Symptom Structure, Characteristics, and Predictive Factors of Post-Traumatic Stress Disorder in Parents Who Lost Their Only Child: Postprint

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Abstract

To investigate the symptom characteristics and predictive factors of post-traumatic stress disorder (PTSD) among bereaved parents in China, this study administered a questionnaire on basic information related to the parents themselves and their deceased children, along with the PTSD Checklist-Civilian Version (PCL-C), to 463 bereaved parents in China. The results indicated that: (1) The dysphoric arousal model of PTSD, which includes five factors —intrusion, avoidance, numbing, dysphoric arousal, and anxious arousal— was validated for its applicability among bereaved parents in China using confirmatory factor analysis. (2) According to screening based on DSM-IV diagnostic criteria, 71.92% of bereaved parents were PTSD-positive, with the positive rates of PTSD factors increasing sequentially for avoidance, intrusion, dysphoric arousal, emotional numbing, and anxious arousal. (3) The age of bereaved parents and the duration since their child' s death showed significant correlations with PTSD symptoms; PTSD symptom scores of bereaved parents differed significantly across their gender, family location, and family income status; after incorporating all factors into the regression equation, the factors most predictive of PTSD symptoms among bereaved parents were found to include: gender, family location, and age.

Full Text

Preamble

Assessing the Symptom Structure, Characteristics, and Predictive Factors of Posttraumatic Stress Disorder among Shidu Parents

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Abstract

This study examined the symptom characteristics and predictive factors of posttraumatic stress disorder (PTSD) among Chinese parents who lost their only child (shidu parents). A total of 463 shidu parents completed questionnaires assessing demographic information, loss-related variables, and the PTSD Checklist-Civilian Version (PCL-C). The results indicated: (1) Confirmatory factor analysis supported the five-factor dysphoric arousal model of PTSD, comprising intrusion, avoidance, emotional numbing, dysphoric arousal, and anxious arousal, as applicable to Chinese shidu parents. (2) Using DSM-IV diagnostic criteria, 71.92% of shidu parents screened positive for PTSD, with positive rates increasing across the following symptom clusters: avoidance, intrusion, dysphoric arousal, emotional numbing, and anxious arousal. (3) PTSD symptoms showed significant negative correlations with parental age and duration since the child' s death. Significant differences in PTSD symptom severity were found based on gender, residential location, and family income. When all factors were entered into a regression equation, gender, residential location, and age emerged as the most significant predictors of PTSD symptoms among shidu parents.

Keywords: shidu parents; posttraumatic stress disorder; symptom characteristics; predictive factors

Introduction

Since the 1970s, the Chinese government has vigorously promoted family planning through the "one couple, one child" policy, which created a generation of only-child families and fundamentally transformed traditional family structures for millions of Chinese citizens (Chen & Lu, 2006). According to China' s first Family Development Report released by the National Health and Family Planning Commission (2014), China has approximately 430 million households, with planned-birth families accounting for about 300 million (70% of all households). Scholars have argued that only-child families are inherently risky (Mu, 2014), as the death of the sole child due to various causes (e.g., accidents, illness, disasters) creates a tragic group of "shidu parents" (Peng, 2013).

Based on Chinese census data (2011), it is estimated that China currently has over 1 million shidu families, with 76,000 new cases added annually. By 2050, the number of shidu parents is projected to reach 22 million (Ma, 2014; Wang, 2013). The death of a child represents one of the most severe traumas parents can experience (Luo et al., 2017; Kun et al., 2013). For shidu parents, the loss

of their only child may constitute an even more significant traumatic stressor, compounded by financial difficulties and eldercare challenges, potentially leading to severe stress states and even PTSD.

Posttraumatic stress disorder (PTSD) is a persistent and serious mental illness that occurs following exposure to extraordinary threatening or catastrophic events (Lancaster et al., 2014). Traumatic stressors include war (Wolf et al., 2017), natural disasters such as earthquakes and hurricanes (Ironson et al., 2014), public emergencies like terrorist attacks (Hill et al., 2013), accidents such as vehicle crashes (Delahanty et al., 2000), sexual assault (Dworkin et al., 2018), abuse (Keeshin et al., 2014), illness (Glover & Poland, 2002), bereavement (Wang et al., 2015), and miscarriage (Lopez & Seng, 2014). While some research has examined child death as a stressor (Chan et al., 2012; Xu et al., 2014), no systematic studies have investigated the impact of losing an only child on parental PTSD symptoms.

PTSD not only severely affects patients' physical and mental health and quality of life but also imposes substantial economic costs and social safety burdens on families and nations. Global epidemiological surveys indicate that with increasing natural and human-caused traumatic events, PTSD risk has risen significantly, with lifetime prevalence reaching 7-12% (Kessler et al., 2005). International studies show varying PTSD prevalence rates across disaster types: 5-60% among populations exposed to natural disasters and 25-75% among those exposed to human/technological disasters (Galea et al., 2005). Domestic research in China has primarily focused on earthquake survivors, with prevalence rates of 6.5-65.6% (Chan et al., 2012; Wang et al., 2011; Zhou et al., 2015), while other disaster-exposed populations show rates of 7.2-41.8% (Wang et al., 2015; Xu et al., 2014; Zhu et al., 2017).

Since the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; APA, 1994) introduced PTSD diagnostic criteria, debate over PTSD symptom structure has persisted for over two decades. The DSM-IV clinical symptom criteria include 17 primary symptoms forming a three-dimensional structure: intrusion (B1-B5), avoidance/numbing (C1-C7), and hyperarousal (D1-D5). Clinical diagnosis requires at least one intrusion symptom, three avoidance/numbing symptoms, and two hyperarousal symptoms. This three-factor model has been questioned by early researchers, who proposed alternative models (Armour, 2015). Given that different PTSD structural models contain varying symptom configurations, diagnostic criteria and prevalence rates differ accordingly (Cao et al., 2015). Therefore, accurately defining PTSD symptom structure across populations is crucial for revealing pathogenic mechanisms, refining diagnostic criteria, and developing effective prevention and intervention strategies.

Research has demonstrated that the three-factor model inadequately represents PTSD' s clinical symptom structure (Elhai et al., 2011; Simms et al., 2002) and contributes to high comorbidity and misdiagnosis rates (Cao, 2015). Consequently, researchers have proposed alternative models based on empirical and

theoretical work, with King et al.' s (1998) four-factor emotional numbing model, Simms et al.' s (2002) four-factor dysphoria model, and Elhai et al.' s (2011) five-factor dysphoric arousal model receiving substantial empirical support. King et al. (1998) separated DSM-IV' s avoidance (C1-C2) and emotional numbing (C3-C7) symptoms into two independent factors, which together with intrusion (B1-B5) and hyperarousal (D1-D5) factors formed a four-factor emotional numbing model (see Table 1).

Simms et al.' s (2002) four-factor dysphoria model, developed by modifying the emotional numbing model, merged three hyperarousal symptoms related to sleep problems, irritability, and concentration difficulties (D1-D3) with emotional numbing symptoms (C3-C7) into a dysphoria factor, reflecting the general negative affect component shared with mood and anxiety disorders (Watson, 2009). The four-factor dysphoria model comprising intrusion, avoidance, dysphoria, and a hyperarousal factor with two symptoms (see Table 1) better distinguished PTSD-specific from nonspecific symptoms and partially explained high comorbidity with mood and anxiety disorders (Cao et al., 2015). Numerous studies have confirmed that both four-factor models significantly outperform DSM-IV' s three-factor structure (Armour et al., 2016; Elhai et al., 2011; Lenferink et al., 2017; Simms et al., 2002; Yufik & Simms, 2010). However, no consensus exists regarding which four-factor model is superior (Armour et al., 2016).

As shown in Table 1, the primary difference between the dysphoria and emotional numbing models concerns the placement of D1-D3 symptoms. Research indicates these three symptoms load moderately on both hyperarousal and dysphoria factors, suggesting they are not clear indicators of either factor and may represent an independent factor in PTSD' s clinical structure (Shevlin et al., 2009). Accordingly, Elhai et al. (2011) separated these symptoms from the dysphoria factor, proposing a five-factor model comprising intrusion (B1-B5), avoidance (C1-C2), emotional numbing (C3-C7), dysphoric arousal (D1-D3), and anxious arousal (D4-D5) (see Table 1). Increasingly, empirical studies have supported the five-factor dysphoric arousal model across diverse trauma types and cultural contexts, including bereaved individuals, earthquake survivors, hurricane survivors, older adults, and adolescents (Armour et al., 2016; Pietrzak et al., 2014; Pietrzak et al., 2012; Wang et al., 2013).

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5; APA, 2013) revised PTSD's clinical symptom criteria, with its symptom structure primarily influenced by King et al.' s (1998) emotional numbing model and Simms et al.' s (2002) dysphoria model (Armour et al., 2016). Specific changes include: (1) adopting a four-factor phenotypic model similar to the emotional numbing model, comprising intrusion, avoidance, negative alterations in cognition and mood, and hyperarousal; (2) combining DSM-IV' s five emotional numbing symptoms with two new symptoms (distorted blame and persistent negative emotional state) to form the negative alterations in cognition and mood factor; and (3) combining DSM-IV' s five hyperarousal symptoms with one new

symptom (reckless or self-destructive behavior) to form the hyperarousal factor. Additionally, researchers have proposed various DSM-5-based models, including four-factor dysphoria, five-factor dysphoric arousal, six-factor anhedonia, six-factor externalizing behavior, and seven-factor hybrid models, which have been validated in numerous studies (Zhou et al., 2017).

Although numerous DSM-5-based PTSD symptom structure models have been developed with some empirical support, their dispersed symptom structures may lead to overgeneralization of PTSD diagnosis (Pietrzak et al., 2015). Thus, further investigation of DSM-IV-based PTSD structures remains important (Boasso et al., 2016). This study' s in-depth examination of DSM-IV' s three-factor structure and subsequent models can inform the refinement of PTSD structures in DSM-5 and future diagnostic systems.

Compared to international research, domestic PTSD studies in China are relatively limited, primarily focusing on earthquake survivors (Chan et al., 2012; An et al., 2018; Zhou et al., 2017). Cao et al. (2015) noted that PTSD symptom structures differ across populations and cultures, leading to variations in diagnostic criteria and prevalence rates. Different trauma types produce distinct PTSD characteristics, making systematic research on shidu parents who lost their only child theoretically and practically valuable.

International research on bereavement-related PTSD has generally examined broad bereaved populations (Boelen et al., 2008) without specific subgroup analysis. Studies on general bereaved populations have validated DSM-IV' s three-factor model and subsequent four- and five-factor models (Boelen et al., 2008; Van et al., 2016). Factors such as gender (Mitchell & Terhorst, 2017), deceased' s gender, time since loss, and kinship level (e.g., parental loss as primary bereavement) (Van et al., 2016), and socioeconomic status (Norberg et al., 2016) have been identified as influencing factors for PTSD in bereaved populations.

However, variations in bereavement experiences may lead to differences in PTSD symptoms, characteristics, and structures. As He (2015) noted, unlike the phenomenon of only-child death in Western families, China' s one-child policy has created a much larger and more complex shidu parent population. Furthermore, under Chinese culture' s traditional belief that "of three unfilial acts, having no descendants is the worst," the death of an only child prevents shidu parents from fulfilling their duty to continue the family line. Additionally, death remains a taboo topic in Chinese culture, amplifying the impact of child loss on shidu parents (He, 2014). Therefore, studying PTSD symptoms in shidu parents within China' s cultural context holds significant importance.

Examining the classification characteristics, symptom features, and predictive factors of PTSD among shidu parents in China' s policy and social context can provide empirical evidence for PTSD diagnostic classification and evidence for the clinical application and cross-cultural research of the PCL-C measurement tool. Moreover, analyzing PTSD symptom types and characteristics in shidu parents can offer theoretical foundations and practical guidance for PTSD pre-

vention and treatment.

Method

2.1 Participants

Using convenience sampling, 463 shidu parents from Jiangsu, Shandong, Anhui, Henan, and Jilin provinces were recruited through on-site surveys between March and December 2017. Participants had a mean age of 60.20 $\pm$ 7.58 years, including 161 males, 299 females, and 3 with missing gender information. Additional demographic information is presented in Table 2 . Inclusion criteria were: (1) child loss occurred more than 12 months prior; (2) participants could not or would not have additional children or adopt due to age or other reasons; (3) participants were not currently taking psychiatric medication or receiving psychotherapy. After obtaining approval from the institutional ethics committee, trained researchers conducted home visits, explained the study purpose and questionnaire completion methods, assured confidentiality, and obtained informed consent. Researchers also committed to contacting participants and providing referrals to professional psychological treatment services if assessment results reached clinical significance.

2.2 Measures

2.2.1 Basic Information Questionnaire The questionnaire assessed participants' demographic information and loss-related variables. Demographic information included gender, age, residential location, education level, marital status, economic status, and religious beliefs. Loss-related information included relationship to the deceased, time since death, deceased's age at death, closeness to the deceased, and whether they had grandchildren.

2.2.2 PTSD Checklist-Civilian Version (PCL-C) The PCL-C was developed by Weathers et al. (1993) and revised by Yang et al. (2007). It includes 17 items corresponding to DSM-IV PTSD diagnostic criteria, assessing PTSD symptoms experienced in the past month. The scale comprises three subscales: B (intrusion, items 1-5), C (avoidance/numbing, items 6-12), and D (hyperarousal, items 13-17). Each symptom is rated on a 1-5 scale (1 = not at all, 2 = a little bit, 3 = moderately, 4 = quite a bit, 5 = extremely). For PTSD screening, the symptom counting method requires at least one intrusion symptom, three avoidance/numbing symptoms, and one hyperarousal symptom, with each item scored ≥ 3 considered symptom-positive. The internal consistency coefficient in this study was 0.903.

2.3 Procedure

First, researchers identified survey regions based on available resources and contacted local civil affairs bureaus, community leaders, or nonprofit organizations serving shidu populations. Second, volunteers with psychological counseling

backgrounds were trained and conducted mock testing. Third, researchers and volunteers visited families, guided shidu parents through informed consent procedures, and administered questionnaires. Fourth, during testing, researchers maintained attention to shidu parents, provided immediate psychological support, introduced the team' s service WeChat public account (offering self-help books, psychological assistance, and real-life stories), and compensated participants upon completion. Fifth, researchers provided feedback on survey results and relevant recommendations within 30 working days.

2.4 Statistical Analysis

Data were processed and analyzed using SPSS 21.0 and MPLUS 7.0. Model fit was evaluated using ^{2}/df, CFI, TLI, RMSEA, and SRMR indices. Competing models were compared through confirmatory factor analysis. For nested models, chi-square difference tests were used (Satorra & Bentler, 2001); if the p-value for chi-square difference was < 0.05, the model with better fit indices (CFI, TLI, RMSEA, SRMR) was selected. For non-nested models, BIC difference analysis determined model superiority (Schwarz, 1978); BIC differences of 0-10 supported the model with the lower value, while differences > 10 indicated substantial differences strongly favoring the lower-BIC model (Raftery, 1995).

Categorical data were described using frequencies and percentages. Pearson correlation analysis examined relationships between continuous demographic/loss variables and PTSD. Independent samples t-tests and one-way ANOVA assessed differences in categorical variables. A linear regression equation was established using the Enter method, with PTSD scores as the dependent variable and demographic/loss variables as predictors.

2.5 Control and Assessment of Common Method Bias

Due to objective constraints, this study relied solely on self-report data, potentially introducing common method bias. Following Zhou and Long' s (2004) recommendations, procedural controls were implemented, including anonymous administration and reverse-scored items. After data collection, Harman' s single-factor test was used (Podsakoff et al., 2003). Exploratory factor analysis of all study variables yielded five factors with eigenvalues > 1 in both rotated and unrotated solutions. The first unrotated factor explained 27.47% of variance, and the first rotated factor explained 20.67%, both well below the 40% critical threshold, indicating no significant common method bias.

Results

3.1 Model Comparison

Confirmatory factor analysis was used to examine four competing models. Table 3 shows that all models demonstrated good fit. Among nested models, M3 was superior to M1 ($\Delta\ ^2 = 3.148$, $\Delta df = 1$, $p < 0.001$), M4 was superior to M1 ($\Delta\ ^2 =$

11.545, df = 5, Δp < 0.001), M3 was superior to M2 (Δ ^{2} = 25.276, Δdf = 1, p < 0.001), and M4 was superior to M3 (Δ ^{2} = 8.397, Δdf = 4, p < 0.001). Based on these results, M4 showed the best fit indices. For non-nested models M1 and M2, BIC difference analysis indicated M1 was significantly better than M2 (ΔBIC = 19.144). In summary, M4 was the optimal model, indicating that Chinese shidu parents' PTSD symptom structure comprises five dimensions: intrusion, avoidance, emotional numbing, dysphoric arousal, and anxious arousal. Factor loadings for the five-factor model are presented in Table 4 , with all factor loadings meeting criteria (a_{ij} > 0.300).

3.2 Symptom Characteristics of PTSD in Shidu Parents

The mean PCL-C score for all participants was 50.10 ± 11.73, ranging from 18 to 85. Using DSM-IV diagnostic criteria ($ $1 intrusion symptom, $ $3 avoidance/numbing symptoms, and $ $2 hyperarousal symptoms with item scores ≥ 3), 333 of 463 shidu parents (71.92%) screened positive for PTSD.

Table 5 presents the percentage of participants scoring ≥ 3 on each PCL-C symptom for both PTSD-positive and negative groups. Both groups showed highest frequencies for avoidance symptoms, followed by intrusion symptoms. The most frequently endorsed symptoms were efforts to avoid thoughts, memories, and activities related to the child' s death, as well as recurrent distressing memories and thoughts about the death.

3.3 Predictive Factors of PTSD in Shidu Parents

Pearson correlation analysis revealed that PTSD scores were significantly negatively correlated with parental age (r = -0.18, p < 0.01) and duration since the child' s death (r = -0.10, p < 0.05), but not significantly correlated with the child' s age at death (r = 0.06, p > 0.05).

Independent samples t-tests and one-way ANOVA showed significant gender differences in PTSD scores, t(458) = -5.58, p < 0.01, Cohen' s d = 0.54, with female shidu parents (M = 52.29, SD = 11.11) reporting more severe symptoms than males (M = 46.08, SD = 11.87). Significant differences also emerged for residential location, t(456) = 4.21, p < 0.01, Cohen' s d = 0.39, with rural shidu parents (M = 52.42, SD = 12.43) showing more severe symptoms than urban parents (M = 47.90, SD = 10.57). Additionally, PTSD symptoms differed significantly by family income, F(3, 458) = 2.74, p < 0.05, Cohen' s d = 0.26, with parents earning 0-999 RMB (M = 52.21, SD = 13.79) and 1000-1999 RMB (M = 51.19, SD = 11.71) reporting more severe symptoms than those earning 2000-2999 RMB (M = 48.85, SD = 10.95) and 3000+ RMB (M = 48.45, SD = 10.46).

No significant differences were found for child' s gender, parental education, anticipation of child' s death, presence of grandchildren, or marital relationship at the time of death (p > 0.05).

Variables showing significant correlations or differences were entered into a regression equation. Categorical variables were dummy-coded (gender: 0 = male, 1 = female; residential location: 0 = rural, 1 = urban). Regression analysis identified three significant predictors of PTSD symptoms (see Table 6): parental age, residential location, and gender.

Discussion

Traumatic life events impose tremendous psychological impact on survivors, potentially causing severe mental illness. As the most common disorder following trauma exposure, PTSD holds significant research value (Dworkin et al., 2018; Ironson et al., 2014). Clarifying PTSD symptom structure models across different populations and cultural contexts, and understanding their characteristics and predictive factors, is essential for effective prevention and intervention. This study validated the five-factor dysphoric arousal model among Chinese shidu parents, analyzed their symptom characteristics, and examined the influence of demographic and loss-related variables on PTSD symptoms.

4.1 PTSD Symptom Structure in Shidu Parents

Results indicate that Chinese shidu parents'PTSD symptom structure comprises five dimensions: intrusion, avoidance, emotional numbing, dysphoric arousal, and anxious arousal. The five-factor model' s distinction from the two four-factor models primarily concerns the placement of D1-D3 symptoms, which form a separate dysphoric arousal factor. This classification has received increasing support across general trauma-exposed populations, domestic violence victims, hurricane survivors, earthquake survivors, and bereaved individuals (Armour et al., 2016; Elhai et al., 2011; Pietrzak et al., 2014; Pietrzak et al., 2012; Wang et al., 2013; Zhou et al., 2017). This study' s validation of the five-factor model in Chinese shidu parents enriches cross-cultural and cross-population PTSD research, deepens understanding of specific symptom characteristics, and provides theoretical support for targeted prevention and intervention.

4.2 Symptom Characteristics of PTSD in Shidu Parents

The PTSD positive screening rate of 71.9% in this study is substantially higher than previous findings from natural and technological disaster research (Breslau, 2001; Chan et al., 2012; Galea et al., 2005; Wang et al., 2011). Studies of bereaved populations report PTSD positive rates of 18.7-55.3% (Boelen et al., 2008; Van et al., 2016; Wu et al., 2011; Zhao et al., 2009). Unlike other relatives, children are intimately connected to parents' sense of life meaning. When a child dies, parental identity, lifestyle, and worldview are profoundly affected (Hibberd et al., 2010), resulting in more severe PTSD symptoms.

Several factors may account for these elevated rates. First, PTSD prevalence correlates with trauma severity—more severe events yield higher rates (Yang et al., 2016). Second, victim characteristics matter: female survivors (Zhang &

Ho, 2011) and older survivors (Chan et al., 2012) show higher PTSD rates, and timing of trauma affects prevalence (Xia et al., 2015). Third, PTSD symptom structures vary across populations and cultures, affecting diagnostic criteria and prevalence determination (Cao et al., 2015).

Chinese shidu families experience the loss of their only child—a core component of the family triangle—causing devastating family disruption, rigidified parental relationships, and loss of life motivation (Xu & Liu, 2017). Shidu parents constitute a unique group shaped by China' s specific policy history, and their psychology is inevitably influenced by Chinese culture. Traditional Chinese culture emphasizes filial piety, ancestral lineage continuation, and ancestor worship (He, 2014), while simultaneously treating death as a taboo subject (Guo, 1992; Lu et al., 2004). This cultural context causes ethical value collapse for shidu parents. Thus, high PTSD prevalence among shidu parents represents a culturally shaped outcome.

Among the five PTSD symptom dimensions, avoidance showed the highest positive rate, followed by intrusion. This contrasts with the common view that intrusion is PTSD' s most characteristic symptom (Deng, 2016), a pattern also found in child loss research (Seino et al., 2008). This may be because individuals experiencing natural disasters, war, assault, abuse, accidents, and illness directly experienced the traumatic event, resulting in more intrusive trauma memories. In this study, 70.1% of children died unexpectedly from accidents (traffic, sudden illness, natural disasters, drowning, homicide), and 84.0% of parents did not anticipate the death or witness the scene, potentially explaining lower intrusion symptoms.

The most frequently endorsed specific symptoms were efforts to avoid activities, memories, and thoughts about the child' s death, and recurrent distressing memories and thoughts about the death, belonging to avoidance and intrusion clusters. Shidu parents'avoidance manifests through suppression (avoiding social contact and reminders), distraction (work, travel, sex, alcohol), and emotional expression (crying, excessive talking, hyperactivity) (He, 2015). Intrusion involves sudden thoughts and images related to the child' s death. Confucian culture, which dominates Chinese tradition, views descendants as the continuation of self and ancestors' lives. Having no descendants represents true death and the most unfilial act, severing ancestral lineage (Lu et al., 2004). Therefore, child loss is more painful for Chinese shidu parents than for Western families. The cultural prohibition against discussing death amplifies the impact, leading shidu parents to employ avoidance strategies when facing reminders or intrusive thoughts to prevent repeated emotional pain.

4.3 Predictive Factors of PTSD in Shidu Parents

This study identified parental age, gender, and residential location as significant predictors of PTSD. Regarding gender, females reported more severe PTSD symptoms than males, consistent with international bereavement re-

search (Mitchell & Terhorst, 2017). Attachment and coping styles may explain this difference. Compared to bereaved fathers, bereaved mothers show stronger correlations between attachment anxiety, attachment avoidance, and PTSD symptoms (Xu & Liu, 2017). Continuing bonds—attachment patterns formed between the living and deceased after loss (Rubin, 1999)—differ by gender: bereaved mothers tend to maintain connections with their child through more negative bonding methods (e.g., preserving belongings), while fathers tend to sever connections (He et al., 2017). Preserved belongings may serve as stimulus cues triggering more PTSD symptoms, such as intrusive memories. Additionally, bereaved mothers more frequently employ emotion-focused coping, which is associated with more PTSD symptoms (Christiansen et al., 2014). As child death is irreversible, problem-focused coping is impossible, and many shidu parents adopt emotion-focused coping. When overwhelming emotions arise, some suppress feelings or avoid pain triggers, with mothers showing stronger emotion-focused coping than fathers, exacerbating the impact.

Regarding residential location, rural shidu parents showed more severe PTSD symptoms than urban parents. International research similarly identifies socioeconomic status as an influencing factor (Norberg et al., 2016). Income, as a key socioeconomic indicator, represents hope. In rural areas where agriculture is the primary income source, lower income and living standards reduce resilience. As Lee and Xiao (1998) noted, wealth accumulation in Chinese culture serves eldercare and demonstrates family status and value. China' s urban-rural dual structure creates substantial disparities: rural shidu parents face more severe survival challenges, including low income, inadequate medical and pension security, material hardships, and psychological distress. The acquaintance society nature of rural communities, combined with cultural emphasis on lineage continuation and "raising children for old-age support," intensifies psychological dilemmas for rural shidu parents (Chen, 2016).

Regarding age, older shidu parents showed less severe PTSD symptoms. Possible explanations include: First, with age comes experience in dealing with negative events and greater psychological resources for coping with catastrophic events (Laska et al., 2013). Second, participants ranged from 49-87 years; younger shidu parents were more affected by the one-child policy and received less government assistance (Zhou & Mi, 2013), experiencing more complex psychological pressures. Third, older adults engage in life review, evaluating whether life goals were achieved. Research shows positive word specificity in autobiographical memory correlates positively with age at child loss (Yang, 2015), suggesting older shidu parents recall more positive and specific life events, resulting in milder PTSD symptoms.

Limitations and Future Directions

This study validated the dysphoric arousal model' s applicability to Chinese shidu parents, analyzed symptom characteristics and influencing factors, and enriched PTSD theoretical research while providing an evidence base for inter-

vention. However, several limitations exist. First, although numerous studies have examined DSM-5 PTSD symptom structures, no Chinese PTSD measurement tools based on DSM-5 were available at submission. This study primarily used DSM-IV-based structures; future research should introduce and domesticate DSM-5-based PTSD measures.

Second, findings showed avoidance as the most prominent symptom in shidu parents, contrasting with the common view that intrusion is PTSD' s most characteristic feature, yet no in-depth analysis of avoidance was conducted. Future qualitative research should explore the characteristics and impact of avoidance symptoms in shidu parents.

Third, this cross-sectional design limited generalizability. Future longitudinal studies or samples from different cultural backgrounds and trauma types (e.g., different child loss circumstances vs. other bereavement types) should further examine cross-temporal and cross-sample stability of the model.

Fourth, the PTSD symptom assessment scale used was a screening measure; positive screens were not confirmed through clinical structured interviews, potentially overestimating true PTSD prevalence. Future studies should combine clinical interviews to compensate for self-report limitations.

Fifth, although Western countries have parents who lost their only child, no PTSD research specifically targeting this population was found. Future cross-cultural comparisons could analyze similarities and differences in PTSD structure, symptoms, predictive factors, and mechanisms.

Despite these limitations, this study has theoretical and practical significance. First, it enriches PTSD symptom structure research by supporting Elhai et al.' s (2011) five-factor dysphoric arousal model in Chinese shidu parents. Second, findings on gender, age, and residential location as predictors provide reference for future research on PTSD development mechanisms. Finally, conclusions can inform Chinese shidu parent PTSD prevention and intervention by screening high-risk patients across five symptom dimensions, particularly intrusion and avoidance, while implementing differentiated interventions based on age, location, and gender.

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Note: Figure translations are in progress. See original paper for figures.