

Coping styles and health locus of control across European and Asian samples during a global health crisis

BACKGROUND

Global health crises such as the COVID-19 pandemic place individuals under significant psychological strain, highlighting the importance of effective coping styles. The present study aimed to examine factors related to individuals' health behaviors in the context of a global health crisis by examining the association between coping styles and health locus of control, as well as the variation in this relationship across cultural contexts.

PARTICIPANTS AND PROCEDURE

The sample included 2,617 participants from European ($n = 1,205$) and Asian ($n = 1,412$) countries. Participants completed measures of health locus of control and coping styles during the COVID-19 pandemic. Data were analyzed using descriptive statistics, reliability analyses, analyses of variance, correlation analyses, and hierarchical regression analyses.

RESULTS

The findings reveal that health locus of control beliefs are meaningfully related to coping responses, and that the

patterns of these associations vary across the European and Asian samples. The powerful health locus of control dimension showed a substantially stronger positive association with problem-focused coping among Asian participants than among European participants. Differences between the two samples were also found in the relationship between chance-oriented locus of control and coping styles.

CONCLUSIONS

The study reveals that the dimensions of health locus of control are significantly associated with coping styles, and that the patterns of these associations differ across cultural contexts. The findings may contribute to more effective health behavior management in the context of global health crises.

KEY WORDS

Asia; cross-cultural research; differences; Europe; pandemic

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BACKGROUND

Among the principal drivers of the prospective disequilibrium confronting humanity are global health crises, exemplified by the COVID-19 pandemic that emerged in 2020. The deleterious ramifications of this pandemic are extensively documented: millions of deaths, economic stagnation, political restrictions, etc. Of particular gravity is the profound impact on mental health, manifested in heightened prevalence of anxiety, stress, depression, and a spectrum of psychiatric disorders, frequently culminating in suicidal ideation and behavior. According to the World Health Organization (WHO, 2022), there was a 25% increase in the prevalence of mental disorders such as anxiety and depression during the first year of the pandemic alone. Studies conducted during and after the COVID-19 pandemic show that the factors contributing to poor mental health are diverse, including fear of infection (Autenrieth et al., 2024; Chen et al., 2021), social distancing policies and lockdowns (Ferwana & Varshney, 2024), misinformation on social media (Gabarron et al., 2021), and job loss (Yao & Wu, 2022).

Despite these findings, relatively little attention has been paid to a critical psychological factor underlying individual responses to such crises – namely, how individuals cope with stress. Ineffective coping styles and strategies may exacerbate psychological distress, whereas adaptive coping can mitigate the negative impact of crisis-related stressors. Understanding how individuals select and use coping styles and strategies in life-threatening situations is therefore essential for explaining variation in both psychological outcomes and health-related behavior (Carver & Connor-Smith, 2010).

COPING, LOCUS OF CONTROL, AND CULTURAL CONTEXT

Coping is a psychophysiological process that accompanies human life from a very early age. It manifests through specific actions and behaviors, such as learning, mastering, adapting, managing, controlling, planning, and avoiding. One of the first and most influential approaches to understanding the nature of coping is the contextual approach, primarily associated with the transactional theory of stress and coping (Lazarus & Folkman, 1984). According to this theory, coping is largely determined by the context in which an individual's behavior occurs and essentially represents an effort to reduce loss, prevent threats, or alleviate the distress associated with them (Carver et al., 1989; Carver & Connor-Smith, 2010).

Subsequently, the transactional view of coping was complemented by the dispositional approach (Moos & Holahan, 2003), which holds that stable per-

sonality traits influence how individuals habitually respond to stress (Bolger, 1990). It emphasizes that coping does not depend solely on the current situation but is also mediated by the individual's preexisting dispositions, cognitions, stereotypes, and experiences.

Another approach to coping is the existential approach. It holds that people can achieve prosperity, happiness, and well-being by reframing threats and adversities as necessary challenges that give their existence personal meaning (Zika & Chamberlain, 1992). A strength of this approach is that reframing hopeless situations helps individuals respond to challenges in a positive, constructive way and reduces the risk of depression.

The above-mentioned approaches most clearly outline the nature and characteristics of coping; however, consensus on its definition and scope remains elusive, despite the publication of thousands of scholarly papers on this topic by the end of the 20th century, and the number continues to grow (Frydenberg, 2014). Much of this research has focused on coping with mental health challenges and has sought to clarify the determinants of positive health behavior. Several authors have addressed this question by examining the relationship between coping with mental health problems and health locus of control (Arraras et al., 2002; Groth et al., 2019; Gruszczyńska et al., 2022).

The term *locus of control*, introduced and popularized by J. Rotter (1966), refers to the attribution of causality to behavior and comprises two dimensions: internal and external. An internal locus of control reflects the belief that one is in control of one's own life and that the outcomes of one's actions are primarily due to one's own decisions, opportunities, and abilities. Conversely, individuals with an external locus of control believe that life outcomes are governed by powerful external factors beyond their control, such as unfavorable circumstances, fate, or luck (Ajzen, 2002; Rotter, 1966). This conceptualization gradually evolved into a well-established theoretical framework, and numerous studies subsequently demonstrated that the internality-externality dimension is an important personality construct that regulates individual behavior (April et al., 2012; Roddenberry & Renk, 2010).

The internal-external dimension also influences individuals' health behavior. For this reason, a specific extension of the general locus of control (GLOC) construct has been developed: the health locus of control (HLOC). The health locus of control mediates individuals' perceptions of their own health and, to some extent, determines their health behavior. This important function of the internal-external orientation in health behavior has led to the development of specialized research instruments for measuring locus of control in relation to individual health expectations.

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The cultural context also influences how individuals deal with challenges during a health crisis. From a cultural perspective, people's behavior, including their health behavior, depends on the prevailing cultural orientation, reflecting the widely accepted principle that context plays an important role in the formation of personality (Hofstede, 1980).

Based on numerous empirical studies, most authors distinguish two types of cultural orientation: individualistic and collectivist (Matsumoto et al., 1997; Triandis et al., 1988). According to Hofstede's "individualism vs collectivism" (IDV) dimension, one of the main characteristics distinguishing societies is the extent to which people perceive themselves as part of a group. In societies characterized by an individualistic orientation, interpersonal bonds tend to be relatively weak, with members prioritizing personal goals and self-interest over collective concerns. The collectivist orientation is characterized by the opposite pattern: the focus is not on the individual but on the group (family, society), on duty, collective norms, mutual assistance, and cooperation with others (Hofstede, 2006; Triandis et al., 1988). Within this theoretical framework, cultural typology serves as a significant mediating factor, shaping the selection of coping styles across both normative and crisis situations. This suggests that, across cultures, the same life-threatening or adverse events may elicit divergent psychological responses and somatic manifestations and, consequently, be appraised differently by individuals from different cultural backgrounds (Ji et al., 2022; Slovic, 1987). In some cultures, they might be perceived as threatening challenges, while in others they might go unnoticed, suggesting that, across cultural contexts, the coping styles individuals choose vary.

In this regard, it is necessary to note that, according to the generally accepted cultural typology, European societies are characterized by an individualistic cultural orientation, while Asian societies are characterized by a collectivist cultural orientation. In the present analysis, this cultural typology is used conditionally and only in relation to the countries included in the study because cultural boundaries in the modern digital world are increasingly blurred, and not all Asian societies are collectivist (e.g., Japan and Singapore), just as not all European societies are individualistic (e.g., Albania and Belarus).

Based on the previous analysis, it could be postulated that the association among coping, locus of control, and cultural context influences individuals' health behavior during a health crisis. Notably, cultural orientations appear to modulate both the degree of health locus of control and the manner in which these beliefs are functionally associated with various coping styles and strategies. Consequently, the association between health locus of control and coping cannot be presumed to be universally applicable;

rather, it is likely to vary systematically across cultural contexts.

PURPOSE OF THE STUDY AND HYPOTHESES

The present study aimed to examine whether health locus of control and its associations with coping styles differed between participants from the sampled European and Asian countries during the COVID-19 pandemic. From a cognitive-behavioral perspective, coping responses can be understood as behavioral expressions of how individuals appraise a stressful situation and evaluate their capacity to influence its outcomes. In this context, it is important to examine whether health-related control beliefs were associated with coping responses and whether this relationship varied across cultural contexts. Understanding these processes is essential for developing culturally sensitive approaches to health behavior and psychological adaptation in crisis contexts.

Based on these considerations, the following hypotheses were formulated:

H1. During a health crisis, health locus of control dimensions are expected to show distinct associations with coping styles: internal health locus of control is expected to be most strongly associated with problem-focused coping, chance health locus of control with avoidant coping, and powerful others health locus of control with all three coping styles.

H2. The associations between health locus of control dimensions and coping styles are expected to differ significantly in strength and pattern between the sampled European and Asian groups.

H3. Cross-group differences in HLC–coping associations are expected to be particularly evident for the two external dimensions of health locus of control.

H3a. PHLC is expected to show a stronger positive association with PFC among participants from the sampled Asian countries than among those from the sampled European countries.

H3b. CHLC is expected to show stronger positive associations with PFC and EFC among participants from the sampled Asian countries than among those from the sampled European countries.

PARTICIPANTS AND PROCEDURE

PARTICIPANTS

The sample consisted of participants from two broad cultural regions: Europe (Bulgaria, Germany, and Hungary) and Asia (China, India, and Indonesia). In total, 2,617 individuals aged between 18 and 80 years took part in the study ($M = 37.98$, $SD = 15.20$). Of these, 1,412 participants were from Asian countries (45.9% female, 49.6% male, and 4.5% preferred not to

disclose their gender), while 1,205 participants were from European countries (64.6% female, 34.5% male, and 0.9% preferred not to disclose their gender).

The mean age of the participants differed between the cultural groups. The Asian subsample had an average age of 31.50 years ($SD = 12.77$), whereas the European subsample was older, with a mean age of 44.96 years ($SD = 14.51$).

The selection of countries was driven by the desire to reflect the cultural nuances and geographical diversity within each sample. In the European group, participants were recruited from Bulgaria ($n = 405$), Germany ($n = 400$), and Hungary ($n = 400$). These countries share relatively individualistic cultural values and represent three distinct regions of Europe: Eastern, Western, and Central Europe.

In the Asian group, the sample included participants from China ($n = 500$), India ($n = 500$), and Indonesia ($n = 412$). These countries represent culturally diverse contexts shaped by major religious and philosophical traditions, including Buddhism, Hinduism, Islam, Taoism, Confucianism, and Catholicism. Nevertheless, these countries are generally regarded, albeit conditionally, as being characterized by collectivist cultural values.

PROCEDURE

The study in Europe and Asia was conducted between April and June 2020. Data collection was carried out online across all participating countries using a standardized digital survey platform. The questionnaire was translated from English into Bulgarian, Chinese, German, Hungarian, Indonesian, and Hindi, following a translation-back-translation procedure to ensure linguistic and conceptual equivalence. Participants received an electronic survey link directly from the researchers and were informed about the anonymous and voluntary nature of their participation.

ETHICAL APPROVAL

The preliminary research ethics approval procedure was deemed unnecessary for this study because the survey was anonymous and respondents completed the online questionnaire voluntarily. The study was conducted in accordance with the APA Ethics Code (American Psychological Association, 2017) and the EFPA Meta-Code of Ethics (European Federation of Psychologists' Associations, 2025).

MEASURES

The Brief COPE Inventory. To assess coping styles among European and Asian participants, the Brief

COPE Inventory was employed (Carver, 1997; Carver & Connor-Smith, 2010). It is based on the conceptualization of coping within the framework of the transactional theory of stress and coping (Lazarus & Folkman, 1984), and its dimensions include three main coping styles: (a) problem-focused coping (PFC), which is aimed at actively dealing with the problem, eliminating the stressor, or modifying the stressful situation; (b) emotion-focused coping (EFC), which aims to regulate one's own emotional reactions to the stressor; (c) avoidant coping (AC), which involves disengagement from or avoidance of the stressor. The Brief COPE is a 28-item self-report measure developed as a short version of the original 60-item COPE scale (Carver et al., 1989). It is designed to evaluate both adaptive and maladaptive coping responses to stressful events.

Participants indicated, on a four-point Likert scale, how frequently they used each coping behavior, ranging from *I haven't been doing this at all* to *I've been doing this a lot*. The responses were analyzed according to the three main coping styles, taking into account that each style corresponds to a set of coping strategies/facets:

PFC – active coping, use of instrumental support, positive reframing, planning.

EFC – emotional support, venting, humor, acceptance, religion, self-blame.

AC – self-distraction, denial, substance use, behavioral disengagement.

The Brief COPE has shown sound psychometric properties in prior research. The coping scales demonstrated satisfactory internal consistency, with Cronbach's α coefficients ranging from .71 to .81 across the three dimensions: $\alpha = .81$ for PFC ($n = 8$), $\alpha = .73$ for EFC ($n = 12$), and $\alpha = .71$ for AC ($n = 8$). These results indicate acceptable reliability and internal coherence across all subscales.

Multidimensional Health Locus of Control Scale – Form A. The Multidimensional Health Locus of Control Scale – Form A (MHLC-A) was used to assess the internal-external orientation in individuals' health behavior (Wallston et al., 1978). It consists of 18 items describing three main dimensions of health locus of control, which are distributed across three scales: (a) internal health locus of control (IHLC), referring to the belief that one's health depends on one's own behavior; (b) powerful others health locus of control (PHLC), referring to the belief that one's health depends on the behavior of influential, significant, competent, or powerful others (such as medical doctors); and (c) chance health locus of control (CHLC), referring to the belief that luck or random factors determine health outcomes.

Participants had to indicate their level of agreement on a six-point Likert scale, ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Results are usually moderately reliable; they have Cronbach's α

coefficients in the .60-.75 range and test-retest stability coefficients of .60-.70.

In the present study, internal consistency coefficients (Cronbach's α) ranged from .67 to .77 across the three subscales, indicating acceptable reliability.

STATISTICAL ANALYSIS

Statistical analyses were conducted using IBM SPSS Statistics. Descriptive statistics and reliability analyses were first computed for the main study variables. Pearson correlation analyses were then used to examine the associations between health locus of control dimensions and coping styles.

To test hypothesis 1, Pearson correlations between the three health locus of control dimensions and the three coping styles were computed in the total sample. To test hypothesis 2, zero-order Pearson correlations were computed separately for participants from the sampled European and Asian countries. The corresponding correlation coefficients were compared using Fisher's r -to- z tests for independent correlations. Cohen's q was calculated as an effect size for the difference between the two independent correlation coefficients.

Hypothesis 3 was examined by focusing on the cross-group differences involving the two external health locus of control dimensions: powerful others HLC and chance HLC. The same Fisher's r -to- z comparisons and Cohen's q effect sizes were used to evaluate whether these associations showed the expected cross-group patterns.

Because the sampled European and Asian groups differed in chronological age, additional hierarchical regression analyses were conducted as robustness checks. In each model, one coping style was entered as the dependent variable. In the first step, the three health locus of control dimensions, the country group, and the interaction terms between each health locus of control dimension and country group were entered. In the second step, chronological age was added to examine whether age contributed additional explained variance and whether the observed cross-group differences in the HLC-coping associations remained after accounting for age.

RESULTS

ASSOCIATIONS BETWEEN HEALTH LOCUS OF CONTROL AND COPING STYLES

To test hypothesis 1, Pearson correlation analyses were conducted between the three health locus of control dimensions and the three coping styles in the total sample. The results showed distinct patterns of association. Internal health locus of control (IHLC)

Table 1

Correlations between health locus of control dimensions and coping styles in the total sample

HLC dimension	PFC	EFC	AC
IHLC	.40***	.28***	.04*
PHLC	.26***	.22***	.20***
CHLC	.01	.20***	.34***

Note. HLC – health locus of control; IHLC – internal health locus of control; PHLC – powerful others health locus of control; CHLC – chance health locus of control. Values are Pearson correlation coefficients. Pairwise deletion was used; Ns ranged from 2,523 to 2,545; * $p < .05$, *** $p < .001$.

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was most strongly associated with problem-focused coping (PFC), whereas chance health locus of control (CHLC) was most strongly associated with avoidant coping (AC). Powerful others health locus of control (PHLC) was positively associated with all three coping styles (Table 1).

The association between CHLC and PFC was not significant. Although the association between IHLC and AC reached statistical significance, its magnitude was negligible and was therefore not interpreted as substantively meaningful. Overall, the results supported hypothesis 1.

CROSS-GROUP DIFFERENCES IN HLC-COPING ASSOCIATIONS

To test hypothesis 2, zero-order Pearson correlations between health locus of control dimensions and coping styles were computed separately for participants from the sampled European and Asian countries. The corresponding correlation coefficients were then compared using Fisher's r -to- z tests.

As shown in Table 2, most HLC-coping associations differed significantly between the two groups. Eight of the nine comparisons were statistically significant, indicating differences in the strength and/or direction of the corresponding associations.

In general, the associations showed a more positive pattern among participants from the sampled Asian countries. The only non-significant cross-group difference was found for the association between PHLC and AC. Overall, these findings supported hypothesis 2.

EXTERNAL HEALTH LOCUS OF CONTROL AND CROSS-GROUP DIFFERENCES

Hypothesis 3 further specified the cross-group differences examined in hypothesis 2 by focusing on the two external dimensions of health locus of control. Specifically, hypothesis 3 predicted that cross-group

Table 2*Comparison of HLC-coping associations between the sampled European and Asian country groups*

Association	Europe		Asia		Fisher's <i>z</i>	<i>p</i>	Cohen's <i>q</i>
	<i>N</i>	<i>r</i>	<i>N</i>	<i>r</i>			
IHLC-PFC	1,193	.26	1,352	.48	-6.47	< .001	.26
IHLC-EFC	1,187	.15	1,339	.33	-4.96	< .001	.20
IHLC-AC	1,191	-.11	1,352	.07	-4.41	< .001	.18
PHLC-PFC	1,189	.07	1,355	.36	-7.61	< .001	.30
PHLC-EFC	1,183	.06	1,340	.26	-5.26	< .001	.21
PHLC-AC	1,187	.10	1,355	.13	-0.76	.445	.03
CHLC-PFC	1,186	-.20	1,357	.15	-8.74	< .001	.35
CHLC-EFC	1,183	-.04	1,344	.33	-9.49	< .001	.38
CHLC-AC	1,184	.25	1,356	.34	-2.31	.021	.09

Note. HLC = health locus of control; IHLC = internal health locus of control; PHLC = powerful others health locus of control; CHLC = chance health locus of control; PFC = problem-focused coping; EFC = emotion-focused coping; AC = avoidant coping. Fisher's *z* tests compare the corresponding correlation coefficients between the sampled European and Asian country groups. Negative *z* values indicate higher Fisher-transformed correlations in the sampled Asian group. Cohen's *q* represents the effect size for the difference between the two independent correlation coefficients.

differences in HLC-coping associations would be particularly evident for PHLC and CHLC.

The results were generally consistent with this expectation. As shown in Table 2, the largest cross-group differences were observed for associations involving external HLC dimensions. The strongest difference was observed for the association between CHLC and EFC: it was close to zero in the European group ($r = -.04$) but positive in the Asian group ($r = .33$), Fisher's $z = -9.49$, $p < .001$, $q = .38$. A similarly pronounced cross-group difference was observed for CHLC and PFC, with a negative association in the European group ($r = -.20$) and a positive association in the Asian group ($r = .15$), Fisher's $z = -8.74$, $p < .001$, $q = .35$.

Hypothesis 3a was generally supported. PHLC showed a stronger positive association with PFC among participants from the sampled Asian countries ($r = .36$) than among participants from the sampled European countries ($r = .07$), Fisher's $z = -7.61$, $p < .001$, $q = .30$.

Hypothesis 3b was also generally supported. CHLC showed a more positive pattern of associations with coping styles among participants from the sampled Asian countries than among participants from the sampled European countries. This pattern was most evident for PFC and EFC. For AC, the association was positive in both groups and was stronger in the Asian group ($r = .34$) than in the European group ($r = .25$), Fisher's $z = -2.31$, $p = .021$, although the effect size was small ($q = .09$).

Overall, the findings generally supported H3. PHLC showed a substantially stronger positive asso-

ciation with PFC in the Asian group than in the European group, supporting hypothesis 3a. CHLC also showed a more positive pattern of associations with coping styles in the Asian group, particularly for PFC and EFC, supporting hypothesis 3b. However, this pattern was not uniform across all external HLC-coping associations, as the cross-group difference for CHLC-AC was statistically significant but small.

ROBUSTNESS CHECK CONTROLLING FOR CHRONOLOGICAL AGE

Because the sampled European group was older than the sampled Asian group, additional hierarchical regression analyses were conducted to examine whether the observed cross-group differences in HLC-coping associations remained after controlling for chronological age. In each model, one coping style was entered as the dependent variable. In the first step, the HLC dimensions, the country group, and the interaction terms between HLC dimensions and country group were entered. In the second step, chronological age was added to the model. This approach allowed us to assess whether the observed differences between the sampled European and Asian groups in the strength and pattern of HLC-coping associations remained after accounting for age.

As shown in Table 3, chronological age contributed differently across the three coping styles. For PFC, adding age did not significantly improve the model and explained only an additional 0.1% of the variance ($\Delta R^2 = .00$, $p = .053$). Thus, adding age did not signif-

Table 3

Hierarchical regression analyses testing the incremental contribution of age

Dependent variable	R^2 Step 1	R^2 Step 2	ΔR^2 age	ΔF	df	p
PFC	.18	.18	.00	3.76	1, 2380	.053
EFC	.12	.15	.03	91.05	1, 2369	< .001
AC	.13	.18	.05	146.18	1, 2376	< .001

Note. PFC – problem-focused coping; EFC – emotion-focused coping; AC – avoidant coping. Step 1 included HLC dimensions, country group, and interaction terms between HLC dimensions and country group. Step 2 added chronological age. Country group refers to the sampled European and Asian groups.

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icantly improve the model or materially change the observed cross-group differences in the associations between the HLC dimensions and PFC. For EFC, chronological age accounted for an additional 3.3% of the explained variance ($\Delta R^2 = .03$, $p < .001$), indicating a modest additional contribution. However, the key interaction terms between the HLC dimensions and the country group remained significant after age was included. This suggests that although age was related to EFC, adjusting for age did not substantially alter the cross-group differences in the associations between the HLC dimensions and emotion-focused coping. For AC, age made a stronger contribution, adding 5.1% to the explained variance ($\Delta R^2 = .05$, $p < .001$). In this model, the initially significant interaction between CHLC and country group was no longer significant after controlling for age, indicating that the cross-group difference in the association between CHLC and AC was attenuated after adjustment for age.

Overall, the robustness analyses showed that the cross-group differences in the associations between HLC and problem-focused and emotion-focused coping remained after accounting for chronological age. However, the cross-group difference in the association between CHLC and avoidant coping was no longer significant after adjustment for age.

DISCUSSION

The present study examined the associations between health locus of control dimensions and coping styles among participants from the sampled European and Asian countries during the COVID-19 pandemic. The findings showed that health locus of control beliefs were meaningfully related to coping responses, but the pattern of these associations differed between the two regional groups. In the total sample, IHLC was most strongly associated with PFC, whereas CHLC was most strongly associated with AC. In turn, PHLC was positively associated with all three coping styles. Cross-group comparisons further showed that most HLC–coping associations were stronger or more positive among

participants from the sampled Asian countries, particularly for associations involving the external HLC dimensions.

The overall pattern underscores the importance of treating health locus of control as a multidimensional construct that influences health behavior rather than as a simple internal–external continuum. Internal HLC was most clearly linked to PFC, suggesting that beliefs in personal influence over health outcomes are associated with more active and instrumental coping responses. These responses correspond, albeit to varying degrees, to the aforementioned coping strategies: active coping, use of instrumental support, positive reframing, and planning. The presence of a strong relationship between IHLC and PFC suggests that during a health crisis, such as the COVID-19 pandemic, the majority of individuals tend to believe that their health depends on their own behavior. This belief prompts them to actively address the problem by eliminating the stressor or modifying the stressful situation using appropriate coping styles.

Chance HLC, in contrast, was most strongly related to avoidant coping, indicating that perceiving health outcomes as determined by luck or random factors may be associated with greater reliance on disengagement-oriented responses. In the context of the present study, this suggests that individuals who rely on chance, luck, or fate for their health status tend to use passive coping strategies and may even demonstrate disengagement from coping with life-threatening situations. PHLC showed a broader pattern of associations, suggesting that reliance on external agents in health-related situations may have a more complex meaning than simple passivity or lack of personal agency. This association appears more complex and multifaceted because individuals may use different coping strategies depending on their assessment of the behavior and characteristics of influential, significant, competent, and powerful others (e.g., medical doctors). This interpretation of the association between the two constructs is consistent with meta-analytic evidence showing that IHLC, PHLC, and CHHLC are differently related to health behaviors and global health appraisal (Cheng

et al., 2016). It should be borne in mind, however, that unlike the current study, which was conducted during a critical pandemic, all research conducted until 2020 analyzed the health effects of individual behavior in standard health situations.

According to the second hypothesis, the associations between health locus of control dimensions and coping styles were expected to differ significantly in strength and pattern between the sampled European and Asian groups. The cross-group analysis suggests that these findings may also be interpreted from a cultural meaning perspective, according to which control beliefs and coping responses may not have fixed psychological meanings across contexts. This does not imply that Europe and Asia should be treated as homogeneous cultural blocks, but it suggests that the same control belief may be embedded in different social expectations, authority relations, and coping norms. This interpretation is consistent with cross-cultural evidence showing that the associations between locus of control and psychological outcomes vary across cultural contexts (Cheng et al., 2013). Although these associations are generally weak to modest, they may vary not only across cultural contexts but also depending on demographic and other factors (Cheng et al., 2016). It should also be noted that cultural approaches and empirical studies on cross-cultural coping variations with health challenges emphasize the role of culturally embedded meanings, social expectations, coping goals, and the distinction between attempts to change external circumstances and attempts to adapt to contextual constraints (Chun et al., 2006; Kuo, 2011).

Particularly interesting and significant are the findings related to the third hypothesis. According to its first aspect (H3a), PHLC is expected to show a stronger positive association with PFC among participants from the sampled Asian countries than among those from the sampled European countries. This hypothesis is based on a cultural approach, according to which the collectivist orientation of respondents in the Asian sample suggests that they perceive their own well-being as closely related to the well-being of the group to which they belong, namely, significant others. In this sense, during a pandemic, they may perceive a life-threatening situation as an existential threat directed simultaneously at them and at their group of affiliation, and their active coping styles may be directly related to their significant others (e.g. family members).

The results are consistent with this hypothesis, as PHLC showed a substantially stronger positive association with PFC among participants from the sampled Asian countries than among those from the sampled European countries. This suggests that an orientation toward strong and significant others (family members, group leaders, doctors, experts, health authorities), or other influential others, may

function as part of active coping in health-threatening situations rather than as a marker of passivity. During a pandemic, reliance on competent external sources may represent a pragmatic coping response, especially when health-related decisions depend on expert knowledge, institutional guidance, and collective coordination. This interpretation is consistent with health-related evidence showing that the PHLC can be linked to active practical coping and health-promoting behaviors in some contexts and that individuals with higher PHLC may rely more heavily on healthcare professionals for guidance and demonstrate better adherence when strong provider support is available (Fatima et al., 2021; Gao et al., 2025).

According to the second aspect of the third hypothesis (H3b), CHLC was expected to show stronger positive associations with PFC and EFC among participants from the sampled Asian countries than among those from the sampled European countries. The findings regarding CHLC are important but require cautious interpretation. Prior meta-analytic evidence suggests that chance HLC should be considered separately from other HLC dimensions because it shows distinct associations with health-related outcomes, and these associations may vary across demographic and cultural moderators (Cheng et al., 2016). In the present study, CHLC was negatively associated with problem-focused coping and was barely related to emotion-focused coping in the sampled European group. Based on these findings, it can be suggested that during a health crisis, participants from the sampled European countries, who may have stronger individualistic orientations, tend to actively use pragmatic strategies to deal with health threats, rather than relying on chance, fate, or luck. In the context of the COVID-19 pandemic, it can be further assumed that, compared to Asians, Europeans tend to adhere to imposed restrictions and recommendations from authorities more strictly.

In the sampled Asian group, however, CHLC was positively associated with both problem-focused and emotion-focused coping. This pattern suggests that, in the context of a pandemic, chance-related beliefs did not necessarily preclude active or emotion-regulatory coping efforts. Rather, perceiving health outcomes as partly shaped by chance may have co-existed with attempts to solve problems, regulate emotions, and adapt to changing circumstances. This dual association of CHLC with PFC and EFC, observed in the Asian group, could be explained by a collectivist orientation. On the one hand, the traditionally stronger connectivity with significant others (family, membership groups, recognized authorities) may encourage the active use of coping strategies aimed at solving the problem for mutual well-being; on the other hand, the connection between CHLC and EFC suggests a more persistent search for emo-

tional support and a stronger religious commitment. Numerous studies have shown that in critical health situations, more religious individuals tend to use religiosity as a coping strategy (Camarines et al., 2022; Henslee et al., 2015).

At the same time, CHLC was positively associated with avoidant coping in both groups, indicating that chance-related beliefs may also be linked to passivity and disengagement-oriented responses. The cross-group difference for CHLC-AC was statistically significant but small, and this finding should therefore be interpreted cautiously.

The robustness analyses controlling for chronological age add an important qualification to these findings. The sampled European group was older than the sampled Asian group, and age contributed differently across coping styles. The cross-group differences in HLC-problem-focused coping and HLC-emotion-focused coping associations remained after accounting for age, suggesting that these patterns were not primarily attributable to age differences between the groups. However, avoidant coping appeared more age-dependent, particularly for the association between CHLC and avoidant coping. This indicates that the findings involving avoidant coping should be interpreted with greater caution.

Taken together, the results challenge overly dichotomous interpretations of health locus of control in which internal control is assumed to be uniformly adaptive and external control beliefs are assumed to be uniformly maladaptive. Internal HLC was clearly associated with problem-focused coping, whereas the two external dimensions showed distinct patterns of association. These findings support a more contextualized understanding of health locus of control, in which the meaning of control beliefs depends on the specific HLC dimension, the coping domain, and the broader cultural and situational context.

PRACTICAL IMPLICATIONS

The findings have practical implications for health communication and psychological interventions during large-scale health crises. For individuals with stronger IHLC, interventions may benefit from emphasizing concrete actions, planning, positive reframing, and instrumental support for personal health behaviors. For individuals who place greater trust in powerful others, clear communication from physicians, experts, and public health authorities may support problem-focused coping rather than undermine personal agency. For individuals with stronger chance-related beliefs, interventions may focus on reducing perceived unpredictability by providing clear, consistent, and actionable guidance. Such approaches may be especially relevant during health crises, when uncertainty is high and personal behav-

ior must be coordinated with expert recommendations and public health measures.

LIMITATIONS

Several limitations should be acknowledged. First, the cross-sectional design precludes causal conclusions about the relationships between health locus of control and coping styles. The findings should therefore be interpreted as associations rather than evidence of directionality. Second, all variables were assessed using self-report measures, which may increase the risk of common method bias and response-style effects. Third, the broad categorization of participants into the sampled European and Asian groups may obscure important within-group variability. The study did not directly measure individual-level cultural orientation, such as individualism, collectivism, interdependence, or relational self-construal. Therefore, the findings should not be interpreted as direct evidence of participants' individual cultural values.

Fourth, the sampled European and Asian groups differed in chronological age. Although additional analyses showed that the main patterns for problem-focused and emotion-focused coping remained after accounting for age, avoidant coping appeared more age-dependent. Fifth, the study was conducted during the COVID-19 pandemic, a period characterized by high uncertainty, rapidly changing public health measures, and varying national responses. As a result, the generalizability of the findings beyond pandemic or crisis contexts may be limited.

CONCLUSIONS

In conclusion, the present study contributes to a more nuanced understanding of the associations between health locus of control and coping styles during a global health crisis. The findings indicate that HLC dimensions are meaningfully associated with coping responses, and that these associations differ between participants from the sampled European and Asian countries. Internal HLC was most strongly related to PFC, whereas CHLC was most strongly related to avoidant coping in the total sample. At the same time, external control beliefs did not show a uniformly maladaptive pattern. PHLC was more strongly associated with PFC in the sampled Asian group, and CHLC showed positive associations with problem-focused and emotion-focused coping in that group. These findings highlight the importance of moving beyond simple internal-versus-external interpretations of health locus of control and adopting more context-sensitive models of coping and control during health crises. Overall, the findings suggest relationships among coping, control beliefs, and cul-

ture, emphasizing the need for context-sensitive approaches in both research and practice.

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