

The Intervention Effect Assessment on Social Support Condition of the First Settlers in Dan jiangkou Reservoir Area, China

Jinfeng Sun¹, Baoqing Shi², Jianxiang Shi³, Xinpei Yue¹, Liang Sun¹ and Qingfeng Tian^{1*}

¹Department of Social Medicine and Health Service Management, College of Public Health, Zhengzhou University, 450001 Zhengzhou, PR China;

² College of Public Health, Zhengzhou University, 450001 Zhengzhou, PR China;

³Cancer Autoimmunity Research Laboratory, Department of Biological Sciences, University of Texas, El Paso, TX 799 68, USA.

Corresponding Email: tianqf@zzu.edu.cn

Abstract. Objective: To assess the effect of psychological intervention on social support condition of the first settlers in Dan jiangkou reservoir area. **Methods:** Using the Social Support Rating Scale (SSRS) to measure the social support condition of the first batch of immigrants before and after the intervention, and then compare it with the immigrants who were not intervened. **Results:** Compared with the immigrants who were not intervened, the immigrants who received intervention have a higher score on the availability of social support ($P<0.05$). **Conclusion:** Psychological intervention can improve the social support condition for immigrants, especially in enhancing the availability of social support.

Keywords. Dan jiangkou, immigrant, social support, intervention

1 Introduction

Social support is an interpersonal system, taking the individual as the core. It is composed of several aspects of supporting behaviors from both the individuals themselves and others supporters around [1]. Previous prospective study found that, it increased the risk of death among people who suffered from the poor quality or the lacking of social relations. Both human and animals experiments showed that social isolation was a risk factor of death[2]. Epidemiological studies have shown that social support is associated with lower morbidity and mortality, and benefits the cardiovascular, neuroendocrine, and immune system[3]. Since Dan jiangkou reservoir served as the source of the diverted water, the life of residents living in this area was totally disturbed. About 11 townships, 185 administrative villages, and 1312 village groups were flooded directly because of this project. Nearly 15,000 m² land was flooded and 2,583,800 m² houses were destroyed, affecting up to 10.73 million people[4]. The immigration for of South-to-North Water Diversion Project was mandatory, and residents were forced to move to new places. Unwillingness of leaving the former residence along with the unaccustomedness to the resettlement leaved psychological trauma among these immigrants. Changes in natural and social environment, especially the loss of farming and social relationship, made this situation even worse.[5]. Previous studies show that the mental status of these immigrants were negatively affected, and it's difficult for them to eliminate negative emotions.[6]. This study assessed the intervention of quo-immigrants' social support and explored the effectiveness of this measures, which may provide useful information and advice to the policy-makers about psychological comfort for immigrants.

2 Material and Methods

Research Subjects. Subjects were the first batch of immigrants who moved out Xichuan county, Dan jiangkou reservoir in 2010. The study design was approved by the ethical committee of Zhengzhou University. Written informed consent was obtained from all participants. Inclusion criteria: Participant must be aged 15 years and over. Exclusion criteria: people who have deaf, mental underneath, mental patients and severe cardiovascular, and cerebrovascular diseases were excluded.

Intervention programs. The immigrants were divided into intervention group and control group. The control group had no treatment, while the intervention group was treated with the following steps:

1. Carry out mental health education

Health education pamphlets and relevant materials were distributed; radio, blackboard, and propaganda showcase, etc. were used to transmit mental health knowledge; thematic seminar and lectures were given for mental health education among immigrant schoolchildren

2. Establish mental health records and psychological warning information network

The immigrant mental health records and psychological warning information network were established.

3. Provide psychological counseling

Face to face psychological counseling was carried out. High-risk groups were screened according to the results of the psychological investigation, then psychological counseling was provided.

4. Provide health service

We configured health services for immigrants, improving immigration physical health.

5. According to the intervention to immigration subjects, the immigrants' health guidelines which included health knowledge, common sense psychology and so on were drafted to make the resettlement progress smoothly.

Questionnaire survey. The Social Support Rating Scale (SSRS) was used to evaluate the situation of social support. The scale was established by Xiao, Shuiyuan [7]. It has 10 items and is divided into three aspects: subjective support, objective support and support utilization. Subjective support is subjective experience or emotional support, which mainly refers to the individual's emotional experience and satisfaction to be respected, supported and understood in society; objective support refers to the objective, actual or perceived support, including direct material assistance and social networks; utilization of support refers to the individual on the utilization of social support.

The scoring method of Social Support Rating Scale is as follows [8]: ① Items 1 ~ 4, 8 ~ 10: Selecting items 1,2,3,4 will get 1,2,3,4 points respectively. ② Item five: the total scores are divided into A, B, C, D 4 parts, each count from none to full support will get 1 to 4 points separately. ③ Articles 6 and 7, if the answer is "no source", the score is 0 points, whose answer is "following sources", he will get the score according to the amount he choose. ④ Total score is the sum of 10 items; objective support score is the sum of item 2, 6, 7; subjective support score is the sum of item 1, 3, 4, 5; the utilization of supporting score is the sum of 8,9,10. The higher the score you get, the better your social support have.

Statistical Analysis. Before inputting the data, we conducted quality audits on each questionnaire and removed the incomplete questionnaires. The Software of Epidata3.0 was used to establish a database. Double entry was conducted to avoid input error. SPSS17.0 statistical software was used to conduct chi-square test, two-sample t-test and other statistical analysis for the data. Significance level $\alpha = 0.05$.

3 Results

Demographic Characteristics. We issued 1420 questionnaires, and retrieved 1372 questionnaires, the effective rate was 96.6%. The intervention group has 522 males and 445 females; the mean age is 46.74 ± 15.85 years old. Control groups have 204 males and 201 females; the mean age is 44.75 ± 14.51 years old.

Comparison of the score on social support between intervention and control groups before and after the intervention. Before the intervention, there was no statistically significant differences between the two groups ($P > 0.05$) in social support, subjective support, objective support and the utilization of social support. After the intervention, the intervention group had a higher score on the utilization of social support than the control group ($P < 0.05$); no statistically significant difference was observed on the other three aspects ($P > 0.05$). The results are shown in Table 1.

Table 1. Comparison of social support between intervention and control groups before and after intervention

Group	Before intervention				After intervention				t value			
	Total score	Subjective support	Objective support	Utilization	Total score	Subjective support	Objective support	Utilization	Total score	Subjective support	Objective support	Utilization
Intervention group	37.95±8.68	22.63±6.13	8.36±2.75	6.92±2.43	38.62±8.46	22.68±5.36	8.60±3.17	7.73±2.68	1.231	0.200	0.969	4.904 [#]
Control group	38.84±7.10	23.59±4.95	8.60±2.69	6.66±1.96	37.80±7.79	22.93±4.95	8.09±2.75	6.77±2.11	-1.228	-1.186	-1.640	0.488
t value	-1.088	-1.676	-0.784	1.139	1.376	-1.242	1.763	5.420 [#]	/	/	/	/

Note: # means $P < 0.05$

Hierarchical comparison of social support between immigrants before and after intervention. After the intervention, the scores on utilization of social support are statistically higher than immigrants before the intervention both in male, female, 15 ~ 34 and 35 ~ 54 age groups, primary group, junior high school group, unmarried group, married group and farmer ($P < 0.05$). Comparing the two groups, the differences are not statistically significant ($P > 0.05$) in the scores of social support, subjective support and objective support. The results are shown in Table 2.

Table 2 Hierarchical comparison of social support between immigrants before and after intervention

Project Group	Before intervention				After intervention				t value			
	Total score	Subjective support	Objective support	Utilization	Total score	Subjective support	Objective support	Utilization	Total score	Subjective support	Objective support	Utilization

		t	rt			t	rt		e	t	rt	
Gender												
male	38.73± 8.51	23.24± 5.98	8.43± 2.70	7.02± 2.58	39.16± 8.73	23.04± 5.48	8.45± 3.18	7.68± 2.72	-0.5 52	0.379	-0.07 7	-2.810 #
female	36.73± 8.82	21.66± 6.27	8.25± 2.85	6.75± 2.18	38.23± 8.21	22.07± 5.26	8.52± 3.23	7.63± 2.68	-1.7 40	-0.713	-0.86 4	-0.404 #
Age												
15~	39.53± 8.65	23.94± 6.03	8.51± 2.77	7.03± 2.61	41.43± 8.94	23.99± 5.22	9.36± 3.63	8.08± 2.58	-1.4 94	-0.064	-1.84 7	-2.829 #
35~	37.56± 8.89	21.92± 6.18	8.47± 2.89	7.06± 2.35	38.33± 8.26	22.20± 5.47	8.41± 3.07	7.69± 2.70	-0.8 93	-0.488	0.196	-2.455 #
55~	37.47± 8.30	22.57± 6.21	8.20± 2.47	6.75± 2.38	37.56± 8.36	22.04± 5.29	8.26± 3.18	7.29± 2.71	-0.0 87	0.742	-0.16 2	-1.634 #
Educational												
Primary and below	35.72± 8.26	21.16± 6.12	8.01± 2.56	6.55± 2.28	36.84± 8.63	21.22± 5.59	8.27± 3.05	7.33± 2.65	-1.2 88	-0.097	-0.92 5	-3.071 #
Junior high school	39.07± 8.77	23.53± 6.10	8.49± 2.83	6.95± 2.52	39.72± 8.28	23.32± 5.21	8.68± 2.29	7.74± 2.73	-0.7 74	0.389	-0.63 4	-3.080 #
High school and above	42.13± 7.69	24.70± 5.12	9.28± 2.98	8.15± 2.09	40.97± 7.57	24.14± 4.36	8.44± 3.37	8.40± 2.61	0.7 71	0.621	1.314	-0.522
Marriage												
Unmarried	39.15± 9.06	23.33± 6.75	8.74± 2.57	7.07± 2.12	37.81± 9.08	21.37± 5.48	7.94± 3.91	8.53± 2.41	0.6 41	1.455	0.980	-2.696 #
Married	38.52± 8.29	23.14± 5.80	8.47± 2.75	6.85± 2.43	39.31± 8.18	23.07± 5.25	8.73± 3.04	7.52± 2.71	-1.3 13	0.179	-1.21 3	-3.542 #
Others	30.19± 8.58	16.58± 5.88	6.71± 2.53	6.90± 2.53	33.51± 9.01	18.96± 5.15	6.73± 3.28	7.88± 2.83	-1.6 20	-1.886	-0.02 8	-1.550 #
Profession												
Farmer	37.98± 8.63	22.64± 6.13	8.40± 2.77	6.89± 2.42	38.99± 8.54	22.64± 5.48	8.59± 3.18	7.75± 2.74	-1.5 61	0.000	-0.85 1	-4.450 #
Non-farmer	37.80± 8.98	22.57± 6.19	8.16± 2.69	7.05± 2.52	37.90± 8.31	22.35± 5.17	8.20± 3.26	7.38± 2.58	-0.0 76	0.267	-0.08 9	-0.867 #

Note: # means $P < 0.05$

4 Discussion

Differences between the two investigations among control group are not statistically significant ($P > 0.05$) in social support, subjective support, objective support and the utilization of social support. It shows that with the psychological intervention, their social support situation has not been improved, and the immigrants had the same social support with the resettlement. Comparing with the score before the intervention in intervention group, immigrants after the intervention have higher scores in the use of social support and the differences are statistically significant ($P < 0.05$). After the intervention, the intervention group get a higher scores on the utilization of social support than the control group, and the differences are statistically significant ($P < 0.05$). It shows that the implementation of psychological intervention can improve the utilization of social support, and exclude the adaption of resettlement and other factors. Interventions' improvement of social support utilization is still valid. Comparing the scores before and after the intervention in intervention group, the differences are not statistically significant ($P > 0.05$) in social support, subjective support, objective support and the utilization of social support. Considering after the relocation, immigrants lived collectively in the form of immigrant village. Immigrants have very little contact with local residents in daily life, their objective sources of support are all from immigrants. After the remove, the external environment break the immigrants' original production and lifestyle, disrupting its natural kinship, the long-regional relations and the social support systems formed of other social networks, social support occurred tremendous changes. With these changes, objective source of support reduced, causing the reducing of subjective support immigrants feel. By implementing psychological interventions in the key populations, immigrants' utilization of social support improved to a certain extent, but the new social network is still not established, objective and subjective support did not change significantly.

Comparing the scores before and after the intervention in intervention group, the differences are not statistically significant ($P>0.05$) in social support, subjective support, objective support and the utilization of social support. Considering after the relocation, immigrants lived collectively in the form of immigrant village. Immigrants have very little contact with local residents in daily life, and their objective sources of support are all from immigrants. After the remove, the external environment broke the immigrants' original production and lifestyle, disrupted their natural kinship, the long-regional relations and the social support systems formed of other social networks which indicated the available social support occurred tremendous changes. With these changes, objective source of support reduced, and subsequently caused the decrease of subjective support in immigrants' feelings. By implementing psychological interventions in the key populations, immigrants' utilization of social support improved to a certain extent, but the new social network is still not established, objective and subjective support did not change significantly.

After the intervention, the scores on utilization of social support are higher than immigrants before the intervention both in male and female group, suggesting the intervention effect in both genders is close. After the intervention, the scores on utilization of social support are higher than immigrants before the intervention both in 15~34 and 35~54 age groups. Before and after the intervention, the differences are not statistically significant ($P>0.05$) in every dimensions in 55~ age group. It shows that effect of intervention program in people over 55 years is not as efficient as that in the other age groups, considering the mobility of the older was limited. Since their social adaptability was reduced, they are more difficult to establish new social support network. After the intervention, the scores on utilization of social support are higher than immigrants before the intervention both in primary group and junior high school group. Before and after the intervention, the differences are not statistically significant ($P>0.05$) in every dimensions in high school age group. This shows that psychological intervention has an obvious effect on immigrants who have the lower level of education, probably because the immigrants of higher educational level accept more information. They learned their current standard of living and the gap between them and other rural areas through a variety of channels, which causing psychological negative emotions that affect the intervention. After the intervention, the scores on utilization of social support are higher than immigrants before the intervention both in unmarried and married group, and the differences are statistically significant ($P<0.05$). Before and after the intervention, the differences are not statistically significant ($P>0.05$) in every dimension in other marital status group. Interventions have less effect on immigrants who were divorced, widowed and other conditions, considering the quality of marriage has a certain impact on the intervention effect. After the intervention, the scores on utilization of social support are higher than immigrants before the intervention in farmer group, and the differences are statistically significant ($P<0.05$). Before and after the intervention, the differences are not statistically significant ($P>0.05$) in every dimension in non-farmer group. Indicating that interventions help farmers adapt to new farming environment gradually, they are getting used to resettlement life.

5 Conclusion

In conclusion, we can get the following conclusions from our study:

1 Psychological intervention in our study has an effect on improving the social support condition, especially on enhancing the availability of social support.

2 Intervention programs have a significant effect on immigrants 55 years old or younger, lower education level, and farmers.

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