education for them. Studies have focused more on the impact of social capital on mental health, but ignored its impact on the accessibility to mental health services among IMs.

Methods: Data from the China Migrant Dynamic Survey of 2017, involving 138939 IMs in 31 provinces were used to explore the interaction of social capital, life stress index(LSI) and gender on acceptance of mental health education(AMHE). Social capital was divided into cognitive (CSC) and structural social capital (SSC). Line charts, multi-level logistic regression, and other statistical methods were conducted to analyze the data.

Results: Results suggest: (1) The SSC ranking with different LSI levels was "moderate (3.62 ± 1.736), mild (3.53 ± 1.755), severe (3.53 ± 1.755)", SSC was positively correlated with AMHE (OR=1.320, 95%CI 1.305 to 1.336), but the correlation would decrease with the increase of LSI (OR=0.969, 95%CI 0.953 to 0.985; OR=0.949, 95%CI 0.934 to 0.964); (2) Males' SSC (3.67 ± 1.780) was significantly higher than that of females (3.36 ± 1.614), but its influence on AMHE of females was higher (OR=1.050, 95%CI 1.036 to 1.064); (3) The CSC ranking with different LSI levels was "mild (3.71 ± 2.096), moderate (3.71 ± 2.076), severe (3.42 ± 2.024)", there was no significant gender difference in CSC, and CSC was positively correlated with AMHE (OR=1.087, 95%CI 1.076 to 1.098), but gender and LSI had no significant moderating effect on it.

Conclusion: Gender and LSI are associated with CSC and SSC, but only the relationship between SSC and AMHE is moderated by them. SSC has both a main effect and buffering effect, while CSC only shows the main effect. In order to provide better mental health services, the government should pay more attention to stimulating the enthusiasm of the IMs for civic participation and social participation.

Background

Over the past three decades, social change has led to unprecedented massive internal migration in China. An increasing number of people leaves their original places of residence to work and live in other provinces or cities to improve their lives, such people are called internal migrants (IMs). The number of IMs exceeded 240 million in 2017 [1]. Epidemiological research has documented that migration contributes to the risks of mental illness [2], but internal migration is different from cross-border migration. Some surveys in China have pointed out that IMs could be vulnerable to discrimination and stigmatization, and also might become stressed by finding work, housing, schools for their children, and health care without the protections and benefits [3]. IMs tend to show more symptoms of depression and anxiety and lower levels of mental health [4-8]. The high level of psychological distress suggests that efforts targeting mental health promotion and mental disorder prevention among the IMs are an urgent need.

Providing mental health education is a good way to address this need. Because of institutional constraints, the IMs encounter obstacles to accessing local public health services (PBS), which has become an important risk affecting the health of the migrants [9], but the situation has been improving on the past decade. In 2009, China initiated the National Essential Public Health Services (NEPHS) projects. It required local Community Health Centers to provide NEPHS to all residents in their area, including migrants that have lived there for more than six months [10]. The National Health Commission (NHC) reintroduced measures to promote the NEPHS equalization of IMs in 2013, and health education was one of the priorities, including mental health education [11]. In 2016, China promulgated the *Interim Regulations on Residence Permits*, stipulating that IMs with residence permit to enjoy the same treatment as local residents in receiving PBS [12]. In the same year, NHC launched the *Action Plan on Health Education and Promotion for the Migrant Population (2016-2020)* to carry out extensive health education and promotion activities among the IMs [13]. The government's efforts have indeed contributed to a rapid rise in the proportion of migrants receiving health education [14]. However, the current data is still far from the national planning target, and the underlying reasons need to be revealed.

Studies have confirmed that gender, education, community type and migration range have significant impacts on the health education of IMs [15-18]. Although studies believe that social capital plays a prominent role in migrants' access to PBS [19, 20], it is more often used to discuss its influence on IMs' mental health [6 - 8, 21 - 24] while ignoring its value in the process of access to PBS. However, access to health services has been suggested as a pathway by which social capital influences health outcomes [25]. The study by Hou et al. [26] was an exception. Their study confirmed the positive effect of individual structural social capital on health education of the IMs. From the social resource perspective, social capital can influence the frequency of health information seeking and the diversity of used sources positively through three mechanisms: increased exposure to health information, enhanced seeking abilities, and reinforced health culture or norms embedded in social networks [27]. Guo et al. [28] had pointed out that lack of information is the biggest obstacle to IMs to access NEPHS in China. Therefore, it is possible that social capital plays an important role in the process of migrants' access to mental health services, but the relevant research is still lacking.

At present, studies on the social capital of migrants are based on the background of developed countries. Due to the interdependence of cultural, economic, and social capital [29], the relationships between social capital and health are not consistent across countries [30]. Considering the characteristics of social capital of Chinese people [31, 32], and the lack of social capital of IMs in the destination [33, 34], it is necessary to re-examine the relationship between social capital and the accessibility of mental health services in the context of China. Reviewing the existing studies on social capital and PBS for the IMs in China, they are largely based on regional samples or early national samples, and therefore can not describe a recent national profile. Moreover, there are at least three inadequacies: (1) Social capital can be divided into cognitive (CSC) and structural social capital (SSC), both CSC and SSC can independently influence health outcomes [35], the influence of SSC on the PBS for IMs has been studied [26], but the influence of CSC has not been studied. (2) Research trends in social capital and health have moved towards the detailed analysis of the differences in this relationship among subgroups (e.g., gender) [36].

However, most of the studies in China have adopted the independent effect multi-factor model. This approach fails to provide evidence that the relationship between social capital and health is moderated by other variables. (3) Two models have been put forward by Cohen and Wills [37] to explain the mechanisms by which social relationships influence health outcomes: the main effect model and the stress-buffering model, but few studies have considered both effects together.

In this study, we used a 2017 national IMs sample, taking acceptance of MHE (AMHE) as the outcome variable, introducing life stress index (LSI) and gender as moderators, and planned to respond to three questions: (1) What are the differences in the relationship between SSC and AMHE among people under different LSI? (2) Will the relationship between SSC and AMHE be significantly moderated by gender? (3) Will the situation be similar between CSC and SSC, or are there significant differences? Obviously, our findings could help deepen the understanding of the relationship between social capital and access to PBS, and also provide a reference to the improvement on relevant policies of the Chinese government and other developing countries.

Methods

Data

The data was obtained from the China Migrant Dynamic Survey (CMDS) in 2017 and was provided by the Migrant Population Service Center. CMDS is an annual national sample survey of the internal migrants organized by the NHC from 2009, with an annual sample size of approximately 200,000 households. CMDS adopts the layered, multi-stage, and proportional to scale PPS (Probability proportional to size) sampling method. This study adopted the individual questionnaire A of CMDS, which was uniformly printed and distributed by the NHC. The questionnaire A includes basic information about respondent's demography, perception of the destination, the state of social interaction, and utilization status of NEPHS, etc. Full-time investigators collected the questionnaire data through household interviews, and each respondent gave informed consent before commencing the interview. Dates were entered through the migrant population health and family planning dynamic monitoring system, input data was subjected to multiple checks to ensure quality. The respondents consisted of internal migrants aged 15-59 living in the destination for more than one month. In this study, the inclusion conditions were set as "18-59 years of age, residence duration more than one year. Finally, 138939 people were included in this study. The mean age of the sample was (36.18 ± 9.271) years, and the mean residence duration was (7.21 ± 5.893) years.

Measurement

Dependent variables

AMHE was set as a dependent variable, the question was: Have you received MHE in your host community in the past year? Yes = 1 and no = 0.

Independent variables

Social capital was the independent variable of this study. It refers to the resources and benefits received through connections with others, either as individuals or groups [35]. The concept can be broken down into two dimensions: SSC and CSC. SSC refers to the presence of formal opportunity structures or activities in which individuals build or strengthen their social connections. These structures and activities are often operationalized through measures of an individual's civic or social participation. CSC generally refers to individuals' perceptions, beliefs, and attitudes toward their social surroundings, with corresponding measures focused mainly on the concepts of generalized and particularized trust [38]. In this study, social capital was limited to the destination, and it was a localized social capital that reflects the social resources available to the migrant population there.

The SSC of this survey included civic participation and social participation in the destination. Questions of the former were: "since 2016, have you made suggestions to your unit/community/village or supervised the unit/community/village affairs management", "since 2016, have you participated in property donation, blood donation, volunteer activities, etc.", "since 2016, have you reported the situation/put forward policy suggestions to relevant government departments in various ways ", "since 2016, have you posted online comments on national affairs and social events or participated in related discussions", "since 2016, have you participated in party/youth league organization activities and party branch meetings". There were four-level answers for each question: 1= no, 2 = occasionally, 3 = sometimes, and 4 = often, the score ranged from 5 to 20. The question of social participation was "have you participated in any of the following activities in the past year: trade unions, volunteer associations, homecoming associations, fellow-students association, home town chamber of commerce, others", the score ranged from 0 to 7. According to the distribution characteristics of scores, civic participation was integrated into 5 levels: 1 (5 points), 2 (6 points), 3 (7 points), 4 (8 points), 5 (9-20 points). Social participation was also integrated into 5 levels: 1 (0 points), 2 (1 points), 3 (2 points), 4 (3 points), 5 (4-6 points). The spearman correlation coefficient of civic participation and social participation was 0.366 ($p < 0.001$), and the SSC grade can be obtained by adding the two grades, and 7 grades were: 1 (2 points), 2 (3 points), 3 (4 points), 4 (5 points), 5 (6 points), 6 (7 points), 7 (8-10 points).

The CSC generally referred to IMs' perceptions, beliefs, and attitudes toward their destination in this study, with corresponding measures focused mainly on the concepts particularized trust[37]. There were 5 questions in the survey: "I like the city/place I live now", "I am concerned about the changes in the city/place I live now", "I am very willing to blend with the local people and become a part of them", "I think the local people are willing to accept me as a part of them", "I feel locals look down on outsiders", each question was graded as "totally disagree", "disagree", "basically agree", or "totally agree", $\alpha = 0.779$. According to the distribution of scores, CSC was divided into 7 levels: 1 (5-14 points), 2 (15 points), 3 (16 points), 4 (17 points), 5 (18 points), 6 (19 points), 7 (20 points).

Moderating variables and controlling variables

LSI and gender were set as moderating variables. The question about LSI was "At present in the local area, does your family have the following difficulties: finding a stable job, affording a house, schools for

their children, the income is too low, life is not used to, and other difficulties". These difficulties are thought to be frequently dealt with by migrants [3]. According to the distribution characteristics of scores, LSI was integrated into 3 levels: mild (none), moderate (had 1-2 difficulties), severe (had 3-6 difficulties). Education, migratory range, and community type were set as the control variables. According to the compulsory education years in China, education was divided into two categories: ≤ 9 and >9 years groups, and the community types were divided into urban and rural areas, the migratory range was divided into inter-province and intra-province.

Statistical analysis

SPSS 22.0 was used for data analysis. Firstly, we present the descriptive statistical data in order to describe the general characteristics of the included sample. Secondly, we used univariate analysis, AMHE was taken as the dependent variable and other included factors were taken as independent variables for cross-table analysis to investigate whether each factor had a significant impact on the dependent variable, the test index was the chi-square value. Thirdly, we compared differences in CSC and SSC among subgroups of gender and LSI with independent sample t-test and one-way analysis of variance. Fourthly, we used multiple line charts to explore the influence of interaction effects among gender, LSI, CSC and SSC on AMHE. Finally, a hierarchical logistic regression analysis was conducted with AMHE as the dependent variable, CSC, SSC as the independent variables, gender and LSI as the moderating variables, and education, community type and migratory range as the control variables, the aim is to investigate the moderating effects of LSI and gender on the relationship between social capital and AMHE.

Results

Characteristics of the sample

The data in Table 1 shows: about 35.9% of the IMs received MHE in the community in the past year, which was a relatively low number; the sample had a similar ratio of male to female (51.4% VS 48.6%), nearly three quarters (74.2%) of the population lived in urban communities, and the number of inter-provincial migrant population was slightly less than that of intra-provincial migrant population (48.8% VS 51.2%); the migrant population did have higher LSI, with the proportion of mild, moderate and severe groups being 43.3%, 25.8% and 30.9%, and more than half of the IMs would face at least one life difficulty; the social capital of the IMs was characterized by high CSC and low SSC, the proportion of CSC in the low group (5-14 points) was only 15.7%, while that in the high group (≥ 16 points) was 57.2%, the proportion of SSC in low subgroup (2 points) reached 38.4%, this means that more than one third of the migrant population had neither civic nor social participation in the past year.

Table 1 Characteristics of the sample, in 2017, China (N=138939).

Variables	Subgroups	N	%	Variables	Subgroups	N	%
AMHE	Yes	49946	35.9	CSC	Level 105-14	21855	15.7
	No	88993	64.1		Level 2015	37683	27.1
Gender	Male	71377	51.4	Level 3016	16930	12.2	
	Female	67562	48.6	Level 4017	12883	9.3	
Education	≤9 years	83860	60.4	Level 5018	12037	8.7	
	>9 years	55079	39.6	Level 6019	19452	14.0	
Community type	Urban	103038	74.2	Level 7020	18104	13.0	
	Rural	35901	25.8	SSC	Level 102	53396	38.4
Migration range	Across provinces	67810	48.8	Level 203	30960	22.3	
	within a province	71129	51.2	Level 304	21311	15.3	
LSI	Mild	60166	43.3	Level 405	13184	9.5	
	Moderate	35859	25.8	Level 506	8630	6.2	
	Severe	42914	30.9	Level 607	5388	3.9	
				Level 708-10	6070	4.3	

Results of univariate analysis

Cross table analysis was performed with AMHE as the dependent variable and other included factors as independent variables. The univariate analysis results of Table 2 showed that: the gender difference in AMHE was not significant, while the proportion of AMHE was higher for people with higher education years, living in urban communities and migration within a province. The correlation between LSI and AMHE was non-linear, people without life hardship being listed in the study had a higher AMHE. Among people with living difficulties, the AMHE increased from the increase in LSI. The impact of social capital on AMHE was very prominent, higher CSC corresponds to higher AMHE, the same was true of the SSC, and the impact of SSC on AMHE was significantly greater than that of CSC.

Table 2 Results of univariate analysis, AMHE as the dependent variable and gender, education, community type, migratory range, LSI and social capital as the independent variables.

Variables	Subgroups	Acceptance rate of MHE(%)	χ^2	Variables	Subgroups	Acceptance rate of MHE(%)	χ^2
Gender	Male	35.8	2.204	CSC	Level 1	27.4	2231.412***
	Female	36.1			Level 2	32.1	
Education	≤9 years	33.3	639.859***		Level 3	34.8	
	>9 years	40.0			Level 4	36.5	
Community type	Urban	37.8	570.265***		Level 5	38.0	
	Rural	30.7			Level 6	42.7	
Migration range	Intra-province	39.3	702.372***	SSC	Level 7	46.5	7936.773***
	Inter-province	32.5			Level 1	25.5	
LSI	Mild	38.8	465.632***		Level 2	32.9	
	Moderate	32.1			Level 3	39.9	
	Severe	35.2			Level 4	46.1	
					Level 5	51.5	
					Level 6	56.6	
					Level 7	67.5	

Note: ***p<0.001, **p<0.01, *p<0.05. The same is true of the symbols in the rest of the table.

Impact of gender and LSI on CSC and SSC

Table 3 Comparison of mean grades of CSC and SSC among different gender and LSI subgroups.

Variables	Subgroups	CSC		SSC	
		M ± SD	Statistic	M ± SD	Statistic
Gender	Male	3.62 ± 2.075	t = 0.133	3.67 ± 1.780	t = 34.784***
	Female	3.62 ± 2.071		3.36 ± 1.614	
LSI	Mild	3.71 ± 2.096	F = 303.936***	3.53 ± 1.755	F = 148.408***
	Moderate	3.71 ± 2.076		3.62 ± 1.736	
	Severe	3.42 ± 2.024		3.41 ± 1.611	

In Table 3, independent-samples t-test showed that there was no significant difference in CSC between males and females, but SSC of males was significantly higher than that of females. One-way ANOVA found significant differences in CSC and SSC among the three groups of LSI. The Bonferoni method was used for post comparison, and the following results were obtained: the CSC of group mild was not significantly different from that of group moderate, and both groups were significantly lower than that of group severe; the ranking of SSC of group moderate was significantly greater than that of group mild, which in turn was significantly greater than that of group severe.

Interaction of gender, LSI, CSC, and SSC on AMHE

Firstly, the interaction of gender, CSC and SSC on AMHE was explored. As shown in Figure 1, with the improvement of CSC, we could see that the AMHE curves of both males and females were slowly rising, and the distance between the two curves was very close, indicating that the interaction effect between gender and CSC might not be significant. In Figure 2, with the improvement of SSC, the AMHE curves of both males and females also rose slowly, but the curves of females always stayed at the top and the distance between the two curves gradually widened, indicating that the interaction between gender and SSC might be significant, and SSC of females would have a greater influence.

Then, we explore the interaction of LSI, CSC and SSC on AMHE. In Figure 3, with the increase of CSC, all three groups of curves showed an upward trend. The curve of group mild always stays at the top, followed by group severe and moderate. The trend of the three curves was nearly parallel, indicating that the interaction effects between LSI and CSC might not be significant. In Figure 4, with the improvement of SSC, all three groups of curves also showed an upward trend. However, the distance between group mild and severe showed an increasing trend, while the distance between group severe and moderate showed a decreasing trend, indicating that interaction effects of LSI and SSC might exist.

Results of multivariate analysis

In Table 4, after introducing the LSI, CSC and SSC, Block 2 compared with Block 1, Omnibus test X^2 increased by 8499.370 ($p < 0.001$), Cox & Snell R^2 increased from 0.011 to 0.070, Hosmer & Lemeshow test X^2 was reduced from 54.084 to 25.666, with the variation explained proportion ascending also synchronization to improve the fit of the model. To further introduce the interaction items of LSI, gender, and social capital, Block 3 compared with Block 2, Omnibus test X^2 increased by 98.278 ($p < 0.001$), Cox & Snell R^2 adjusted to 0.071, Hosmer & Lemeshow test X^2 increased from 25.666 to 35.666, the variable to explain degree slightly increase and the fit of the model is not significant deterioration. By analyzing the OR value of each variable in Block 3, it could be found that after controlling other variables and interaction effects, the main effects of gender and LSI were significant, AMHE of males was significantly higher than that of females, AMHE of group severe was significantly lower than that of group mild, but there was no significant difference between group moderate and group mild. The main effects of CSC and SSC were also significant, and AMHE increased with the increase of CSC (or SSC). It should be pointed out that the interaction effect of CSC with gender and LSI was not significant, while the interaction effect of SSC with gender and LSI was significant. The OR value of Gender*SSC was significantly greater than 1, and those of Moderate*SSC and Severe*CSC were significantly less than 1. In addition, we did not find that the OR value of Gender*SSC*LSI was significant, so it was not presented in table 4.

Table 4 Logistic regression results of gender, education, community type, migratory range, LSI and social capital on AMHE.

Independent Variables	Reference group	Block 1		Block 2		Block 3	
		OR	95% CI	OR	95% CI	OR	95% CI
Gender Female	Male	1.005	0.983 1.027	1.105***	1.080 1.130	0.906**	0.849 0.966
Education >9 years	≤9 years	1.268***	1.239 1.297	0.967**	0.943 0.991	0.967**	0.943 0.991
Community type Rural		0.789***	0.769 0.811	0.875***	0.851 0.899	0.875***	0.852 0.899
	Urban						
Migration range		0.768***	0.751 0.785	0.799***	0.780 0.817	0.799***	0.781 0.818
Inter- province	Intra-province						
LSI Moderate	Mild			0.704***	0.684 0.724	0.774***	0.713 0.840
	Severe			0.886***	0.862 0.910	1.048	0.972 1.130
CSC				1.094***	1.088 1.100	1.087***	1.076 1.098
SSC				1.318***	1.308 1.327	1.320***	1.305 1.336
Gender*CSC						1.006	0.995 1.017
Gender*SSC						1.050***	1.036 1.064
Moderate*CSC						1.006	0.992 1.020
Severe*CSC						1.005	0.992 1.019
Moderate*SSC						0.969***	0.953 0.985
Severe*SSC						0.949***	0.934 0.964
Omnibus test X^2		1582.813***		10082.183***,		10180.461***,98.278	
Cox & Snell R^2		0.011		0.070		0.071	
Hosmer & Lemeshow test X^2		54.084***		25.666**		35.666***	

Discussion

There were three main findings in this study: (1) The SSC ranking of IMs with different LSI levels was "moderate, mild, severe", SSC was positively correlated with AMHE, but the correlation would decrease from the increase in LSI; (2) The SSC of males was significantly higher than that of females, but the influence of SSC on AMHE of females was more prominent; (3) The CSC ranking of IMs with different LSI levels was "mild, moderate, severe", there was no significant gender difference in CSC, and CSC was positively correlated with AMHE, but gender and LSI had no significant moderating effect on it.

Migration means a loss of the original social network and a disruption in civic participation in the new environment, particularly if migrants view the move as temporary and have little stake or familiarity in the destination community, which results in the deficiency in the migrants [39]. Previous studies have pointed out that the social participation in the Chinese migrant population is insufficient and the members of social networks tend to be in the middle and lower classes [33, 34]. The study found that the SSC of the IMs was indeed insufficient, 38.4% of whom had neither civic participation nor social participation in the past year. LSI and SSC were closely correlated, but the correlation was not linear. The SSC of the moderate group is the highest, followed by the mild group, and the group severe was significantly

reduced. These findings are important supplements to the deficiencies in the existing studies. We also found that the SSC of males was significantly higher than that of females, which may be related to the content included in this study. The included options are more external to the family, while compared with males, females' social relations are more inclined to family and relatives [38].

Although the SSC of the IMs is insufficient, it can effectively promote the AMHE by the migrant population in the community. With the restriction of other variables, the AMHE could increase by from 32.0% for each increase in SSC unit, this is consistent with some studies [26, 27, 40]. According to Song et al. [27], SSC could increase exposure to MHE information for IMs, enhance their seeking abilities of MHE, and reinforce mental health culture or norms embedded in social networks. This study found that SSC had different effects on AMHE under different LSI. Although SSC was not the highest in the mild group, its influence on AMHE was the strongest; while the SSC was the highest in the moderate group, its influence on AMHE was weakened; and both the SSC and its influence on AMHE were the lowest in the severe group. The Network-Episode Model[41] believes that the supporting role of social relations not only depends on its scale, but also depends on its density, durability, reciprocity and other structural characteristics. Previous studies have confirmed that structural differences in social networks can indeed affect health information seeking behavior [27]. Clearly, the SSC of the group moderate had quantity, but lacked quality, while the group severe lacked both. Gendered social roles and norms may act at multiple levels to shape the structure and composition of men's and women's social networks and, by extension, the types of resources that they have access to in their networks [38]. Therefore, the impact of social capital on health is different to genders. Landstedt et al. 's study [42] found that SSC has a greater impact on health of men, while Moore and Carpiano [38] emphasized that social capital seemed more salient for women's health. This study also found this difference, although the SSC of females was lower, its impact on AMHE was greater than that of males, it confirmed Moore and Carpiano's points.

In this study, the CSC of the IMs showed a relatively high level. 93.3% of the IMs think that the local people accept them, and only 17.1% feel the discrimination of the local people, two figures were significant improvements over the data(74.3% and 25.7%) obtained in a 2008 regional survey by Ren and Tao [43]. Whether this is due to sample differences or changes in the overall social environment remains to be confirmed. CSC is significantly positively correlated with AMHE, indicating that the more positive the evaluation of the destination is, the more likely it is to encourage the IMs to seek local mental health services. But the impact of CSC was significantly lower than that of SSC. As proposed by Guo et al. [28], the biggest obstacle to the IMs to access NEPHS is the lack of information, the informational capabilities contained in SSC may make it more valuable for the IMs to obtain MHE. Unlike SSC, the impact of CSC on AMHE was not moderated by LSI and gender. Given the high level of CSC, this may have created a ceiling effect, resulting in CSC differences between gender(or LSI) subgroups not being sufficient to generate significant AMHE differences. It is quite different from some studies based on western cultural background [38]. More cross-cultural studies are needed to flesh out these findings.

Kawachi and Berkman [25], when talking about the relationship between social ties and mental health, pointed out: the stress-buffering model posits that social ties are related to well-being only for persons

under stress, whereas the main effects model proposes that social ties have a beneficial effect regardless of whether individuals are under stress. It has been suggested that structural aspects of social relationships (e.g., social networks, social integration) may operate via main effects, whereas functional aspects of social relationships (e.g., perceived support) operate through a stress-buffering mechanism. In this study, the analysis results showed that SSC had both a main effect and a buffering effect, while CSC only showed a main effect. This is the first time such a phenomenon has been found in the migrant population, our choice of outcome variables may be a reason, but further research is needed to confirm and explain it.

Two things have to be pointed out. First of all, the selection of SSC measurement content of this study has strong Chinese cultural characteristics, such as homecoming associations, Party branch of the Chinese Communist Party and Communist Youth League, etc., which is difficult to find counterparts in the research based on other cultures, which may affect the comparability of different research conclusions to a certain extent. Secondly, our research limits the acceptance scope of MHE to the community. In China, the community usually refers to the village committee or street, which is different from the concept of community in western culture, and its scope is smaller. Such a setting may reduce the function of social capital. After all, the geographical background of social capital is the whole city in this study.

Conclusions

The social capital of Chinese IMs was characterized by high CSC and low SSC, and the influence of SSC on AMHE was significantly greater than that of CSC. The correlation between LSI and social capital of IMs was non-linear, and LSI could weaken the influence of SSC on AMHE. Gender difference only exists on the SSC. Although the SSC level of males was higher than that of females, the influence of SSC on AMHE of females was stronger. In summary, SSC had both a main effect and a buffering effect, while CSC only showed a main effect. These findings expanded our understanding of the relationship between social capital and mental health services among IMs. When promoting the mental health education of the IMs, the government should pay attention to enhancing their positive identity to the city and at the same time improve their civic participation and social participation.

Abbreviations

AMHE: Acceptance of Mental Health Education

CMDS: China Migrant Dynamic Survey

CSC: Cognitive Social Capital

IMs: Internal Migrants

LSI: life stress index

NEPHS: National Essential Public Health Services

NHC: National Health Commission

PBS: Public Health Services

SSC: Structural Social Capital

Declarations

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Availability of data and materials

Since the data used in this paper were provided by the Migrant Population Service Center, which is the top agency governing migrant population issues in China, we had to sign a legally binding agreement with the agency that we will not share any original data with any third parties. However, interested researchers can apply for access to the data at <http://www.ldrk.org.cn/>.

Authors' contributions

All authors participated in the design of the study. ZY carried out the statistical analysis and composed the first draft. CHJ gave opinions for modification. All authors read and approved the final manuscript.

Ethics approval and consent to participate

The “National Internal Migrant Dynamic Monitoring Survey, 2017” data is publicly available to authorized researchers who have been given permission by the Migrant Population Service Center, and written informed consents were obtained from all participants. The analysis of public access data was exempted by the local IRB; as this involved analyzing de-identified existing data, ethical approval was not required.

Consent for publication

Not applicable.

Competing interests

No competing interests in this study.

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Figures

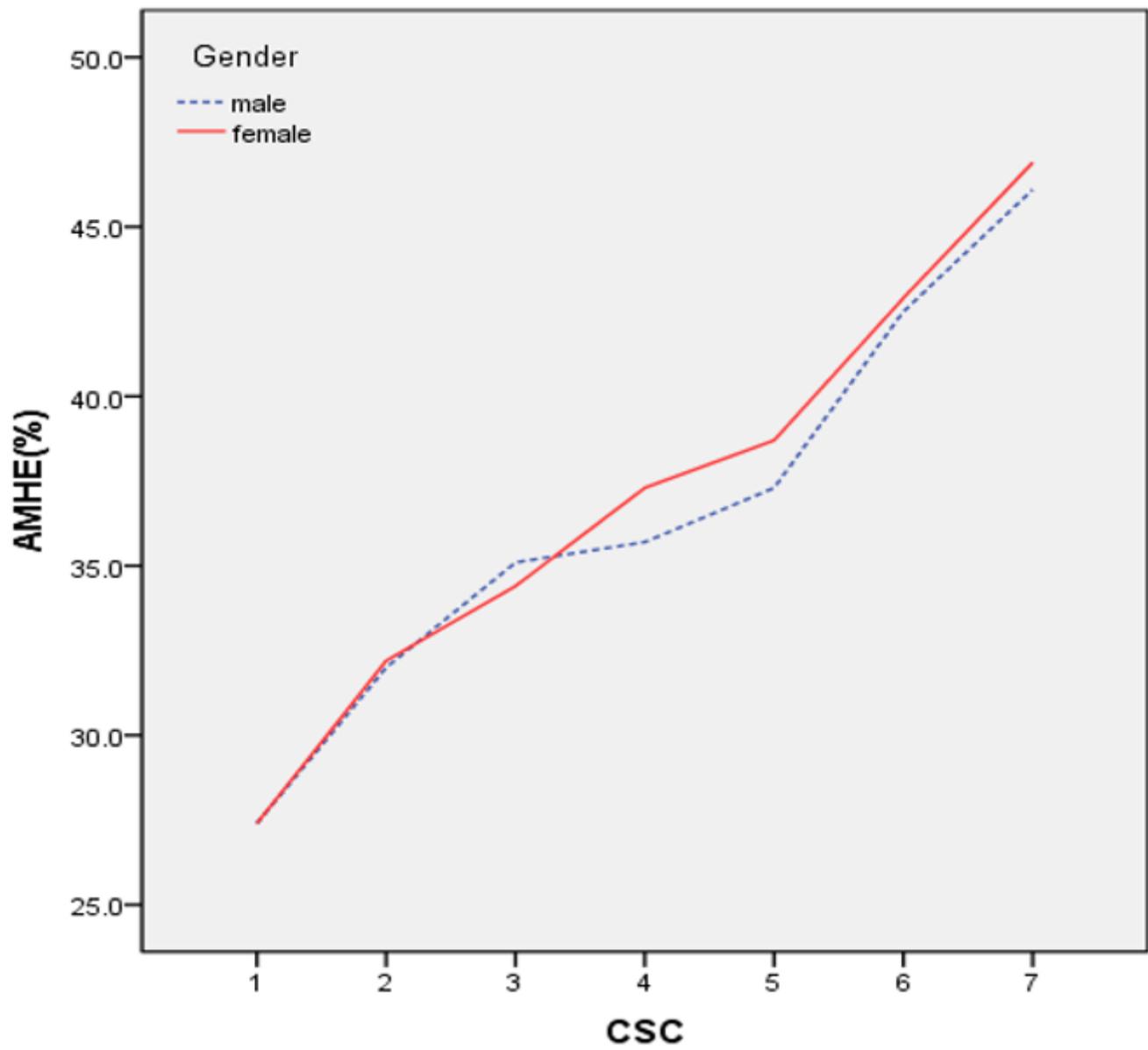


Figure 1

Interaction of gender and CSC on AMHE

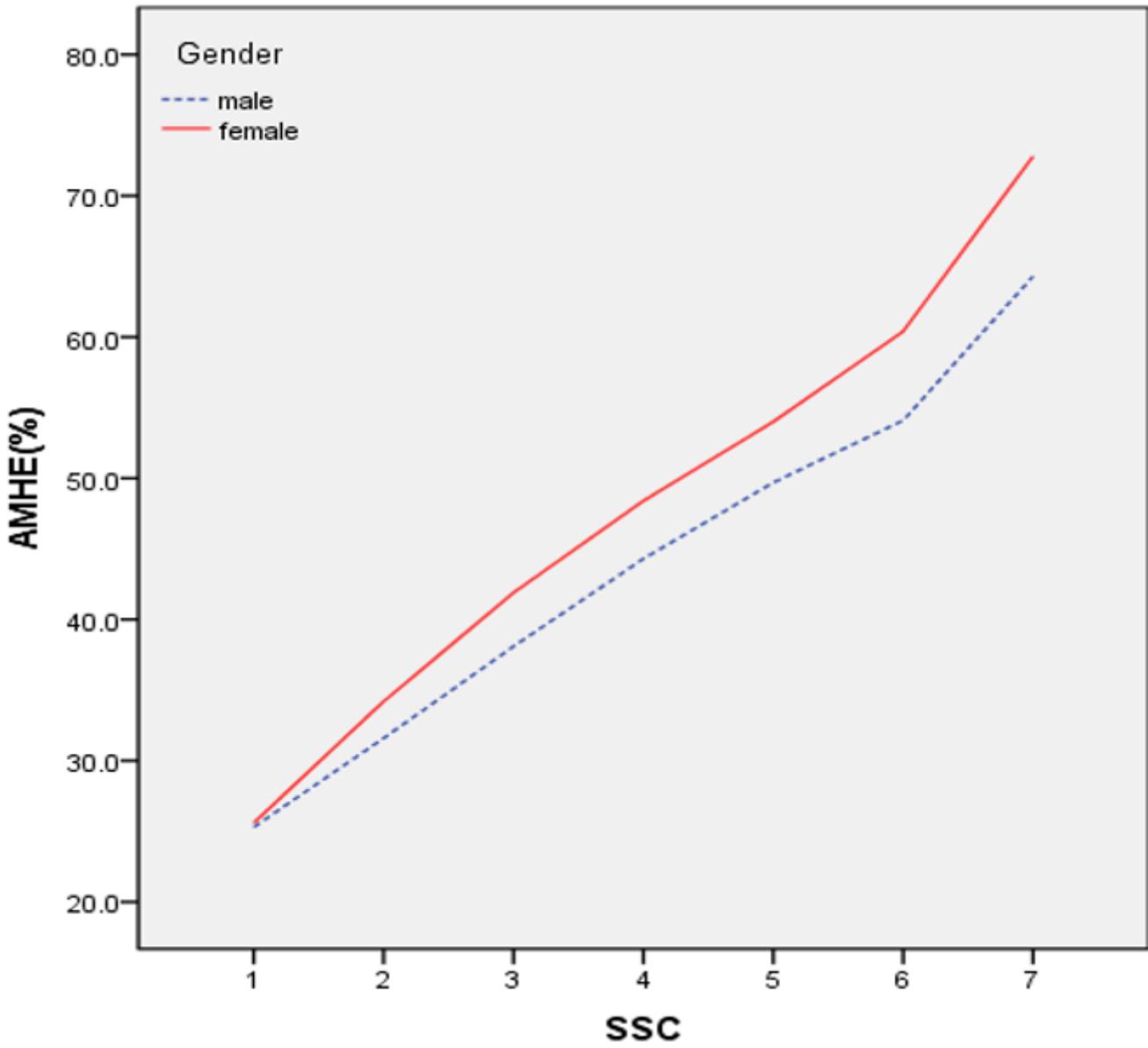


Figure 2

Interaction of gender and SSC on AMHE

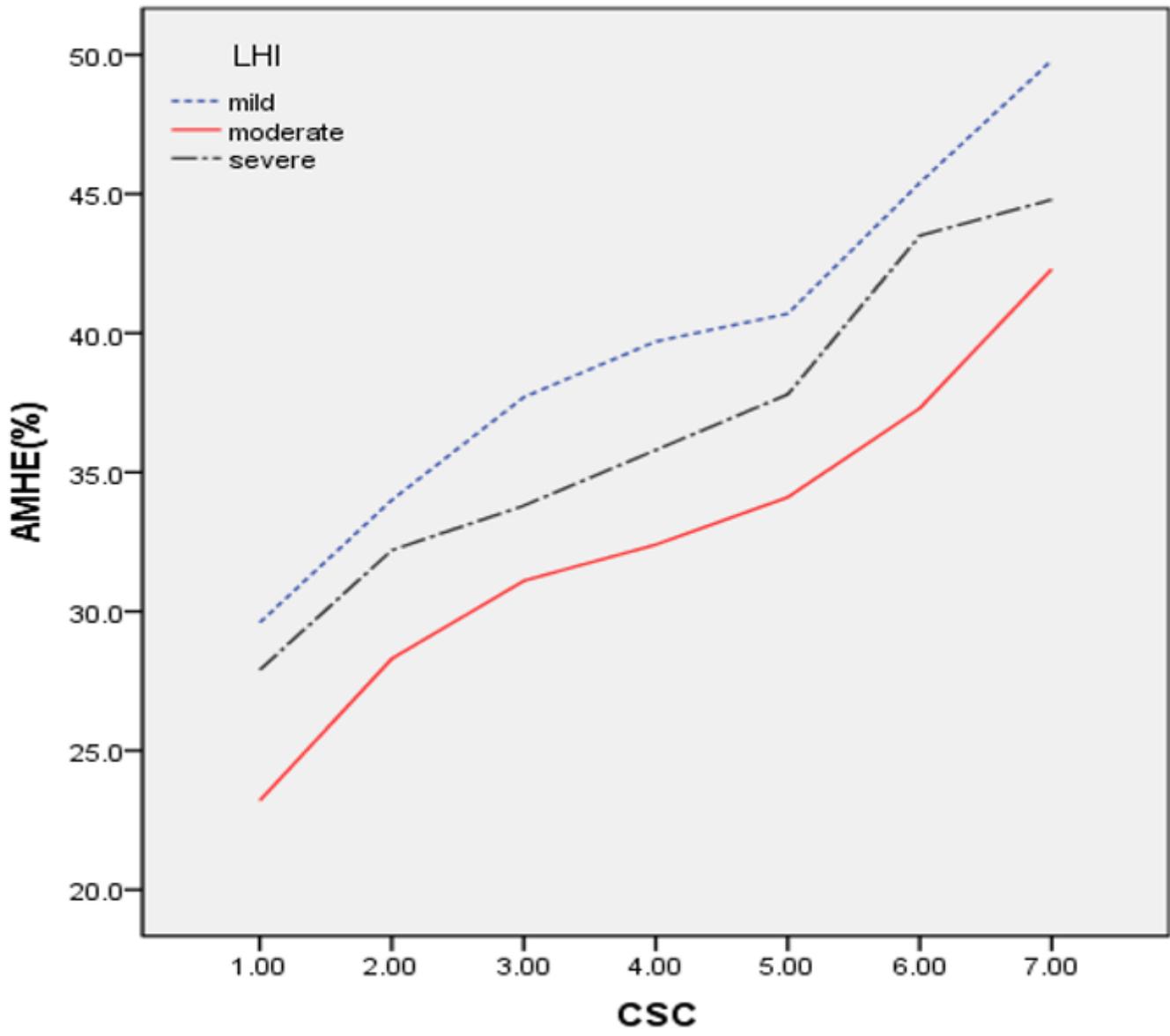


Figure 3

Interaction of LSI and CSC on AMHE

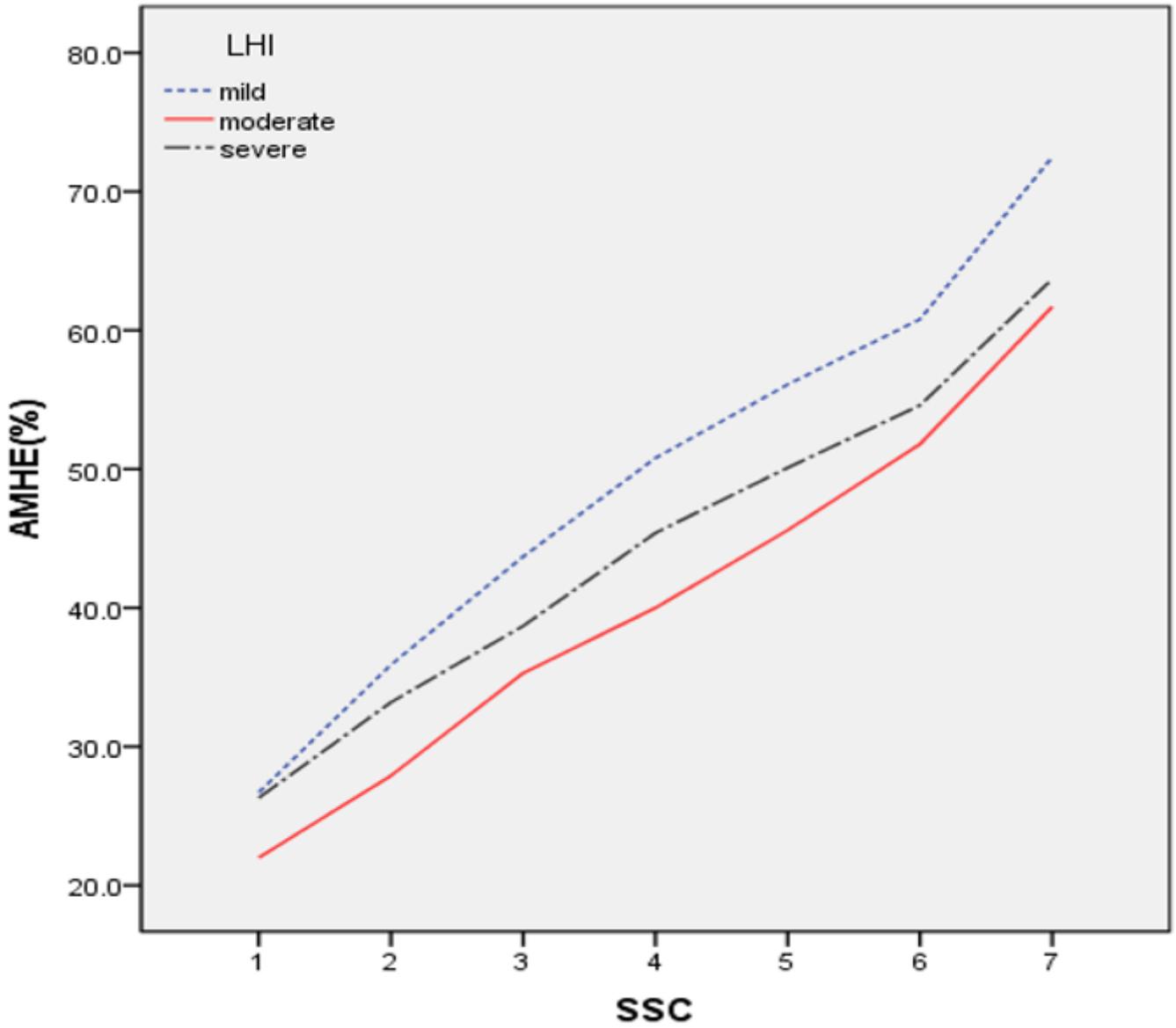


Figure 4

Interaction of LSI and SSC on AMHE