

Resilience and Emotional and Behavioral Problems of Adolescents in China: Effects of a Short-Term and Intensive Mindfulness and Life Skills Training

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Many adolescents face emotional and behavioral problems that can negatively impact their future outcomes. Fortunately, resilience is a characteristic that can help to mitigate the negative consequences of emotional and behavioral problems. This study aims to examine the effects of an intensive, short-term training that combines aspects of both mindfulness training and Life Skills Training on the resilience and emotional and behavioral problems of adolescents in China. Our results show that changes in mindfulness are significantly associated with changes in adolescents' resilience and emotional and behavioral problems, while changes in life skills are not. Implications and directions for future research are discussed.

Keywords: Intensive Intervention, mindfulness, life skills training, emotional and behavioral problems, resilience, adolescents, China

Introduction

Adolescence is a time of enormous change in a young person's life. Not only do the brains and bodies of young people change during adolescence, but often so do their responsibilities and social roles. The breadth of these changes can result in great stress for some adolescents. This is especially true of adolescents who have emotional and behavioral problems or have had adverse childhood experiences (ACEs). The World Health Organization (WHO; n.d.a) reports that 10 to 20 percent of adolescents worldwide experience mental disorders. Notably, this number does not include adolescents who may experience internalizing and externalizing problems at a level that would not amount to a clinical diagnosis. Importantly, the psychosocial capabilities of adolescents have a considerable impact on their later achievements and outcomes. For example, internalizing and externalizing problems have been found to increase inflammation in children, a prerequisite for adult chronic disease (Slopen, Kubzansky, & Koenen, 2013). Therefore, it can be said that a substantial number of adolescents around the world suffer from a variety of emotional and behavioral problems that may affect their ultimate success and well-being.

One important factor that can assuage the negative ramifications of internalizing and externalizing problems is resilience. Resilience can be defined as "the maintenance of positive adaptation by individuals despite experiences of significant adversity" (Luthar, Cicchetti, & Becker, 2000). Resilience has been shown to mitigate the effects that internalizing and externalizing problems and ACEs have on school engagement and chronic disease (Bethell, Newacheck, Hawes, & Halfon, 2014) and the likelihood that further emotional and behavioral

problems will develop (Bahmani et al., 2016; Bethell, Gombojav, Solloway, & Wissow, 2016). So, despite substantial risk factors, resilient adolescents may be able to avoid a variety of negative outcomes.

Yet, many children are not able to develop resilience or combat their internalizing and externalizing problems on their own. Mindfulness training and Life Skills Training (LST) are both interventions that show promise in reducing internalizing and externalizing problems and increasing resilience in children and adolescents (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Jamali et al., 2016; Mak, Whittingham, Cunningham, & Boyd, 2018). A variety of studies have separately analyzed the effectiveness of mindfulness training and LST in increasing resilience and reducing emotional and behavioral problems (Bluth & Eisenlohr-Moul, 2017; Esmaeilinasab, Malek Mohamadi, Ghiasvand, & Bahrami, 2011), but few studies have examined that effects that such trainings have on resilience and internalizing and externalizing problems at the same time. Thus, one of the aims of this study is to examine the efficacy of an intervention that combines aspects of both mindfulness training and LST in increasing resilience and reducing emotional and behavioral problems. Moreover, this study aims to examine which specific aspects of such a program independently influence internalizing and externalizing problems and resilience.

This article is structured as follows: the next section reviews literature on internalizing and externalizing problems, resilience, mindfulness training, and LST. Afterwards, we present our intervention, data, measures, and analytic approach in the methodology section, followed by the results section. Finally, we conclude by discussing the implications of our findings.

Literature Review

Resilience, Internalizing and Externalizing Problems, and Adolescence

Adolescence is a stressful period of time in an individual's life. During adolescence, many young people are expected to take on increased obligations, while navigating shifting social roles. Even more, the brains and bodies of young people go through remarkable transformations as they enter adolescence. During adolescence, the brain areas focusing on attention, rewards, affect, inhibition, and goal-directed behavior undergo serious changes (Yurgelun-Todd, 2007). These changes greatly affect adolescents' social and emotional abilities, which, in turn, affect their well-being, interpersonal relationships, and general understanding of the world around them. Therefore, it should come as no surprise that emotional and behavioral problems are quite common in adolescence. WHO estimates that up to 20 percent of adolescents around the world have a mental disorder (n.d.a.) and suicide is the second leading cause of death for adolescents aged 15 to 19 globally (n.d.a.). When recognizing that an even larger number of adolescents have internalizing and externalizing problems that do not reach a clinical level, it is easy to see that adolescent mental health should be a top priority for parents, teachers, administrators, and policy-makers around the world.

Emotional and behavioral problems have a myriad of consequences for adolescents, the majority of which are negative. Zbar, Surkan, Fombonne, and Melchior (2015) examined the effects of internalizing and externalizing problems on educational attainment in a cohort of French children and found that internalizing problems have a significant harmful effect on later educational attainment. Slopen and colleagues (2013) found that inter-

nalizing and externalizing problems increase inflammation in children, which can lead to a variety of chronic diseases later in life. Likewise, internalizing and externalizing problems have been shown to increase the incidence of later psychotic-like experiences and the development of further internalizing and externalizing problems in youth across a variety of ages (Lancefield, Raudino, Downs, & Laurens, 2016; Willner, Gatzke-Kopp, & Bray, 2016). Even more, externalizing problems have been found to increase an adolescent's risk to use substances, such as alcohol and marijuana (Colder et al., 2013; King, Iacono, & McGue, 2004). Importantly, emotional and behavioral problems develop in children as young as three or four and remain relatively stable throughout childhood and adolescence (Bahmani et al., 2016; Schoemaker, Mulder, Dekovic, & Matthys, 2013; Willner et al., 2016).

Recently, resilience has gained attention in the literature for its ability to mitigate the relationship between negative life experiences and emotional and behavioral problems (Arslan, 2016; Bethell et al., 2014; Bethell et al., 2016). Resilience describes a process by which an individual positively adapts to stress, crisis, and adversity. The mechanisms through which resilience works help to promote resistance and recovery, despite experiences such as poverty, violence, abuse, discrimination, and discord. As an illustration, Arslan (2016) found resilience to play a protective, mediating role between psychological maltreatment and emotional and behavioral problems in a sample of Turkish high school students. Other studies have shown similar results in the United States (Bethell et al., 2014; Bethell et al., 2016). However, children cannot just decide that they would like to be resilient and immediately begin reaping the benefits; resilience is a skill that develops with practice and is learned over time

(SAMHSA, 2013).

Mindfulness and Life Skills Training

Mindfulness can be defined as a state of consciousness that incorporates non-judgmental, purposeful awareness and attention to the present moment (Kabat-Zinn, 2003; Schonert-Reichl & Lawlor, 2010). Although it stems from the traditions of Buddhist meditation, mindfulness has been adopted by the West over the latter half of the last century and is now a daily practice in the lives of individuals around the world (Kabat-Zinn, 2003). Mindfulness has been shown to have copious positive effects on mental well-being. For example, Bogels, Lieke van Dun, de Schutter, and Restifo (2008) found that after an eight-week mindfulness training, adolescent participants improved on the parameters of goals, internalizing and externalizing problems, attention, and self-control. Likewise, Black and Fernando (2013) demonstrated that a five-week mindfulness training improved the classroom behavior of lower-income and ethnic minority elementary school children for up to seven weeks after training. Similar results have been found in a plethora of other studies involving youth from a variety of backgrounds (Brown & Ryan, 2003; Keng, Smoski, & Robins, 2011; Mak et al., 2018; Napoli, Krech, & Holley, 2005). Particularly notable for the purposes of this study, mindfulness training has been shown to increase resilience in children and adolescents. Bluth and Eisenlohr-Moul (2017) found that an eight-week mindfulness training program for 47 adolescents in the southeast United States increased resilience, curiosity, and gratitude. Mindfulness may increase resilience by helping individuals to process events using open and non-judgmental attention and avoid the path of psychological dissociation (Thompson, Arnkoff, & Glass, 2011).

Another training program that has

demonstrated sizably positive outcomes for adolescent well-being is LST. Although originally designed as a drug abuse prevention program for adolescents, LST has been shown to improve a variety of the psychological and social skills of its participants (Botvin & Griffin, 2004). For instance, Jamali et al. (2016) found LST to be effective in reducing drug addiction, violence, stress, and sensation-seeking among Iranian middle schoolers. Likewise, Esmailinasab and colleagues (2011) saw self-esteem increase in Iranian high school students following an LST program. LST has three components: personal management skills, social skills, and drug-related skills. The LST program has demonstrated efficacy with students from different socioeconomic, geographic, and racial/ethnic backgrounds, as well as with a variety of different program providers (Botvin & Griffin, 2004). However, there is scant literature examining the relationship between LST and resilience or LST and internalizing and externalizing problems. Therefore, one of the aims of this paper is to assess LST's effect on resilience and emotional and behavioral problems.

Overall, it is clear that emotional and behavioral problems are serious issues that affect a large number of adolescents around the world. Even more, such problems are associated with a myriad of negative outcomes. Encouragingly, resilience appears to play a mitigating role between adverse life experiences, internalizing and externalizing problems, and later adverse outcomes. Yet, resilience is not a skill that children can develop quickly or at will. Mindfulness training and LST are both programs that show promise in helping to reduce internalizing and externalizing problems in adolescence as well as to increase resilience. This study aims to examine the effects of a program that combines aspects of both mindfulness training and LST on the

emotional and behavioral problems and resilience of adolescents in China with delinquency issues.

Methodology

Data

Our data came from School X, a combined middle and high school that focuses on education for children and adolescents with delinquency issues. School X was established in 1978 in Beijing, China and originally only accepted male students. Typically, students are transferred to School X from their previous school if they exhibit unresolved delinquent behaviors. Possible delinquent behaviors that may result in transfer to School X include gang involvement; disruption of law and order; carrying knives; assault; forcefully taking other's property; spreading obscene readings and media; engaging in fornication or prostitution; stealing; gambling; and using drugs. In 2016, School X began admitting females and non-delinquent students. In 2018, around 60 percent of the students at School X had a history of delinquency issues at their previous schools. All 61 students attending School X were surveyed during the pretest. However, five students did not complete the program and another five had incomplete data in the posttest survey. Therefore, the final sample size was 51 with an attrition rate of 16.4 percent.

Procedure

Participants were asked to complete a pretest survey in their classrooms before the intervention began. The survey included questions assessing emotional and behavioral problems, resilience, life skills, and mindfulness, as well as demographic information such as gender, age, and whether they were born in Beijing.

Subsequently, over the 10-day period of June 6, 2018 to June 15, 2018, eight mindfulness and life skills training sessions were provided to partici-

pants (once per weekday). The trainings took place in classrooms during students' regular class time and lasted about 50 minutes. The trainings were conducted in Chinese. The training team included two licensed social workers and a group of MSW students. The local school teachers were invited to join the training activities upon their availability.

The research team created a training manual titled *Mindfulness and Life Skills Training* based on *Mindfulness-Based Cognitive and Behavioral Intervention for Children*, (Lu, Rios, & Huang, 2018) and *Life Skills Training-Promoting Health and Personal Development* (Botvin, 2016). The training manual was adapted for children and developed based on mindfulness and life skills training concepts and approaches. Each training session in the manual covered a topic related to children's management of their daily lives: breathing exercises, goal setting, emotion recognition, emotional management, assertiveness, decision making, expression of gratitude, and attention to breathing.

The first session included an ice breaker activity, an introduction of mindfulness, and a breathing exercise. The breathing exercise encompassed a 10-minute audio tape of a breathing exercise created by Tingting Hu (Hu, 2018) and a discussion of the students' feelings and bodily changes during the exercise. The second session connected goal-setting with self-esteem. When a person sets and achieves realistic short-term goals, they feel successful and confident, leading to an increased self-esteem. Facilitators related students' short-term goals to their long-term goals and discussed how to make clear action plans.

The third session focused on emotion recognition. In order to manage emotions and alleviate stress, children need to understand what emotions they have and why they have them.

This session encouraged children to look into their thoughts and feelings and explore the connections between them.

Subsequently, session four focused on emotion management. In session four, facilitators demonstrated strategies to manage emotions, such as the breathing exercise used in session one, and discussed with children the consequences of acting impulsively based on negative emotions on daily life.

Session five concentrated on decision-making. Decision-making is a behavior that often times becomes a habit and occurs without purposeful thought. In this session, facilitators used the Stop-Think-Go model from Botvin (2016) to help students learn how to make careful and calculated decisions so that they have the potential to develop the healthier habit of making decisions with deliberate thought.

Session six focused on assertiveness. Facilitators introduced three types of behavior: passive, aggressive and assertive. Assertiveness denotes a calm but firm attitude. When students learn about assertiveness and how to be assertive, they are more likely to stand up for themselves with an appropriate attitude. They are also less likely to become involved in behaviors and situations that make them feel uncomfortable.

Session seven concerned gratitude. With gratitude, students can establish meaningful relationships with others and acknowledge the goodness and happiness in their lives. The facilitators led the children in activities that helped them find the things in their lives that they are most grateful for.

Finally, the last session reviewed the skills discussed in the previous seven sessions. Facilitators reminded students of the learning goals for each session, had students reflect on their experiences throughout the sessions, and encouraged students to continue

practicing the skills on their own time to achieve a sustainable impact. At the conclusion of this session, students completed the post-test survey, which had the same questions as the pre-test survey. Both the pre-test and post-test surveys took approximately 20-30 minutes to complete.

Measures

Dependent Variables. The dependent variables in this study were the measured change in child emotional and behavioral problems and the change in resilience. The child emotional and behavioral problems were measured by a shortened version of the Self-Description Questionnaire (SDQ; Bendheim-Thoman Center for Research on Child Well-being, 2013; Marsh, 1990). More specifically, the Chinese version of the SDQ, which has shown good reliability, validity, and cultural applicability for the purposes of surveying Chinese adolescents (Lu, Huang, Rios, 2017; Leung, Marsh, Craven, & Abduljabbar, 2016; Marsh, Kong, & Hau, 2000; Yeung & Lee, 1999), was used with the participants. The SDQ measures externalizing problems, problems that manifest as outward behavioral outcomes, and internalizing problems, problems manifested in thoughts and feelings. (Bogels et al., 2008). Externalizing problems were measured by the following six items: "I get distracted easily"; "It's hard for me to finish my school work"; "It's hard for me to pay attention"; "I often argue with other kids"; "I get in trouble for fighting with other kids"; and "I get in trouble for talking and disturbing others." The Cronbach's alpha of these items is 0.70. Internalizing problems were comprised of the following eight items: "I feel sad a lot of the time"; "I often feel lonely"; "I feel angry when I have trouble learning"; "I worry about doing well in school"; "I worry about finishing my work"; "I worry about taking tests"; "I worry about having someone to play with at

school"; and "I feel ashamed when I make mistakes at school." The Cronbach's alpha of these items is 0.79. Students rated the frequency of each item in their daily lives on a scale of 0 to 3, with 0 meaning "not at all true" and 3 meaning "very true". Summed scores representing the externalizing problems ranged from 0 to 18, while the sum of scores representing the internalizing problems ranged from 0 to 24. When added together, the total of both the internalizing and externalizing problems (the SDQ sum score) ranged from 0 to 42, with higher scores indicating more problems. We calculated the change of child emotional and behavioral problems by subtracting the pre-test SDQ sum score from the post-test SDQ sum score.

Resilience was measured by the 14-item Resilience Scale (RS14) (Wagnild, 2009). The RS14 was designed to assess a trait-like conception of resilience by focusing on a set of personal characteristics that have been shown to mediate the effects of adverse life conditions on psychological adjustment (Wagnild, 2016; Wagnild & Young, 1993). The RS14 has shown great reliability and validity across ethnic adolescents and the Chinese population (Pritzker & Minter, 2014; Shi et al., 2016). Participants were asked to rate the degree to which they identified with each of the items such as, "I am determined"; "My belief in myself gets me through hard times"; and "When I'm in a difficult situation, I can usually find my way out of it." within the past two weeks. The Cronbach's alpha of these items is 0.87. Participants rate each item on a scale of 1 to 7, with 1 representing "strongly disagree" and 7 signifying "strongly agree". The total scores range from 14 to 98, with higher scores indicating higher resilience. We used the post-test resilience score minus the pre-test resilience score to calculate the change of resilience.

Key Independent Variables. Our

key independent variables were changes in mindfulness and life skills. Mindfulness was measured by the 14 item Mindful Attention Awareness Scale for Adolescents (MAAS-A) which has been validated for use with community and clinical population adolescents ages 14 to 18 (Brown, West, Loverich, & Biegel, 2011). This study used the Chinese version of MAAS-A, which has shown both reliability and validity when administered to Chinese populations (Deng et al., 2012; Lu, Huang, & Rios, 2017). The items in MAAS-A describe everyday experiences related to mindful thoughts, behaviors, and feelings, such as "I break or spill things because of carelessness, not paying attention, or thinking of something else"; "I find myself doing things without paying attention"; and "I rush through activities without being really attentive to them." The participants rated the frequency that they experienced each of these items during the past two weeks on a scale of 1 (almost never) to 6 (almost always). We reversed the coding so that higher scores would represent higher level of mindfulness. The sum MAAS-A score, which ranged from 14 to 84, indicates the levels of mindfulness. We used the post-test mindfulness score minus the pre-test mindfulness score to calculate the change of mindfulness.

The life skills score was measured by a 10-item questionnaire developed by National Health Promotion Associates (2007). The 10 items measure refusal, assertiveness, relaxation, and self-control skills. For the refusal skills section participants were asked to respond with how frequently they did the following in the past two weeks: "say no when someone tries to get you to 'smoke a cigarette'; "drink beer, wine, or liquor"; and "smoke marijuana or drug." The assertiveness skills section asked about the frequency of the following instances: "tell someone

if they give you less change (money) than you're supposed to get back after you pay for something"; "say no to someone who asks to borrow money from you"; and "tell someone to go to the end of the line if they try to cut in line ahead of you." The relaxation skills section asked subjects how often they did the following: "relax all the muscles in your body, starting with your feet and legs," and "breathe in slowly and deeply" when faced with feelings of anxiety or nervousness. The self-control skills section asked participants how often "if you find that something is really difficult, you get frustrated and quit," and "you stick to what you are doing until you're finished with it." The participants rated the frequency of these experiences in their lives from the past two weeks. The frequency was rated from 1 (definitely would) to 5 (definitely would not). We reversed the coding, except for question 9, so that higher number scores would represent having higher life skills. The sum score of the 10 items indicates the level of life skills, which ranged from 10 to 50. We used the post-test life skills score minus the pre-test life skills score to calculate the change of life skills.

Covariates. Our analyses controlled for demographic and personal background information that may influence child emotional and behavioral outcomes and resilience, including age, gender, place of birth (Beijing or other), family structure (two-parent, single-parent, and other family), and delinquency. Delinquency status was noted if the student transferred into the School X due to delinquency issues at their previous school.

Analytic Strategy

We conducted both descriptive and multivariate analyses. The descriptive analysis showed the changes of main variables before and after the intervention. In the multivariate analysis, ordinary least squares regressions

were performed to examine the net effect of changes of mindfulness and life skills on the changes of emotional and behavioral problems and resilience, while controlling for all covariates.

Results

Table 1 shows the description of the sample. Among the 51 adolescents, two thirds of the students transferred into the school due to delinquent issues in their previous schools. The average age of the sample was 16.5 and boys comprised 84 percent of the sample. About half of the students in the sample were born in Beijing and 67 percent came from two-parent families.

Table 2 presents changes of the key variables before and after the intervention. Regarding the key independent variables, both mindfulness and life skills show significant changes before and after the intervention. The mindfulness score increased 2.9 points, from 63.3 to 66.2 points, and the score of life skills increased 1.3 points, from 38.6 to 39.9. However, among components of life skills, only refusal and relaxation skills increased significantly, while the scores of assertiveness and self-control skills did not have substantial changes. With respect to changes in dependent variables, both SDQ and resilience show significant changes. The SDQ score decreased by 1.4 points, from 10 to 8.6 points, and the resilience score increased by 5.1 points, from 65.2 to 70.2 points.

Table 3 presents the regression estimates of changes to SDQ and resilience. Change in the mindfulness score both before and after the intervention significantly reduced changes to the SDQ score. Specifically, controlling for all covariates, every 1-point increase of the mindfulness score was associated with a 0.18 point decrease in change of the SDQ score. Change in life skills, along with other controls, did not have

significant effects on the change of SDQ score. Turning to the regression result of resilience change, change of mindfulness and gender (being a boy) showed marginal effects. Every 1-point increase in change of the mindfulness score was associated with a 0.26-point increase in change of the resilience scores. Compared to girls, boys had 8.1 points higher change of resilience scores.

Table 4 further examines the effects of mindfulness and life skills on the subscales of SDQ (specification I), as well as effects of components of life skills on the changes of SDQ and resilience (specification II). The regression analyses followed the same method as that of Table 3, except that we replaced the whole life skills score with the different life skills components in specification II. First, it appears that a change in mindfulness has significant effects on the overall SDQ score change through its effects on reducing internalizing problems, although a mindfulness change has no effect on externalizing problems. Secondly, although the overall life skills change did not have an effect on the changes of SDQ and resilience, changes on assertiveness and relaxation skills show effects on the changes of SDQ. Specifically, increasing one point of relaxation skills was associated with a 0.51-point reduction of internalizing problems and 0.37-point reduction of overall SDQ. However, contrary to the hypothesis, increasing 1 point of assertiveness was associated with a 0.57-point increase of internalizing problems and 0.85-point increase of overall SDQ.

Discussion and Conclusion

Our results indicate that the intervention had significant effects on mindfulness, life skills, emotional and behavioral problems, and resilience. Specifically, the participants demonstrated increased levels of mindful-

ness, the life skills of refusal and relaxation, and resilience, as well as decreased emotional and behavioral problems. These results coincide with previous literature that suggests social and emotional learning programs have positive outcomes on youth (Durlak et al., 2011).

The increase in the mindfulness post-intervention showed strong effects on reducing emotional and behavioral problems through its effects on reducing internalizing problems. However, it should be noted that further research is warranted to examine the long-term effect of the intervention on externalizing problems. This is important, as Willner, Gatzke-Kopp, and Bray (2016) suggested that externalizing problems are strongly linked to internalizing problems. Future research should further examine the relationship between externalizing and internalizing problems and how interventions may be able to decrease one by targeting the other. In addition, the change in mindfulness exhibited effects on increasing resilience. This result was expected and is promising. Our intervention was markedly shorter than those of the previous literature. If an intervention is able to achieve effects on both resilience and emotional and behavioral problems in such an abbreviated amount of time, the implications are hopeful. Future research is warranted to test the efficacy of similarly sized interventions.

Unexpectedly, the increase in life skills did not have effects on emotional and behavioral problems or resilience. This finding is in contrast to the majority of literature on LST. One conjecture for this result is the opposite effects of relaxation and assertiveness on emotional and behavioral problems. Although we found the intervention to increase relaxation skills, we did not see significant effects on assertiveness. Moreover, our regression analysis showed that while increases in relaxation are associated with a decrease in

internalizing problems, increases in assertiveness are associated with an increase in internalizing problems. Once again, internalizing problems appear to play an important role in the interaction of emotional and behavioral problems. Further research should examine the interaction between assertiveness and emotional and behavioral problems. One idea is that increased assertiveness may increase an adolescent's conflicts with peers, thereby increasing the adolescent's vulnerability to emotional and behavioral problems. Another possible explanation rests in the difference between communication styles in collectivist Chinese culture and the individualistic culture of the west, where Botvin Life Skills Training was devised. Collectivist ideology pushes in-group members to be concerned about the face, or identity, of fellow members: thus, there is a tendency to have a general awareness of others' feelings, needs, and wants (Ting-Toomey, 1988). Ting-Toomey and her colleagues (1991) found that collectivists have high other-face and high mutual-face concerns, so they tend to avoid or oblige conflict strategies in general and also gravitate towards cooperating conflict strategies. Furthermore, Brown and Levinson (1987) indicate indirect communication as a major linguistic mechanism to attend to face, making indirectness characteristic of communication style in collectivistic cultures like that of China. Indirect language is also easily attended to due to the high-context nature of Chinese culture. Holtgraves (1997) validated these results in a study that investigated intercultural communication using a measure that assesses production and comprehension of indirect communication. The study confirmed that people from collectivist cultures are generally more indirect than those who come from individualistic cultures. Because attentional awareness in the former is dedicated to context, one's meaning can be

conveyed implicitly with the understanding that people will interpret their language within a relevant context (Hall, 1976, 1983). Thus, the western conceptualization of assertiveness may not be normative within Chinese culture, and, because assertiveness as a communication style is more direct than the conventional style, may even be perceived as rudeness or disrespect, and increase adolescent's emotional and behavioral problems.

Finally, our study had a few limitations. First, we did not include a control group. Therefore, we cannot be certain that our results stem from the specificities of the intervention itself or the participants interactions with the facilitators or other factors. Second, we had a small sample size. Our final sample size was just 51 students, future research should replicate the intervention with a larger and more diverse group of participants. Finally, our program only consisted of a short 10-day intensive intervention and it is unclear if the effects found in this paper will persist over time. However, the results are promising and indicate that even a short-term, intensive mindfulness and life skills training can have substantial effects on reducing emotional and behavior problems and improving resilience of adolescents with delinquency issues.

Table 1. Descriptive Statistics of Key Variables

	Mean (S.D.)
Delinquent [%]	66.7
Age	16.5 (1.4)
Gender [%]	
Male	84.3
Female	15.7
Birth Place [%]	
Beijing	49.0
Others	51.0
Family Type [%]	
Two-Parent Family	66.7
Single-Parent Family	21.6
Others	11.8

Note: N=51.

Table 2: Changes of Main Variables before and after the Intervention

	Before	After	Change	T-test
Mindfulness	63.3 (8.7)	66.2 (9.4)	2.9 (8.1)	2.9 **
Life Skills (LS)	38.6 (5.0)	39.9 (5.4)	1.3 (4.9)	1.9 *
Refusal	12.8 (2.8)	13.6 (2.4)	0.8 (2.5)	2.4 *
Assertiveness	11.5 (1.6)	11.9 (2.2)	0.4 (1.5)	1.7
Relaxation	6.8 (1.7)	7.3 (2.0)	0.5 (1.9)	1.8 *
Self-control	7.5 (1.7)	7.1 (1.7)	-0.4 (2.1)	-1.4
SDQ	10.0 (6.2)	8.6 (6.5)	-1.4 (4.0)	-2.5 **
External	3.8 (2.7)	3.0 (2.6)	-0.4 (2.1)	-2.4 *
Internal	6.2 (4.2)	5.5 (4.4)	-0.7 (2.9)	-1.7 *
Resilience	65.2 (13.2)	70.2 (12.8)	5.1 (8.4)	4.3 ***

Note: N=51. * $p < .05$, ** $p < .01$.

Table 3. Regression Analysis of Changes of SDQ and Resilience

	Change of SDQ			Change of Resilience		
	B	S. E.	P	B	S. E.	P
Change of Mindfulness	-0.18	0.07	*	0.26	0.15	+
Change of Life Skills	0.03	0.12		-0.08	0.25	
Delinquency	-0.07	1.58		-4.74	3.24	
Age	-0.18	0.41		0.55	0.84	
Boy	2.04	2.01		8.10	4.11	+
Beijing	0.08	1.16		1.52	2.38	
Single-Parent Family	0.37	1.43		2.79	2.94	
Other Family	-1.61	1.82		-0.28	3.72	
Constant	0.45	6.96		-9.66	14.25	
R-square	0.17			0.20		

Note: N=51. + p<.10, * p < .05, ** p <.01, *** p < .001.

Table 4. Regression Analysis of Changes of SDQ and Resilience

	Change of SDQ			Change of SDQ, Ex.			Change of SDQ, In.			Change of Resilience		
	B	S.E.	P	B	S.E.	P	B	S.E.	P	B	S.E.	P
Specification I												
Change of Mindfulness	-0.18	0.07	*	-0.07	0.04		-0.11	0.05	*	0.26	0.15	+
Change of Life Skills	0.03	0.12		-0.02	0.07		0.05	0.08		-0.08	0.25	
Specification II												
Change of Life Skills (LS)												
Refusal	0.15	0.25		-0.06	0.14		0.21	0.17		-0.65	0.50	
Assertiveness	0.85	0.37	*	0.28	0.22		0.57	0.26	*	0.54	0.81	
Relaxation	-0.51	0.29	+	-0.15	0.17		-0.37	0.21	+	0.32	0.63	
Self-control	-0.03	0.29		-0.06	0.16		0.03	0.20		-0.15	0.60	

Note: N=51. + p<.10, * p < .05, ** p < .01, *** p < .001.

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