



## Coping mediates the association between empathy and psychological distress among Japanese workers

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### ABSTRACT

Previous studies have demonstrated an association between low empathy and high psychological distress. However, few studies have explored the mediators of this association. The present study examined how coping mediates the effect of empathy on psychological distress. Participants were 1232 Japanese workers who completed a comprehensive coping scale comprising eight subscales. We conducted a cross-sectional mediation analysis. The findings showed that low empathy was associated with high psychological distress and that this association was mediated by the cognitive reappraisal of approach coping and by the abandonment and responsibility-shifting of avoidance coping. These results offer a useful model of how empathic capacity impacts perceived psychological distress by demonstrating the protective and enhancing role of specific coping.

### 1. Introduction

According to the Japanese Ministry of Health, Labour and Welfare (2012), over 60% of workers report severe stress in the workplace and the most frequently reported cause is interpersonal relations. Workplace interpersonal relations tend to be mandatory and less influenced by personal preference compared with other interpersonal relations. Thus, investigation of the association between stress and factors underlying successful interpersonal relations is important to maintain the mental health of workers.

One factor that supports successful interpersonal relations is empathy. Empathy is an individual's ability to understand and respond adaptively to others' emotions, succeed in emotional communication, and promote prosocial behavior (Spreng, McKinnon, Mar, & Levine, 2009). Previous studies have demonstrated that lower empathy is related to maladaptive outcomes. For example, according to one systematic review of subclinical populations and patients with major depressive disorders, low empathy individuals tend to show more depressive symptoms (Schreiter, Pijnenborg, & Aan Het Rot, 2013). Similarly, lower empathy was identified as a risk factor for "burnout" in medical students and medical doctors (Duarte, Branco, Raposo, & Rodrigues, 2015; Torres, Aresté, Mora, & Soler-González, 2015). Bourgault et al. (2015) also found an association between lower empathy and lower well-being in nurses. These results indicate that individuals with lower empathy are likely to develop greater psychological distress. However, less is known about the psychological

mechanisms underlying this association.

One factor that may mediate between empathic traits and perceived psychological stress is coping. Coping has been defined as cognitive and behavioral efforts to manage external and/or internal demands that are appraised as taxing or exceeding the resources of the person (Lazarus & Folkman, 1984, p. 141).

Several studies have investigated the relationship between coping and psychological distress. A study of a Canadian community sample demonstrated that people who used positive coping, such as problem solving or exercising, reported less distress, whereas those who used avoidance and self-distractive behaviors reported more distress (Meng & D'Arcy, 2016). A study of caregivers of patients with schizophrenia indicated that caregivers who used positive reframing experienced less psychological distress, whereas caregivers who used behavioral disengagement, venting, and self-blame experienced more psychological distress (Ong, Ibrahim, & Wahab, 2016).

Previous research indicates an association between empathy and coping. Factors that affect coping are called coping resources. Previous studies have identified several coping resources, such as self-esteem, optimism, self-efficacy, and social support (Betoret, 2006; Fliege et al., 2016; Nes & Segerstrom, 2006). There is evidence that empathy is a coping resource. A study of a Spanish adolescent sample found that empathy was positively associated with active coping, such as support seeking and problem solving (Carlo et al., 2012). A longitudinal experimental study indicated that high empathy predicted low aggressive/antisocial coping (Buchwald, 2003). These results suggest that

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individuals with higher empathy may be able to select appropriate coping strategies.

Taken together, previous research illustrates associations between empathy and psychological distress, coping and psychological distress, and empathy and coping. Thus, it is reasonable to assume that coping can mediate the association between empathy and psychological distress.

To investigate these possible associations and mediation, it is important to consider the multiplicity of the coping concept. The most popular classification of coping is based on the dichotomy of approach and avoidance coping (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). Approach coping refers to efforts directed toward reducing or eliminating stressors, such as information seeking, planning, social support seeking, and proactive coping. Avoidance coping refers to efforts to move away from stressors, such as abandonment, denial, distraction, and cognitive avoidance. This distinction between approach and avoidance coping is particularly important because it overlaps with a goal-based model of behavior that attempts to explain basic human behavior in terms of the motivation to move toward goals or remain/move away. There is evidence for an association between this distinction and personality traits (Carver & Connor-Smith, 2010).

Previous studies have shown that approach coping is generally adaptive, whereas avoidance coping is maladaptive. For example, a greater use of approach coping is associated with lower depression and anxiety (Roesch et al., 2005) and higher psychological well-being (Dukes Holland & Holahan, 2003), whereas greater use of avoidance coping is associated with higher depression (Dyson & Renk, 2006; Gutiérrez-Zotes et al., 2015) and cortisol dysregulation (Hoyt et al., 2013). However, a review article by Taylor and Stanton (2007) indicated that the evidence for the effects of approach coping are less consistent than evidence for the effects of avoidance coping. These mixed results may be because a one-dimensional classification such as approach/avoidance is too simple and broad to detect complicated underlying mechanisms.

Another well-established coping classification differentiates between problem-focused and emotion-focused coping (Lazarus & Folkman, 1984). Problem-focused coping is defined as handling problems and changing the situation. This coping strategy involves developing a better understanding of the problem and finding solutions or obtaining advice from the right person. In contrast, emotion-focused coping is defined as the regulation of emotional reactions derived from stressful situations. This type of coping involves self-distraction by doing something else or trying to find a positive angle to the problem.

Tobin, Holroyd, Reynolds, and Wigal (1989) integrated these two-dimensional approaches. They demonstrated that coping factors could be organized into two general categories (i.e., approach and avoidance) at a tertiary factor level, and that four subfactors could be extracted in a hierarchical model, with two orthogonal and subgeneral strategies for each tertiary factor (i.e., [1] approach and problem-focused, [2] approach and emotion-focused, [3] avoidance and problem-focused, and [4] avoidance and emotion-focused strategies). Similarly, Holahan and Moos (1987) introduced another dimension of coping, the cognitive and behavioral dimension, and classified coping into three categories: active-cognitive, active-behavioral, and avoidance-oriented strategies. Kamimura, Ebihara, and Sato (1995) integrated these three classification approaches and developed a tri-axial coping scale that has eight facets based on the following three axes: approach–avoidance, problem-focused–emotion-focused, and cognitive–behavioral dimensions. This scale permits the examination of the effect of approach/avoidance coping as well as specific coping strategy, which is identified by the combination of three dimensions.

Considering the multidimensional nature of coping indicated in previous research, we comprehensively investigated the mediational effects of multiple coping strategies and examined the difference between mediational effects. We hypothesized that individuals with higher empathy may have more successful interpersonal relationships

and may receive support from others to cope with difficult situations. Thus, they may be more likely to use approach coping. In contrast, individuals with lower empathy may have poorer interpersonal relationships and may receive less support from others. Thus, they may be more likely to use avoidance coping.

## 2. Methods

### 2.1. Participants and procedure

Participants were 1760 workers from five organizations (four private companies and one local government department) in Kinki district, Japan. There were 1352 surveys submitted (collection ratio: 76.8%). Informed consent was obtained from participants, who were informed that study participation was voluntary and that there was no disadvantage for non-participation. Data were collected on age, gender, working position (supervisory/non-supervisory) and measurement scales were used to assess empathy, coping, and psychological distress. The survey took approximately 15 min to complete. In four organizations, we distributed surveys to the office workers via the person in charge of personnel. Each office worker personally sealed their completed survey in an envelope and submitted it to the personnel department. In one organization, we distributed a Microsoft Excel file containing the survey via a member of the personnel staff. Each office worker emailed back the completed file directly to the authors.

### 2.2. Instruments

#### 2.2.1. Empathy (Empathy Quotient-short)

To assess empathy, we used the short version of the Empathy Quotient (EQ; Wakabayashi et al., 2006). The EQ was developed to measure global empathy (Baron-Cohen & Wheelwright, 2004). The short version of the EQ comprises 22 items rated on a four-point Likert scale ranging from “strongly agree” to “strongly disagree.”

#### 2.2.2. Coping (Tri-Axial Coping scale-24)

To assess coping, we used the Tri-Axial Coping scale (TAC-24; Kamimura et al., 1995). The TAC-24 consists of three coping dimensions: approach/avoidance, problem-focused/emotion-focused, and cognitive/behavioral. The scale comprises eight subscales that are combinations of the three dimensions: 1. Planning (approach-problem-cognitive; e.g., think what to do next based on lessons learned from previous behavior); 2. Information seeking (approach-problem-behavioral; e.g., obtain information from someone who is knowledgeable about the situation); 3. Cognitive reappraisal (approach-emotion-cognitive; e.g., try to find a positive aspect to the situation rather than focusing only on the negative aspect); 4. Catharsis (approach-emotion-behavioral; e.g., distract myself by complaining); 5. Abandonment (avoidance-problem-cognitive; e.g., think there is nothing I can do and postpone it); 6. Responsibility shifting (avoidance-problem-behavioral; e.g., put the responsibility onto other people); 7. Cognitive distancing (avoidance-emotion-cognitive; e.g., try not to think about it); 8. Distraction (avoidance-emotion-behavioral; e.g., enjoy sports or traveling). Each subscale was extracted as an independent factor and demonstrated sufficient internal consistency ( $\alpha = 0.86$  to  $0.65$ ) (Kamimura et al., 1995). Previous studies (Suzuki, 2004) have shown good model fitness for the scale (GFI = 0.90, AGFI = 0.86, RMSEA = 0.07) and its reliability and validity have been verified. The scale consists of 24 items rated on a five-point Likert scale ranging from “never” to “always.”

#### 2.2.3. Psychological distress (Brief Survey of Occupational Stress)

To assess psychological distress, we used the Brief Survey of Occupational Stress (Shimomitsu & Haratani, 1997). This scale was developed in a study commissioned by the Japanese Department of Labour (currently the Ministry of Health, Labour and Welfare) and its reliability and validity have been verified. This comprehensive measure

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