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Belief in a just world for the self and others, Karma, system justification and well-being during COVID-19 pandemic: Evidence from 15 Asian nations

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Belief in a just world for the self and others, Karma, system justification and well-being during the COVID-19 pandemic: Evidence from 15 Asian nations

Abstract

The World Health Organization (WHO, 2020) announced the COVID-19 outbreak as a pandemic. Globally, this situation affects people in various domains including mental health. Existing theories and research findings suggest justice beliefs are associated with mental health and may help to cope with adverse life circumstances. Participants ($N = 3,694$) in 15 Asian nations completed measures of belief in a just world (BJW), Karma, system justification, well-being indices and COVID-19 impact. The results show that BJW for the self and system justification positively predicted well-being while BJW for others provided reverse

associations. Furthermore, Karma predicted both higher life satisfaction and depression. However, COVID-19 impact did not moderate the relationships between justice beliefs and well-being. The results provide various psychological functions but do not consistently indicate the buffering role of justice beliefs during COVID-19 pandemic.

Keywords: belief in a just world; Karma; system justification; well-being; COVID-19

Introduction

The World Health Organization (WHO, 2020) declared COVID-19 a global pandemic. Given the emerging nature of this pandemic, the uncertainty and uncontrollability linked to its contagion have had negative impacts on people's mental health all over the world. At the onset of vaccine development, the governments worldwide took alternative measures to restrict disease transmission, such as enforcing lockdowns and promoting social distancing. These measures led to increased self-isolation and reduced face-to-face interactions, impacting social support. Consequently, the pandemic not only worsened overall well-being but also threatened individuals' sense of justice, which is connected to other psychological needs, like the need for control and predictability. This research aims to examine the relationships between justice beliefs—belief in a just world for the self versus others, Karma, and system justification—and well-being during the COVID-19 pandemic, while also examining the possible moderating effects of COVID-19 impact across 15 Asian nations.

BJW, Well-being, and Adverse Life Circumstances

The belief in a just world (BJW) is the belief that individuals receive what they deserve and deserve what they get. According to just world theory (Lerner, 1980), this belief contributes to feelings of control, meaning, order, security, and stability in life. Additionally, a sense of justice in one's own life is crucial for overall well-being. BJW is a two-dimensional construct: (1) BJW for the self (BJW-S) (e.g., "I feel that I get what I deserve"), and (2) BJW for others (BJW-O) (e.g., "I feel that people get what they deserve") (Lipkus et al., 1996). Lipkus et al. (1996) found that while both constructs are positively related, they fulfill different psychological functions. Specifically, BJW-S predicted higher level of life satisfaction and lower level of depression and stress, whereas BJW-O only predicted life satisfaction.

Apart from Lipkus et al. (1996)'s research, previous studies have consistently shown that BJW-S is particularly related to well-being (Bègue & Bastounis, 2003; Khera et al., 2014; Sutton & Douglas, 2005; Sutton et al., 2008; Sutton et al., 2017). In contrast, BJW-O is associated with negative outcomes, such as prejudice against marginalized groups like the elderly and the poor (Bègue & Bastounis, 2003; Sutton & Douglas, 2005; Khera et al., 2014). Additionally, Dalbert (1999) proposed a BJW scale that parallels Lipkus et al.'s (1996) distinction, differentiating between Personal BJW (PBJW) and General BJW (GBJW). Previous research utilizing this alternative scale has shown that PBJW, akin to BJW-S, uniquely predicted well-being (e.g., Correia & Dalbert, 2007; Dalbert, 1999; Megías et al., 2019; Nartova-Bochaver et al., 2019; Otto et al., 2006). Consequently, researchers often use both BJW subscales interchangeably: self-related (BJW-S and PBJW) and other-related (BJW-O and GBJW) (Hafer & Sutton, 2016).

While the concepts of just world beliefs and its psychological functions are presumed to be universal, the generalizability of these findings across different cultural contexts has been questioned. Most BJW and well-being studies have been relied on Western samples (e.g., Bègue & Bastounis, 2003; Correia & Dalbert, 2007; Dalbert, 1999; Khera et al., 2014; Megías et al., 2019; Nartova-Bochaver et al., 2019; Otto et al., 2006; Sutton & Douglas, 2005; Sutton et al., 2008; Sutton et al., 2017), leaving a gap in research on non-Western populations, particularly in Asia. In Asian studies that have included both BJW dimensions, some found that self-related BJW uniquely predicts well-being (Chobthamkit et al., 2022; Kamble & Dalbert, 2012), while others indicated that both self- and other-related BJW predicted well-being (Wu et al., 2011; Wu et al., 2013; Yu et al., 2018). Despite these mixed results, a consistent pattern emerges. Notably, Chobthamkit (2021) conducted extensive multi-level studies across 44 Asian cities, confirming that self-related BJW is a significant predictor of well-being, supporting its universal psychological function.

When facing adverse life circumstances, BJW may serve as a personal resource that buffers mental health risks (Dalbert, 2001). Specifically, self-related BJW is important for well-being among individuals facing hardships, such as cancer patients (Megías et al., 2019), flood survivors (Otto et al., 2006), and marginalized groups like refugee workers (Khera et al., 2014). Conversely, some research indicates that other-related BJW can be equally important for coping with stress among disadvantaged groups, such as those suffering from chronic pain (McParland & Knussen, 2010; McParland et al., 2012) and young adults living in an assisted accommodation (Sutton & Winnard, 2007). Furthermore, other-related BJW has been found to be more important than self-related BJW for individuals dealing with adverse conditions like earthquakes (Wu et al., 2011, 2013) and for those in impoverished groups (Wu et al., 2011). Overall, past studies on BJW and well-being in difficult circumstances yield mixed findings, potentially because other-related BJW may be more relevant in contexts where stress is experienced collectively.

Karma, Well-being, and Adverse Life Circumstances

The term "Karma," derived from Sanskrit, means "act, effect, fate" and refers to the consequences of one's actions. It involves an impersonal and supernatural force that monitors moral behavior and possesses the legitimate authority to justly reward good actions and punish bad ones (Baumard & Boyer, 2013) whereas the concept of justice in theism is based on divine authority (Bronkhorst, 2011; White et al., 2016). Karma is a prevalent spiritual belief related to justice found in various Eastern religious traditions, including Buddhism, Hinduism, and Jainism (Reichenbach, 1988; White et al., 2017; see also White & Norenzayan, 2019). While Karma is increasingly gaining recognition in the West (e.g., Kaufman, 2005; Perrett, 1985; Statista Research Department, 2021), Western samples endorse it less strongly than their Asian counterparts (Chobthamkit et al., 2022; White et al., 2019; White et al., 2021). Specifically, Indians perceived Karma as more inevitable than Americans did (Goyal & Miller, 2023).

Research on the psychological implications of Karma has shown positive associations with well-being in India (Agrawal & Dalal, 1993; Anand, 2009; Dalal & Pande, 1988), while other studies in Sri Lanka (Levy et al., 2009) and the USA (Davidson et al., 2005) found links to poor physical and psychological health. However, recent findings indicate that, among a UK sample, Karma positively predicted life satisfaction and depression whereas no significant associations were found in Thai samples (Chobthamkit et al., 2022). Given these mixed results, understanding the psychological functions of Karma is challenging. On one hand, Karma can provide a sense of order and meaning in life, aligning with just world theory (Lerner, 1980; White et al., 2019) and enhancing well-being. On the other hand, it may contribute to a stable and pessimistic explanatory style (Levy et al., 2009), which can diminish both physical and psychological well-being (Scheier & Carver, 1992; Scheier et al., 2001). Additionally, individuals who view karma as inevitable may attribute their misfortunes to past wrongdoings (Goyal & Miller, 2023), which could be negatively related to their well-being. Thus, Karma may serve as both a positive and negative predictor of well-being.

In the context of individuals facing adverse life circumstances, Karma can be either a supportive or detrimental factor for mental health. For example, it is positively associated with psychological recovery in patients recovering from myocardial infarction (Agrawal & Dalal, 1993) and individuals with disabilities from accidents (Dalal & Pande, 1988). Conversely, Karma has been linked to poorer physical and mental health among survivors of violent trauma (Davidson et al., 2005) and those affected by tsunamis (Levy et al., 2009). Therefore, the literature on Karma among individuals experiencing negative life events presents similarly mixed findings.

System Justification, Well-being, and Adverse Life Circumstances

System justification theory posits that individuals are driven to view existing social structures as fair and legitimate to defend and rationalize the status quo. This motivation serves

a psychological function, particularly when people face injustices and inequalities (Jost & Banaji, 1994). Engaging in system justification may fulfill fundamental needs, including epistemic needs (addressing ambiguity and seeking certainty), existential needs (reducing insecurity and perceived threats), and relational motives (fostering a sense of shared reality and social connections) (Jost & Hunyady, 2005; Jost et al., 2008). Consequently, system justification may enhance well-being and help individuals cope with threats and negative life experiences, particularly those related to injustice and inequality.

Previous studies have found associations between system justification and well-being indicators, such as increased life satisfaction and decreased anxiety and depression across 18 countries (Vargas-Salfate et al., 2018). Additionally, it is linked to higher self-esteem and lower depression, particularly among individuals of higher social status, such as ethnic majorities (Caucasian/White) in the United States who strongly identify with their group (O'Brien & Major, 2005). Conversely, the supportive role of system justification is also evident among disadvantaged groups, including low-income European Americans (Jost & Hunyady, 2002; Rankin et al., 2009), LGBTQ individuals in Chile (Bahamondes-Correa, 2016) and the United States (Suppes et al., 2018), low social class individuals in China (Li et al., 2020), and those experiencing gender discrimination across 23 countries (Napier et al., 2020). Some research highlights the buffering effects of system justification among marginalized groups, such as individuals facing relative deprivation in New Zealand (Osborne & Sibley, 2013), women encountering hostile sexism in Portugal (Pacilli et al., 2019), and ethnic minorities and women in New Zealand (Bahamondes et al., 2019). Furthermore, this palliative function appears in individuals coping with adverse circumstances, such as the November 2015 Paris terror attacks (Vasilopoulos & Brouard, 2019). Thus, system justification seems beneficial for both advantaged and disadvantaged groups, as well as for those facing negative life experiences.

The present research

As the COVID-19 pandemic has incurred specific adverse life circumstances that people had collectively experienced all over the world, it is worth investigating people's mental health from the perspectives of justice beliefs. Furthermore, although justice beliefs (BJW-S, BJW-O, Karma, and system justification) conceptually and empirically overlap in their definition (BJW and Karma: Agrawal & Dalal, 1993; Baumard & Boyer, 2013; Chobthamkit et al., 2022; Reichenbach, 1988; White & Willard, 2024; White et al., 2017, 2019; BJW and system justification: e.g., Jost & Banaji, 1994; Jost & Hunyady, 2005; Kelemen et al., 2014), there are some differences. BJW focuses on how people believe in justice in general without specifying the context and the timing. For example, I feel that people treat each other with what they deserve fairly (Lipkus et al., 1996) whereas system justification specifically focuses on humans, especially institutions and justice is immanent; the system delivers justice in the here and now. For example, "In general, my country's political system operates as it should." (Kay & Jost, 2003). On the other hand, Karma is the supernatural concept which is cosmic, not human and justice may be immanent (in this life) or ultimate (in future life.) For example, people's moral behavior in either a past life or this life influences their lives in either this life or a future life (White et al., 2019). Apart from the similarities and differences in the concept of justice beliefs, their psychological functions are either similar to or different from each other. BJW-S and system justification should be positively related to well-being whereas BJW-O should be negatively associated with well-being. Moreover, Karma may be both a positive and negative predictor of well-being.

Moreover, there has not been much prior research addressing the psychological functions of all four justice beliefs in the same study. In the present research, we examined the relationships between justice beliefs and well-being (life satisfaction and depression) during the COVID-19 pandemic. Moreover, most justice beliefs may play the buffering role among people who faced adverse life circumstances whereas previous research addressing Karma and

well-being among the samples facing adverse life circumstances provides mixed findings. Thus, we also explored the moderating roles of COVID-19 impact (objective indices at nation-level and subjective indices at both individual and nation-levels) in the associations between justice beliefs and well-being during the COVID-19 pandemic in 15 Asian nations. We tested the following hypotheses:

Hypothesis 1 BJW-S positively predicts life satisfaction (Hypothesis 1A) whereas negatively predicts depression (Hypothesis 1B).

Hypothesis 2 BJW-O negatively predicts life satisfaction (Hypothesis 2A) whereas positively predicts depression (Hypothesis 2B).

Hypothesis 3 Karma positively predicts life satisfaction (Hypothesis 3A) and depression (Hypothesis 3B).

Hypothesis 4 System justification positively predicts life satisfaction (Hypothesis 4A) whereas negatively predicts depression (Hypothesis 4B).

Hypothesis 5 COVID-19 impact positively moderates the relationships between BJW-S and well-being indices: life satisfaction (Hypothesis 5A) and depression (Hypothesis 5B). In other words, the associations between BJW-S and well-being will be stronger among individuals who are more severely affected by COVID-19, both at the national and the individual levels, whether measured objectively or subjectively.

Hypothesis 6 COVID-19 impact positively moderates the relationships between BJW-O and well-being indices: life satisfaction (Hypothesis 6A) and depression (Hypothesis 6B). In other words, the associations between BJW-O and well-being will be stronger among individuals who are more severely affected by COVID-19, both at the national and the individual levels, whether measured objectively or subjectively.

Hypothesis 7 COVID-19 impact moderates the relationships between Karma and well-being indices: life satisfaction (Hypothesis 7A) and depression (Hypothesis 7B). In other

words, the associations between Karma and well-being will be stronger among individuals who are more severely affected by COVID-19, both at the national and the individual levels, whether measured objectively or subjectively.

Hypothesis 8 COVID-19 impact positively moderates the relationships between system justification and well-being indices: life satisfaction (Hypothesis 8A) and depression (Hypothesis 8B). In other words, the associations between system justification and well-being will be stronger among individuals who are more severely affected by COVID-19, both at the national and the individual levels, whether measured objectively or subjectively.

Method

Participants and procedure

We recruited 3,695 participants (2,379 women or 64.4%), aged 18-80 ($M = 25.51$, $SD = 8.38$) across 15 Asian nations (mainland China, Hong Kong, India, Indonesia, Japan, Macau, Malaysia, Myanmar, Pakistan, Philippines, South Korea, Taiwan, Thailand, Turkey, and Vietnam) who self-reported that they have lived in these countries since birth. (see Table 1). Participants completed the study using questionnaires prepared as part of a larger study. The sampling was administered online by the snowballing technique during the early critical wave of the COVID-19 pandemic (March-May 2020). Some participants were given extra course credits for participation. The study took about 30 minutes to complete; participants were thanked and debriefed upon completion.

All measures were translated from English to the local languages and then independently back-translated, as described by Brislin (1970). The two English versions were compared for translation discrepancies, which were resolved through discussion among the translators. The study received ethical approval from the Psychology research ethics panel. All materials for the study, data and analysis scripts are available at https://osf.io/h95cg/?view_only=c4016cf685c14b2db78c0891663d392d.

Measures

Belief in a just world.

Belief in a Just World Scale (BJW) (Lipkus et al., 1996) consists of the eight-item *Belief in a Just World to the Self (BJW-S)* (e.g., "I feel that the world treats me fairly.", α = .89) and the eight-item *Belief in a Just World to the Others (BJW-O)* (e.g., "I feel that the world treats people fairly.", α = .87) (0 = strongly disagree, 6 = strongly agree).

Karma

Belief in Karma scale (White et al., 2019) consists of 16 items (e.g., "Karma is a force that influences the events that happen in my life.", 1 = strongly disagree, 5 = strongly agree). α = .89.

System Justification

System justification scale (Kay & Jost, 2003) consists of seven items (e.g., "In general, I find society to be fair.", 1 = strongly disagree, 6 = strongly agree). α = .79.

Well-being indices

We used a five-item *Satisfaction With Life Scale (SWLS)* (Diener et al., 1985) (e.g., "I am satisfied with my life", 1 = *strongly disagree*, 7 = *strongly agree*, α = .84), and the 11-item *Rasch-derived short form of the Center for Epidemiological Studies Depression Scale (CES-D)* (Cole et al., 2004), assessing how often the respondents felt and behaved during the past week (e.g., "I feel depressed", 0 = *rarely or none of the time (less than 1 day)*, 3 = *most or all of the time (5-7 days)*, α = .83). In Japan, the six-item Depression subscale of Zigmond and Snaith (1983)'s *Hospital Anxiety and Depression Scale (HADS)* developed by Hatta et al (1998) (e.g., "I feel as if I am slowed down.", α = .68) was used instead of CES-D[1].

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[1] Due to research practices, Depression subscale of Zigmond and Snaith (1983)'s Hospital Anxiety and Depression Scale (HADS) developed by Kitamura (1993) was specially employed to measure depression among Japanese sample instead of Rasch-derived short form of the Center for Epidemiological Studies Depression scale (CES-D) (Cole et al., 2004). When considering samples from different nations, the results indicated that BJW-S negatively predicted depression in most nations, regardless of which measure was used.

COVID-19 impact

We used objective indices of COVID-19 impact at nation-level and subjective indices of COVID-19 impact at both individual and nation-levels. According to objective indices of COVID-19 impact at nation-level, we used *COVID-19 cases and COVID-19 deaths proportions* by calculating the nation-level proportions of COVID-19 cases and deaths during March to May 2020 (World Health Organization, 2024) to the number of populations in each nation in 2020 (Population Reference Bureau, 2020).

According to subjective indices of COVID-19 impact, we used one item measuring *Perceived COVID-19 Impact* by asking the participants to rate "How much has COVID-19 impacted your daily life?" (0 = *unaffected*, 10 = *extremely affected*) (English et al., 2022). Then, we used participants' individual responses as individual-level perceived COVID-19 impact, and we calculated the nation-level mean scores of individual responses as nation-level perceived COVID-19 impact.

Results

Measurement Invariance Tests

We used a translation method that has been commonly used in cross-cultural research (Brislin, 1970) and performed measurement invariance tests in the framework of multi-group confirmatory factor analysis (CFA). Model fit was assessed by the comparative fit index (CFI) and root mean square error of approximation (RMSEA) (Rutkowski & Svetina, 2014). We found the measurement invariance tests supported the metric invariance of BJW, Karma, system justification, life satisfaction and CES-D and scalar invariance of BJW, Karma and CES-D[2] (see Table 2).

Preliminary Factor Structure of HADS

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[2] Due to errors during data collection in Thailand, we used only the 8-item-CES-D. Then, we perfomred measurement invariance tests and the main result patterns remained consistent which supported the metric and scalar invariances of the 8-item-version of CES-D (ΔRMSEA < .03).

As we used the HADS to measure depression in Japan, we conducted principal component analysis (PCA) using Oblimin with Kaiser normalization (an oblique rotation). Using the eigenvalue > 1 criterion, we found two factors with the last factor emerging as marginally significant (eigenvalue = 1.121). Then, we computed a one-factor model and found that all seven items appropriately loaded onto the same factor (loadings ranging from .274 to .767) The reliability coefficient was acceptable (α = .68).

Bivariate Correlations Between Study Variables

The analyses of bivariate correlations showed significant correlations among most variables except the correlations between Karma and depression (r = -.03, p = .098), depression and individual-level perceived COVID-19 impact (r = .02, p = .303), depression and COVID-19 cases proportion (r = .02, p = .296), and depression and COVID-19 death proportion (r = .03, p = .138). Moreover, all justice beliefs are positively correlated with life satisfaction whereas they are negatively correlated with depression (see Table 3).

Justice Beliefs and Well-Being During COVID-19 Pandemic

Before testing hypotheses 1-4, we assessed an empty model at nation-level to examine whether well-being indices significantly varied across nations. The results indicated the variations in life satisfaction (*variance* = 0.04, p = .001) and depression (*variance* = 0.02, p = .003) across nations. However, the intraclass correlation coefficient (ICC) of life satisfaction is .025 considered small while ICC of depression is .066 considered acceptable (e.g., Castro, 2002; Hsu et al., 2017; LeBreton & Senter, 2008). Thus, Ordinary Least Squares (OLS) regression is recommended for predicting life satisfaction while it is worth running multilevel analyses for predicting depression.

Next, to test hypotheses 1A, 2A, 3A, and 4A by performing OLS multiple regression, we included all justice beliefs (BJW-S, BJW-O, Karma, and system justification) simultaneously as predictors of life satisfaction. BJW-S positively predicted life satisfaction (β

= .43, $p < .001$) whereas BJW-O negatively predicted life satisfaction (β = -.08, $p < .001$). The results support both hypothesis 1A and 2A. Moreover, Karma positively predicted life satisfaction (β = .10, $p < .001$) which supports hypothesis 3A. Additionally, system justification positively predicted life satisfaction (β = .15, $p < .001$) supporting hypothesis 4A (see Table 4)[3].

Then, to test hypotheses 1B, 2B, 3B, and 4B by performing a random intercept model, we included all justice beliefs simultaneously as predictors of depression. Across all samples, BJW-S negatively predicted depression (γ = -.15, $p < .001$) whereas BJW-O positively predicted depression (γ = .08, $p = .001$). The results support both hypothesis 1B and 2B. Moreover, Karma positively predicted depression (γ = .06, $p = .009$) which supports hypothesis 3B. Additionally, system justification negatively predicted depression (γ = -.13, $p < .001$) supporting hypothesis 4B (see Table 5)[4].

We also analyzed OLS multiple regression to test the associations between justice beliefs and well-being indices in each of 15 nations. BJW-S positively predicted life satisfaction in all 15 nations whereas negatively predicted depression in most nations, except Hong Kong and South Korea. BJW-O negatively predicted life satisfaction in Turkey only whereas positively predicted depression in six nations (mainland China, India, Japan, Pakistan, Taiwan, and Vietnam). Karma positively predicted life satisfaction in three nations (mainland China, India, and Vietnam) and positively predicted depression in two nations (mainland China

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[3] To control for demographic characteristics of participants, specifically age and gender, we included age and gender in an Ordinary Least Squares (OLS) regression analysis predicting life satisfaction. The results showed that age positively predicted life satisfaction (β = .10, $p < .001$) but not gender (β = .03, $p = .071$). The overall results pattern remained consistent. Life satisfaction was positively predicted by BJW-S (β = .43, $p < .001$), Karma (β = .10, $p < .001$) and system justification (β = .14, $p < .001$) whereas negatively predicted by BJW-O (β = -.07, $p < .001$).

[4] To control for demographic characteristics of participants, specifically age and gender, we included age and gender in a random intercept model predicting depression. Age negatively predicted depression (γ = -.01, $p < .001$) but not gender (γ = .00, $p = .888$). The overall results pattern remained consistent. Depression was negatively predicted by BJW-S (γ = -.14, $p < .001$) and system justification (γ = -.10, $p < .001$) whereas positively predicted by BJW-O (γ = -.07, $p < .001$) and Karma (γ = .06, $p = .005$).

and Turkey). System justification positively predicted life satisfaction in most nations, except mainland China, Japan, Myanmar, and Philippines, whereas negatively predicted depression in four nations (mainland China, India, Philippines, and Turkey) (see Table 6).

Moderating Effects of COVID-19 Impact on the Associations Between Justice Beliefs and Well-Being

Individual-level moderating effects

To test hypotheses 5A, 6A, 7A, and 8A, by performing OLS multiple regression, we included all justice beliefs and the interactions between the justice beliefs and individual-level COVID-19 impact simultaneously as predictors of life satisfaction. all justice beliefs (BJW-S: $\beta = .43$, $p < .001$; BJW-O: $\beta = -.08$, $p < .001$; Karma: $\beta = .10$, $p < .001$; System Justification: $\beta = .14$, $p < .001$) and individual-level perceived COVID-19 impact ($\beta = -.04$, $p = .007$) predicted life satisfaction. Moreover, individual-level perceived COVID-19 impact negatively moderate the association between Karma and life satisfaction ($\beta = -.03$, $p = .042$). When considering the Variance Inflation Factor (VIF), all VIFs were not more than 10 which do not indicate severe multicollinearity (e.g. Hair et al., 1995) (see Table 7).

Next, we tested hypotheses 5B, 6B, 7B, and 8B, by performing random slope models, we included all justice beliefs and the interactions between all justice beliefs and individual-level COVID-19 impact simultaneously as predictors of depression. The results show individual-level perceived COVID-19 impact did not moderate any associations between justice beliefs and depression whereas all justice beliefs (BJW-S: $\gamma = .43$, $p < .001$; BJW-O: $\gamma = .29$, $p < .001$; Karma: $\gamma = .53$, $p < .001$; System Justification: $\gamma = .29$, $p < .001$) and individual-level perceived COVID-19 impact ($\gamma = .29$, $p < .001$) significantly predicted depression (see Table 8).

Nation-level moderating effects

Before testing the cross-level interactions between justice beliefs and nation-level objective indices of COVID-19 impact on both well-being indices, we assessed an empty model at nation-level to examine whether the associations between justice beliefs and well-being indices varied significantly across nations. The results showed variations in the associations between BJW-S and life satisfaction (*variance* = .01, *p* = .030) and between system justification and depression (*variance* = .01, *p* = .036) across nations. Thus, it is worth testing the moderating effects of nation-level indices of COVID-19 impact on the associations between BJW-S and life satisfaction and between system justification and depression (Hypotheses 5A and 8B).

Then, we performed random slope models to test the cross-level interactions in hypothesis 5A. The results showed that only nation-level COVID-19 cases proportion positively moderated the association between BJW-S and life satisfaction (γ = 56.16, *p* = .040) but not the nation-level perceived COVID-19 impact (γ = .01, *p* = .533) and COVID-19 death proportion (γ = 1932.81, *p* = .051) mostly contradicting hypothesis 5A (see Table 9-11). Next, we performed random slope models to test the cross-level interactions in hypotheses 8B. The results showed that none of the nation-level COVID-19 impact indices moderated the association between system justification and depression (perceived COVID-19 impact: γ = -.01, *p* = .352; COVID–19 cases: γ = -14.89, *p* = .523; COVID-19 deaths: γ = -1,200, *p* = .157) contradicting hypothesis 8B (see Table 12-14).

Applying a correction for multiple tests

As we analyzed moderating effects of COVID-19 impact one by one and we did not apply a correction for multiple tests, Type I errors might increase more chances of incorrectly producing significant results. Thus, we decided to use a Holm-Bonferroni sequentially adjusted alpha to apply a correction for multiple tests. First, we sort the *p*-values in ascending order. Then, we computed the cut-off *p*-value by /(m + 1 - k) when is widely acceptable cut-off

p-value (starting from .05) and m is the number of hypotheses (32) and k is the rank number of *p*-value. After that, we compared the actual *p*-value from the specific hypothesis with the calculated cut-off *p*-value to see whether the actual *p*-value was fewer than the calculated cut-off *p*-value and to decide whether to reject the null hypothesis (Holm, 1979). Because we have only two significant moderating results (i.e., the nation-level COVID-19 cases proportion positively moderated the association between BJW-S and life satisfaction whereas the individual-level perceived COVID-19 impact negatively moderated the association between Karma and life satisfaction, and), the cut-off *p*-value for the first hypothesis by 0.05(32 + 1 - 1) = 0.016 and for the second hypothesis by 0.05(32 + 1 - 2) = 0.002 which is fewer than the actual *p*-value from both hypotheses (.040 and .042). Thus, we decided to accept the null hypotheses. In other words, the nation-level COVID-19 cases proportion did not positively moderate the association between BJW-S and life satisfaction and the individual-level perceived COVID-19 impact did not negatively moderate the association between Karma and life satisfaction.

Discussion

The present findings

The results indicate variations in the psychological functions of all four justice beliefs (BJW-S, BJW-O, karma, and system justification) during the COVID-19 pandemic. BJW-S positively predicted well-being, while BJW-O negatively predicted well-being. These findings support Lerner's (1980) just world theory, which suggests that the belief in fairness in one's own life is more psychologically important than the fairness of others' outcomes (Dalbert, 1999; Lerner, 1980). They also confirm previous research indicating that BJW-S is uniquely associated with well-being (Bègue & Bastounis, 2003; Khera et al., 2014; Lipkus et al., 1996; Sutton & Douglas, 2005; Sutton et al., 2008; Sutton et al., 2017).

Moreover, Karma positively predicted both life satisfaction and depression. While most prior studies reported either positive (Agrawal & Dalal, 1993; Anand, 2009; Dalal & Pande, 1988) or negative associations between Karma and well-being (Davidson et al., 2005; Levy et al., 2009), recent research found that Karma positively predicted both life satisfaction and depression (Chobthamkit et al., 2022). On one hand, Karma may diminish well-being and promote maladaptive coping strategies among those who believe their lives are governed by Karma (Levy et al., 2009), particularly among those who view Karma as inevitable (Goyal & Miller, 2023). For example, individuals might feel that they cannot avoid and cannot overcome negative life events, leading them to believe they can only "pay the price." On the other hand, Karma may enhance well-being, as it aligns with just world theory, fostering a sense of control, meaning, order, security, and stability in life (Lerner, 1980; White et al., 2019). Additionally, Karma embodied the law of cause and effect, indicating that prior actions lead to specific consequences. Consequently, individuals who believe they can influence their own lives may be more inclined to engage in positive behaviors and expect favorable outcomes. Therefore, this dual psychological function of Karma —based on whether it is considered externally or internally—could clarify the seemingly contradictory findings regarding its association with well-being.

Furthermore, system justification positively predicted well-being which confirmed previous findings (e.g., O'Brien & Major, 2005; Vargas-Salfate et al., 2018). In response to COVID-19 pandemic, the government implemented measures and policies aimed at restricting disease transmission (e.g., lockdown, social distancing, and self-isolation). However, these measures and policies are negatively associated with people's well-being (e.g., Munasinghe et al., 2020; Nurunnabi et al., 2021; Toffolutti et al., 2022). Thus, system justification may assist people in coping with these circumstances and preserving their well-being by fostering a belief that existing social structures, such as government institutions, are legitimate and fair (Jost &

Banaji, 1994). In other words, during the pandemic, people may perceive that their government implemented appropriate policies, serving a psychological palliative function. However, COVID-19 impact did not moderate any associations between justice beliefs and well-being. The results suggest that, despite the global effects of the COVID-19 pandemic, the psychological functions of justice beliefs remain consistent, regardless of the extent to which individuals experience its impact.

Limitations and future directions

There are a few limitations of the present research. One of them is that a cross-sectional and correlational design does not provide causal inferences. To address this limitation, longitudinal research would be suggested for future research. Another one is that although the government played an important role in response to the COVID-19 pandemic, the present research did not measure variables regarding people's opinions about the government. Future studies should include variables such as attitudes toward government and government trust to examine the mechanisms underlying the psychological function of system justification. Despite these limitations, a key strength of the present research is the large sample size covering 15 Asian nations during COVID-19 pandemic. The results should be generalized across Asia.

Conclusions

The present findings show that during COVID-19 pandemic, there are variations in the psychological functions of justice beliefs. BJW-S and system justification are positively associated with well-being while BJW-O is negatively related to well-being. Furthermore, Karma is both a positive and negative predictor of well-being. Moreover, as COVID-19 pandemic affected people's lives all over the world, the psychological function of justice beliefs seems to be generally beneficial among all people no matter how much people perceive the impact of COVID-19 pandemic.

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