



## Culture-related grief beliefs and social support influence depressive symptoms of Shidu parents in rural China

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### ABSTRACT

**Background:** Parents who have lost their only child are known as Shidu parents in China. Losing an only child is an enormous tragedy for parents that can trigger severe depressive symptoms. Few studies have explored the influence of cultural beliefs and social support on depressive symptoms.

**Objective:** This study aimed to explore the relationship between culture-related grief beliefs, social support and depressive symptoms among Shidu parents in rural China.

**Method:** This cross-sectional study was conducted in Sujiatun district of Shenyang, China. Data were collected from November 2019 to February 2020 from 228 rural Shidu parents. Questionnaires consisted of the Center for Epidemiologic Studies Depression Scales (CES-D), the Culture-related Grief Beliefs of Shidu Parents Questionnaire (CBSQ), the Social Support Rating Scale (SSRS), and demographic and bereavement-related information. Hierarchical multiple linear regression analysis was conducted to examine the associations among culture-related grief beliefs, social support and depressive symptoms.

**Results:** Of the 228 Shidu parents, 87.0% reported depressive symptoms (CES-D  $\geq$  16). The mean age of the participants was 62.91 years, ranging from 50 to 86. Regression analysis indicated that parents' younger age, lower education level and debts were prominent risk factors for depressive symptoms. Perceived stigma (a subscale of CBSQ) was positively associated with depressive symptoms. Social support was negatively associated with depressive symptoms.

**Conclusions:** Given the high prevalence of depressive symptoms in rural Shidu parents, there is a critical need to reduce perceived stigma and increase social support to alleviate depressive symptoms among Shidu parents in rural China.

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### PALABRAS CLAVE

Padres Shidu; síntomas depresivos; creencias de duelo; estigma percibido; apoyo social; China rural

### 关键词

失独父母; 抑郁症状; 哀伤信念; 歧视知觉; 社会支持; 中国农村

### HIGHLIGHTS

- 'Shidu parents' in China refers to parents who have lost their only child.
- The prevalence of depressive symptoms among Shidu parents is 87.0%.
- Reducing perceived stigma and increasing social support are essential to alleviate Shidu parents' depressive symptoms.

## Las creencias de duelo relacionadas con la cultura y el apoyo social influyen en los síntomas depresivos de los padres Shidu en las zonas rurales de China

**Antecedentes:** Los padres que han perdido a su único hijo se conocen como padres Shidu en China. Perder un hijo único es una tragedia enorme para los padres que puede desencadenar síntomas depresivos graves. Pocos estudios han explorado la influencia de las creencias culturales y el apoyo social sobre los síntomas depresivos.

**Objetivo:** Este estudio tuvo como objetivo explorar la relación entre las creencias de duelo relacionadas con la cultura, el apoyo social y los síntomas depresivos en padres Shidu de las zonas rurales de China.

**Método:** Este estudio transversal se realizó en el distrito Sujiatun de Shenyang, China. Los datos se recopilaron desde noviembre de 2019 hasta febrero de 2020 en 228 padres Shidu rurales. Los cuestionarios consistieron en las Escalas de Depresión del Centro de Estudios Epidemiológicos (CES-D por su sigla en inglés), el Cuestionario de Creencias de Duelo relacionadas con la Cultura de los Padres Shidu (CBSQ por su sigla en inglés), la Escala de Calificación de Apoyo Social (SSRS por su sigla en inglés) e información demográfica y relacionada con el duelo. Se realizó un análisis de regresión lineal múltiple jerárquica para examinar las asociaciones entre las creencias de duelo relacionadas con la cultura, el apoyo social y los síntomas depresivos.

**Resultados:** De los 228 padres Shidu, el 87% reportó síntomas depresivos (CES-D  $\geq$  16). La edad media de los participantes fue de 62,91 años, con un rango de 50 a 86. El análisis de regresión indicó que la edad más joven de los padres, un nivel educativo más bajo y las deudas eran factores de riesgo importantes para los síntomas depresivos. El estigma percibido (una subescala del CBSQ) se asoció positivamente con síntomas depresivos. El apoyo social se asoció negativamente con síntomas depresivos.

**Conclusiones:** Dada la alta prevalencia de síntomas depresivos en los padres Shidu rurales, existe una necesidad crítica de reducir el estigma percibido y aumentar el apoyo social para aliviar los síntomas depresivos entre los padres Shidu en las zonas rurales de China.

## 失独文化信念和社会支持影响中国农村失独父母的抑郁症状

**背景:** 在中国,失独父母是指失去了唯一的孩子的父母。失去独生子女对于父母来说是巨大的打击,可能会引起严重的抑郁症状。文化信念和社会支持对抑郁症状影响的研究较少。

**目的:** 本研究旨在探索中国农村失独父母失独文化信念,社会支持和抑郁症状之间的关系。

**方法:** 此次横断面研究是在中国沈阳苏家屯区进行的。数据收集在2019年11月至2020年2月之间,共获取了228名失独父母的信息。问卷内容包括流调中心抑郁量表(CES-D),失独文化信念量表(CBSQ),社会支持评定量表(SSRS),以及人口学变量和丧子信息。多元分层线性回归用来分析检验失独文化信念,社会支持和抑郁症状的关系。

**结果:** 228名失独父母中,87.0%患有抑郁症状( $CES-D \geq 16$ )。参与者的平均年龄为62.91岁,范围是50-86。回归分析表明失独父母年龄小,教育水平低,拥有债务是抑郁症状发生的可能危险因素。歧视知觉(失独文化信念子量表)正向影响抑郁症状,社会支持负向影响抑郁症状。

**结论:** 鉴于农村失独父母抑郁症状的患病率较高,为了缓解中国农村失独父母抑郁症状,迫切需要降低失独父母的歧视知觉并增加社会支持。

## 1. Introduction

Since the one-child policy, which aimed to control the rapid population growth, was launched by the Chinese government in the late 1970s, a special group has emerged in Chinese society: the Shidu population (Yin et al., 2018). Shidu parents are parents who have lost their only child and have not conceived or adopted another (Yin et al., 2018). Losing an only child is an extremely stressful experience in one's life (Youngblut, Brooten, Cantwell, Del Moral, & Totapally, 2013). Previous studies have reported that losing an only child is significantly correlated with symptoms of depression, anxiety, post-traumatic stress disorder (PTSD), and prolonged grief disorder (PGD) (Wang, Ren, Wang, Xu, & Wang, 2019; Wang, Xu, Ren, Wang, & Wang, 2019; Yin et al., 2018; Zhou et al., 2020). In addition, Shidu parents often suffer from high morbidity of chronic diseases, periodic hospitalizations, and even suicidal ideation (Wang, Ren, et al., 2019; Yin et al., 2018).

In 2013, there were more than one million Shidu families, and the total number of such families is projected to reach more than ten million in 2035 (Wang, Xu, et al., 2019). Furthermore, experts estimated that the number of Shidu families in rural China is much higher than that in urban China, and rural residents may experience worse mental health and more psychological distress (Cheng, Yang, Inder, & Chan, 2020; Li, Shi, Liang, Ding, & Xu, 2018). Differences in the social and economic development status between urban and rural areas, such as income, the pension system, and the healthcare system, might be reasons for more severe mental distress among the rural Shidu population (Hu et al., 2018; Liang, Sarwar, & Horn, 2019). On the one hand, the per capita income in urban China is 2.69 times greater than that in rural China (Xiao & Zhong, 2020). Urban parents usually have pensions after retirement, while most rural parents may have no income after losing their only child. On the other hand, urban elderly people are usually covered by health insurance, while rural elderly people mainly rely on their children to

pay for medical expenses (Liang et al., 2019). In this context, for rural parents, the loss of their only child may not only mean the loss of a loved child but also the loss of caregiving and financial support in old age (Liang et al., 2019). Therefore, rural Shidu parents with economic stress and pension difficulties may be more susceptible to mental distress (Liu et al., 2019).

Traditional Chinese cultural beliefs may have an impact on the psychological condition of Shidu parents. In 2019, Shi et al. developed the Culture-related Grief Beliefs of Shidu Parents Questionnaire (CBSQ) to assess bereavement-related cognitions among Chinese Shidu parents (Shi et al., 2019). The CBSQ is composed of three aspects: filial piety belief, destiny belief, and perceived stigma. Filial piety, which is mainly influenced by Confucianism in Chinese society, refers to a series of behaviours including respecting ancestors, giving birth to a male heir to continue the family line, and caring for parents. In addition, preserving one's body and cherishing one's life are main components of filial piety. Confucianism contends that children's bodies come from their parents and that hurting or not cherishing one's body is a manifestation of unfilial piety (Ma, 2020). Confucianism also argues that 'no posterity is the greatest of the three unfilial acts (不孝有三, 无后为大)', which means that having no children is an unfilial act to one's parents (Zheng, Lawson, & Head, 2017). Filial piety requires children to sacrifice themselves and to obey their parents. Furthermore, young people are expected to fulfil their filial responsibilities unconditionally (Tan & Barber, 2020). The Chinese belief in filial piety is also influenced by Buddhism, which suggests that people are born to repay their parents (Zi, 2010). Although filial piety is a part of traditional Chinese culture, rural residents are more affected by this belief than urban residents. For example, some urban residents have taken the initiative to choose Double Income, No Kids (DINK) families or to not marry. In China, DINK families mainly appear in large cities, such as Beijing and Shanghai. A survey in 2002 showed that the proportion of DINK families in

Shanghai was 12.4% (Wu & Yin, 2019). Second, destiny belief, which refers to the belief that fate is predestined, is deeply rooted in Chinese culture (He, Tang, Zhu, & Wang, 2014). Destiny belief is the universal spiritual belief of the Chinese and mainly derives from Buddhism (Guang, 2013). Buddhism contends that 'all results have reasons (善有善报, 恶有恶报)' which means that good is rewarded with good and evil is rewarded with evil. Buddhism also aims to solve the problem of death and proposes the theory of reincarnation, which means that human life is not a simple process from birth to death but a cycle of rebirth, pursuing the sublimation of liberation from life and death (Tian, 2012). Therefore, the effects of Buddhism might have both negative and positive effects on Chinese Shidu parents. Previous studies have shown that some Shidu parents find it difficult to accept the fact that their children have passed away and attribute the death of their children to punishment from God, which makes them feel helpless and guilty (He et al., 2014; Shi et al., 2019). For Shidu parents, feelings of helplessness and guilt hinder the grief recovery process. However, the belief that human life is a cycle of rebirth may help Shidu parents accept the death of their children relatively calmly. Therefore, the relationship between destiny belief and depressive symptoms needs to be further explored. Finally, in traditional Chinese belief represented by Confucianism, people avoid talking about death and believe that death is unlucky (Tian, 2012). There is a Chinese saying, 'A white-haired man grieves for a black-haired man (白发人送黑发人)', which means that the death of a child before his or her parents will bring extreme grief to the parents and is regarded as a sign of bad luck. Having no offspring means the end of the family line, which is treacherous for Chinese families (Ikels, 2004). The inability to pass on the family lineage is related to negative cognitions about oneself, such as self-guilt and perceived stigma (He et al., 2014). In some rural areas of China, there are even special funeral methods for children who die abnormally, such as direct burial and no funerals. These special customs undoubtedly make Shidu parents perceive stigma and do not relieve their inner grief. Some urban elderly people may take the initiative to go to nursing homes, while rural elderly people mostly rely on their children because they have no income if they do not work (Leng, Guo, Liu, Wu, & Chen, 2019). The traditional Chinese cultural concept of 'raising children to provide against old age (养儿防老)' is more prevalent in rural areas. Therefore, rural Shidu parents may face more discrimination after losing their children. For rural Shidu parents, cultural stigmatization related to the loss of their only child undoubtedly has a negative effect on their psychological health (He et al., 2014). To our knowledge, no studies have explored the impact of unique Chinese

cultural beliefs on the depressive symptoms of Shidu parents, especially rural Shidu parents. Therefore, in the present study, we aim to use the CBSQ to explore the influence of cultural beliefs on depressive symptoms among rural Shidu parents.

Shidu parents may experience various types of psychological distress, with depressive symptoms being the most common (Huang, 2020). Previous studies have shown that the prevalence of depressive symptoms is estimated to be 36.9% (Zhang et al., 2020), 72.1% (Zhang et al., 2016), 74.2% (Zhao et al., 2018) and 85.6% (Wang, Pan, & Liu, 2015) among Shidu parents. In addition to the prevalence of depressive symptoms, previous studies have reported risk factors related to the development of depressive symptoms among Shidu parents. For example, Shidu mothers reported higher scores for depressive symptoms than Shidu fathers (Zhang & Jia, 2020b). Divorced or widowed Shidu parents reported higher depressive symptoms than married Shidu parents (Ji et al., 2019; Zhang et al., 2016). Shidu parents with lower education were more likely to report higher depressive symptom scores than Shidu parents with higher education (Zhang et al., 2016; Zhao et al., 2018). Shidu parents with poor financial status (e.g. family monthly income  $\leq$  ¥1000) reported higher depressive symptom scores (Ji et al., 2019; Zhang & Jia, 2020b; Zhang et al., 2016). Shidu parents with poor physical condition (e.g. chronic illness) reported higher scores for depressive symptoms (Fan, Zheng, & Leng, 2018; Ji et al., 2019; Wang et al., 2015). Existing studies on Shidu parents in China are limited to demographic characteristics, and there are few studies on cultural beliefs. Shi et al. developed the CBSQ and found that Shidu parents with a diagnosis of prolonged grief reported higher scores of cultural beliefs than undiagnosed Shidu parents (Shi et al., 2019). Therefore, this study aims to investigate the influence of demographic characteristics and cultural beliefs on the depressive symptoms of rural Shidu parents.

Social support has been defined in the literature as helping and protecting others; it usually derives from family, friends, and colleagues (Langford, Bowsher, Maloney, & Lillis, 1997; Streeter & Franklin, 1992). It may be tangible financial assistance or intangible emotional support that can protect people from the adverse effects of life pressures (Langford et al., 1997). As a protective factor, social support is believed to help prevent mental illness and promote recovery for bereaved people after they experience traumatic events (Guo et al., 2015; Li, Li, & Shi, 2017; Zhang & Jia, 2020a). Previous research found that bereaved parents without social support were more likely to develop negative mental health outcomes (Cao, Yang, & Wang, 2018). Various studies conducted on Shidu parents have demonstrated that social support can alleviate mental illness such as depressive

symptoms, anxiety and PTSD (Cao et al., 2018; Wang, Ren, et al., 2019; Zhang & Jia, 2020a). Moreover, Shidu parents with more social support reported lower scores of depressive symptoms (Cao et al., 2018; Zhang et al., 2017). This study aims to explore the relationship between depressive symptoms and social support and to consider the rationale for treatment recommendations for rural Shidu parents.

To our knowledge, no quantitative research has collectively examined the impact of culture-related grief beliefs and social support in relation to depressive symptoms among rural Shidu parents. Therefore, in the present study, we aim to 1) explore the prevalence and associated factors of depressive symptoms among rural Shidu parents; 2) examine the association between culture-related grief beliefs and depressive symptoms among rural Shidu parents, and 3) examine the association between social support and depressive symptoms among rural Shidu parents.

## 2. Methods

### 2.1. Participants and procedures

Ethics approval was granted by the Ethics Committee of China Medical University. This cross-sectional study was conducted in Sujiatun district of Shenyang, China. Data were collected from November 2019 to February 2020. This study used a cluster sampling method. All accessible Shidu parents living in a rural area of Sujiatun district of Shenyang, China were invited. We invited both parents from the same Shidu family to participate in the survey. For couples in which both members were unable to participate in the survey, we invited one member of the couple who could participate. The inclusion criteria were: 1) living in the community for more than half a year; 2) aged 49 years and above (in China, Shidu parents over the age of 49 can receive subsidies from the government and are relative easy for community workers to contact); 3) having lost an only child and not given birth to or adopted another child; and 4) clear consciousness and fluent expression in Chinese. Participants with intellectual disabilities or severe mental diseases were excluded.

We invited the participants who met the inclusion criteria to the community office to complete questionnaires. Written informed consent was obtained before the survey, while the aims and significance of the survey were explained. The participant's personal information was kept confidential. We chose psychologists from community health centres to conduct this survey because they periodically contact Shidu parents and maintain close relationships. Prior to data collection, psychologists were trained to ensure a standardized process. In the process of completing the questionnaire, if the participants had any

questions about the content of the questionnaire, the psychologists helped to explain. The psychologists would visit the participants' homes if they preferred.

A total of 275 Shidu parents were recruited for this study. Of these, 33 parents refused to participate. Of the 242 participants, 14 parents were excluded from the analysis due to >30% missing data. The final sample size for analysis was 228 (effective response rate of 82.90%). There were no significant differences in demographic characteristics between the 228 participants and the nonparticipants who refused to participate or participants excluded for missing data. Missing data were missing completely at random.

### 2.2. Instruments

#### 2.2.1. Demographic characteristics and bereavement-related information

Demographic characteristics included gender, age, marital status, education, working status, chronic disease, religious belief, annual household income and debts. Bereavement-related information consisted of the gender of the deceased child, age of the child at death, reason of the child's death, time since the child's death and whether the participant had a grandchild. The reason for the child's death was divided into two groups: 'accident or acute disease' and 'chronic disease or mental illness'. Chronic disease or mental illness indicated that the child died of a chronic disease such as cancer or died by suicide due to a mental illness such as depression. Debts was accessed by using the question, 'Do you currently have debts?' The answer was coded as 'yes' (1) or 'no' (0).

#### 2.2.2. Depressive symptoms

Depressive symptoms were measured by the Center for Epidemiologic Studies Depression Scales (CES-D), a self-report measurement tool developed by Lenore Sawyer Radloff (Radloff, 1977). The scale consists of 20 items and each item is rated on a 4-point Likert scale from 0 (rarely or none of the time) to 3 (most or all of the time) based on the frequency of current depressive symptoms in the past week. Four items are reverse scored. The total score varies from 0 to 60. Higher scores indicate higher levels of depressive symptoms. A cut-off value of 16 has been proposed to suggest a depression diagnosis (Lewinsohn, Seeley, Roberts, & Allen, 1997). The Chinese version of the CES-D has been used widely among Chinese population and demonstrated satisfactory validity and reliability (Chin, Choi, Chan, & Wong, 2015; Wang et al., 2015). In the present study, the internal consistency for this scale was 0.90.

#### 2.2.3. Culture-related grief beliefs

Culture-related grief beliefs were measured by the Culture-related Grief Beliefs of Shidu Parents



**Table 1.** CBSQ items.

Items
Filial piety belief
1. The loss of my child is the end of my family line.
2. The blood line is not carried on, I am sorry to my parents.
3. The ancestral line ended because I lost my child.
Destiny belief
4. I lost my child because I have bad luck.
5. God decides about our (my child's and my) fate.
6. I believe people's longevity is predestine.
Perceived stigma
7. Parents who have lost their only child are a special group, others will not want to have contact with us.
8. After losing my child, others will treat me like an outcast.
9. I am unable to integrate into society due to my social identity as a parent who lost his/her only child.

Questionnaire (CBSQ), a nine-item measure which includes three dimensions, reflecting cognitions related to filial piety belief, destiny belief and perceived stigma (see Table 1) (Shi et al., 2019). Participants gave their answers on a six-point rating scale ranging from 1 (strongly inconsistent) to 6 (strongly consistent). Scores were calculated for each dimension separately, with higher scores indicating stronger endorsement of culture-related cognitions. The CBSQ demonstrated good reliability and validity in Chinese Shidu parents (Shi et al., 2019). In the present study, the internal consistency for this scale was good (filial piety belief: 0.81, destiny belief: 0.71, perceived stigma: 0.88).

#### 2.2.4. Social support

Social support was measured by the Social Support Rating Scale (SSRS), a self-reported scale developed by Xiao, which includes 10 items (Xiao, 1994). Examples of items for the SSRS include 'The number of people who lived together with you in the half past year', 'The number of relatives and friends contacted frequently in the past year', and 'Are you willing to ask for help when you are in trouble?' Each item is rated on a four-point scale, ranging from 1 to 4 apart from the sixth and seventh items. We added the subitems of the sixth and seventh items to obtain the scores. A total score was calculated, with higher scores indicating higher levels of social support. This scale has been widely used among the Chinese population and has demonstrated satisfactory validity and reliability (Guo et al., 2015; Li, Jiang, & Ren, 2017; Xing, Yu, Chen, Zhang, & Tan, 2013). In the present study, the internal consistency for this scale was 0.80.

#### 2.3. Data analysis

Data analyses were performed using SPSS 21.0. Independent t-tests or one-way ANOVA was used to explore the relationship between demographic characteristics, bereavement-related information and

depressive symptoms. Pearson's correlation coefficient was calculated to explore the correlations among depressive symptoms, culture-related grief beliefs and social support. We used Expectation-Maximization to replace the missing values of continuous variables.

Hierarchical linear regression can clearly show the contribution value of the variable in each step to the dependent variable. Therefore, hierarchical linear regression was conducted to explore the influence of the control variables, culture-related grief beliefs, and social support on depressive symptoms at each step. The control variables were included in step 1. In this study, we kept gender, age, education, and debts in the model as potential confounders. Because education is a categorical variable without a linear trend, we set dummy variables for education. The group 'primary school or under' was set as the reference group. In step 2, filial piety belief, destiny belief and perceived stigma were entered as independent variables. Social support was added in step 3.

### 3. Results

#### 3.1. Participants' characteristics

The sample included 228 Shidu parents. The demographic characteristics and bereavement-related information are shown in Table 2. The mean age of the participants was 62.91 years (SD = 6.18, ranging from 50 to 86). A total of 87.0% (198/228) of the participants met the criteria for depressive symptoms. There were 46 couples among 180 married samples. The remaining 88 participants were from different families. In our sample, only 12% of Shidu parents had religious beliefs. There was no difference in the scores of filial piety belief, destiny belief, perceived stigma, and depressive symptoms between Shidu parents with or without religious belief. The results of univariate analyses demonstrated that education was negatively associated with depressive symptoms and debts was positively associated with depressive symptoms ( $p < .05$ ). We chose these as control variables in the hierarchical multiple linear regression analysis.

#### 3.2. Correlations among depressive symptoms, culture-related grief beliefs and social support

Table 3 shows the correlations among the continuous variables. Filial piety belief was not correlated with depressive symptoms. Destiny belief and perceived stigma were positively correlated with depressive symptoms ( $r = 0.15, p < .05$ ;  $r = 0.39, p < .01$ ). Social support was negatively correlated with depressive symptoms ( $r = -0.39, p < .01$ ).

**Table 2.** Demographic characteristics associated with depressive symptoms among Shidu parents.

Variable	N (%)	Depressive symptoms mean (SD)	t/F	p
Gender			-1.11	0.271
Male	104(45.61)	27.30(10.89)		
Female	124(54.39)	28.81(9.79)		
Age			0.40	0.673
<60	55(24.12)	28.64(10.59)		
60–69	151(66.23)	28.19(10.26)		
≥70	22(9.65)	26.35(10.20)		
Marital status			0.847	0.430
Married	180(78.95)	28.03(10.67)		
Divorced	29(12.72)	26.90(7.69)		
Widowed	19(8.33)	30.79(10.30)		
Education			8.08	0.000
Primary school or under	33(14.47)	31.42(10.76)		
Middle school	148(64.91)	28.96(9.65)		
Senior high or above	47(20.61)	23.17(10.55)		
Working status			2.99	0.052
Employed	37(16.23)	25.95(8.17)		
Unemployed	93(40.79)	30.05(11.19)		
Retired	91(39.91)	27.00(10.23)		
Missing	7(3.07)			
Chronic disease			-1.93	0.055
No	125(54.82)	26.93(9.23)		
Yes	98(42.98)	29.69(11.57)		
Missing	5(2.19)			
Religious belief			-1.49	0.137
No	198(86.84)	27.81(10.52)		
Yes	27(11.84)	30.97(8.58)		
Missing	3(1.32)			
Annual household income			1.68	0.188
< ¥20,000	89(39.04)	28.86(9.93)		
¥20,000– ¥30,000	66(28.95)	28.67(12.18)		
> ¥30,000	65(28.51)	26.02(8.13)		
Missing	8 (3.51)			
Debts			-3.93	0.000
No	188(82.46)	27.13(9.81)		
Yes	28(12.28)	35.04(10.82)		
Missing	12(5.26)			
Gender of the deceased child			-1.13	0.260
Male	153(67.11)	27.66(11.27)		
Female	68(29.82)	29.18(8.13)		
Missing	7(3.07)			
Age of the child at death			0.05	0.948
≤15	48(21.05)	28.00(8.70)		
16–29	125(54.82)	28.00(10.61)		
≥30	52(22.81)	28.54(11.31)		
Missing	3(1.32)			
Reason of the child's death			1.01	0.313
Accident or Acute disease	139(60.96)	28.83(10.97)		
Chronic disease or Mental illness	82(35.96)	27.37(9.34)		
Missing	7(3.07)			
Time since the child's death			2.36	0.072
≤5	42(18.42)	27.93(9.49)		
6–10	72(31.58)	28.81(10.97)		
11–15	39(17.11)	31.10(8.41)		
≥16	72(31.58)	25.86(10.89)		
Missing	3(1.32)			
Whether the participant had a grandchild			-1.24	0.218
No	149(65.35)	27.06 (10.18)		
Yes	61(26.75)	29.02 (10.91)		
Missing	18 (7.89)			

### 3.3. The results of the hierarchical multiple linear regression

Table 4 shows that the regression model explained 26.0% of the variance in depressive symptoms. The  $R^2$  changes indicated that the incremental variances explained by each block of variables were 13.7%, 10.9% and 4.4% for demographic characteristics, culture-related grief beliefs, and social support, respectively. In the final model of the hierarchical multiple linear regression and the forest plot (Figure 1), older age,

senior high school education and above, and more social support decreased the risk of depressive symptoms, while debts and perceived stigma increased the risk of depressive symptoms.

## 4. Discussion

This study explored the prevalence and associated factors of depressive symptoms among Shidu parents in rural China. We found that the prevalence of

**Table 3.** Descriptive statistics and bivariate correlations.

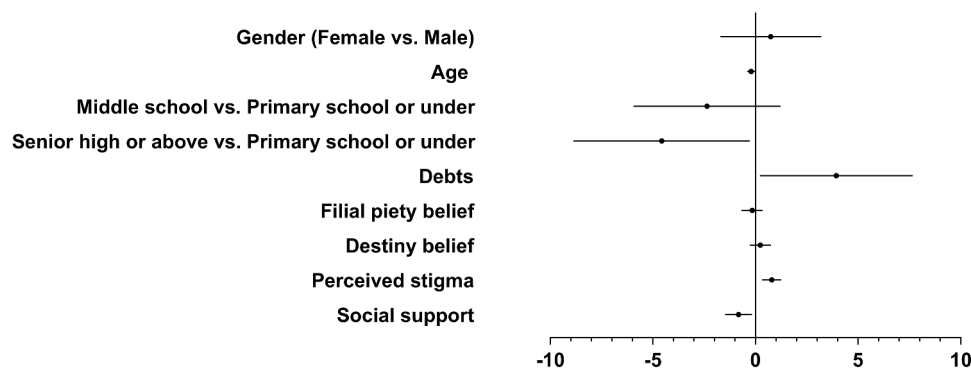
Variables	1	2	3	4	5
(1) Filial piety belief	1				
(2) Destiny belief	0.64**	1			
(3) Perceived stigma	0.54**	0.48**	1		
(4) Social support	0.13*	0.09	-0.27**	1	
(5) Depressive symptoms	0.13	0.15*	0.39**	-0.39**	1
M	9.21	8.85	7.52	30.08	28.12
SD	3.56	3.20	3.42	7.40	10.31
Range	3, 18	3, 18	3, 18	12, 51	2, 57

\* $p < 0.05$ , \*\* $p < 0.01$  (two-tailed).

**Table 4.** Hierarchical multiple linear regression analysis of depressive symptoms among Shidu parents in rural China.

Variables	Depressive symptoms						Adjusted $R^2$	$\Delta R^2$
	B	95% CI		t	$p$ -values	$\beta$		
<b>Demographic characteristics</b>							0.116	0.137
Gender (Female vs. male)	0.75	-1.71	3.21	0.60	0.549	0.04		
Age	-0.20	-0.40	-0.01	-2.00	0.046*	-0.12		
Education								
Middle school vs. Primary school or under	-2.35	-5.94	1.23	-1.29	0.197	-0.11		
Senior high or above vs. Primary school or under	-4.57	-8.86	-0.28	-2.10	0.037*	-0.18		
Debts	3.95	0.22	7.67	2.09	0.038*	0.13		
<b>CBSQ</b>							0.217	0.109
Filial piety belief	-0.16	-0.67	0.36	-0.60	0.550	-0.05		
Destiny belief	0.24	-0.28	0.76	0.93	0.355	0.08		
Perceived stigma	0.80	0.33	1.26	3.35	0.001**	0.27		
Social support	-0.35	-0.54	-1.57	-3.59	0.000**	-0.25	0.260	0.044

B = unstandardized beta;  $\beta$  = standardized regression weight; \* $p < 0.05$ , \*\* $p < 0.01$  (two-tailed).

**Figure 1.** Forest plot of the associated factors of depressive symptoms (hierarchical multiple linear regression).

depressive symptoms was 87.0%, which was higher than prior research results conducted among Shidu parents. For example, Zhang et al. found that the prevalence of depressive symptoms was 36.9% in urban Shanghai, the financial centre of China, where residents are exposed to more information and assistance in promoting mental health (Zhang et al., 2020). It is not surprising that the prevalence in Shanghai is relatively lower. Another study conducted in Changsha (an urban city) reported that 72.1% of Shidu parents had depressive symptoms (Zhang et al., 2016). Moreover, Ji et al. reported that the prevalence of depressive symptoms among Shidu mothers and fathers was 76.5% and 63.2%, respectively, in Tangshan (an urban city) (Ji et al., 2019). In addition, Wang et al. found 85.6% of Shidu parents in Chongqing (an urban city) suffered from depressive symptoms (Wang et al., 2015). However, all of these studies combined rural and

urban Shidu parents and did not report the prevalence of rural residents separately. Based on our results, we speculate that the prevalence of depressive symptoms among rural Shidu parents is higher than that in urban areas. Therefore, more attention and more assistance could be given to rural Shidu parents.

The hierarchical multiple linear regression results in the present study indicated that younger age, lower education level and debts were related to more severe depressive symptoms. First, this study found a negative association between age and depressive symptoms. This result is inconsistent with some studies (Wang et al., 2015; Zhang & Jia, 2020b) but consistent with an existing study (Eli et al., 2020). A possible explanation is that younger parents may have more ambitions and plans, and the death of their only child subverts their expectations (Zhou et al., 2020). In addition, with increasing age, parents have

likely experienced more negative events and thus may have more psychological energy to cope with traumatic events (Eli et al., 2020). Compared with elderly people, young people, who typically experience high pressure from work and family, are often neglected by society and perceive less social support. Therefore, a lack of support may contribute to younger Shidu parents being more prone to depressive symptoms. However, further research is needed to identify the relationship between age and depressive symptoms among Shidu parents. Second, this study found that Shidu parents with lower education levels tended to report higher level of depressive symptoms, which is consistent with previous studies (Guo et al., 2017; Liu et al., 2020). Well-educated individuals are more likely to be exposed to knowledge and information on life skills and self-efficacy to promote health, and alleviate depressive symptoms (Guo et al., 2017). Finally, in this study, having debts increased the risk of depressive symptoms, consistent with previous findings (Ji et al., 2019). For Shidu parents, lower income and debts not only aggravate the pain of losing their children but also make them worry about their future lives. Therefore, more protection and social attention could be given to Shidu parents' economic situation, especially in rural areas.

The present study extends existing literature on culture-related grief beliefs by quantitatively exploring the relationship between culture-related grief beliefs and depressive symptoms among Shidu parents. According to the regression results, perceived stigma was positively associated with depressive symptoms, which was consistent with previous results (Scocco, Preti, Totaro, Corrigan, & Castriotta, 2019). Chinese society is profoundly affected by familism culture, which means that family members attach great importance to the family and enjoy certain rights and responsibilities, such as paying attention to family reputation and being responsible to the family (Zhang & Jia, 2018). Shidu parents are sometimes culturally stigmatized because they fail to pass down the family name, which is more common in rural areas (Liang et al., 2019). To alleviate Shidu parents' depressive symptoms, it is essential to reduce their perceived stigma through the following three avenues. First, the government could consider formulating relevant policies to protect the legitimate rights and interests of Shidu parents, such as medical treatment policies that require a child's signature. Second, society could invest in charity organizations for Shidu parents, and provide them with financial and spiritual support. Third, the community through different community-based activities could promote a culture where the experience of Shidu parents is shared, helping them to feel understood and a sense of belonging. Religious beliefs may act as a positive resource in the process of grief recovery for Shidu parents and can help them find meaning in the painful

life experiences and assist them in obtaining spiritual comfort and inner peace (He & Wang, 2017). In our study, only 12% of Shidu parents had religious beliefs and based on previous research (He & Wang, 2017), most Shidu parents who had religious beliefs turned to religion after they lost their child rather than before. They believed in religion because they could not bear the pain of losing their child and needed to find a way to give meaning to the rest of their lives. However, the multiple linear regression results of this study did not indicate an association between filial piety belief and destiny belief with depressive symptoms when we adjusted for controlling variables. We speculate that this might be because our sample size was not large enough to draw this conclusion or because compared to stigma, the effects of these two beliefs on depressive symptoms are relatively more complicated. Further large-scale longitudinal studies could be conducted to explore these relationships.

Losing an only child is extremely painful, and this type of pain cannot be felt by nonbereaved people. As a result, Shidu parents are often marginalized and are willing to communicate only with other Shidu parents. Shidu parents call other Shidu parents 'Tong Ming Ren' in Chinese, which means they share the same fate – the loss of the only child (Zheng & Lawson, 2015). Although Tong Ming Ren are not members of each other's family, the same destiny links them together, and they get along like family members (Zhang & Jia, 2019). The Tong Ming Ren self-help organization is a homogenous mutual assistance group that is partly self-organized and partly organized by communities. This organization regularly arranges various activities, such as grief healing lectures, travelling and celebrating Chinese traditional festivals together. The spiritual support provided by the Tong Ming Ren self-help organization for Shidu parents can relieve their fear and grief due to loneliness and death (Xiao, 2018). A Tong Ming Ren group intervention was found to improve Shidu parents' depressive symptoms, increase the sense of intimacy and dependence between Shidu parents, reduce their interpersonal sensitivity, and make them more willing to communicate with others (Xiao, 2018). Previous studies indicated that participating in these self-help organizations helped Shidu parents reconstruct their social identity, enhance interpersonal communication and a sense of belonging, have expectations about the future, and then reintegrate into their original social interactions (Chen, 2014). Therefore, it is advisable to encourage Shidu parents to participate in self-help organizations, such as online social groups and in-person communication groups, to increase the integration with others and reduce the sense of stigmatization. Considering the relatively undeveloped network in rural China, it is more feasible to establish in-person self-help organizations for rural Shidu population to communicate with each other.



The current findings revealed that perceiving more social support led to fewer depressive symptoms, which is consistent with other studies (Cao et al., 2018; Wang, Zheng, & Zhou, 2019; Zhang et al., 2017). Children are the major source of hope, meaning and purpose for their parents, especially in mainland China; therefore, the death of an only child places Shidu parents at risk of depressive symptoms (Liang et al., 2019). Previous research has indicated that Shidu parents receive less emotional social support from friends or family than they expected (Zheng et al., 2017). Furthermore, in rural areas, financial social support is also urgently needed because the per capita income is much lower (Liang et al., 2019). Thus, interventions that increase both financial and emotional social support are necessary for rural Shidu parents. On the one hand, more financial support could be provided to Shidu parents, such as improving the social insurance system and subsidizing poor families (Eli et al., 2020). On the other hand, emotional help and care from family members, friends, and neighbours can alleviate depressive symptoms, especially in rural China, where the relationship between neighbours may be closer than that of distant relatives (Fan et al., 2018). More evidence-based grief work with a focus on the Dual Process Theory (Stroebe & Schut, 2010), meaning-making (Neimeyer, Klass, & Dennis, 2014), and increased awareness of the challenges of disenfranchised grief (Doka, 2002) are needed to help Shidu parents adapt to the changes in their lives and establish new meaning (Chen, Fu, Sha, Chan, & Chow, 2019).

#### 4.1. Limitations

This study has several limitations. First, our study is based on cross-sectional research, so causal relationships between the variables cannot be determined. Further studies using longitudinal tracking could overcome this limitation. Second, due to the use of a self-reporting questionnaire to obtain data, response bias is inevitable. Respondents may overestimate or underestimate the relationship between variables. Finally, the significant associations between variables may be affected by the relatively small sample size. The participants in the present study were limited to Shidu parents in a rural area in Shenyang, China. Therefore, the results and the conclusions of this study should be interpreted carefully.

#### 4.2. Implications

The present study has practical implications. First, the prevalence of depressive symptoms among rural Shidu parents is so high that this special group deserves more

attention from the government and society. This study also provides a direction for identifying high-risk groups of Shidu parents. In rural areas, Shidu parents with younger age, a lower education level or debts are at higher risk of depressive symptoms. Second, cognitive therapy for Shidu parents may not only focus on the general grief cognitions identified in existing studies but can also be expanded to include culture-related grief beliefs (Shi et al., 2019). Finally, rural Shidu parents are a vulnerable group with low economic status even before their only child died (Eli et al., 2020). Losing an only child, facing financial pressure, and having no one to rely on deeply aggravate the depressive symptoms of rural Shidu parents. Therefore, the government could formulate corresponding policies to provide more economic and institutional guarantees for rural Shidu parents. In addition, social support plays a significant beneficial role in the recovery process of the Shidu population. Therefore, a social support network could be established for Shidu parents including encouraging relatives, friends, neighbours and community workers to provide more social support for Shidu parents.

## 5. Conclusions

The present study found a high prevalence of depressive symptoms among Shidu parents in rural China. Younger age, lower education level and debts were associated with a higher level of depressive symptoms. Perceived stigma was positively associated with depressive symptoms, and social support was negatively associated with depressive symptoms. The current findings emphasized the importance of reducing perceived stigma and increasing social support to alleviate depressive symptoms among Shidu parents in rural China.

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## Data availability statement

We have signed a confidentiality agreement with the participants. Due to the particularity of the Shidu population, their private information is inconvenient to disclose. Therefore, our data cannot be made publicly available. Data were available from the corresponding author on reasonable request.

## Disclosure statement

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## References

- Cao, X., Yang, C., & Wang, D. (2018). The impact on mental health of losing an only child and the influence of social support and resilience. *Omega*, 80(4), 666–684. doi:10.1177/0030222818755284
- Chen, A. (2014). Formation mechanism of self-organizations of families losing the only child-based on two cases in Shanghai. *Social Science of Beijing*, 11, 55–60. doi:10.13262/j.bjsshkxy.bjshkx.141107
- Chen, L., Fu, F., Sha, W., Chan, C., & Chow, A. (2019). Mothers coping with bereavement in the 2008 China earthquake: A dual process model analysis. *Omega*, 80(1), 69–86. doi:10.1177/0030222817725181
- Cheng, C., Yang, C. Y., Inder, K., & Chan, S. (2020). Urban-rural differences in mental health among Chinese patients with multiple chronic conditions. *International Journal of Mental Health Nursing*, 29(2), 224–234. doi:10.1111/inm.12666
- Chin, W. Y., Choi, E. P., Chan, K. T., & Wong, C. K. (2015). The psychometric properties of the Center for Epidemiologic Studies Depression Scale in Chinese primary care patients: Factor structure, construct validity, reliability, sensitivity and responsiveness. *PloS One*, 10(8), e0135131. doi:10.1371/journal.pone.0135131
- Doka, K. J. (Ed.). (2002). *Disenfranchised grief: New directions, challenges, and strategies for practice*. Champaign, IL: Research Press.
- Eli, B., Zhou, Y., Liang, Y., Fu, L., Zheng, H., & Liu, Z. (2020). A profile analysis of post-traumatic stress disorder and depressive symptoms among Chinese Shidu parents. *European Journal of Psychotraumatology*, 11(1), 1766770. doi:10.1080/20008198.2020.1766770
- Fan, H., Zheng, L., & Leng, Z. (2018). Status and influencing factors of mental health among Chinese people bereaved of their only child. *Chinese General Practice*, 21, 1944–1948.
- Guang, X. (2013). Buddhist impact on Chinese culture. *Asian Philosophy*, 23(4), 305–322. doi:10.1080/09552367.2013.831606
- Guo, J., Guan, L., Fang, L., Liu, C., Fu, M., He, H., & Wang, X. (2017). Depression among Chinese older adults: A perspective from Hukou and health inequities. *Journal of Affective Disorders*, 223, 115–120. doi:10.1016/j.jad.2017.07.032
- Guo, S., Tian, D., Wang, X., Xiao, Y., He, H., Qu, Z., & Zhang, X. (2015). Protective effects of social support content and support source on depression and its prevalence 6 months after Wenchuan earthquake. *Stress and Health: Journal of the International Society for the Investigation of Stress*, 31(5), 382–392. doi:10.1002/smi.2563
- He, L., Tang, X., Zhu, Z., & Wang, J. (2014). Great pain: Qualitative research on grief reactions of the parents who lost their single child. *Chinese Journal of Clinical Psychology*, 22, 792–798. doi:10.16128/j.cnki.1005-3611.2014.05.053
- He, L., & Wang, J. (2017). Qualitative research on religious coping of the parents who lost their only child. *Chinese Journal of Clinical Psychology*, 25(5), 970–975. doi:10.16128/j.cnki.1005-3611.2017.05.039
- Hu, H., Cao, Q., Shi, Z., Lin, W., Jiang, H., & Hou, Y. (2018). Social support and depressive symptom disparity between urban and rural older adults in China. *Journal of Affective Disorders*, 237, 104–111. doi:10.1016/j.jad.2018.04.076
- Huang, Q. (2020). A review of researches on mental depression among people who lost their only child. *Law and Society*, 4, 68–73.
- Ikels, C. (2004). *Filial piety: Practice and discourse in contemporary East Asia*. Redwood City, CA: Stanford University Press.
- Ji, J., Cui, Y., Li, R., Wang, J., Wang, R., Chang, A., & Jiang, J. (2019). Analysis on the distribution of depression and its influencing factors in the parents who loss their only child in Tangshan Area. *China Modern Medicine*, 26, 180–183.
- Langford, C. P., Bowsher, J., Maloney, J. P., & Lillis, P. P. (1997). Social support: A conceptual analysis. *Journal of Advanced Nursing*, 25(1), 95–100. doi:10.1046/j.1365-2648.1997.1997025095.x
- Leng, Z., Guo, Q., Liu, L., Wu, M., & Chen, M. (2019). Preference and influencing factors for institute-based care of the elderly in Zhejiang Province. *Preventive Medicine*, 31(6), 545–548. doi:10.19485/j.cnki.issn2096-5087.2019.06.002
- Lewinsohn, P. M., Seeley, J. R., Roberts, R. E., & Allen, N. B. (1997). Center for Epidemiologic Studies Depression Scale (CES-D) as a screening instrument for depression among community-residing older adults. *Psychology and Aging*, 12(2), 277–287. doi:10.1037/0882-7974.12.2.277
- Li, J., Shi, L., Liang, H., Ding, G., & Xu, L. (2018). Urban-rural disparities in health care utilization among Chinese adults from 1993 to 2011. *BMC Health Services Research*, 18(1), 102. doi:10.1186/s12913-018-2905-4
- Li, M., Jiang, X., & Ren, Y. (2017). Mediator effects of positive emotions on social support and depression among adolescents suffering from mobile phone addiction. *Psychiatria Danubina*, 29(2), 207–213. doi:10.24869/psyd.2017.207
- Li, M., Li, J., & Shi, K. (2017). The experience of social support among bereaved Chinese people: A qualitative study. *The Journal of Psychology Science*, 40, 961–966. doi:10.16719/j.cnki.1671-6981.20170428
- Liang, Y., Sarwar, M., & Horn, S. V. (2019). Child loss, social capital, and depressive symptoms among elderly adults in urban and rural China. *Journal of Aging and Health*, 31(2), 343–373. doi:10.1177/0898264318804637
- Liu, D., Xi, J., Hall, B. J., Fu, M., Zhang, B., Guo, J., & Feng, X. (2020). Attitudes toward aging, social support and depression among older adults: Difference by urban and rural areas in China. *Journal of Affective Disorders*, 274, 85–92. doi:10.1016/j.jad.2020.05.052
- Liu, T., Song, X., Cheng, F., Wang, C., Zhang, Z., Rong, C., ... Zhu, T. (2019). The impact of resources from family and society on psychological well-being among elderly parents who lost their only child – Based on perspective of Maslow's hierarchy of needs. *Population & Development*, 25, 87–93.
- Ma, Z. (2020). Discussion on the Confucian filial piety. *Think & Explore*, 2, 289.
- Neimeyer, R. A., Klass, D., & Dennis, M. R. (2014). A social constructionist account of grief: Loss and the narration of

- meaning. *Death Studies*, 38(6–10), 485–498. doi:10.1080/07481187.2014.913454
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385–401. doi:10.1177/014662167700100306
- Socco, P., Preti, A., Totaro, S., Corrigan, P. W., & Castriotta, C.; SOPROXI Team. (2019). Stigma, grief and depressive symptoms in help-seeking people bereaved through suicide. *Journal of Affective Disorders*, 244, 223–230. doi:10.1016/j.jad.2018.10.098
- Shi, G., Wen, J., Xu, X., Zhou, N., Wang, J., Shi, Y., ... Stelzer, E. M. (2019). Culture-related grief beliefs of Chinese Shidu parents: Development and psychometric properties of a new scale. *European Journal of Psychotraumatology*, 10(1), 1626075. doi:10.1080/20008198.2019.1626075
- Streeter, C. L., & Franklin, C. (1992). Defining and measuring social support: Guidelines for social work practitioners. *Research on Social Work Practice*, 2(1), 81–98. doi:10.1177/104973159200200107
- Stroebe, M., & Schut, H. (2010). The dual process model of coping with bereavement: A decade on. *OMEGA-Journal of Death and Dying*, 61(4), 273–289. doi:10.2190/OM.61.4.b
- Tan, S. C., & Barber, S. J. (2020). Confucian values as a buffer against age-based stereotype threat for Chinese older adults. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 75(3), 504–512. doi:10.1093/geronb/gby049
- Tian, M. (2012). On Buddhism's view of death-starting from the comparison with the Confucian view of life and death. *Xiangchao*, 9, 55+58.
- Wang, G., Zheng, L., & Zhou, B. (2019). Analysis of relationship among social support, depression, loneliness and quality of life about the parents who lost their only child. *Chinese Journal of General Practice*, 17, 622–640. doi:10.16766/j.cnki.issn.1674-4152.000751
- Wang, P., Pan, X., & Liu, J. (2015). Depression of the aging parents who lost their only child in China. *American Journal of Applied Psychology*, 4(4), 83–89. doi:10.11648/j.ajap.20150404.11
- Wang, Q., Ren, L., Wang, W., Xu, W., & Wang, Y. (2019). The relationship between post-traumatic stress disorder and suicidal ideation among shidu parents: The role of stigma and social support. *BMC Psychiatry*, 19(1), 352. doi:10.1186/s12888-019-2353-7
- Wang, Q., Xu, W., Ren, L., Wang, W., & Wang, Y. (2019). The relationship between hope and post-traumatic stress disorder in Chinese shidu parents: The mediating role of perceived stress. *Journal of Affective Disorders*, 251, 23–30. doi:10.1016/j.jad.2019.03.049
- Wu, Y., & Yin, Y. (2019). From the four generations cohabitation family to the DINK family: The evolution of Chinese young people's family concept. *Humanities and Social Sciences*, 7(2), 71–75. doi:10.11648/j.hss.20190702.14
- Xiao, J. (2018). *Research on the application of group work in the psychological support of Shidu families—Take M town in Chengdu as an example*. Chengdu: Yunnan Petroleum University.
- Xiao, S. (1994). The theoretical basis and application of Social Support Rating Scale. *Journal of Clinical Psychological Medicine*, 4, 98–99.
- Xiao, Y., & Zhong, D. (2020). The impact of the supply of basic public services on the urban-rural income gap: Based on the perspective of different income sources. *Journal of Southwest Minzu University*, 3, 105–114.
- Xing, H., Yu, W., Chen, S., Zhang, D., & Tan, R. (2013). Influence of social support on health-related quality of life in new-generation migrant workers in Eastern China. *Iranian Journal of Public Health*, 42(8), 806–812.
- Yin, Q., Shang, Z., Zhou, N., Wu, L., Liu, G., Yu, X., ... Liu, W. (2018). An investigation of physical and mental health consequences among Chinese parents who lost their only child. *BMC Psychiatry*, 18(1), 45. doi:10.1186/s12888-018-1621-2
- Youngblut, J. M., Brooten, D., Cantwell, G. P., del Moral, T., & Totapally, B. (2013). Parent health and functioning 13 months after infant or child NICU/PICU death. *Pediatrics*, 132(5), e1295–e1301. doi:10.1542/peds.2013-1194
- Zhang, H., Shang, Z., Wu, L., Sun, Z., Zhang, F., Sun, L., ... Liu, W. (2020). Prolonged grief disorder in Chinese Shidu parents who have lost their only child. *European Journal of Psychotraumatology*, 11(1), 1726071. doi:10.1080/20008198.2020.1726071
- Zhang, W., Wang, A., Guo, Y., Yao, S., Luo, Y., & Zhang, J. (2017). Mediation role of self-efficacy between social support and depression of only-child-lost people. *Zhong Nan Da Xue Xue Bao Yi Xue Ban*, 42, 836–842. doi:10.11817/j.1672-7347.2017.07.016
- Zhang, W., Wang, A., Yao, S., Luo, Y., Zhang, J., & Li, Z. (2016). Relationship of depressive symptoms and psychological resilience in only-child-lost people. *Chinese Mental Health Journal*, 30, 612–617.
- Zhang, Y., & Jia, X. (2018). A qualitative study on the grief of people who lose their only child: From the perspective of familism culture. *Frontiers in Psychology*, 9, 869. doi:10.3389/fpsyg.2018.00869
- Zhang, Y., & Jia, X. (2019). The relationship between loss characteristics and mental health of Shiduers (parents who have lost the only child). *Chinese General Practice*, 22, 2749–2754.
- Zhang, Y., & Jia, X. (2020a). The meaning of bonds: The relationships among grief rituals, support from relatives and friends, and the mental health of Shiduers. *Omega*, 30222820909650. Advance online publication. doi:10.1177/0030222820909650
- Zhang, Y., & Jia, X. (2020b). Relationship between demographic characteristics and the mental health of Shiduers. *China Journal of Health Psychology*, 28, 552–557. doi:10.13342/j.cnki.cjhp.2020.04.017
- Zhao, X., Xie, C., Ni, X., Li, X., Wu, S., Wang, S., & Zeng, Z. (2018). Characteristics and influencing factors analysis of depressive symptoms among one-child-lost-persons. *Chongqing Medicine*, 47, 183–185.
- Zheng, Y., & Lawson, T. R. (2015). Identity reconstruction of Shiduers: Narratives from Chinese older adults who lost their only child. *International Journal of Social Welfare*, 24, 399–406. doi:10.1111/ijsw.12139
- Zheng, Y., Lawson, T. R., & Head, B. A. (2017). "Our only child has died"—A study of bereaved older Chinese parents. *Omega*, 74(4), 410–425. doi:10.1177/0030222815612285
- Zhou, N., Wen, J., Stelzer, E. M., Killikelly, C., Yu, W., Xu, X., ... Maercker, A. (2020). Prevalence and associated factors of prolonged grief disorder in Chinese parents bereaved by losing their only child. *Psychiatry Research*, 284, 112766. doi:10.1016/j.psychres.2020.112766
- Zi, C. (2010). *Filial piety thought of Chinese Buddhist-comparing with Confucian filial thought*. Qinghai: Qinghai Normal University.