International Journal of Mental Health Promotion

Tech Science Press

DOI: 10.32604/ijmhp.2023.043167

ARTICLE

The Relationship between Father-Love Absence and Non-Suicidal Self-Injury: Based on Nock's Integrated Theoretical Model of NSSI

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Received: 23 June 2023 Accepted: 17 November 2023 Published: 05 February 2024

ABSTRACT

Fathers play an important role in children's development throughout their lives, and Father-Love Absence (FLA) leads to more behavioral problems, including Non-Suicidal Self-Injury (NSSI). However, there has been no research on the relationship between FLA and NSSI and its influencing mechanism. This study is based on Nock's integrated theoretical model of NSSI, aiming to explore the influence of FLA on NSSI and further investigate the mechanism of Subjective Vitality (SV) and Forgiveness (FORG). This study recruited 1795 adolescents in central China to complete four scales, including Father-Love Absence Scale (FLAS), The Subjective Vitality Scale (SVS), The Tendency to Forgive Scale (TTF), and Non-Suicidal Self-Injury Scale. FLA can directly affect NSSI, and indirectly affect NSSI through three paths of "FLA→SV→NSSI, FLA→FORG→NSSI, FLA→SV→FORG→NSSI". These results not only enrich our understanding of the relationship between FLA and NSSI and its internal mechanism but also provide theoretical and practical support for the reduction of NSSI in family education.

KEYWORDS

Father-Love Absence; Non-Suicidal Self-Injury; Subject Vitality; Forgiveness; Nock's integrated theoretical model of NSSI

Introduction

In a typical family, fathers and mothers share both common and distinct educational roles in raising their children, roles that are mutually reinforcing and essential [1]. Consequently, the significance of the paternal role in the development of children cannot be underestimated. Presently, Father-Love Absence has become a global concern. Father-Love Absence (FLA) refers to the cognitive, emotional, volitional, and behavioral absence of fathers in their children's development [2]. Compared with Father Absence, the Father-Love Absence mentioned in this study emphasizes the importance of psychological absence. FLA is associated with a higher occurrence of behavioral problems [3], including maladaptive behavior [4], aggressive behavior [5], and even life-threatening behavior [6]. Furthermore, Non-Suicidal Self-Injury (NSSI) is a noteworthy behavioral issue [7]. Therefore, building upon Nock's integrated theoretical model of NSSI, this research aims to investigate the relationship between FLA and NSSI and the mechanism underlying of their effects. This research provides theoretical foundations and practical implications for the reduction of NSSI in family education.

Non-Suicidal Self-Injury (NSSI) is defined as self-directed, deliberate destruction or alteration of bodily tissue

without suicidal intent [8]. FLA can be linked to a critical early adverse family environmental factor, specifically a distal risk factor, as it may place children in a neglectful and unsupported home environment. Nock's integrated theoretical model of NSSI suggests that Distal Risk Factors play a role in fostering the progression of more adverse Intrapersonal Vulnerability Factors and Interpersonal Vulnerability Factors [9]. Additionally, NSSI is frequently employed as a coping mechanism in response to challenging or stressful life events. Therefore, this study suggests that FLA might function as a distal risk factor that negatively affects NSSI. Furthermore, empirical studies have consistently identified FLA as a significant contributing factor to the incidence of NSSI. For instance, Rohner et al. [10] found that fathers' active involvement in their children's development might serve as a protective factor against behavioral problems (e.g., NSSI); Fu et al. [11] observed that the absence of fathers is associated with a higher likelihood of children experiencing suicidal ideation. Based on the above analysis, this study proposes that H1: Father-Love Absence (FLA) is positively associated with Non-Suicidal Self-Injury (NSSI). Although many recent studies have explored the factors that influence NSSI, the majority of them have focused predominantly on negative factors. As a result, this study has chosen to examine the connection between FLA and NSSI, incorporating two positive variables: subjective vitality and forgiveness.

Subjective vitality is defined as a "positive sense of vitality and energy" [12]. Studies have demonstrated that relationships between fathers and children, as well as mothers and children, can predict adolescents' subjective vitality [13]. A positive parent-child relationship can foster a sense of vitality by nurturing a positive attitude toward life [14,15]. Father-Love Absence is clearly not associated with a positive parent-child relationship. Therefore, it is hypothesized that Father-Love Absence reduces adolescents' subjective vitality. Moreover, increased subjective vitality can effectively alleviate the negative effects of FLA on adolescents [16]. Previous studies have established a link between subjective vitality and NSSI, indicating that subjective vitality can improve adolescents' psychological adjustment, encourage healthy lifestyle behaviors, and enable them to overcome potential obstacles with a more optimistic mindset [17]. This includes improving self-control [18], reducing impulsivity [19], and problematic behaviors [20,21]. It is important to note that NSSI is a form of problematic behavior that is closely related to self-control and impulsivity. Therefore, subjective vitality can help people with thoughts of NSSI to effectively overcome challenges in their lives, thus reducing the likelihood of NSSI [12]. Based on the analysis above, this study suggests that H2: Subjective vitality is a mediating factor between FLA and NSSI.

Forgiveness (FORG) refers to the process of transforming the victim's attitude toward the offender's cognition, emotion, motivation, and behavior into pro-social forgiveness after the offense [22,23]. Previous studies have demonstrated the significant influence of early developmental environments on the development of forgiveness [24]. Macaskill [25] further extended this idea by proposing that children who experience active paternal involvement during their upbringing tend to exhibit higher levels of forgiveness, and fathers' warmth positively predicts forgiveness [26]. Therefore, we hypothesized that children who grow up in a FLA environment would be negatively affected in their level of forgiveness. Furthermore, forgiveness and NSSI exhibit a strong correlation. Conceptually, forgiveness involves a pro-social transformation process that facilitates individuals in engaging with pro-social behaviors while inhibiting aggressive behaviors [27,28]. Furthermore, NSSI represents a form of self-directed aggressive behavior [29]. Thereby, we hypothesize that forgiveness may be negatively associated with NSSI. Several empirical studies have demonstrated that individuals with high levels of forgiveness have a reduced likelihood of experiencing NSSI [30,31]. Based on the above analysis, FLA leads to lower levels of forgiveness, which further leads to more NSSI occurring. This study proposes that H3: Forgiveness plays a mediating role between FLA and NSSI.

Furthermore, there may exist a strong link between subjective vitality and forgiveness. Subjective vitality represents a form of subjective energy [18], and an individual's subjective vitality reaches optimal levels when sufficient energy is generated [12]. This energy, in turn, fosters forgiveness [32,33]. Empirical research has also demonstrated the relationship between subjective vitality and forgiveness, Mok et al. [34] discovered that subjective vitality correlates with elevated forgiveness levels. In summary, we hypothesize that the subjective vitality of children who experience FLA is impaired, which results in lower levels of forgiveness, further contributing to an increased probability of NSSI. Therefore, this study proposes that H4: "subjective vitality→forgiveness" acts as a chain mediator between FLA and NSSI.

Based on Nock's integrated theoretical model of NSSI, this study aims to explore the effects of FLA on NSSI and the mediating role of subjective vitality and forgiveness. It is expected to provide a theoretical basis and practical support for preventing NSSI. This study proposes four hypotheses:

H1: Father-Love Absence (FLA) is positively associated with Non-Suicidal Self-Injury (NSSI).

H2: Subjective vitality is a mediating factor between FLA and NSSI.

H3: Forgiveness is a mediating factor between FLA and NSSI.

H4: "Subjective vitality→forgiveness" acts as a chain mediator between FLA and NSSI.

Methods

Participants and procedure

A questionnaire survey was conducted among 2,148 students from a middle school in central China. A total of 1795 valid samples were gathered, including 319 Grade 3 junior middle school students, 568 Grade 1 senior middle school students, 462 Grade 2 senior middle school students, and 446 Grade 3 senior middle school students. The sample included 774 boys and 1,021 girls, with an average age of 16.23 ± 1.31 years. None of the participants had a history of physical or

mental illness. Before completing the questionnaire, all participants submitted written informed consent forms. Considering that most of the students are minors, we follow the principle of voluntariness and hand out questionnaires after obtaining the consent of the school guardian (head teacher) and parents. This study received approval from the ethics committee of the author's affiliated institution.

Measures

Father-Love Absence

The Father-Love Absence Scale (FLAS) developed by Xiang et al. [2], was utilized as the measurement tool for assessing FLA. This scale is grounded in the context of Chinese culture, containing emotional absence, behavioral absence, cognitive absence, and volition absence, including 18 items (e.g., "father seldom thinks from my point of view"). The scale uses a 5-point Likert scale, which ranges from 1 ("totally inconsistent") to 5 ("totally consistent"), with higher scores indicating a greater Father-Love Absence. In this study, the FLAS has high reliability (Cronbach's α = 0.895).

Subjective vitality

The Subjective Vitality Scale (SVS) developed by Ryan et al. [12], was used to assess subjective vitality. Considering that Bostic et al. [35] demonstrated that the removal of 2 items enhanced the scale's effectiveness, it now consists of 6 items (e.g., "I feel full of vitality and energy", "I feel sluggish"). The scale employs a 5-point Likert scale, which ranges from 1 ("strongly disagree") to 5 ("strongly agree"). In this study, the SVS has high reliability (Cronbach's α = 0.835).

Forgiveness

The Tendency to Forgive Scale (TTF) developed by Brown [36] was used to assess forgiveness. The scale consists of 4 items (e.g., "Even if someone gives me a hard time, I quickly calm down and let it go"). The scale uses a 7-point Likert scale, which ranges from 1 ("strongly disagree") to 7 ("strongly agree"). The Chinese version of this scale has been used in Chinese sample survey and has good reliability and validity [37]. In this study, the TTF has high reliability (Cronbach's α = 0.621).

Non-Suicidal Self-Injury

The scale developed by You et al. [38] was used to assess NSSI which originally comprised 12 items. In this study, two items were excluded, resulting in the use of 10 items (e.g., "biting oneself on purpose" and "cutting oneself with a knife"). The scale uses a 4-point Likert scale, which ranges from 1 ("0 times") to 4 ("more than 6 times"). Higher scores on this scale indicate a higher frequency of NSSI in the past year. Prior research has established the scale's high reliability and validity among Chinese participants [39], and our study further confirmed its high reliability (Cronbach's α = 0.843).

Results

Firstly, the mean value, standard deviation and direct correlation of four latent variables of Father-Love Absence, Subject Vitality, Forgiveness, and Non-Suicidal Self-Injury were analyzed. Subsequently, a measurement model was then developed in AMOS 24.0 to determine the reliability of the selected observed variables in representing the underlying constructs. According to the dimensions of the scale, FLA is divided into four dimensions, including emotional absence (EA), cognitive absence (CA), behavioral absence (BA), and volitional absence (VA). To improve the degree of commonality, reduce random errors, and make the quality of the new index better than that of the original question, we package the two variables of subjective vitality and forgiveness into two dimensions, and NSSI into three dimensions. If the fit of the measurement model is satisfactory, a structural equation model can be constructed. FLA can directly impact NSSI and indirectly influence NSSI through three paths: "FLA→SV→NSSI, FLA→FORG→NSSI, FLA→SV→FORG→NSSI". Chi-square statistics, approximate root mean square error (RMSEA), comparative fitting index (CFI), and standardized root mean square residual (SRMR) were used as fitting indexes to evaluate the accuracy of the model [40].

Common method bias

Firstly, we used the Harman single-factor test to evaluate the presence of common method variance. Secondly, confirmatory factor analysis was utilized to incorporate all variables into a single latent variable for conducting a common method deviation analysis test on the data, with the common factor number set to 1. These results showed that the fitting index of the model was not ideal [$\chi^2_{(66,\ N\ =\ 1795)}$ = 4410.248, $p < 0.001$, RMSEA = 0.193, CFI = 0.440, SRMR = 0.130]. It can be observed that the fit of the single common factor structure is less than ideal, indicating the absence of a significant common method bias in the data set for this study.

Descriptive statistics and bivariate correlations for all measures

The results of descriptive statistical and correlation analysis of each variable are shown in Table 1. These results indicate significant correlations among the four variables. More precisely, FLA exhibited a positive correlation with NSSI, and a negative correlation with SV and FORG. Moreover, SV and FORG were significantly negatively correlated with NSSI. And SV was positively correlated with FORG.

Measurement model

The measurement model contained 4 latent variables (FLA, SV, FORG, NSSI) and 11 observation variables, all of which had a good fit [$\chi^2_{(38,\ N\ =\ 1795)}$ = 259.604, $p < 0.001$; RMSEA = 0.057, SRMR = 0.053, CFI = 0.970]. The factor loadings of all latent variables exhibited significant correlations with their respective observed variables ($p < 0.001$), indicating that the observed variables effectively represented the latent constructs.

Evaluation of rationality in the structural model

Based on the preceding analyses, we constructed Model 1. In Model 1, FLA can directly impact NSSI and indirectly influence NSSI through three paths of "FLA→SV→NSSI, FLA→FORG→NSSI, FLA→SV→FORG→NSSI". The results

TABLE 1

Descriptive statistics and correlation of all variables

Variable	*M*	*SD*	1	2	3	4
1. FLA	45.41	13.80	1.00			
2. SV	21.21	4.28	−0.40***	1.00		
3. FORG	16.46	4.30	−0.29***	0.39***	1.00	
4. NSSI	11.14	2.68	0.22***	−0.25***	−0.17***	1.00

Note: FLA, Father-Love Absence; SV, Subject Vitality; FORG, Forgiveness; NSSI, Non-Suicidal Self-Injury. ***$p < 0.001$.

TABLE 2

Fit indices among model 1

	χ^2	*df*	CFI	RMSEA	SRMR	AIC	ECVI
Model 1	259.604	38	0.970	0.057	0.053	315.604	0.176

Note: CFI, comparative fit index; RMSEA, root-mean-square error of approximation; SRMR, standardized root-mean-square residual; AIC, Akaike information criterion; ECVI, expected cross validation index.

showed that model 1 had a good fit [$\chi^2_{(38,\ N\ =\ 1795)} = 259.604$, $p < 0.001$, RMSEA = 0.057, SRMR = 0.053, CFI = 0.970]. Each fit index indicates that the model aligns well with the observed data, as shown in Table 2. Therefore, we use the model as the structural equation model for this study.

We conducted Structural Equation Modeling (SEM) analysis to evaluate the final model, and the corresponding path coefficients are displayed in Fig. 1. Specifically, FLA was positively correlated with NSSI (β = 0.16, $p < 0.001$), and negatively associated with SV (β = 0.42, $p < 0.001$) and FORG (β = 0.15, $p < 0.001$). Moreover, SV was positively associated with FORG (β = 0.42, $p < 0.001$), and negatively associated with NSSI (β = 0.16, $p < 0.001$). Finally, FORG was negatively related to NSSI (β = 0.08, $p < 0.05$).

The findings suggest a direct association between FLA and NSSI, which supports Hypothesis 1. Furthermore, SV and FORG both served as mediators in the relationship between FLA and NSSI. Three indirect effects were observed between FLA and NSSI: "FLA→SV→NSSI, FLA→FORG→NSSI, FLA→SV→FORG→NSSI", which supports Hypothesis 2, Hypothesis 3, Hypothesis 4.

Significance test of mediating variables

Based on the mediation model, 5000 self-recommendation samples were randomly extracted from the original data set (N = 1795). We subsequently employed the Bootstrap method to rigorously assess the significance of the model's mediation effect. If the 95% confidence interval for the path coefficient does not include 0, it indicates that the mediation effect is significant [41]. The results disclosed the significant mediating roles of subjective vitality and forgiveness in the relationship between FLA and NSSI within the 95% confidence interval. At the same time, the chain mediation path of "SV→FORG" is also established between FLA and NSSI, as shown in Table 3.

Stability analysis of the model across gender

In order to test the stability of the structural model, we examined its robustness with regard to transgender individuals. Initially, we conducted an independent sample *t*-test to explore potential gender differences across the four latent variables. The results showed that Father-Love Absence [$t_{(N\ =\ 1795)} = 0.988$, $p > 0.05$], Subject Vitality [$t_{(N\ =\ 1795)} = 0.111$, $p > 0.05$] and Non-Suicidal Self-Injury [$t_{(N\ =\ 1795)} = 0.884$, $p > 0.05$] have no significant gender differences. Nevertheless, a significant gender difference in forgiveness was observed [$t_{(N\ =\ 1795)} = 0.047$, $p < 0.05$], indicating that boys scored higher than girls.

Given the identified gender differences, we proceeded to investigate the model's stability through multi-group analysis. Following Byrne's suggestion [39], this study constructed a model that allows for independent path estimation for each gender (unconstrained structural paths) and a model that restricts path coefficients to be equal for both genders (constrained structural paths). The premise of constructing these two models is to keep the basic parameter factor loadings, error variances and structural covariances constant. The results showed that there was a significant difference between the two models [$\chi^2_{(89,1795)} = 338.667$, $p < 0.05$]. At the same time, all the fitting indexes of the two models met the fitness standards (Table 4). Furthermore, considering that χ^2 was significantly affected by the large sample size, the cross-sex stability of the structural model was further investigated using the critical ratio of differences (CRD) between the two models to verify the cross-sex stability.

According to the decision rule, it is known that if the absolute value of CRD between two parameters is not greater than 1.96, it indicates that there is no significant difference [42]. The results show that there is a difference in FLA→SV (CRD = 2.434), and there is no difference in FLA→NSSI (CRD = −1.745), SV→NSSI (CRD = −0.341), FLA→FORG (CRD = 1.12), FORG→NSSI (CRD = −0.992).

Discussion

Based on Nock's integrated theoretical model, this study explored the relationship between Father-Love Absence

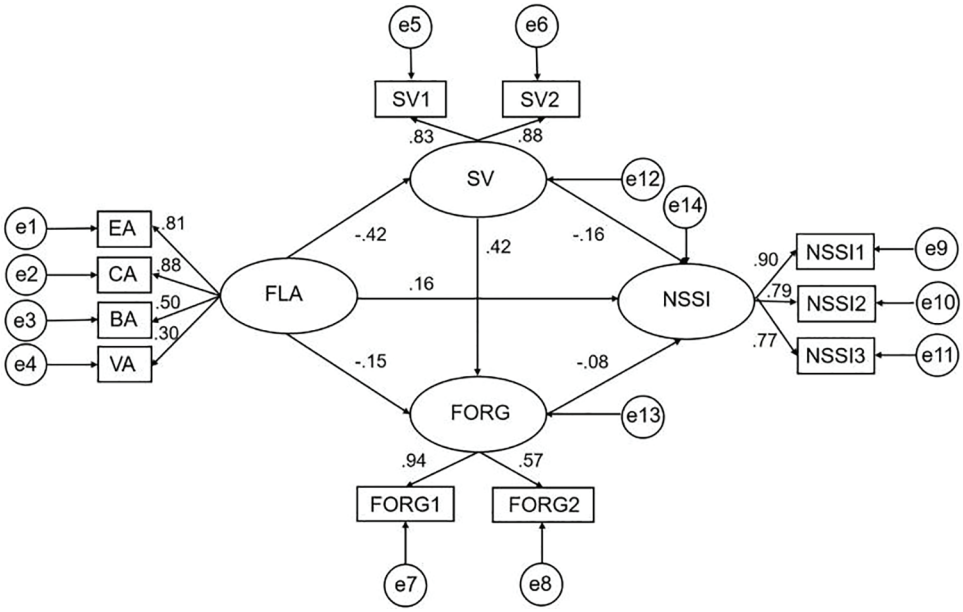

FIGURE 1. The chain mediation model 1. Note. FLA, Father-Love Absence; SV, subject vitality; FORG, forgiveness; NSSI, non-suicidal self-injury; EA, emotional absence; CA, cognitive absence; BA, behavioral absence; VA, volitional absence.

TABLE 3

Standardized indirect effects for 95% confidence intervals

	Estimate	95% confidence intervals	
		Lower	Upper
FLA→SV→NSSI	0.055	0.034	0.081
FLA→FORG→NSSI	0.009	0.002	0.021
FLA→SV→FORG→NSSI	0.011	0.002	0.024

TABLE 4

Comparison of cross-gender constrained and unconstrained structural pathway models

	χ^2	*df*	CFI	RMSEA	SRMR	AIC	ECVI
Unconstrained structural paths	325.820	83	0.967	0.040	0.050	423.820	0.236
Constraint structure paths	352.205	98	0.965	0.038	0.050	420.205	0.234

(FLA) and Non-Suicidal Self-Injury (NSSI). Furthermore, this study explores the mediating role of subjective vitality and forgiveness. Firstly, according to the results of correlation analysis and structural equation modeling, FLA and NSSI are significantly positively correlated. Secondly, the analysis of the significance test for mediating effects revealed the presence of three indirect effects. Lastly, the model's gender stability was assessed through *t*-tests and multi-group analysis, revealing an absence of significant gender differences within the model. In summary, FLA can predict NSSI directly and positively. Furthermore, indirect predictions manifest through three distinct mediating pathways: FLA→SV→NSSI, FLA→FORG→NSSI, FLA→SV→FORG→NSSI. The results not only contribute to an enhanced comprehension of the relationship between FLA and NSSI and its underlying mechanism, but also have important practical significance for the intervention of NSSI in children and adolescents from the aspect of family education.

Firstly, the study found that a positive correlation between Father-Love Absence and Non-Suicidal Self-Injury (FLA→NSSI), which verified H1. The bond between a father and their child represents one of the most pivotal and influential relationships [43]. Father-Love Absence (FLA) has numerous adverse effects on children. This study has confirmed that FLA is associated with a higher incidence of Non-Suicidal Self-Injury (NSSI). This finding aligned with Nock's integrative theoretical model that distal risk factors

including FLA can influence NSSI. Specifically, distal risk factors tend to trigger aversive cognition and emotions that individuals want to escape [9], and NSSI is a negative strategy to escape aversive stimuli or events. In other words, FLA leads individuals to experience heightened aversive thoughts and emotions, compelling them to resort to NSSI as a means of regulation [44,45]. Furthermore, this conclusion can also be interpreted from an alternative standpoint, children with FLA are likely to show less tolerance to stress and frustration [46] and have poorer problem-solving and adaptive abilities [47]. Consequently, children experiencing FLA are more likely to experience heightened stress in response to challenging situations, driving the utilization of NSSI as a coping mechanism in the face of seemingly insurmountable circumstances. In summary, FLA can positively predict NSSI.

Secondly, our findings suggested that subjective vitality mediates the relationship between FLA and NSSI (FLA→SV→NSSI), which confirms H2. Fathers were more likely to foster self-expression, critical thinking, and autonomy in their children than mothers [48]. Consequently, children raised in a FLA environment may lack the autonomy to make choices and decisions. Furthermore, in the absence of a fatherly presence, children may face a deficiency in the guidance and support required for competence development. In addition, the absence of a robust father-child relationship can result in feelings of social isolation and lack of emotional support. In other words, Father-Love Absence (FLA) can be considered a potential factor that compromises the fulfillment of fundamental psychological needs [49,50]. Furthermore, a crucial factor in enhancing subjective vitality is the fulfillment of these basic psychological needs. Regarding the relationship between subjective vitality and NSSI, it can be understood that NSSI is an unhealthy coping mechanism that is employed by individuals facing problem-solving challenges [51,52]. This implies that lower subjective vitality may make individuals more vulnerable to negative emotions. When faced with emotional distress and a lack of effective coping strategies due to decreased subjective vitality, individuals may be more likely to turn to NSSI as a means of regulating their emotions and coping with difficulties. In summary, FLA can influence NSSI through subjective vitality.

In addition, the study found that forgiveness played a mediating role between FLA and NSSI (FLA→FORG→NSSI), which verified H3. FLA can negatively affect forgiveness, which can be understood that early adolescents' ability to forgive will be influenced by parents, because parents will set an example of forgiveness for their children and thus cultivate their children's ability to forgive [53]. In comparison to children who experience FLA, those who have fathers actively engaged in their upbringing benefit from increased opportunities to learn forgiveness from their fathers during their upbringing, leading to elevated levels of forgiveness. The relationship between forgiveness and NSSI can be comprehended through three dimensions: emotion, cognition, and behavior. Emotionally, the empirical avoidance model [54] points out that NSSI aims to avoid or escape negative emotional stimuli [55]. Because individuals with low levels of forgiveness are unable to transform negative emotion into positive emotion, the probability of adopting NSSI to escape negative emotions increases. Cognitively, individuals with elevated forgiveness levels engage in positive reevaluation of deviant behaviors [56]. This cognitive process may deter individuals from ruminating and fixating on negative thoughts about themselves and others, thereby mitigating the propensity for NSSI. Behaviorally, forgiveness fosters pro-social conduct and diminishes aggressive behaviors [57], whereas NSSI inherently represents aggressive behavior [29]. In conclusion, individuals who grow up full of father's love have higher levels of forgiveness, which reduces the occurrence of NSSI.

Finally, the study confirmed Hypothesis 4 by demonstrating that the pathway of "subjective vitality→ forgiveness" acted as a chain mediator (FLA→SV→FORG→NSSI) in the link between FLA and NSSI. From an energy restoration perspective, subjective vitality represents a positive form of energy. Adequate energy enables individuals to process information effectively and enhance emotional control, reducing impulsive behavior [58]. Negative thoughts, feelings and behaviors are transformed into positive ones, and this transformation process is known as forgiveness [22]. At the same time, it is also understandable from the perspective of self-regulatory capacity that subjective vitality can bolster individuals' self-regulatory abilities [18]. Furthermore, individuals with strong self-regulatory capacities are more forgiving to their offenders [59]. In other words, subjective vitality can facilitate forgiveness. Based on the above analyses, FLA diminishes subjective vitality, and individuals lacking subjective vitality lack the requisite energy to mobilize internal resources for forgiveness, thereby increasing the likelihood of NSSI. To sum up, "subjective vitality→ forgiveness" plays a chain mediating role between FLA and NSSI.

Nonetheless, our study does have certain limitations. Firstly, this study relied on the self-report method, which introduces the possibility of subjective factors influencing data accuracy. In future studies, the incorporation of interviews or observational data is advisable. Secondly, this study analyzed cross-sectional data through structural equation modeling (SEM). While the model is theoretically grounded, the relationships between variables can only be tentatively deduced, and the precise causal relationships require further verification. Future research would benefit from the inclusion of longitudinal data. Last but not least, The Cronbach's α of the TTF in this study was 0.621, which seems low. Although studies have shown that values higher than 0.6 are acceptable [60,61], it does present some problems. The larger the number of items, the larger α, and the smaller the number of items, the smaller α. Consequently, the inclusion of only four items in the TTF may have resulted in diminished internal consistency. However, it is important to note that this study did not prioritize scale revision, and we will continue this work in future studies.

This study has confirmed a positive correlation between Father-Love Absence (FLA) and Non-Suicidal Self-Injury (NSSI). Additionally, it has illustrated the mechanism of the role of Subjective Vitality and Forgiveness it through

mediation analyses. These findings not only enhance our comprehension of Nock's integrated theoretical model of NSSI but also contribute to the theoretical discourse surrounding NSSI. They provide novel insights for crafting intervention strategies aimed at reducing NSSI, including approaches that focus on enhancing subjective vitality and promoting forgiveness. Moreover, emphasizing the significance of fathers in the upbringing of their children and encouraging fathers to participate in family education further averts the occurrence of NSSI from a family perspective. In conclusion, this study provides a robust theoretical foundation and practical insights for preventing NSSI and enhancing mental health.

Acknowledgement: The authors thank all the team members for their committed participation in this study.

Funding Statement: This study was supported by the National Social Science Fund of China (23BSH144).

Author Contributions: The authors confirm contribution to the paper as follows: study conception and design: Yuhan Zhou and Yanhui Xiang; data collection: Yuhan Zhou, Xiaojun Li and Yanhui Xiang; analysis and interpretation of results: Yuhan Zhou; draft manuscript preparation: Yuhan Zhou, Xiaojun Li and Yanhui Xiang. All authors reviewed the results and approved the final version of the manuscript.

Availability of Data and Materials: Please contact author for data requests.

Ethics Approval: The present study adhered to the Declaration of Helsinki regarding research on human participants. The study was approved by the Ethics Committee of Hunan Normal University with 051 number on March 05, 2021.

Conflicts of Interest: The authors declare that they have no conflicts of conflicts of interest to report regarding the present study.

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