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Mindfulness Group Intervention Improved Self-compassion and Resilience of Children From Single-parent Families in Tibetan Areas

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Objective: The current study aimed to examine the effects of a mindfulness group intervention on self-compassion, psychological resilience, and mental health of children from single-parent families in Tibetan areas. **Methods:** A total of 64 children from single-parent families in Tibetan areas were randomly allocated to a control group (n=32) and an intervention group (n=32). Participants in the control group received conventional education, while participants in the intervention group received 6-week mindfulness intervention in addition to the conventional education. Both groups completed the Five Facet Mindfulness Questionnaire (FFMQ), Self-compassion Scale (SCS), Resilience Scale for Chinese Adolescent (RSCA), and the Mental Health Test (MHT) before and after the intervention. **Results:** After the intervention, the levels of mindfulness and self-compassion in the intervention group were significantly improved in relative to the control group. The positive cognition in the RSCA was significantly increased in the intervention group, whereas no significant change was observed in the control group. There was a trend towards lower self-blame in the MHT, but no significant impact of the intervention on the overall level of mental health was found. **Conclusion:** Results suggest that a 6-week mindfulness training effectively improve self-compassion and resilience of single-parent children. Thus, mindfulness training as a cost-effective approach can be arranged in the curriculum, which helps students develop high level of self-compassion and resilience. In addition, there may be a need to improve emotional control in order to improve mental health.

Key words: mindfulness group intervention; children from single-parent families; self-compassion; resilience; mental health

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Introduction

Children in single-parent families are those under 18 years old who cannot live independently and are raised by their father or mother alone due to the divorce of their parents or the death of one of them[1, 2]. With the socio-economic development and the increasing diversification of social structure, the divorce rate in China has increased from 0.96‰ in 2000 to 3.1‰ in 2020[3]. As the divorce rate increases, the number of children in single-parent families continues to increase, and now exceeds 20 million[4]. The lack of family structure and the absence of parenting by one parent can influence children's growth and their mental health [5, 6] . For instance, studies have shown that compared to two-parent families, children in single-parent families may experience more traumas such as physical neglect, emotional neglect, and physical abuse due to long-term lack of care from one or even both of their estranged parents[7] and children in single-parent families have lower resilience [8] and exhibit more mental health problems such as high self-blame, low self-esteem [9]and high relative deprivation[8]. Children among single-parent families in Tibetan areas may be more prone to mental health problems due to limited education condition and lower economic and social status. [10, 11]Studies have shown that childhood is a critical period for the development of children and thus is an important window of opportunity to foster mental health [12-14]. Therefore, enhancing the resilience and improving the mental health of children especially among single-parent families in Tibetan areas is of great importance to promote a healthy development[13]. Among several possible interventions to promote mental health in children (e.g., physical training, art therapy) [3, 15, 16] , mindfulness-based interventions may play a vital role [3, 17, 18], especially in Tibetan children, as Tibet is one of the birthplace of Buddhism. An overwhelming majority of the population follows Tibetan Buddhism (also known as Lamaism) [19].

Mindfulness is the awareness that arises by practicing a particular way of paying attention (on purpose, non-judgmentally) to thoughts flowering in the mind, the body, and the environment at any given moment [20-22] . Mindfulness group intervention is a group psychological intervention method based on mindfulness, which can improve mental resilience [23]and reduce symptoms of some mental health conditions.[20, 24] For trauma populations, high levels of mindfulness attenuated the association between trauma exposure and anxiety symptom severity[25]. Mindfulness themed group counseling was also found to significantly improve the mental health of orphaned school students[26]. When a combined intervention of mindfulness with compassion was examined, it was effective in reducing traumatic stress symptoms and improving self-compassion in people with interpersonal violence trauma[27]. Similarly, psychological interventions based on mindfulness combined with compassion were found to reduce depression levels and improve psychological resilience in depressed patients with traumatic childhood experiences[28].

Although the mindfulness intervention combined with compassion has a significant potential for the treatment of traumatized populations, additional research is needed to refine the approach, and determine whether it can be used as a complementary or stand-alone intervention option[29]. Moreover,

there is little research on the use of mindfulness group interventions in children from single-parent families who may have experienced a trauma (e.g., due to the divorce of their parents). Taken together the previous research indicates that although mindfulness interventions can improve the psychological resilience and mental health of people who have experienced trauma, further research is required to investigate whether mindfulness group interventions can improve self-compassion, resilience, and mental health in children among single-parent families, and whether such an intervention approach can improve mental health as a stand-alone intervention option. Based on the positive findings of studies applying mindfulness intervention to improve mental health in trauma populations[29], this study hypothesized that mindfulness group interventions can enhance self-compassion and resilience and can improve the mental health of single-parent children in Tibetan areas. In addition, correlation between each two outcomes of interest at baseline was investigated, which could help researchers and health professionals gain a deep understanding about the above-presented variables in this unique group.

Methods

Study design and participants

Primary school students located in a minority (Tibetan) area were recruited through flyers posted on campus and word-of-mouth advertisements. The stratified randomization was performed and two different schools were included in the study. Participants were included in this study, if they met the following inclusion criteria: (1) being willing to participate in this study and to comply with the intervention protocol; (2) healthy participants aged 9-12 years old; (3) students living in a single-parent (father or mother) family; (4) being able to understand and follow the instruction of mindfulness practice. Exclusion criteria were predetermined as follow: (1) participants diagnosed with language disorder, which affects their communication during mindfulness practice; (2) clinically diagnosed patients in terms of psychiatric or neurological disorder (e.g., mood disorder(s) referred by psychiatrist or clinicians); (3) being sensitive to body-mind relaxation activities; (4) with no participation in any other behavioral intervention program. Demographic data were collected at the beginning of this study, including gender and age. **The study protocol was approved by the university ethical committee (PN-2020-034)**

To reach an appropriate power based on a previous study[1], the number of participants were a-priori estimated using G*Power3.1.9.7, while an effect size of $f=0.25$, power = 0.85, $p < 0.05$ were set in a 2 (experimental group vs control group) x 2 (baseline vs post-intervention test) ANOVA design with repeated measures. Specifically, a minimum of 27 participants per group are required. Assuming a typical dropout rate of approximately 20%, a larger sample size was recruited: (1) experimental groups consisted of 33 students who lived with his or her father or mother; (2) 34 single-parent students who lived in an economically similar school were recruited as a control group. Of note, one student in the experimental group dropped-out due to illness, while two students of the control group did not complete the post-intervention test due to a loss of interest. Thus, a total of 64 participants were included for data analysis in this study.

Study procedures

Recruitment advertisement took place around October, 2021. After screening against the eligibility criteria, single parents of 67 participants were invited to complete the consent form prior to the beginning of this study. This is followed by a baseline measure of participated children with the above-mentioned questionnaires. The participants of two schools being located in regions with a comparable economic development status were randomly assigned into either an experimental group or a wait-list group. To avoid mixing the immediate effects of mindfulness-based intervention, at post-intervention self-administered assessment was conducted after seven days after the cessation of the intervention. The main outcomes of interest were measured before and after the intervention period, which will be detailed below. The data collection was performed via paper-pencil questionnaire in classroom.

Intervention protocol

Given the fact that single-parent children had childhood trauma[30] with low self-esteem [9] and great negative emotion[31], a group-based mindfulness practice, employed in previous studies was used[32]. The intervention protocol involved three phases [27, 32–35], with 5 to 7 sessions per phase. The intervention lasted 6 weeks, with three non-consecutive 35-min training sessions per week. Of note, 16 to 17 children were arranged as a group during mindfulness practice administered by a psychology teacher who had received an official mindfulness training. **The mindfulness interventions included mindful eating, listening, movement, with compassion, as well as small group interactions to talk about feelings and emotions concerning both pleasant and unpleasant events.** Children who participated in the control group were asked to maintain an unaltered lifestyle and instructed not to participate in any behavioral training during the intervention period.

Outcomes of interest

The childhood trauma questionnaire (CTQ) was used to measure the childhood trauma of the participants in the study[36, 37]. This self-administered scale consists of 28 items and it requires participants to recall and then report childhood trauma. Specifically, of the 28 items, 25 were categorized into five sub-dimensions (emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect), with five items per sub-dimension. Children who participated were asked to make their response based on a 5-point Likert scale (1 = never true, 2 = rarely true, 3 = sometimes true, 4 = often true, 5 = very often true). Scores of each sub-dimension ranged from 5 to 25 points, with a higher point indicating more severe trauma exposure. The three remaining questions make up a Minimization/Denial (M/D) scale, which is used to help determine if respondents are underreporting their childhood trauma.

The Five Facet Mindfulness Questionnaire (FFMQ) was used to assess the trait-like tendency to be mindful in daily life[38, 39]. This self-rating scale consists of 39 items and is categorized into five facets (observation, description, aware actions, non-judgmental inner experience, and non-reactivity). The children were asked to make their responses based on a 5-point Likert scale (1 = Never or very rarely true, 2 = rarely true, 3 = sometimes true; 4 = often true; 5 = very often or always true). For observation, description, aware actions, non-judgmental inner experience, 8 to 40 points can be obtained for each facet, while the nonreactivity facet has a score range of 7 to 35. Specifically, higher scores reflect greater level of mindfulness in the daily life among participants.

The 26-item self-compassion scale was used to measure overall self-compassion and its relevant components including mindfulness (n = 4 items), community humanity (n = 4 items), self-kindness (n = 5 items), self-judgement (n = 5 items), isolation (n = 4 items), over-identification (n = 4 items). Each item was rated from “1 = almost never” to “5 almost always”. The mean of each subscale was computed. Of note, reverse scores on self-judgment, isolation, and over-identification were first computed.

The 27-item Resilience Scale for Chinese Adolescents (RSCA) was used to assess resilience. This Chinese version of the RSCA consists of five factors (goal planning, help-seeking, family support, affect control, and positive thinking). Each item was rated on a 5-point Likert scale (1 = completely disagree, and 5 = completely agree).

The 100-item Mental Health Test (MHT) was used to assess mental health. It is a standardized mental health diagnostic scale revised by Zhou Bucheng (Zhou et al.,1993) This Chinese version of the *MHT* consists of eight dimensions (learning anxiety, social anxiety, loneliness anxiety, self-blame tendency, allergic tendency, physical symptoms, terror tendency and impulse tendency). Each item was rated on a 2-point Likert scale (1 = yes, and 0 = no).

Statistical analysis

Chi-squared tests for a categorical variable (percentage) and *t*-tests for continuous variables (mean and standard deviation) were used to determine group difference at baseline, respectively. The Pearson product-moment correlation coefficient was used to measure the strength of a linear association between each two outcomes/variables of interest. For correlations, the absolute criterion was applied (Safrit & Wood, 1995): 0–0.19: no correlation; 0.2–0.39: low correlation; 0.40–0.59: moderate correlation; 0.60–0.79: moderately high; ≥ 0.80 : high correlation. To determine intervention effects, a 2 (group: mindfulness vs control) x 2 (time: baseline vs week-6) analysis of variance (ANOVA) with repeated measure was used. The above-mentioned analyses were performed using SPSS program (version 26). According to the Cohen’s effect size standard (≥ 0.8 = large; <0.8 to > 0.2 = medium; ≤ 0.2 = small) [40].

Results

As shown in Table 1, no significant baseline differences on gender and age were observed ($p_s > 0.05$). Similarly, no significant group difference on total scores and each subscale (physical neglect, emotional neglect, emotional abuse, emotional abuse, physical abuse, sexual abuse) of CTQ ($p_s > 0.05$).

Table 1. Demographic data and childhood trauma questionnaire (CTQ) scores

	Mindfulness (n=32)	Control (n=32)
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	mean (SD), or %	mean (SD), or %
Gender (%)	56.25	62.50
Age, year	10.63 (1.12)	10.22 (0.94)
Physical neglect	10.84 (2.76)	11.94 (2.15)
Emotional neglect	10.75 (4.06)	10.34 (3.09)
Emotional abuse	8.56 (3.23)	9.09 (3.86)
Physical abuse	7.75 (3.12)	7.09 (2.22)
Sexual abuse	6.22 (2.18)	7.03 (2.61)
Total score	44.13 (10.58)	45.50 (9.84)

As shown in Table 2, significant correlations between each two variables were calculated for total scores of each scale. Correlations between mindfulness and CTQ total scores; and mental health were negative. In contrast, the correlations between mindfulness and self-compassion; and resilience, as well as the correlation between resilience and self-compassion were positive. Notably, in the subscales, the physical abuse subscale score in CTQ was negatively correlated with the positive thinking subscale in resilience; the affect control subscale score in resilience was negatively correlated with mental health, but was not significantly correlated with mindfulness, self-compassion, or CTQ total score.

Table 2. Correlation between each two outcomes of interest at baseline($n=64$)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Emotional abuse	—														
2 Physical Abuse	0.60**	—													
3. Sexual Abuse	0.31*	0.19	—												
4 Emotional Neglect	0.52**	0.40**	0.29*	—											
5 Physical Neglect	0.30*	0.24	0.03	0.45**	—										
6 CTQ total score	0.80**	0.67**	0.47**	0.83**	0.56**	—									
7 Mindfulness	-0.21	-0.33**	-0.14	-0.33**	-0.09	-0.33**	—								
8 Self-compassion	-0.02	-0.01	0.12	0.10	0.07	0.13	0.34**	—							
9 Goal planning	-0.09	-0.10	-0.20	-0.13	-0.01	-0.13	0.17	0.42**	—						
10 Affect control	0.00	0.00	-0.12	0.01	-0.15	-0.06	0.24	0.21	-0.09	—					
11 Positive thinking	-0.20	-0.44**	-0.11	-0.16	0.00	-0.21	0.20	0.29*	0.56**	-0.19	—				
12 Family support	-0.08	-0.24	0.01	-0.16	-0.13	-0.17	0.33**	0.29*	0.24	0.27*	0.19	—			
13 help-seeking	-0.06	-0.07	0.04	-0.16	-0.06	-0.09	0.29*	0.43**	0.18	0.46**	0.23	0.43**	—		
14 Resilience total score	-0.09	-0.22	-0.08	-0.13	-0.05	-0.14	0.37**	0.54**	0.60**	0.46**	0.51**	0.67**	0.74**	—	
15 Mental Health	0.07	-0.03	-0.02	-0.12	-0.01	-0.01	-0.26*	-0.31*	0.02	-0.38**	0.03	-0.21	-0.20	-0.22	—

Note.: * = $p < 0.05$; ** = $p < 0.01$

Mindfulness group intervention effect

The results of ANOVA with repeated measures revealed a significant interaction on mindfulness between group and time, $F(2,62)=9.16$, $p=0.004<0.01$, $\eta_p^2=0.13$; Further simple effects analysis showed that the difference in mindfulness in the pre-test between the two groups was not significant, $F(1,62)=0.50$, $p>0.05$, $\eta_p^2=0.01$; while the difference in mindfulness in the post-test between the two groups was significant, $F(1,62)=21.90$, $p<0.001$, $\eta_p^2=0.26$. The total score of mindfulness in the

intervention group (125.84±13.38) was significantly higher than that in the control group (111.84±10.36). For mindfulness sub-scales, significant interaction effects on observation and aware actions between group and time were found, $F_1(2,62)=6.65$, $p_1=0.012<0.05$, $\eta_{p1}^2=0.10$; $F_2(2,62)=5.20$, $p_2=0.026<0.05$, $\eta_{p2}^2=0.10$; The differences in the pretest between the two groups were not significant, $p_s>0.05$; the differences in the post-test between the two groups were significant, $F_1(1,62)=6.72$, $p_1=0.012<0.05$, $\eta_{p1}^2=0.10$, $F_2(1,62)=9.38$, $p_2=0.003<0.01$, $\eta_{p2}^2=0.13$. The scores of observation and aware actions sub-scales in the intervention group (29.41±7.08; 25.66±6.69) were significantly higher than those (25.44±4.99; 21.09±5.13) in the control group. These findings suggest that the mindfulness group intervention had a significant effect on mindfulness especially in the domains of observation and awareness action.

The effect of intervention on self-compassion and resilience

Table 3 displays pre- and post-intervention means on the self-compassion and resilience outcome variables. The results of ANOVA revealed significant group-time interaction effects on self-compassion, $F(2,62)=5.17$, $p=0.03<0.05$, $\eta^2=0.08$. No significant differences at pretest were found between mindfulness and control groups, while the intervention group reported significant improvements at post-test on the overall scale of self-compassion compared to the controls ($F(1,62)=8.75$, $p=0.04<0.05$, $\eta_p^2=0.12$). In addition, significant differences were found on two of the five subscales of this factor, including community humanity ($F(1,62)=4.46$, $p=0.04<0.05$, $\eta_p^2=0.07$) and self-kindness ($F(1,62)=15.47$, $p<0.001$, $\eta_p^2=0.20$). The results suggested that the mindfulness intervention had significant improvements on total self-compassion scores, especially in the domains of community humanity and self-kindness.

The result of the ANOVA analysis revealed no significant differences in changes in resilience over time between the two groups. However, a significant group-time interaction effect on positive thinking, which is one of the five subscales of this factor, was found, $F(2,62)=6.35$, $p=0.01<0.05$, $\eta_p^2=0.09$. The intervention group reported significant improvements at post-test ($F(1,62)=9.56$, $p=0.003<0.01$, $\eta_p^2=0.13$), but no significant difference at pre-test ($F(1,62)=0.22$, $p>0.05$, $\eta_p^2<0.01$) on the subscale of positive thinking compared to the controls.

Table 3. Changes of Self-compassion and Resilience After Intervention in the mindfulness group and control group

	Mindfulness (n=32)		Control (n=32)	
	baseline	post-intervention	baseline	post-intervention
Self-compassion total score	82.88 (10.28)	89.84 (9.24)*	83.25 (10.45)	82.16 (11.43)
Community humanity	12.44 (3.95)	14.44 (3.28)*	13.19 (2.90)	12.88 (2.60)

Self-judgement	15.84 (3.72)	17.06 (3.04)**	15.69 (3.80)	15.72 (2.73)
Self-kindness	17.34 (4.53)	19.34 (3.62)	16.28 (2.13)	15.50 (4.18)
Isolation	11.03 (2.82)	12.16 (3.06)	12.06 (3.47)	12.09 (2.83)
Mindfulness	14.16 (3.28)	14.44 (3.11)	13.47 (3.18)	12.75 (2.89)
Over-identification	12.06 (3.10)	12.41 (2.80)	12.56 (3.41)	13.22 (2.72)
Resilience total score	88.81 (12.76)	95.12 (11.42)	87.22 (14.74)	88.75 (13.40)
Goal planning	18.09 (4.80)	18.44 (3.44)	16.75 (4.54)	16.69 (4.18)
Affect control	19.06 (3.72)	20.78 (4.13)	18.03 (5.18)	18.59 (4.14)
Positive thinking	13.03 (3.52)	15.28 (2.69)**	14.41 (3.61)	14.06 (3.57)
Family support	19.00 (3.78)	20.41 (4.05)	18.19 (4.31)	19.59 (4.62)
Help-seeking	19.62 (4.44)	20.22 (3.68)	19.84 (4.52)	19.81 (5.38)

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ paired t-test between baseline and post-intervention.

The effect of intervention on mental health

Table 4 displays pre- and post-intervention means on the mental health outcome variables. In the pretest condition, the differences between the two groups in the scale scores for each dimension and total scores were not significant, $p_s > 0.05$. In view of the significant correlation between the score of affect control subscale of resilience and mental health in the pretest, a 2×2 repeated-measures ANOVA was conducted to assess mindfulness intervention effects on mental health, controlling for affect control scores as covariates. The results showed that there were no significant effects on the total score of mental health scale, nor the other subscales $p_s < 0.05$, except for a borderline significant interaction between time and group on the self-blame tendency subscale, $F(1,62) = 2.64$, $p = 0.10$, $\eta_p^2 = 0.04$. Simple effects analysis showed that the difference between the score of self-blame in the pre-test and that in the post-test was not significant in the control group, $F(1,62) = 0.31$, $p = 0.58$, $\eta_p^2 < 0.01$. The score of self-blame in the post-test was lower in the intervention group than that in the pre-test, but this did not reach statistical significance.

Table 4. Changes of Mental Health Outcomes After Intervention in the Mindfulness and Control Groups

	Mindfulness ($n=32$)		Control ($n=32$)	
	baseline	post-intervention	baseline	post-intervention
Learning anxiety	9.81 (2.86)	9.47 (2.26)	9.50 (2.10)	8.84 (2.10)
Social anxiety	4.94 (2.24)	5.41 (1.62)	5.19 (2.36)	4.75 (1.57)
Loneliness anxiety	3.25 (2.06)	3.22 (2.34)	3.53 (2.06)	3.59 (1.62)

Self-blame tendency	6.22 (1.93)	5.69 (1.71) [#]	5.59 (1.76)	5.72 (1.80)
Allergic tendency	6.72 (1.71)	6.38 (1.39)	5.94 (1.65)	5.84 (1.25)
Physical symptoms	6.97 (2.82)	7.00 (2.68)	7.00 (2.33)	6.69 (1.82)
Terror tendency	5.91 (2.94)	5.38 (2.49)	4.94 (2.06)	4.84 (1.74)
Impulse tendency	3.62 (2.14)	3.28 (2.51)	4.28 (2.35)	3.84 (2.10)
Mental health total score			45.94 (10.29)	44.12 (7.23)

Note: [#] $p < 0.10$

2.2.4 Effects of Gender and grade on outcome measures

To examine whether the intervention effects were influenced by grade and gender, independent sample t-tests were conducted on the grade (3rd and 4th grade/ 5th and 6th grade) and gender (male/female) separately in the intervention group, using positive thinking, with the change (post-test minus pre-test) of mindfulness, self-compassion, positive cognition in self-blame as dependent variables. The results showed that the differences in grade and gender were not significant, $p_s > 0.05$.

3 Discussion

This study assessed the mental health benefits of a 6-week mindfulness group program for children from single-parent families in Tibetan areas in China. As expected, mindfulness training improved the self-compassion and resilience, but no statistically significant effect on overall mental health was found. More specifically, the cross-sectional analysis of baseline data revealed the following major findings: (1) CTQ the total score was negatively associated with mindfulness, but not significantly associated with mental health; (2) affect control in resilience was negatively associated with mental health, but not significantly associated with mindfulness, self-compassion, and childhood trauma.

There is a trend of elevated trauma among children from single-parent families in Tibetan areas compared to previous results of children from non-single-parent families[9]. Similar to the result of previous studies [41], the CTQ total score was negatively associated with mindfulness, which suggests that childhood trauma may reduce the level of mindfulness. However, in slight contrast to previous studies in which childhood trauma was significantly associated with depression [42], trauma among children from single-parent families in Tibetan areas was not significantly associated with markers of mental health. There are two possible explanations for this result. One is that the special Buddhist culture in Tibetan areas in which mindfulness plays a crucial role has a protective effect on children's mental health levels [43, 44], which may potentially alleviate trauma-related negative emotion. The other explanation is that the sample size of the study may be not large enough to detect significance. In addition, it was found that, on the one hand, mindfulness was positively associated with self-compassion and resilience, and negatively associated with mental health; on the other hand, affect control of resilience was negatively associated with mental health, but was not significantly associated with mindfulness, self-compassion, and childhood trauma. Our results may suggest that an increase in mindfulness has the potential to improve self-compassion, resilience, and mental health, but that improvement in mental health may require an increase in affect control of resilience in addition to mindfulness interventions. Taken together, the evidence in the literature suggest that trauma is higher

among children from single-parent families in Tibetan areas, and that trauma-specific mindfulness group interventions may enhance self-compassion and resilience, but the impact on mental health needs to be further studied with longer mindfulness intervention period at school setting as well as the follow-up assessment.

The most important finding of the current study is that a 6-week mindfulness-based group intervention increased the level of mindfulness, self-compassion and positive thinking dimension of resilience in children from single-parent families in Tibetan areas. In particular, the current study provide evidence that mindfulness intervention improved the level of mindfulness generally among children from Tibetan single-parent families, especially in the domains of observation and awareness action. Two mindfulness-related components (observation and awareness) are easy-to-comprehend in relative to other three components, which in turn may be easy to change on the two outcome measures in this unique group. The mindfulness group intervention also significantly increased self-compassion in Tibetan children from single-parent families. This is consistent with the results of previous studies including a recent review indicating that mindfulness can enhance self-compassion regardless of training mode (individual vs group) [45, 46]. In terms of self-compassion enhancement, it was particularly manifested in the community humanity and the self-kindness dimension, which suggests that children had a better acceptance of community humanity and learned to see themselves in a more kindly light after the intervention.

In terms of resilience, the positive thinking of the RSCA was after the intervention significantly higher in the intervention group, whereas no significant change was observed in the control group. This suggests that mindfulness group intervention is effective in improving positive thinking in resilience for children from single-parent families with high levels of trauma. On the other hand, our results slightly differ from observations of previous studies regarding mindfulness group interventions showing that individuals' family support and help-seeking of resilience was improved. [42] The reasons for these differences may be twofold. First, the participants of the previous study were children from the general population, and the children in this study from single-parent families, whose trauma levels were higher than those children living with parents, may have had more difficulty in receiving family support and seeking helps from others. Secondly, this mindfulness group intervention was relatively short (i.e., 6 weeks) and the improvement in family support and help-seeking may not have been evident in the post-test after the intervention.

Another interesting finding of this study was that the children in the mindfulness group showed a tendency to reduce self-blame, but did not exhibit a significant change in assessed parameters of overall mental health. Children from single-parent families have more emotional problems such as higher self-blame, anxiety, loneliness and lower self-esteem, compared to children from two-parent families [47]. The reduction in self-blame in the current study is in line with the results of a previous study showing that a mindfulness group intervention was effective in reducing orphans' tendency to self-blame [48], which may be due to the fact that mindfulness interventions reduce self-blame by enhancing self-compassion. However, unlike the mindfulness group intervention that improved orphans' mental health in terms of learning anxiety and loneliness anxiety tendencies [49] and the mindfulness training that

improved the overall mental health of elementary school students, this mindfulness group intervention did not show a significant effect on the overall level of mental health of children from single-parent families. In our opinion, there are at least three possible explanations for this result. The first possible explanation is that mindfulness was found to be negatively related to mental health in the pre-test but not significantly correlated with affect control dimension of resilience, while affect control was negatively correlated with mental health, which may suggest that the enhancement of mindfulness has a limited impact on the mental health of children from single-parent families in Tibetan areas. In addition, the enhancement of their mental health may require improving their affect control on the basis of mindfulness group interventions. The second possible explanation for the absence of a statistically significant effect on overall mental health is that children from single-parent families have better mental health than orphans in terms of loneliness, and impulsive tendencies, and that the special Buddhist culture in Tibetan areas that emphasizes mindfulness already have a protective effect on children's mental health[43, 44]. The third possible explanation is that the relative short duration of the mindfulness group intervention of 6 weeks was not sufficient enough to induce measurable changes in parameters of overall mental health[50].

There are several limitations that should be considered when interpreting the findings of the current study and when planning future research in this direction. Firstly, the participants in this study were in two rural mountain elementary schools, so the findings may not be generalizable to individuals living in other geographic areas. In addition, all participants were Tibetan; therefore, the findings may be influenced by sociocultural factors of the Buddhist society in which mindfulness is already a crucial element of their culture. Secondly, research with follow-ups at later time points (e.g., 6-month or 1-year follow-up via qualitative survey) would be beneficial to better understand whether participation in the mindfulness program induce long-term changes in psychological functioning and if the participating children continued mindfulness practices beyond the offered training period.

In conclusion, our results support the idea that mindfulness-based interventions lasting 6 weeks can be a promising short-term program for enhancing self-compassion and positive thinking of resilience in children from Tibetan single-parent families. Although we observed improved psychological functioning across a period of 6 weeks, the children may still need group or individual follow-up support in order to preserve or even strengthen the mental health benefits obtained from the intervention. Future studies investigating the effects of mindfulness-based interventions on parameters of mental health in the cohort of children from single-parent families are required to broaden our knowledge in this direction and improve the application of such a intervention program.

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附：研究中所使用的问卷

1. 儿童创伤问卷 (Childhood Trauma Questionnaire, CQT)

指导语:本问卷调查的是你儿童期的成长经历。请根据你的体会在每道问题后面最适合你情况的数字上打“√”。这些问卷是保密的，所以对那些涉及你个人隐私的问题也请你如实作答。谢谢您的合作。

在我成长的过程中下属情况出现的频率:	从不	偶尔	有时	经常	总是
1. 我吃不饱。	1	2	3	4	5
2. 有人照顾我、保护我。					
3. 家里有人喊我“笨蛋”“懒虫”或“丑八怪”等。					
4. 父母过于酗酒或挥霍浪费，以致不能照顾家庭。					
5. 家里有人使我觉得自己很重要或不一般。					
6. 我不得不穿脏衣服。					
7. 我感到家里人爱我。					
8. 我觉得父母希望从来没有生过我。					
9. 家里有人把我打伤的很重，不得不去医院。					
10. 当时我并不希望去改变家里的什么。					
11. 家里有人打的我鼻青脸肿或伤痕累累。					
12. 家里有人用皮带、绳子、木板或其他硬东西惩罚我。					
13. 家里人彼此互相关心。					

14. 家里有人向我说过刻薄或侮辱性的话。					
15. 我觉得我受到了躯体虐待。					
16. 我的童年是美好的。					
17. 我被打的很重，引起了老师、邻居或医生等人的注意。					
18. 我觉得家里有人憎恨我。					
19. 家里人关系很亲密。					
20. 有人试图以性的方式触摸我或让我触摸他。					
21. 有人威逼或引诱我同他做性方面的事。					
22. 我的家是世上最好的。					
23. 有人试图让我做或看性方面的事。					
24. 有人猥亵我。					
25. 我认为我受到了情感虐待。					
26. 如果需要，会有人送我去医院。					
27. 我认为我受到了性虐待。					
28. 家是我力量和支持的源泉。					

2. 五因素正念度量表 (Five Facet Mindfulness Questionnaire, FFMQ)

指导语: 请根据下列等级评定每句话, 把最符合您真实情况的等级数字填在句子前的空白处。

	一点也不符合	较少符合	有些符合	非常符合	完全符合
1. 在行走时, 我会有意关注身体部位在行进中的感觉。	1	2	3	4	5
2. 我擅长于用言语描述我的情感。					
3. 我为自己有不理智的情绪或不合适的情绪而责备自己。					
4. 我感受到了我的情绪和情感, 但我不必对它们做出反应。					
5. 在做事的时候, 我经常走神, 而且很容易被干扰。					
6. 在洗澡时, 我会留心于水滴过身体的感觉					
7. 我能清晰表达自己的信念、观点以及期望。					
8. 我没有注意到我在做什么事情, 这是因为我在做白日梦, 在担忧或分心于外界。					
9. 我观察自己的情绪, 而不迷失其中。					
10. 我告诉自己, 我不应该以我现在的这种方式来感受此时的情感。					
11. 我留意到食物和饮料是如何影响着我的想法、身体的感觉和情绪的。					
12. 我难以找到词语来表达我的所思所想。					
13. 我很容易分心。					
14. 我认为我的一些想法是异常的、不好的; 我不应该那样想。					
15. 我会注意我的一些感觉, 比如: 微风吹拂我的头发、阳光照在我的脸上的感觉。					
16. 我很难用合适的言语来表达我对事物的感受					

17. 我会评判自己的想法是好的或是坏的。					
18. 我难以把注意力集中在当前发生的事情上。					
19. 当我有悲伤的想法或景象时，我会“退一步”，并去觉知那些想法或景象的存在而不被其所控制。					
20. 我会注意一些声音，比如：时钟的滴答声、小鸟的唧喳声、或者汽车穿梭的声音。					
21. 在困难的情境下，我会暂停一下，不马上做出反应。					
22. 当我身体有种感觉时，我很难找到合适的词语来描述它。					
23. 我好像是自动地在做一些事情，并没有完全意识到它。					
24. 通常，当我有令人伤感的想法或者景象时，我能很快恢复平静。					
25. 我告诉我自己，我不应该思考我此刻正思考的东西。					
26. 我闻到了周围一些末西的气味或者芳香。					
27. 即便是我感到非常地不安时，我也能找到同吾来表达它。					
28. 我草草地做完一些事情，而没有真正地集中注意力在其上。					
29. 当陷入令人烦恼的情绪或情境中，我能做到只是去注意它们，而不做出相应反应。					
30. 我想有些情绪是不对的或者是不合适宜的，我不应该体验到它们。					
31. 我注意到了艺术品和自然界中事物的一些视觉元素，如：颜色、形状、纹理还有光和影子。					
32. 我总是倾向于用词语来描述我的体验。					
33. 当我有令人痛苦的想法或景象时，我通常只是去注意它们，顺其自然。					
34. 我总是自动地工作或完成某项任务，而没有意识到我在做什么。					
35. 通常当我有些令人困扰的想法或者景象时，我会根据我当时所想的内容或者脑海中出现的景象来判断自己是对还是错。					
36. 我会去注意，我的情绪是如何影响我的想法和行为的。					
37. 我通常能够非常详细地描述出我此刻的感觉。					
38. 我发现自己做事情的时候，不专心在所做的事情上。					
39. 当不理智的想法出现时，我会自我否决。					

3. 自我同情问卷 (Self-compassion Scale, SCS)

指导语:请仔细阅读每个题目，并根据自己的实际情况，在相应的数字栏内划“√”。

答案没有对错之分，请你根据第一反应如实作答。

	非常不符合	不符合	一般	符合	非常符合
1. 对自己的缺点和不足，我持不满和批判的态度。	1	2	3	4	5
2. 当我情绪低落时，我容易纠结于不顺心的事情。					

3. 遇到困难时, 我会把困难看成是生活的一部分, 是每个人都会经历的。					
4. 当我想到自己的缺点时, 我会感到更加孤立与孤单。					
5. 当我心情不好时, 我会更关爱自己。					
6. 当我在一些对自己来说重要的事情上失败后, 我会不断地想自己的不足。					
7. 当我倒霉的时候, 我会提醒自己: 其实这世上有很多人和我一样不走运。					
8. 处境艰难时, 我通常会对自己很苛刻。					
9. 遇到烦心事时, 我会尽量让自己的情绪保持稳定。					
10. 当我感到自己在某些方面不足时, 我尽量提醒自己: 大部分人和我一样, 都不完美。					
11. 对于我性格中那些自己不喜欢的方面, 我不能容忍。					
12. 当我经历艰难困苦时, 我会关心自己、善待自己。					
13. 当情绪低落时, 我会觉得大多数人可能比我快乐。					
14. 当一些令人痛苦的事情发生时, 我尽量用平和的心态来面对。					
15. 我尽量把自己的失败看成是人生经历的一部分。					
16. 当我意识到自己的缺点时, 我会对自己失去信心。					
17. 当我在一些对自己重要的事情上失败时, 我会尽量全面、客观地看待这些事情。					
18. 当我很努力去争取某样东西时, 我觉得其他人得到同样的东西一定会比我轻松些。					
19. 经历困苦时, 我会善待自己。					
20. 当某些事使我心烦时, 我容易受情绪控制而失去理智。					
21. 经历困苦时, 我对自己有点冷酷无情。					
22. 当情绪低落时, 我尽量用好奇与开放的心态去面对。					
23. 对自己的缺点和不足, 我持宽容态度。					
24. 当一些痛苦的事情发生时, 我会夸大它对我的影响。					
25. 在一些对自己重要的事情上失败时, 我容易觉得自己一个人在承受失败, 感到孤独。					
26. 我尽量去理解和包容自己性格中自己不喜欢的方面。					

4. 青少年心理弹性量表

指导语: 请你根据自己平时的实际情况与这些句子的符合程度, 在 1—5 所相应的数字下打“√”。请根据实际情况填答, 回答没有对错之分。

题号	题目	1 完全	2 比较 不符 合	3 说 不清	4 比 较 符 合	5 完 全 符 合
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		不 符 合				
1	失败总是让我感到气馁。					
2	我很难控制自己的不愉快情绪。					
3	我的生活有明确的目标。					
4	经历挫折后我一般会更加成熟有经验。					
5	失败和挫折会让我怀疑自己的能力。					
6	当我遇到不愉快的事情时,总找不到合适的倾诉对象。					
7	我有一个同龄朋友,可以把我的困难将给他/她听。					
8	父母很尊重我的意见。					
9	当我遇到困难需要帮助时,我不知道该去找谁。					
10	我觉得与结果相比,事情的过程更能够帮助人成长。					
11	面临困难,我一般会定一个计划和解决方案。					
12	我习惯把事情憋在心里而不是向人倾诉。					
13	我认为逆境对人有激励作用。					
14	逆境有时候是对成长的一种帮助。					
15	父母总是喜欢干涉我的想法。					
16	在家里,我说什么总是没人听。					
17	父母对我缺乏信心和精神上的支持。					
18	我有困难的时候会主动找别人倾诉。					
19	父母从来不苛责我。					
20	面对困难时,我会集中自己的全部精力。					
21	我一般要过很久才能忘记不愉快的事情。					
22	父母总是鼓励我全力以赴。					
23	我能够很好的在短时间内调整情绪。					
24	我会为自己设定目标,以推动自己前进。					
25	我觉得任何事情都有其积极的一面。					
26	心情不好也不愿意跟别人说。					
27	我情绪波动很大,容易大起大落。					

5. 青少年心理健康诊断测验 (MHT)

指导语：这些测题是调查你的心情和感受的，不是测验智力和学习能力，与学习成绩无关，答案也没有好坏之分，请按照你平时所想的如实回答。

试题题目：	是	不是
1. 你夜里睡觉时，是否总想着明天的功课？		
2. 老师在向全班提问时，你是否会觉得是在提问自己而感到不安？		
3. 你是否一听说“要考试”心里就紧张。		
4. 你考试成绩不好时，心里是否感到不快。		
5. 你学习成绩不好时，是否总是提心吊胆。		
6. 考试时，当你想不起来原先掌握的知识时，你是否会感到焦虑？		

7. 你考试后，在没有知道成绩之前，是否总是放心不下。		
8. 你是否一遇到考试，就担心会考坏。		
9. 你是否希望考试能顺利通过。		
10. 你在没有完成任务之前，是否总担心完不成任务？		
11. 你当着大家的面朗读课文时，是否总是怕读错？		
12. 你是否认为学校里得到的学习成绩总是不大可靠的？		
13. 你是否认为你比别人更担心学习？		
14. 你是否做过考试考坏了的梦？		
15. 你是否做过学习成绩不好时，受到爸爸妈妈或老师训斥的梦？		
16. 你是否经常觉得有同学在背后说你的坏话？		
17. 你受到父母批评后，是否总是想不开，放在心上？		
18. 你在游戏或与别人的竞争中输给了对方，是否就不想再干了？		
19. 人家在背后议论你，你是否感到讨厌？		
20. 你在大家面前或被老师提问时，是否会脸红？		
21. 你是否很担心叫你担任班干部？		
22. 你是否总是觉得好像有人在注意你？		
23. 在工作或学习时，如果有人注意你，你心里是否紧张？		
24. 你受到批评时，心情是否不愉快？		
25. 你受到老师批评时，心里是否总是不安？		
26. 同学们在笑时，你是否也不会笑？		
27. 你是否觉得到同学家里玩不如在自己家里玩？		
28. 你和大家在一起时，是否也觉得自己是孤单的一个人？		
29. 你是否觉得和同学一起玩，不如自己一个人玩？		
30. 同学们在交谈时，你是否不想加入？		
31. 你和大家在一起时，是否觉得自己是多余的人？		
32. 你是否讨厌参加运动会和文艺演出会？		
33. 你的朋友是否很少？		
34. 你是否不喜欢同别人谈话？		
35. 在人多的地方，你是否觉得很怕？		
36. 你在排球、篮球、足球、拔河、广播操等体育比赛输了时，心里是否一直认为自己不好？		
37. 你受到批评后，是否总认为自己不好？		
38. 别人笑你的时候，你是否会认为是自己做错了什么事？		
39. 你学习成绩不好时，是否总是认为是自己不用功的缘故？		
40. 你失败的时候，是否总是认为是自己的责任？		
41. 大家受到责备时，你是否认为主要是自己的过错？		
42. 你在乒乓球、羽毛球、篮球、足球、拔河、广播操等体育比赛时，是否一出错就特别留神？		
43. 碰到为难的事情时，你是否认为自己难以应付？		
44. 你是否有时会后悔，那件事不做就好了？		
45. 你和同学吵架以后，是否总是认为是自己的错？		

46. 你心里是否总想为班级做点好事?		
47. 你学习的时候, 思想是否经常开小差?		
48. 你把东西借给别人时, 是否担心别人会把东西弄坏?		
49. 碰到不顺利的事情时, 你心里是否很烦躁?		
50. 你是否非常担心家里有人生病或死去?		
51. 你是否在梦里见到过死去的人?		
52. 你对收音机和汽车的声音是否特别敏感?		
53. 你心里是否总觉得好像有什么事没有做好?		
54. 你是否担心会发生什么意外的事?		
55. 你在决定要做什么事时, 是否总是犹豫不决?		
56. 你手上是否经常出汗?		
57. 你害羞时是否会脸红?		
58. 你是否经常头痛?		
59. 你被老师提问时, 心里是否总是很紧张?		
60. 你没有参加运动, 心脏是否经常噗通噗通地跳?		
61. 你是否很容易疲劳?		
62. 你是否很不愿吃药?		
63. 夜里你是否很难入睡?		
64. 你是否总觉得身体好像有什么毛病?		
65. 你是否经常认为自己的体型和面孔比别人难看?		
66. 你是否经常觉得肠胃不好?		
67. 你是否经常咬指甲?		
68. 你是否舔手指头?		
69. 你是否经常感到呼吸困难?		
70. 你去厕所的次数是否比别人多?		
71. 你是否很害怕到高的地方去?		
72. 你是否害怕很多东西?		
73. 你是否经常做噩梦?		
74. 你胆子是否很小?		
75. 夜里, 你是否很怕一个人在房间里睡觉?		
76. 你乘车穿过隧道或路过高桥时, 是否很怕?		
77. 你是否喜欢整夜开着灯睡觉?		
78. 你听到打雷声是否非常害怕?		
79. 你是否非常害怕黑暗?		
80. 你是否经常感到后面有人跟着你?		
81. 你是否经常生气?		
82. 你是否不想得到好的成绩?		
83. 你是否经常会突然想哭?		
84. 你以前是否说过谎话?		
85. 你有时是否会觉得, 还是死了好?		
86. 你是否一次也没有失约过?		

87. 你是否经常想大声喊叫?		
88. 你是否不愿说出别人不让说的事?		
89. 你有时是否想过自己一个人到遥远的地方去?		
90. 你是否总是很有礼貌?		
91. 你被人说了坏话, 是否想立即采取报复行动?		
92. 老师或父母说的话, 你是否都照办?		
93. 你心里不开心, 是否会乱丢、乱砸东西?		
94. 你是否发过怒?		
95. 你想要的东西, 是否就要一定要拿到手?		
96. 你不喜欢的课, 老师提前下课, 你是否会感到特别高兴?		
97. 你是否经常想从高的地方跳下来?		
98. 你是否无论对谁都很亲热?		
99. 你是否会经常急躁得坐立不安?		
100. 对不认识的人, 你是否会都喜欢?		