

Social support and its influencing factors among parents who lost their only child in central China: a cross-sectional study

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Abstract

Background: A large number of special vulnerable group called "the parents who lost their only child" has emerged in China. Due to the normal family structure broke, the social support system of these parents suffered major trauma. It is necessary to understand their social support status and existing problems and explore improved strategies. Methods: We used the Social Support Rating Scale(SSRS), adopted the cluster sampling method to select the participants. The generalized linear regression models were performed to analyze factors influencing all dimensions' scores of the scale. Results: The parents who lost their only child with different monthly income ($P=0.036$) and the grandchildren status ($P=0.017$) had different objective support scores. The parents with one or less chronic diseases were more likely to use support than others. Monthly income($P=0.035$) and self-rated health status($P=0.013$) were significantly associated with the scores of the utilization of support among the parents. Conclusion: Don't bother easily the high-income groups, and to provide an acceptable form of support. More financial support should be given to parents raising the grandchildren. Pay more attention to the mental state of parents who do not have the grandchildren. The family doctor team should treat these parents as key contracted service objects, and provide timely, efficient and comprehensive services.

1 Introduction

Since the late 1970s, the "one-child policy" has been implemented nationwide in the People's Republic of China, leading to great changes in the family structure and total population. With the increasing number of one-child families, a special vulnerable group called "the parents who lost their only child" has emerged[1]. In 2012, the total number of families who lost their only child exceeded 1 million, and about 76,000 new families who lost their child were added each year[2]. There is an old saying in China that raising children for their old age. This is obviously different from the culture of western countries. Therefore, the bereaved parents not only suffer psychologically, but also worry about their future life. Who will give them care and help?

Due to the normal family structure broke, the social support system of the parents who lost their only child suffered major trauma. As the age of these parents increases year by year, they need more and more care and help. Social support means having family, friends and other people, to turn to in times of need or crisis to give you a broader focus and positive self-image. Social support could enhance the quality of life and provide a buffer against adverse life events. Therefore, it is necessary to understand their social support status and existing problems and explore improved strategies.

Yan Li(2013) proposed that there are two major difficulties the parents face in the future: health and life care, and spiritual comfort. Although several local governments have launched schemes to support the parents, the gap in assistance is still vast[3]. Yan Li (2018) examined the psychological suffering, healthcare, and emotional support experienced by the parents who lost their only child, and found they lack appropriate support from the government and society[4]. Yu Song pointed out that it is essential for

the government to provide a comprehensive support system for the parents who lost their only child, including financial relief, elderly care, and work to reduce stigma against these parents[5].

The existing research pointed out some of the problems in these parents' social support, but the vast majority studies were based on the results of qualitative interviews, and it was rare to adopt quantitative methods for research. There were some important factors that were not considered, for instance, the grandchildren, depression status, and so on. Lack of specific measures to improve the social support system. This study used the international general scale—Social Support Rating Scale(SSRS), adopted quantitative methods to analyze the social support status among these parents and its influencing factors, and to explore measures to improve their social support system.

2. Methods

2.1 Sampling

Data was collected from April to July 2018 in Wuhu city, Anhui province, China. We adopted the cluster sampling method to select the participants. The sampling process consists of four steps: (a) According to the administrative divisions of Wuhu city, it was divided into four districts: Jinghu, Jiujiang, Sanshan, and Yijiang. (b) A district was selected from the city, which was Jinghu district. (c) All communities in the Jinghu district were selected. (d) To survey all the parents who lost their only child in the communities. The inclusion criteria were: a) Being older than 49(Considering that the health bureau had brought the parents who lost their only child aged 49 or older into the systematic management, and the mothers who lost their only child aged 49 or older were no longer in the fertile period), b) Having normal cognitive functions, willing and able to cooperate throughout the survey. The exclusion criteria were: a) The parents who lost their only child had refused to accept the government's or others' condolence or survey, b) Moving to another place from the district.

20 family planning officials in the local communities and two professors from Zhejiang Chinese Medical University were recruited and trained as investigators. All participants were clearly informed of the purposes of the study and were asked to sign in the consent form. All participants were ensured of their rights to decline to participate or to withdraw from the study at any time. Privacy and confidentiality of the participants were ensured. Each interview lasted for about 30 minutes. The criteria for identifying a valid questionnaire were: The information of the two scales used was complete, and there were very few missing even no missing sociodemographic information or other data, and no contradictory content. 350 participants were surveyed. 306 valid questionnaires were recovered, and the effective recovery rate was 87.4%.

2.2. Measurements

2.2.1. SSRS

The Social Support Rating Scale (SSRS) designed by Xiao, which is one of the most commonly used instruments for measuring social support in China. It consists of 10 items measuring three dimensions: subjective support (4 items), objective support (3 items), and utilization of support (3 items) [6]. The total score consists of the sum of the scores of the three dimensions. A higher score shows a higher level of social support. A total score of less than 20 signifies low social support, a total score of 20-30 signifies moderate social support, and a total score of more than 30 signifies high social support[7]. The SSRS total score among the parents who lost their only child was regarded as the dependent variable.

2.2.2. EQ-5D scale

The European quality of life-5 dimensions (EQ-5D) was introduced by EuroQol Group in 1990[8]. There are five dimensions in the scale: mobility, self-care, daily activities, pain or discomfort, anxiety or depression. There are three levels of "no difficulty", "some difficulty" and "total difficulty" in each dimension, which are used to evaluate the quality of life of the respondents. Due to the lack of calculation method of China's EQ-5D index score at present, the integral conversion table of Japan for calculation was chosen to use, which borders on China and also located in the east of Asia. The scale index score is -0.11~1.00 points. A higher EQ-5D total score shows better health. The last part of the scale is the European quality of life visual analog scale (EQ-VAS), which is a 20-centimeter visual scale. Participants were asked to rate their own health for the day, with a score of 100 representing their "best health" and a score of 0 representing their "worst health" [9].

2.2.3. Independent variables

The independent variables included the following: gender(1=male, 2=female, male as the reference value), marital status(1=in marriage, 2=not in marriage, in marriage as the reference value), the grandchildren(1=have, 2=no, have as the reference value). Age, monthly income, number of chronic diseases and EQ-5D score were continuous variables. Educational level (1= middle school or less, 2= high school, 3= technical college or more) and self-rated health status (1=good, 2=moderate,3=poor) were regarded as continuous variables in the generalized linear regression model.

A multiple-choice question was used to survey the number of chronic diseases among respondents, "How many chronic diseases do you have?" Sixteen chronic diseases were listed for selection, including diabetes, hypertension, the malignant tumor, hyperlipidemia, cerebrovascular disease, coronary heart disease, Cerebral infarction (stroke), senile dementia, gynaecology disease, chronic liver disease, arthritis, osteoporosis, gout, asthma, hematopathy, Tuberculosis (TB), chronic low back pain, cataract. A higher score means that the participants have more chronic diseases.

2.3. Quality control

The ages of the respondents were confirmed using the household registration system. During the face-to-face field investigation, these trained family planning officials and professors explained how to fill in the questionnaires and helped respondents complete them in their homes or community residents committee

office. The EpiData3.1 software was used to set up the database, and double input was conducted to ensure accuracy.

2.4. Data analysis

Data were analyzed using the SAS version 9.1 software. Sociodemographic variables of the participants were expressed in terms of frequencies. Considering the non-normal distribution of the SSRS score, the rank sum test was adopted to compare the SSRS scores among the parents who lost their only child with different socio-demographic characteristics. The generalized linear regression models were performed to analyze factors influencing all dimensions' scores of the scale.

3. Results

3.1. Sociodemographic characteristics

The parents' average age was 63.49 years old, the standard deviation was 9.03, the median and quartile were 62.00 and 15, the minimum and maximum values were 49 and 92 respectively. Their average monthly income was 2630.10 RMB, the standard deviation was 1159.53 RMB, the median and quartile were 2648 RMB and 1400 RMB, the minimum and maximum values were 0 yuan and 7080 RMB respectively. Other sociodemographic characteristics were displayed in Table 1. Their average SSRS score was 30.94, the standard deviation was 6.41, the median and quartile were 31 and 8, the minimum and maximum values were 11 and 56 respectively.

3.2. Comparison of all dimensions' scores of SSRS between groups

Table 1 shows all dimensions' scores of SSRS comparison of the parents who lost their only child with different socio-demographic characteristics. Rank sum test results were shown: The parents who lost their only child with different monthly income ($P=0.036$) and the grandchildren status ($P=0.017$) had different objective support scores. The objective support scores of low-income parents were higher than those of high-income parents. The objective support scores of parents with the grandchildren were higher than those of parents without the grandchildren. The parents with one or less chronic diseases were more likely to use support than parents with two or more chronic diseases.

3.3. Results of the generalized linear regression of all dimensions' scores of SSRS

Table 2 shows the results of generalized linear regression analysis of the factors affecting all dimensions' scores of SSRS among the parents who lost their only child. Monthly income($P=0.035$) and self-rated health status($P=0.013$) were significantly associated with the scores of the utilization of support among the parents who lost their only child. As monthly income increased, the utilization of support decreased. The better the self-rated health status, the higher the utilization of support.

4. Discussion

This study used the SSRS and adopted the generalized linear regression models to analyze the social support status and its influencing factors among the parents who lost their only child. This study found that parents with different monthly income and the grandchildren status had different objective support scores. The parents with different numbers of chronic diseases had different utilization of support. Monthly income and self-rated health status were significantly associated with the scores of the utilization of support.

This study found that the objective support scores of low-income parents were higher than those of high-income parents. As monthly income increased, the utilization of support decreased. This may be because high-income groups have relatively high socioeconomic status and strong self-esteem, thinking that they do not need economic help or spiritual comfort from others. After this bereavement incident, because it was difficult to accept and worried that people will ask about it or discriminate, some high-income groups even changed their works, moved to distant places, escaped the original social network, and closed themselves up. Therefore, for high-income groups, don't bother easily, to provide an acceptable form of support.

This study found that the objective support scores of parents with the grandchildren were higher than those of parents without the grandchildren. It may be because most parents who had third-generation were under pressure to raise and educate the grandchildren. But the grandchildren is the hope of life for Chinese parents. Their mental conditions were relatively better. Relatives and friends around were more willing to come and help. Therefore, for parents raising the grandchildren, more financial support should be given to ease the pressure. For parents who do not have the grandchildren, pay more attention to their mental state.

This study found that parents with one or less chronic diseases were more likely to use support than parents with two or more chronic diseases. The better the self-rated health status, the higher the utilization of support. This is because people with less chronic diseases and good health can make better use of social support. Using social support can promote health better. As these parents get older, it's important to maintain their health. Yan li also thought that the government should provide them with better health care support[10]. Therefore, we proposed that the family doctor team should treat these parents as key contracted service objects, and provide timely, efficient and comprehensive services.

This study had several strengths. First, this was the first quantitative research adopted generalized linear regression model we had known about the social support among parents who lost their only child in central China city. Second, the independent variables considered were relatively complete, for instance, the grandchildren, the number of chronic diseases, and self-rated health status. Third, it adds to limited study on social support among parents who lost their only child, who were new special vulnerable groups. This study had the following limitations should be acknowledged. First, the sample size was relatively small, and only a city in Wuhu is surveyed. It was difficult to represent the whole central China city situation. Second, the social support status of ordinary elderly people did not be analyzed, lack of

comparison. Third, this study was a cross-sectional survey on social support that made it difficult to make causal inferences.

The study comprehensively analyzed the social support and its influencing factors among parents who lost their only child in central China city and provided a few suggestions for optimizing the social support system. Second, it can cause the government and society to give these parents more support and help, and improve their happiness index in their later years. Some topics are worthy of future further study. First, expand the number and scale of survey cities to better represent the situation in central China. Second, increase the investigation of parents with children, and to compare the social support differences between these two groups. Third, long-term follow-up social support of these parents and try to make a causal inference.

5. Conclusions

Don't bother easily the high-income groups, and to provide an acceptable form of support. More financial support should be given to parents raising the grandchildren. Pay more attention to the mental state of parents who do not have the grandchildren. The family doctor team should treat these parents as key contracted service objects, and provide timely, efficient and comprehensive services.

Abbreviations

SSRS: Social Support Rate Scale; EQ-5D: European quality of life-5 dimensions; EQ-VAS: European quality of life visual analog scale; TB: Tuberculosis

Declarations

a. Ethics approval and consent to participate

Dr. Rong Chao presided over the following the research project: The National Social Science Youth Project of China (Number: 16CSH071). Dr. Rong's research team needs to conduct a questionnaire survey on the sociodemographic characteristics, social support, mental health, quality of life, diseases and service utilization, and elderly care preference of the parents who lost their only child in China. According to The Medical Ethics Committee of Zhejiang Chinese Medical University, since these studies do not involve human intervention, do not pose a health risk to the human body. And the research team promised to keep all the investigation materials confidential and never leak. The committee has decided that a full review is not necessary, and decided to grant ethical approval waiver.

The written Informed consent was obtained from all individual participants included in the study.

b. Consent for publication

All authors consent for publication

c. Availability of data and material

The datasets generated and analyzed during the current study are not publicly available due China's parents who lost their only child are a special vulnerable group, giving them some privacy protection. But are available from the corresponding author on reasonable request.

d. Competing interests

The authors declare that they have no conflict of interest. The funding sources had no role in the design of this study and will not have any role during its execution, analyses, interpretation of the data, or decision to submit results.

e. Funding

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f. Authors' contributions

Chi Zhou and Yan-Chun Sun designed the present study. Xiao-Lan Wang assisted in the acquisition of subjects and data. Analysis and interpretation of data were conducted by Yan Ma. The preparation of the manuscript was conducted by Chao Rong. All authors contributed to and have approved the final manuscript.

g. Acknowledgements

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Tables

Table 1 The SSRS score comparison of parents who lost their only child with different socio-demographic characteristics $\square M(Q_R)\square$ score

Characteristics	Frequency	Subjective Support	Objective support	Utilization of support	Total social support score
Gender					
Male	138	17.0±5.0	8.0±3.0	6.0±2.0	31.0±7.0
Female	161	17.0±5.0	8.0±3.0	6.0±3.0	31.0±10.0
<i>Z</i>		-0.118	-0.765	-1.064	-0.387
<i>P</i>		0.906	0.444	0.287	0.699
Age					
≤60	118	18.0±6.0	8.0±3.0	6.0±3.0	32.0±9.0
≥60	177	17.0±5.0	8.0±3.0	6.0±3.0	30.0±9.0
<i>Z</i>		-1.747	-0.891	-0.132	-1.329
<i>P</i>		0.081	0.373	0.895	0.184
Educational level					
Middle school or less	227	17.0±5.0	8.0±3.0	6.0±3.0	31.0±8.0
High school	61	17.0±5.0	8.0±1.0	6.0±2.0	31.0±5.0
Technical college or more	12	16.0±7.0	8.0±4.0	6.0±3.0	30.0±11.0
<i>Z</i>		0.245	0.254	0.056	0.045
<i>P</i>		0.885	0.881	0.972	0.978
Marital status					
In marriage	195	17.0±5.0	8.0±3.0	6.0±3.0	31.0±7.0
Not in marriage	98	17.0±7.0	8.0±3.0	6.0±3.0	31.0±10.0
<i>Z</i>		-0.115	-0.847	-0.199	-0.277
<i>P</i>		0.908	0.397	0.842	0.782
Monthly income[yuan]					
≤3000	195	17.0±5.0	8.0±4.0	6.0±3.0	31.0±7.0
≥3000	100	17.0±5.0	7.0±2.0	6.0±2.0	31.0±9.0
<i>Z</i>		-0.082	-2.103	-0.994	-0.347
<i>P</i>		0.934	0.036	0.320	0.728
Have grandchildren					
No	259	17.0±6.0	8.0±3.0	6.0±3.0	31.0±7.0
Yes	31	17.0±5.0	8.0±4.0	6.5±4.0	31.0±9.0
<i>Z</i>		-1.172	-2.389	-0.366	-1.717
<i>P</i>		0.241	0.017	0.714	0.086
Self-rated health status					
Good	99	17.0±5.0	7.0±3.0	7.0±3.0	31.0±7.0
Moderate	119	18.0±6.0	8.0±3.0	6.0±2.0	31.0±9.0
Poor	38	17.0±6.0	8.0±3.0	6.0±2.0	31.0±11.0
<i>Z</i>		0.344	1.933	5.833	0.128
<i>P</i>		0.842	0.380	0.054	0.938
Number of chronic diseases					
0	77	17.0±5.0	7.0±3.0	7.0±3.0	31.0±8.0
1	97	17.0±5.0	8.0±3.0	7.0±3.0	31.5±8.0
2	68	17.0±3.0	8.0±3.0	6.0±2.0	30.0±6.0
≥3	52	17.0±7.0	8.0±4.0	6.0±2.0	30.0±11.0
<i>Z</i>		1.275	0.989	10.814	0.930
<i>P</i>		0.735	0.804	0.013	0.818

Note: 7 were missing gender, 11 were missing age, 6 were missing educational level, 13 were missing marital status, 11 were missing monthly income, 16 were missing the third generation, 50 were missing self-rated health status, 12 were missing number of chronic diseases.

Table 2 Generalized linear model regression analysis of the factors affecting SSRS of the parents who lost their only child

Independent variables	Subjective support			
	B	SE	P	OR[95%CI]
Gender	-0.111	0.566	0.844	0.895[0.295,2.713]
Age	-0.051	0.036	0.150	0.950[0.886,1.019]
Educational level	0.233	0.519	0.653	1.263[0.457,3.490]
Marital status	-0.611	0.609	0.315	0.543[0.165,,1.789]
Monthly income	-3.576	3.628	0.324	1.000[1.000,1.000]
The grandchildren	-0.914	0.884	0.301	0.401[0.071,2.268]
Self-rated health status	0.248	0.360	0.491	1.281[0.633,2.595]
Number of chronic diseases	-0.008	0.246	0.973	0.992[0.613,1.605]
EQ-5D score	-0.034	4.100	0.993	0.966 [-,-]

Independent variables	Objective support			
	B	SE	P	OR[95%CI]
Gender	0.018	0.339	0.959	1.018[0.524,1.976]
Age	-0.016	0.021	0.463	0.985[0.944,1.026]
Educational level	-0.147	0.310	0.636	0.863[0.470,1.586]
Marital status	0.263	0.364	0.471	1.300[0.637,2.655]
Monthly income	-3.887	2.171	0.073	1.000[1.000, 1.000]
The grandchildren	-0.981	0.529	0.092	0.410[0.146,1.157]
Self-rated health status	0.157	0.215	0.467	1.170[0.767,1.784]
Number of chronic diseases	0.126	0.147	0.389	1.135[0.851,1.513]
EQ-5D score	3.129	2.453	0.202	22.845[-,-]

Independent variables	Utilization of support			
	B	SE	P	OR[95%CI]
Gender	-0.299	0.267	0.263	0.742[0.439,1.252]
Age	-0.016	0.017	0.327	0.984[0.952,1.017]
Educational level	-0.037	0.245	0.881	0.964[0.597,1.557]
Marital status	-0.100	0.287	0.727	0.904[0.515,1.588]
Monthly income	-3.601	1.712	0.035	1.000[1.000, 1.000]
The grandchildren	-0.095	0.417	0.819	0.909[0.401,2.060]
Self-rated health status	-0.420	0.170	0.013	0.657[0.471,0.916]
Number of chronic diseases	-0.011	0.116	0.928	0.990[0.789,1.242]
EQ-5D score	-3.481	1.935	0.072	0.031[0.001,1.366]

Independent variables	Total social support score			
	β	SE	<i>P</i>	OR[95%CI]
Gender	-0.393	0.896	0.661	0.675[0.117,3.911]
Age	-0.083	0.056	0.139	0.920[0.824,1.027]
Educational level	0.050	0.821	0.952	1.051[0.210,5.253]
Marital status	-0.449	0.964	0.641	0.638[0.096,4.220]
Monthly income	0.000	5.744	0.054	1.000[1.000,1.000]
The grandchildren	-1.900	1.400	0.175	0.150[0.010,2.324]
Self- rated health status	-0.016	0.570	0.978	0.985[0.322,3.010]
Number of chronic diseases	0.108	0.389	0.782	1.114[0.520,2.386]
EQ-5D score	-0.386	6.492	0.953	0.680[-,-]