

## **MINDFULNESS AND SUICIDAL IDEATION IN CHINESE OLDER ADULTS: PERCEIVED STRESS AS MEDIATOR**

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We examined whether or not perceived stress mediates the relationship between mindfulness and suicidal ideation in Chinese older adults. Chinese adults aged from 48 to 59 years ( $N = 213$ ) completed the Mindful Attention Awareness Scale, the Perceived Stress Scale, and the first two items of the Suicide Behaviors Questionnaire-Revised. Results showed that mindfulness was negatively correlated with perceived stress and suicidal ideation, whereas perceived stress was positively correlated with suicidal ideation. Mediation analysis results suggested that perceived stress fully mediated the relationship between mindfulness and suicidal ideation in Chinese older adults. Therefore, we suggest that it is helpful to focus on the enhancement of mindfulness of older adults, because their perceived stress levels may be decreased by greater mindfulness. It is plausible that older adults would then be less likely to develop severe suicidal ideation.

*Keywords:* mindfulness, perceived stress, suicidal ideation, Chinese older adults.

Suicide among older adults is a challenging issue that needs to be tackled in China. The suicide rate among older Chinese adults is 50 to 200 per 100,000, and this rate is four or five times that of the general population (Phillips, Li, Zhang, & Eddleston, 2002). Although older adults in China are at high risk of committing suicide (Phillips et al., 2002), few researchers have discussed the risk and protective factors of suicidal behavior in this population. Therefore, potentially beneficial outcomes for suicide prevention programs targeting older adults could be generated by research findings. For the purposes of this study, older adults are those over 50 years of age, in line with criteria adopted previously in

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investigations into suicide among older people (Duberstein, Conwell, Conner, Eberly, & Caine, 2004).

Previous researchers have suggested that suicidal ideation and perceived stress are two important factors that result in older adults' suicide (G. K. Brown, Beck, Steer, & Grisham, 2000; Ezzati et al., 2014; Kim, 2016). G. K. Brown et al. (2000) found that suicidal ideation increased older adults' chances of committing suicide. *Suicidal ideation* is defined as thinking about or planning to take one's own life. Research findings on older adults' suicidal ideation are particularly valuable because they may have important practical implications for practitioners on how to prevent older adults from committing suicide (G. K. Brown et al., 2000; Kim, 2016; Lynch, Cheavens, Morse, & Rosenthal, 2004).

A growing number of researchers have suggested that greater mindfulness helps promote people's well-being (de Frias & Whyne, 2015). *Mindfulness* is defined as a process of bringing attention to an individual's moment-to-moment experience (Kabat-Zinn, 2003; Mallya & Fiocco, 2016). Researchers of suicidal patients have found that mindfulness-based treatment could raise the patients' awareness of the ruminative nature of suicidal thoughts and facilitate nonjudgmental perception of their thoughts (Luoma & Villatte, 2012; Mark, Williams, & Swales, 2004; J. M. G. Williams, Duggan, Crane, & Fennell, 2006). This could have a positive effect on preventing people from committing suicide. Other researchers have suggested that as mindfulness reduces individuals' experiential avoidance (Luoma & Villatte, 2012), it decreases their chance of adopting an avoidance coping strategy and cognitive and emotional suppression, thereby reducing suicidal thoughts and behavior (Edwards & Holden, 2001; Najmi, Wegner, & Nock, 2007).

As well as directly protecting older adults from being victims of suicide, mindfulness is a powerful strategy for helping them to reduce stress (de Frias & Whyne, 2015). *Perceived stress* has been related to negative life experiences and experience of acute stressors. These stressors come from work, relationship, or health problems, and can potentially raise suicidal ideation when people perceive their inability to cope with them (Ibrahim, Amit, & Suen, 2014). For example, perceived stress significantly predicted suicide in the general Chinese population (Phillips et al., 2002), and in a study on Chinese adolescents, perceived stress was found to be a significant predictor of suicidal ideation (Zhang, Wang, Xia, Liu, & Jung, 2012). For this reason researchers suggest that reducing people's perceived stress is beneficial for preventing suicidal ideation (Giletta et al., 2015).

Researchers have suggested that mindfulness can promote individuals' attention to, and awareness of, positive emotions and experiences, resulting in a decreased level of psychological stress (de Frias & Whyne, 2015), which, in turn, reduces their suicidal ideation. However, it is still not clear how mindfulness, perceived stress, and suicidal ideation relate to one another among older adults. As the promotion of Chinese older adults' well-being can help prevent

them from attempting or committing suicide, it is important theoretically and practically to conduct research with this population. Thus, we examined whether or not the positive effect of mindfulness on suicidal ideation would be found in Chinese older adults. We hypothesized that stress would act as a mediator in the relationship between mindfulness and suicidal ideation. Therefore, we proposed the following hypotheses:

**Hypothesis 1:** There will be a negative correlation between mindfulness, perceived stress, and suicidal ideation among Chinese older adults.

**Hypothesis 2:** There will be a positive correlation between perceived stress and suicidal ideation among Chinese older adults.

**Hypothesis 3:** Perceived stress will mediate the relationship between mindfulness and suicidal ideation in Chinese older adults.

## Method

### Participants

We invited 290 Chinese adults aged between 48 and 59 years to take part in this study. The response rate was 73%, with the final sample consisting of 213 adults with a mean age of 51.72 years old ( $SD = 2.73$ ). Men accounted for 54% of the sample. The institutional review board at Guangdong Medical University approved the research protocol, and written informed consent was obtained from each participant.

### Procedure

We conducted this study in Mainland China and collected data in 2015. All participants were native Chinese. Because it is not easy to obtain a large sample of older adults, we used a snowball sampling method. We recruited eight research assistants to help with data collection and survey distribution. The assistants initially invited older adults to participate in this study through their personal contacts. Participants assessed their levels of mindfulness, perceived stress, and suicidal ideation by anonymously completing a series of paper-and-pencil scales, which were then returned to the assistants. Participants took approximately 20 minutes to answer the items, and the assistants answered participants' questions when they were completing the measures. All participants could withdraw from the study at any time.

### Measures

**Mindful Attention Awareness Scale.** We used the Chinese version (Deng et al., 2012) of the Mindful Attention Awareness Scale (MAAS), developed by K. W. Brown & Ryan (2003), which has 15 items that are rated on a 6-point scale ranging from 1 = *almost always* to 6 = *almost never*. A sample item is "I could be experiencing some emotion and not be conscious of it until some time later."

The Chinese version of the MASS has a reported Cronbach's  $\alpha$  of .85 (Deng et al., 2012) and was .84 in this study.

**Perceived Stress Scale.** We used the Chinese version (Leung, Lam, & Chan, 2010) of the Perceived Stress Scale (PSS) developed by Cohen, Kamarck, & Mermelstein (1983), which consists of 14 items that are rated on a 5-point scale ranging from 0 = *never* to 4 = *very often*. A sample item is "In the last month, how often have you felt that you were unable to control the important things in your life?" Cronbach's  $\alpha$  ranged from .77 to .86 in the Chinese version of the PSS (Leung et al., 2010) and was .81 in this study.

**Suicide Behaviors Questionnaire-Revised.** The Chinese version (Zhao et al., 2012) of the Suicide Behaviors Questionnaire-Revised (SBQ-R) developed by Osman et al., (2001) has been successfully applied to Chinese samples. In this study, we used the first two items assessing suicidal ideation. The first item is "Have you ever thought about or attempted to kill yourself?" and was measured with a 4-point scale ranging from 1 = *never* to 4 = *I have attempted to kill myself, and really hoped to die*. The second item is "How often have you thought about killing yourself in the past year?" and was measured by a 5-point scale ranging from 1 = *never* to 5 = *very often* (5 or more times). Higher scores indicate more frequent suicidal ideation. Cronbach's  $\alpha$  was .68 in the four-item Chinese version of SBQ-R (Zhao et al., 2012) and was an acceptable .72 in the two-item SBQ-R in this study.

### Data Analysis

We conducted Pearson correlation analysis to investigate the correlations among mindfulness, perceived stress, and suicidal ideation in older adults. We applied the Baron and Kenny (1986) method for mediation analysis, and a bootstrapping method to test the significance of the mediation effect (Preacher & Hayes, 2008). In the bootstrap analysis, 50,000 bootstrap samples were drawn from the original dataset to construct a bias-corrected 95% confidence interval (CI; Preacher & Hayes, 2008).

## Results

Descriptive statistics and correlations among the study variables are shown in Table 1. Older adults with greater mindfulness had lower perceived stress and suicidal ideation, and those with higher perceived stress experienced more frequent suicidal ideation. Hypotheses 1 and 2 were thus supported.

Several regression analyses were conducted based on Baron and Kenny's (1986) procedure. The first analysis showed that mindfulness negatively predicted suicidal ideation without controlling for perceived stress ( $\beta = -.05$ ,  $t = -4.17$ ,  $p < .001$ ). The second analysis showed that suicidal ideation was negatively regressed on mindfulness ( $\beta = -.32$ ,  $t = -7.39$ ,  $p < .001$ ). The third

analysis showed that perceived stress positively predicted suicidal ideation when adjusting for mindfulness ( $\beta = .10, t = 5.33, p < .001$ ), but the relationship between mindfulness and suicidal ideation became nonsignificant when controlling for perceived stress ( $\beta = -.02, t = -1.53, p > .05$ ). These results suggest that perceived stress fully mediates the relationship between mindfulness and suicidal ideation (Baron & Kenny, 1986). In addition, an unstandardized mediating effect value of  $-0.03$ , 95% CI  $[-0.04, -0.02]$  was computed by the bias-corrected bootstrapping method, indicating that the mediating effect was significantly different from zero at  $p < .05$ , as the CI did not contain zero (Preacher & Hayes, 2008). Hypothesis 3 was thus supported.

Table 1. *Descriptive Statistics and Correlations Among Study Variables*

	<i>M</i>	<i>SD</i>	Mindfulness	Perceived stress
Mindfulness	66.74	9.81		
Perceived stress	18.40	6.81	-.45**	
Suicidal ideation	5.39	1.80	-.28**	.42**

Note. \*\*  $p < .01$ .

## Discussion

We examined whether or not perceived stress acts as a mediator in the relationship between mindfulness and suicidal ideation in Chinese older adults. The results showed that mindfulness was positively correlated with perceived stress and suicidal ideation. These findings are consistent with those of previous researchers (Astin, 1997; de Frias & Whyne, 2015; Shapiro, Schwartz, & Bonner, 1998; K. A. Williams, Kolar, Reger, & Pearson, 2001). In addition, the finding that mindfulness and perceived stress were positively related contributes to the potentially beneficial implementation of mindfulness-based interventions targeting older adults who are suffering from acute stress.

We also expanded previous findings on the relationship between stress and suicidal ideation in Chinese older adults. This research is especially useful, as older adults comprise the age group most susceptible to suicide in China (Ji, Kleinman, & Becker, 2001; Law & Liu, 2008). Our findings showed that perceived stress in older adults should be regarded with great concern. Previous researchers have suggested that Chinese older adults are challenged by distinct social forces that may increase their stress level. For example, a high level of distress can be triggered by a series of loss events that are characteristic of being older, such as deteriorating health and loss of roles and friends (Li, Xiao, & Xiao, 2009). The contemporary Chinese political context also poses challenges for Chinese older adults. In traditional Confucian teaching, filial piety, care, and respect for older people are ingrained values in China. However, values of individualism and self-

enhancement are gradually infiltrating into Chinese society with the very strong economic growth and implementation of the one-child policy (Li et al., 2009). The more individualistic values mean that more young people live with their spouses instead of their parents, or leave their registered areas and move to cities where there is greater economic opportunity. This leaves older adults in a more isolated position, with a greater risk of loneliness and being unable to sustain healthy psychological functioning.

Our most encouraging finding is that perceived stress fully mediated the relationship between mindfulness and suicidal ideation in older Chinese adults. In other words, older adults with a higher level of mindfulness perceived a significantly lower level of stress, resulting in a reduced level of suicidal ideation. As previous researchers have suggested, awareness and nonjudgment, the two main components of mindfulness, can facilitate conscious awareness of, and coping with, stressors through better self-regulation strategies (Hayes & Feldman, 2004; Shapiro & Schwartz, 2000). Thus, the mediation analysis result reveals that older adults with a higher level of mindfulness tend to be less susceptible to suicidal ideation because they tend to perceive life stressors as less intense and have better coping strategies for dealing with them.

Although we have offered useful findings to fill the research gap in the relationships between mindfulness, perceived stress, and suicidal ideation in Chinese older adults, further research using other robust methods should be conducted to strengthen these empirical findings. Future researchers should investigate other variables that may mediate the relationship between mindfulness and suicidal ideation in older adults.

A limitation in this study is the use of self-report measures. The effect of social desirability is a concern among researchers examining suicide in China, as suicide and death are considered taboo subjects in this country (Yick & Gupta, 2002). Therefore, the employment of multiple methods for data collection (e.g., informant reports from relatives) should be a priority for future researchers. In addition, further investigation using randomized control clinical trials should be undertaken to confirm the true treatment implications of mindfulness-based therapy on suicidal ideation in older adults. We also suggest that longitudinal research be conducted to provide additional evidence to confirm the findings of this cross-sectional study. Finally, another limitation of this research is that the mean age of the participants was 51.72 years. The current sample did not include people aged 60 and above, and future researchers should include this older age bracket in further studies.

In summary, we examined the mediating role of perceived stress in the relationship between mindfulness and suicidal ideation in Chinese older adults. Our findings filled a research gap by providing evidence for the mediating role of perceived stress in this relationship. We thus suggest that practitioners who

promote older adults' well-being should be seriously concerned about their mindfulness and perceived stress levels. It is important that mindfulness-based intervention strategies be used as an effective measure for reducing older adults' perceived stress level. It is plausible that these strategies would contribute to preventing older adults from committing suicide.

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