THE INFLUENCE OF COPING STRATEGIES ON RESILIENCE AMONG UNDERGRADUATE STUDENTS: THE MEDIATING ROLE OF TRAIT MINDFULNESS

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ABSTRACT

Mindfulness helps people increase resilience and cope with stress, serving as a mediating variable between stress and mental well-being. Does mindfulness also improve the effectiveness of coping strategies? What strategies could influence resilience through mindfulness? This research revealed that trait mindfulness also plays an important role in mediating the influence of coping strategies on individual resilience. Online questionnaires were used to collect data from 221 undergraduate students between the ages of 18 and 23. The survey comprised three optimized scales: the coping strategies scale consisted of three categories, the mindfulness scale, and the resilience scale. Mediation regression analysis was used to analyze the data. This study shows that the use of several coping strategies enhances an individual's resilience through the facilitation of trait mindfulness. Active (taking steps to deal with a problem) and positive reinterpretation have the greatest indirect effects on resilience (b = 0.19), followed by planning (finding solutions deliberately) (b = 0.18), suppression (minimizing irrelevant matters) (b = 0.17), acceptance (accepting the problem honestly), and denial (denying the existence of a problem) (b = 0.14), respectively. The strategies that have lower indirect effects are restraint (waiting for an appropriate moment) (b = 0.09) and mental disengagement (diverting attention away from a problem) (b = 0.06). Additionally, a partial indirect effect was found in humor (changing one's perspective on the situation to a humorous one). It is noted that these strategies are all related to mind control; thus, it is possible that mindfulness promotes more effective regulation of the thoughts underlying these strategies. Therefore, dispositional mindfulness formation in youth should be encouraged to promote their ability to cope with difficulties. However, a qualitative approach is needed for further research.

Keywords: Coping strategies; resilience; trait mindfulness; mediation

1. INTRODUCTION

Most individuals have experienced stress from everyday events, such as workplace conflicts, school bullying, relationship problems, and financial matters. The same is true for young adults who are dealing with difficulties. Apart from studying, there may be other factors that lead to stress. Resilience can enable them to overcome negative consequences (Fergus & Zimmerman, 2005). It refers to a person's potential to face problems and their ability to adapt well to risky situations, maintain their potential under pressure, and recover from trauma (Garmezy, 1993; Grotberg, 1995; Werner, 1995) or even its simple definition, which is the ability to bounce back from stress (Smith et al., 2008; Carver, 1998).

The level of resilience partly depends on the coping strategies a person draws upon for a given problem or situation (Southwick et al., 2014). Coping is a person's ability to think and act when dealing with a problem, which helps them through difficult times (Soares et al., 2018). These coping strategies depend on factors related to personality, learning, and experience, as well as the difficulty of the problems. People may use a combination of strategies to manage their challenges (Baqutayan, 2015).

Mindfulness is a variable that helps people increase resilience and cope with stress, serving as a mediating variable between stress and mental well-being (McRae et al., 2008). Mindfulness is generally regarded as a coping strategy that requires practice. Heightening state mindfulness through meditation practice over time increases trait mindfulness, which benefits psychological health (Kiken et al., 2015; Shapiro et al., 2006). These can be assessed by self-reporting (Baer et al., 2004). Research suggests that a person may reach a state of mindfulness without practicing meditation because humans have a natural ability to observe and know their thoughts and feelings without making judgments, and this ability may exist within the subconscious of individuals. Therefore, trait mindfulness is unique and persistent in each person at different levels (Glomb et al., 2011; Grossman et al., 2004; Kabat-Zinn, 2003).

A few studies have found relationships between certain coping strategies, trait mindfulness, and resilience, but there is still uncertainty whether trait mindfulness enhances the effect of coping strategies on resilience by serving as a mediating variable. This research hypothesized that trait mindfulness would mediate the influence of some coping strategies on resilience in the context of undergraduate students.

2. LITERATURE REVIEW

The relationships between trait mindfulness, coping strategies, and resilience remain unclear. However, there is evidence that trait mindfulness may underlie the effect of coping strategies on resilience. In an effort to fill these gaps, the purpose of this study is to examine the influence of coping strategies on the resilience of undergraduate students, employing trait mindfulness as a mediator, while taking into account the relevant findings from previous studies.

2.1 Coping strategies and resilience

Carver et al. (1989) identified 15 types of coping strategies, which fall into three categories:

I. Problem-focused strategy is an attempt to change the situation by reducing obstacles and expanding the scope of problem resolving. This includes: *1) Active*—an effort to eliminate the cause of stress by finding better ways to manage the situation step by step with concrete actions. *2) Planning*—finding the best, most thoughtful solutions to problems that cause stress, which may be to act in the future. *3) Suppression of competing activities*—minimizing unrelated stories in life to focus one's attention on solving a problematic situation. *4) Restraint*— a defensive style that is defined by not doing anything rash and waiting until the appropriate moment to deal with the problem. And *5) Use of instrumental support*—seeking help, advice, or solutions to problems from others;

II. Emotion-focused strategy refers dealing with one's own emotions to feel better without changing the situation. This includes: *6) Use of emotional support*—finding comfort, empathy, and understanding from others or venting feelings to others. *7) Positive reinterpretation*—the reinterpretation of stressful situations and perception of positive aspects; *8) Acceptance*—honestly accepting that the problem has already occurred and that one still cannot find a solution. *9) Turning to religion*— relying on a religion through principles or rituals; and *10) Humor*—changing one's perspective on the problem to a humorous point of view;

III. Avoidant strategy involves avoiding the problem or not managing one's stress. This includes: *11) Venting of emotions*—focusing only on one's stress and letting frustration out. *12) Behavioral disengagement*—not dealing with the stress or giving up on a problem. *13)Mental disengagement*—diverting attention away from a problem to something unrelated, such as daydreaming. *14) Substance use*—the use of alcohol, cigarettes, or drugs to help relieve stress. (In this research, questions were used for alcohol consumption only); and *15) Denial*—denying that the problem happened or pretending not to be troubled by that problem. Coping

strategies are neither good nor bad, and a strategy that is useful in one situation may be ineffective in another. Some strategies are used on specific occasions, such as seeking social support—both instrumental and emotional (Carver et al., 1989; Lazarus, 1993).

Although coping and resilience are related concepts, they are distinct in that coping refers to a variety of skills and purposeful reactions to stress, whereas resilience refers to positive adaptation in the face of serious adversity (Glennie, 2010). While the information on the relationship between resilience and coping can seem ambiguous, there have been some studies on the relationship between these variables. One of the studies has found that resilience and the use of different coping strategies can explain the variations in resilience. Emotion-focused coping is associated with a low level of resilience, while problem-focused coping is positively correlated with management skills and negatively correlated with sensitive emotional responses, which produce a high level of resilience (Alonso-Tapia et al., 2019). Şahin and Hepsöğütlü (2018) have found that resilience is positively correlated with moderate use of active coping and negatively correlated with the use of inappropriate strategies, and those who use approach-oriented coping (taking steps to directly remove the stressor) have higher resilience than those who use other strategies (Chen et al., 2018). The use of coping strategies may also depend on timing (Conley et al., 2020). Heffer and Willoughby (2017) found that using a combination of many positive coping strategies can help a person develop more positive adaptation and have fewer suicidal thoughts than employing a small number of repeated strategies that do not help a person cope better with stress.

2.2 Mindfulness and resilience

Although the Buddhist philosophy has long emphasized the importance of mindful meditation for improving well-being (Baer, 2003), mindfulness is a relatively new concept within the field of psychology (Brown et al., 2013). It is a skill that improves adaptive coping to stressful circumstances by the self-regulation of attention toward the immediate experience and an open and accepting perspective toward one's present experience (Bishop et al., 2004). Thoughts and feelings that enter an individual's awareness are observed rather than expanded on or assessed (Chiesa & Malinowski, 2011).

Several studies in various contexts have revealed a relationship between mindfulness and resilience. Trait mindfulness is negatively correlated with COVID-19-related stress (Dillard & Meier, 2021). Mindfulness and the perception of one own's ability to study affect a student's resilience (Keye & Pidgeon, 2013). In adolescents, mindfulness has also been found to positively correspond with mental health (Klainin-Yobas et al., 2016), to be negatively linked to psychological problems such as stress, depression, and anxiety (Galante et al., 2018; Lynch et al., 2018; Pepping et al., 2016), and to enhance learning efficiency (Yamada & Victor, 2012). Regarding the intersection of mindfulness and resilience, Greason and Cashwell (2009) have shown that mindfulness is a strong predictor of "self-efficacy," which is critical to resilience. Mindfulness can also be used by college students as a coping strategy that reduces stress and depression (Lynch et al., 2018). These findings are consistent with those from the study by Galante et al. (2018), who learned that students who completed a mindfulness program experienced lower stress during the exam than the untrained group, thereby demonstrating their resilience.

2.3 Mindfulness and coping strategies

Higher trait mindfulness is associated with lower rumination, self-criticism, and greater use of adaptive coping strategies. It also predicts higher use of different strategies to varying degrees in each situation (Keng et al., 2018). Healthcare professionals with a low level of mindfulness experience more unpleasant emotions and employ more emotion-focused strategies, implying that trait mindfulness and positive effects assist these individuals in sustaining personal achievement by employing problem-focused coping strategies (Sauvain-Sabé et al., 2023). A study of the relationship between mindfulness, stress, and coping strategies among college students has found that a person with trait mindfulness is more likely to choose an effective coping strategy than a dysfunctional one. Trait mindfulness was also negatively correlated with alcohol or substance use (Karyadi et al., 2014).

Trait mindfulness is positively correlated with emotional stability and both physical and mental well-being. It also allows people to control their behaviors and helps them develop good relationships with others (Dane, 2011). It also positively correlates with confidence, mental health, emotion regulation, and life satisfaction. It is negatively correlated with substance use. It has also been found to be negatively correlated with stress perception, negative mood, anxiety, and depression. Mindful people have low awareness of stress and are also able to relax quickly when faced with a stressful event (Miller et al., 2017; Mesmer-Magnus et al., 2017). Trait mindfulness helps to reduce accustomed negative behaviors, such as inappropriate thinking or preoccupation with negative thoughts (Teasdale et al., 2002). For these reasons, people with high trait mindfulness are more likely to use effective coping strategies.

3. MATERIALS AND METHODS

3.1 Participants

Participants in this study were undergraduate students. The sample size was determined by using G* Power 3 (Faul et al., 2009) with medium effect size estimation (Cohen, 1988). The minimum sample size was calculated to be 107, which was to be increased for the actual data collection. The sample size with a complete dataset totaled 221 participants from three public universities in Bangkok, Thailand. The sampling was purposefully drawn from those who enrolled in general education courses, which allowed students to come from various faculties and disciplines. Inclusion and exclusion criteria for participants were male and female undergraduate student volunteers and students aged 18 years and over, without restrictions on their faculties, disciplines, or any other demographic characteristics. The method was conducted in accordance with the general ethical principles of psychologists and code of conduct. Participants gave written informed consent for their participation, and they could withdraw or terminate their participation at any time based on their personal needs. The data was gathered in June 2020 through an online questionnaire, which the participants had consented to complete.

3.2 Scales

This research used three scales developed from the original scales. The content and concepts of the scales were literally interpreted by the researcher and translated into Thai. They were then proofread with back translation by a language expert, whereas the scoring criteria were based on the original criteria. All scales were tested with 45 participants in the pioneer stage. The data were analyzed by item analysis with t-test; the percentile of the higher score group is 73 or above, and that of the lower score group is at 27 or below. The set of qualified items was then analyzed with a corrected item-total correlation (CITC), whose details are as follows.

3.2.1 The coping strategies scale

The scale was taken from Carver et al. (1989). The Coping Strategies Scale has a total of 60 positive items divided into 15 coping strategies, with 4 items in each strategy on a four-point Likert scale (0 = I *don't use this method*, 1 = *I use it a bit*, 2 = *I use it moderately*, 3 = *I use it a lot*). Developed from item analysis and CITC, the items were selected to be concise and to reduce redundancy by preserving only two items in each strategy, except "mental disengagement" and "restraint," for which only one item each passed the criteria.

Finally, a total of 28 items were included (α = .88). Participants were given prompts, such as: "When you feel the tension from the problematic situation becoming an obstacle to studying, how do you cope with the stress over the past 10 months?" The example of statements in each strategy is as follows, respectively: 1) "I am committed to solving the situation; 2) "I plan to deal with the incident"; 3) "I focus on solving the problem by paying attention to other matters as much as necessary"; 4) "I wait for the right moment to find a solution"; 5) "I try to get advice from others for a solution"; 6) "I tell someone I know about my feelings"; 7) "I think that events help shape me, help me grow, and strengthen me"; 8) "I just think it happened"; 9) "I believe in holy things. It will help me"; 10) "I look at problems as a joke"; 11) "I release stress by expressing negative feelings"; 12) "I stop expecting to achieve educational goals"; 13) "I find something else to do and don't think about the problem"; 14) "I temporarily let my feelings go with an alcoholic drink"; and 15) "I act as if nothing happened".

3.2.2 The mindfulness scale

Freiberg Mindfulness Inventory (Walach et al., 2006) was used for 15 items. It was created according to the original concepts of mindfulness regarding attention and awareness of the mind's experiences without judgment, including one reversal, on a four-point Likert scale (1 = *rarely*, 2 = *sometimes*, 3 = *often*, 4 = *always*). A total of 11 qualifying items were obtained (α = .84). Answers to the question included: "I am aware of my feelings at the present"; "I am always conscious"; "I feel calm and relaxed, even though the circumstances around me are turbulent and tense"; and "I am very impulsive for the matter of myself and others."

3.2.3 The resilience scale

It was developed according to Smith et al. (2008), with three positive and three negative items on a five-point Likert scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *neutral*, 4 = *agree*, 5 = *strongly agree*). All six items passed the criteria (α = .73). Responses to questions include: "I tend to quickly bounce back after a difficult time"; "Even though the stressful event has passed, I still don't feel right"; "I was able to get back to being me when I got through stressful events"; and "It was difficult for me to regain my mind after a terrible incident."

The data were collected from participants after clarifying the research objectives. The document distributed to participants included a URL and online survey instructions. All scales were ordered, respectively: personal information, coping strategies, resilience, and mindfulness.

4. RESULTS AND DISCUSSION

Of the total 221 participants, 102 were male (46.15%), aged between 18 (13.57%) and 23 (5.43%), with the majority being 19 years old (24.89%). Most participants were freshmen (40.72%), and fourth-year students made up the smallest group (15.80%). They studied engineering (56.11%), social sciences and humanities (30.77%), finance and management (9.95%), and others (3.17%). Most were Buddhists (91.40%). The full descriptive statistics of variables are shown in Table 1.

Table 1: Mean, Standard Deviation, and Correlation Coefficient of the Variables

	M	*SD*	**Mindfulness**	**Resilience**
Problem-focused				
1. Active	2.04	.65	.42**	.26**
2. Planning	2.17	.62	.38**	.25**
3. Suppression of competing activities	1.92	.66	.37**	.21**
4. Restraint	1.77	.79	.21**	.07
5. Use of instrumental support	1.72	.79	.10	.01
Emotion-focused				
6. Use of emotional support	1.82	.79	.02	
7. Positive reinterpretation	2.14	.68	.47**	.29**
8. Acceptance	2.02	.64	.30**	.23**
9. Turning to religion	1.14	.81	.09	-.05
10. Humor	1.24	.77	.43**	.30**
Avoidant				
11. Venting of emotions	1.33	.76	-.10	-.31**
12. Behavioral disengagement	0.74	.79	-.13	-.26**
13. Mental disengagement	2.11	.85	.15*	.02
14. Substance use	0.65	.86	.11	-.11
15. Denial	1.39	.74	.31**	.10
Mindfulness	2.84	.48		
Resilience	3.38	.70	.45**	

Note. *p < .05. **p < .01. ***p < .001.

Participants have a moderate level of trait mindfulness (*M* = 2.84, *SD* = .48, skewness = -.24) and resilience (*M* = 3.38, *SD* = 0.70, skewness = .02) based on their mean scores of both variables, with the distribution of the first variable slightly skewed left. There were six strategies that were positively correlated with resilience. Three strategies were in the problem-focused category: active (*r* = .26), planning (*r* = .25), and suppression (*r* = .21). The other three strategies were in the emotion-focused category: positive reinterpretation (*r* = .29), acceptance (*r* = .23), and humor (*r* = .30). These strategies had small effects, with the effects of humor and positive reinterpretation being higher than the others. All of these were also moderately correlated with mindfulness (*r* = .30–.47). Two other strategies in the avoidant category, which were negatively correlated with resilience, were venting of emotions (*r* = -.31) and behavioral disengagement (*r* = -.26). However, there were some strategies which were only correlated with mindfulness. These were restraint, mental disengagement, and denial. Mindfulness and resilience were correlated with each other moderately (*r* = .45).

The testing of mediation with regression analysis was used by SPSS's PROCESS macro (Hayes, 2018), whereby all predictive variables were free from multicollinearity (Tolerance was .456–.860; VIF was 1.16–2.19). The results are shown in Table 2.

Table 2: Influence of Coping Strategies on Resilience Mediating by Trait Mindfulness

	IV on M (a)		M on DV (b)		Indirect effect (ab)		Direct effect (c')	
	b	*SE* (95% CI)	*b*	*SE* (95% CI)	*b*	*SE* (95% CI)	*b*	*SE* (95% CI)
Problem-focused								
1. Active†	.31***	.045 (.22, .40)	.61***	.10 (.42, .81)	.19	.04 (.11, .28)	.09	.07 (-.06, .23)
2. Planning†	.30***	.05 (.20, .39)	.61***	.10 (.42, .80)	.18	.04 (.10, .27)	.11	.07 (-.04, .25)
3. Suppression of competing activities†	.27***	.05 (.18, .36)	.63***	.10 (.45, .82)	.17	.04 (.09, .25)	.06	.07 (-.08, .19)
4. Restraint†	.13**	.04 (.05, .21)	.67***	.09 (.49, .85)	.09	.03 (.03, .15)	-.02	.06 (-.13, .09)
5. Use of instrumental support	.06	.04 (-.02, .14)	.67***	.09 (.49, .85)	.04	.03 (-.02, .09)	-.04	.05 (-.14, .07)
Emotion-focused								
6. Use of emotional support	.01	.04 (-.07, .10)	.67***	.09 (.49, .84)	.01	.03 (-.05, .07)	-.07	.05 (-.17, .04)
7. Positive reinterpretation†	.33***	.04 (.25, .41)	.59***	.10 (.39, .79)	.20	.05 (.11, .29)	.11	.07 (-.03, .25)
8. Acceptance†	.22***	.05 (.13, .32)	.62***	.09 (.43, .80)	.14	.04 (.06, .22)	.11	.07 (-.03, .25)
9. Turning to religion	.05	.04 (-.03, .13)	.68***	.09 (.50, .85)	.04	.03 (-.02, .08)	-.08	.05 (-.18, .02)
10. Humor‡	.27***	.04 (.19, .34)	.58***	.10 (.38, .77)	.15	.04 (.09, .23)	.12*	.06 (.00, .24)
Avoidant								
11. Venting of emotions§	-.06	.04 (-.15, .02)	.62***	.09 (.45, .79)	-.04	.03 (-.11, .02)	-.25***	.05 (-.35, .14)
12. Behavioral disengagement§	-.08	.04 (-.16, .00)	.62***	.09 (.45, .80)	-.05	.03 (-.11, .00)	-.18***	.05 (-.29, -.08)
13. Mental disengagement†	.08*	.04 (.01, .16)	.67***	.09 (.49, .85)	.06	.03 (-.00, .11)	-.04	.05 (-.14, .06)
14. Substance use§	.06	.04 (-.01, .13)	.69***	.09 (.51, .86)	.04	.02 (-.01, .09)	-.13**	.05 (-.23, -.03)
15. Denial†	.20***	.04 (.12, .28)	.68***	.09 (.50, .87)	.14	.04 (.07, .21)	-.04	.06 (-.16, .08)

Note. N = 221. †Complete mediation; ‡Partial mediation; §Direct effect

IV = Coping strategies; M = Mindfulness; DV = Resilience

*p < .05. **p < .01. ***p < .001.

After performing the mediation analysis, six coping strategies revealed clearer influences on resilience by mediating their effects through trait mindfulness. Active (*b* = 0.19), planning (*b* = 0.18), suppression of competing activities (*b* = 0.17), positive reinterpretation (*b* = 0.19), and acceptance (*b* = 0.14) had full indirect effects, while humor (*b* = .15) had a partial indirect effect on resilience.

Surprisingly, there were three strategies that did not directly correlate with resilience but could slightly exert their influence via trait mindfulness. These strategies were restraint (*b* = 0.09), which is a defensive coping style, mental disengagement (*b* = 0.06), and denial (*b* = 0.14). The last two are avoidant coping styles.

The other three strategies that only had direct negative effects on resilience were focusing on and venting of emotions (*b* = -0.25, *p* < .001), behavioral disengagement, and substance use (*b* = -0.18, *b* = -0.13, *p* < .01, respectively).

Past research found that coping strategies in the problem-focused category had positive effects on resilience (de la Fuente et al., 2017) and were the best predictors when being mediated through resiliency within a person (Alonso-Tapia et al., 2019). According to the findings of the current research, the use of many coping strategies requires that individuals have trait mindfulness to regain their resilience. Most of the strategies are in the problem-focused category, including active, planning, suppression of competing activities, and restraint. The results show that these coping styles are useful strategies for students to recover from stress. However, trait mindfulness might serve as an intermediary mechanism between the two variables in the background. So, mindful people who use these strategies, even the defensive style, will get more benefits from resilience. It is possible that trait mindfulness reduces cognitive dissonance; therefore, a person could live with

reality by accepting the inconsistency of thoughts. They have less stress and can focus on problem solving (Muschalik et al., 2020).

Two strategies in the emotion-focused category were found to have an influence on resilience, which was mediated by trait mindfulness: the first was acceptance, perhaps because this strategy is consistent with the nature of mindfulness, which perceives everything as it is; therefore, trait mindfulness and the use of this strategy could promote each other. Because trait mindfulness has been positively correlated with peace of mind (Xu et al., 2015) and a positive mood (Jislin-Goldberg et al., 2012), it may encourage individuals to perceive problems in a relaxed or optimistic way. Thus, trait mindfulness mediates the influence of the reinterpretation strategy on resilience.

Past studies indicate that using strategies in the avoidant category has negative results (Chen et al., 2018). In the current research, however, mental disengagement and denial have slightly positive indirect effects on resilience through trait mindfulness, which could be effective for individuals in adjusting to or recovering from adversity if they have a mindfulness disposition. It may even be because mindfulness could change the mechanisms of those strategies. Instead of avoiding unpleasant experiences and thoughts, a mindful person responds to a stressful situation by nonjudgmentally observing and accepting thoughts and emotions so that a thoughtful choice about how to respond could be made (Sauer et al., 2013). Moreover, resilience is correlated with self-knowledge and self-control, whereas mindfulness appears to be closely linked to self-control and emotion regulation (Linder & Mancini, 2021). Mindfulness may be a fundamental mechanism that facilitates the self-knowledge and self-control that are necessary to cultivate more resilience, even if individuals employ some inappropriate strategies.

There was no influence of supportive strategies on resilience, either instrumental or emotional. Furthermore, these strategies did not correlate with mindfulness because mindful individuals may deal with a given problem on their own or choose more self-relying strategies through the decisions and actions by themself. Besides, turning to religion had no effect on resilience, even though most participants in this research were Buddhist. However, the mean of this strategy's use was relatively low (M = 1.14, SD = .81), which indicates that religions may not be a sanctuary for the younger generation.

The remaining three strategies had no mediation effects. However, negative direct effects on resilience were found, namely for venting of emotions, behavioral disengagement, and substance use (alcohol consumption). The results confirm that those are dysfunctional strategies. Keeping the problem in mind and venting negative emotions without correcting them may promote more negative attitudes that increase stress. Similarly, behavioral disengagement and drinking alcohol are just temporary escapes from the problem and can weaken resilience.

5. CONCLUSION

This research revealed that trait mindfulness is a background mechanism in mediating the influence of several coping strategies on the resilience of individuals. Mindfulness should be encouraged among college students as they face myriad challenges. Practicing mindfulness can eventually transform these skills into habits. There are currently techniques and tools, such as applications and home-use gadgets, that can be used to accommodate the next generation. On the other hand, it would be great to engage in the traditional mindfulness practice through Buddhist Vipassana meditation, which promotes awareness in all mental activities, including perceiving, touching, thinking, and feeling (Walach et al., 2006).

However, further research with larger samples needs to be conducted. This will increase the effect size more clearly. In addition, the investigation of additional variables should be considered, such as the kind of problems the person may experience and the kind of difficulties for which trait mindfulness could better mediate the effect of coping strategies on resilience. Also, a qualitative study method, such as an in-depth interview, could allow more useful information to be obtained.

ACKNOWLEDGEMENT

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