

Coping and Anxiety During Lockdown in Spain: The Role of Perceived Impact and Information Sources

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Background/Purpose: In the context of COVID-19 lockdowns, extant research suggests that secondary coping (a strategy aimed at adjusting oneself to the stressor) is more robustly associated with better mental health than primary coping (a strategy aimed at adjusting the stressor to oneself). We investigated whether these findings are generalizable to Spain—one of the most severely affected countries at that time. We also tested whether the link between secondary coping and mental health (as measured by anxiety) can be accounted for by how individuals perceive the COVID-19 impact (ie, perceived life changes and personal global impact) and how frequently they use traditional and social media to check COVID-19-related information.

Methods: A diverse community sample (N = 408), collected during the first lockdown in Spain (early April 2020), completed a multi-measure online survey including the targeted variables.

Results: Secondary coping outperformed primary coping in predicting reduced anxiety during the lockdown in Spain. Moreover, lower perceived life changes from COVID-19 and reduced personal global impact from COVID-19 both mediated the negative secondary coping-anxiety relationship. No indirect effects emerged for either conventional or social media exposure.

Conclusion: These results (a) strengthen the cross-cultural validity of the link between secondary coping and anxiety and (b) advance our understanding of the psychological mechanisms underlying this association.

Keywords: secondary coping, COVID-19 life changes, anxiety, media exposure, Spanish lockdown

Introduction

Since the first reports of an epidemic outbreak in December 2019 in the Chinese city of Wuhan, COVID-19, an infectious disease caused by SARS-COV-2, has triggered health alarms across the globe. This public health emergency, which in its initial stages required the confinement of nearly half the world's population in government-led efforts to prevent the rapid spread of the disease,¹ has inspired multiple studies interested in empirically examining the impact of public health measures (eg, physical distancing, lockdowns, etc.) on mental health.

This research aimed to expand our understanding of the relationship between mental health and the use of coping strategies during COVID-19 lockdowns. Earlier research conducted in Western countries (eg, Canada²) has shown that the use of secondary coping, defined as the cognitive reappraisal of a highly stressful event,^{3,4} is more strongly and robustly associated with better mental health outcomes when compared to primary coping, defined as the attempt to actively and behaviorally modify the relation of the person with their environment in order to control stress.⁵ However, to the best of our knowledge, no study has yet investigated (a) the generalization of these findings to Spain—one of the most severely affected countries by COVID-19—and (b) the existence of potential underlying mechanisms that could further explain the association between secondary coping and mental health during COVID-19 lockdown. The present piece of research aims to fill these gaps in the literature.

Mental Health and Coping Strategies During the COVID-19

Extant empirical research converges on the idea that the emergence of the COVID-19 crisis is associated with a sharp deterioration in various indices of mental health. Both singular cross-sectional studies^{6,7} and systematic and meta-analytic reviews^{8,9} appear to reflect relevant increments in the prevalence of mental health problems (eg, anxiety or depression symptomatology) in comparison with pre-COVID-19 phase across various countries and populations. There is also evidence that quarantined/isolated individuals were at greater risk of mental health problems than non-quarantined/non-isolated individuals.¹⁰

Notwithstanding the above, the adverse impact of COVID-19 on mental health is not generalizable to all individuals, as there exists an evident and considerable interindividual variability in mental health levels during the COVID-19 outbreak. There must be personal or social factors that may help to elucidate the substantive variability of responses to COVID-19 in terms of mental health. For instance, individuals' coping responses to the wide-ranging changes arising from this health crisis may be one of these differential factors. The term *coping* refers to the cognitive and behavioral efforts to handle stressful events that exceed the resources of the person.¹¹ Hence, coping strategies represent a psychological tool by which individuals try to restore feelings of personal control in response to a stress-inducing event.¹²

One of the most prominent theoretical frameworks pertaining coping strategies covers two distinctive general types, namely: *primary* and *secondary* coping.³⁻⁵ Primary coping involves those active attempts to control or remove the source of stress by influencing certain features of the environment (ie, problem-solving strategies), whereas secondary coping entails individuals' efforts to adjust themselves to the stressful event by primarily utilizing self-focused strategies¹³ (eg, positive reinterpretation, acceptance, etc.).

Recent research examining the connection between certain coping actions and mental health outcomes during the COVID-19 pandemic in Poland observed that responses such as positive reframing or acceptance, which are considered secondary coping strategies, yielded stronger negative correlations with multiple indices of mental health than active coping or planning actions, which are considered primary coping strategies.¹⁴ Along the same lines, an empirical investigation conducted with an Australian sample population showed that positive reframing and acceptance-based responses were predictive of better mental health status in the COVID-19 context, whereas active coping or planning were unrelated to mental health.¹⁵ In the same vein, a study in Portugal found that the use of acceptance coping and positive reframing was associated with fewer mental health problems in times of COVID-19.¹⁶ Also, in a Canadian longitudinal study on coping and mental health of nearly 400 people at the start of the pandemic, researchers found positive reframing (secondary coping strategy) at baseline was also associated with improved quality of life over the one-month follow-up period. In contrast, planning, a primary coping strategy, appeared to be detrimental during the early days of the pandemic.² In another study that investigated coping strategies during the first wave of the COVID-19 outbreak in Slovenia,¹⁷ researchers identified three types of coping profiles: engaged profile (high levels of problem-focused coping, acceptance, and positive reframing), disengaged profile (low levels of problem-focused coping, acceptance, and social support), and avoidant profile (substance use, self-blame, and humor). Engaged coping, which is a combination of primary and secondary coping in our model, was associated with lower levels of anxiety. Authors also noted that engaged-coping-oriented strategies, alongside acceptance, "proved to be most adaptive" (p. 9).

One possible factor that might help to explain the differences in the connection of both forms of coping with mental health concerns the controllability of the stress-inducing situation. Drawing on the goodness-of-fit hypothesis related to the transactional model of stress and coping,¹⁸ primary coping responses are expected to be more effective in situations that are more easily controllable, while secondary coping strategies tend to be more effective in situations that are particularly difficult to control. In consideration of the fact that the COVID-19 pandemic lockdown crisis represents a low-control situation for most citizens around the world, the efficacy of secondary coping strategies in predicting better pandemic adjustment should not be surprising. However, it is plausible that this network of relationships might be more pronounced in countries particularly affected by COVID-19, such as Spain. Proving this fact would reinforce the cross-cultural replicability of the relationship between secondary coping and mental health, which is especially relevant in light of recent studies showing that how people suffer and respond to COVID-19 might be modulated by cultural factors.¹⁹

This research will not only assess differences in mental health during the COVID-19 lockdown as a function of coping strategies but also test the robustness of these associations by controlling for additional relevant factors for mental health, such as sociodemographic characteristics, perceived impact measures (ie, perceived life changes and global/personal COVID-19 impact), and the use of traditional and social media to obtain COVID-19-related information. We adopted such this approach because earlier research has revealed that these latter variables are relevant to mental health in the context of COVID-19 and may be then potentially influencing the coping-mental health link. Regarding socio-demographic factors, it has been evidenced that single-person households showed poorer subjective well-being during the COVID-19 pandemic.²⁰ Furthermore, it was also found that individuals who experienced more serious impacts of the COVID-19 pandemic at the personal level showed diminished life satisfaction.²¹ Finally, other studies have indicated that a more frequent use of both conventional and social media to seek COVID-19-related information was linked to greater anxiety, even after adjusting for other factors.^{22,23} Similarly, previous research in Spain has also established a clear longitudinal association between COVID-19-related news consumption and anxiety.²⁴ Providing evidence that associations between coping strategies and mental health in times of COVID-19 go beyond the abovementioned variables would reinforce the validity of the findings reported to date. We will also investigate whether these latter variables could act as possible routes through which coping responses to the COVID-19 lockdown would relate to decreased anxiety. We theorize that a higher utilization of secondary coping strategies, insofar as it entails a cognitive reinterpretation and acceptance of the COVID-19 reality (a low-control stress-inducing event), could be associated with fewer perceived life changes across various domains, which subsequently reduces the perceived global impact of the COVID-19 pandemic at the personal level, thereby reducing anxiety. On the other hand, it is also plausible that the relationship between secondary coping and anxiety would be mediated by a less frequent use of traditional and social media platforms, since secondary coping entails accepting the situation and positive reframing/cognitive reappraisal. One might appraise that, as a result of lockdown and COVID-19 awareness, individuals who use more secondary coping would not need to frequently consume conventional media and social media platforms, which, in turn, would be related to lower levels of anxiety. To our knowledge, no study has yet tested these assumptions as underlying mechanisms of the association between secondary coping and mental health in times of COVID-19.

Method

Participants

Our sample consisted of a total of 408 Spanish respondents (319 females, 83 males, 2 individuals that did not identify themselves as man or woman, and 4 individuals that preferred to not indicate their gender). The participants were mostly middle-aged adults ($M = 38.05$, $SD = 13.69$; range from 18 to 68). Power analyses showed that our sample size enables us to detect correlation effects of $\rho \geq 0.13/.16$ (two-tailed) and regression effects of $f^2 \geq 0.05/.06$ using ten predictors (demographics + COVID-19-related research variables) with power greater than 0.80 at $\alpha = 0.05/.01$. These effects are highly comparable to those obtained in earlier research examining the connection between COVID-19-related indicators and mental health.²⁵

Instruments

Primary and Secondary Coping

Primary and secondary coping were measured using a shortened version of the COPE scale.²⁶ We adapted this measure to the COVID-19 scenario. Individuals were asked to answer three items assessing primary coping strategies (eg, taking direct action to fix/avoid the problem) and five items assessing secondary coping strategies (eg, acceptance of the situation or personal growth). Participants were asked to answer “in response to the impact of COVID-19 on your life, what strategies have you adopted to cope with the situation,” on a 4-point rating scale ranging from 1 (*do not do this at all*) to 4 (*do this a lot*).

Use of Traditional Media

We assessed the frequency with which participants use three different conventional communication media for gathering COVID-19-related information: local television channels, national television, and newspapers. Answers were provided on a 7-point Likert scale ranging from 1 (*never*) to 7 (*frequently*).

Use of Social Networking Platforms

A single-item measure was used to evaluate the frequency of respondents' use of social media platforms (eg, Facebook, Twitter, etc.) to seek information about the COVID-19 outbreak. Responses were given on a 7-point Likert-type response format (1 = *never*; 7 = *frequently*).

Perceived Life Changes

A 9-item measure was used to assess how the COVID-19 outbreak has changed various aspects linked to individuals' lifestyles and their immediate environments (eg, dietary habits, family life, or social norms). Scores were provided on a 7-point rating scale (1 = *extremely similar*; 7 = *extremely different*). This scale was derived from Demes and Geeraert,²⁷ which measures an individual's cultural and lifestyle differences between home and host country.

Perceived Impact

A single-item measure was included to assess individuals' general perceived impact of COVID-19 on their daily lives with a 11-point Likert-type response format ranging from 0 (*unaffected*) to 10 (*extremely affected*).

Anxiety

We administered (and adapted to the COVID-19 outbreak) the Psychological Problems Scale²⁸ to assess, both at the physical and psychological level, anxiety symptomatology regarding the pandemic crisis. It consists of a total of 15 items (eg, "My thoughts are confused"). Responses were given on a 5-point Likert-type response format (1 = *never*; 5 = *very often*).

Research Design and Procedure

This piece of research was carried out using a cross-sectional, descriptive correlational design via online application conducted during the critical lockdown phase. Data was gathered from online assessments through Qualtrics from April 2 to April 16, 2020—coinciding in time with the Spanish national lockdown (March 14, 2020 to April 28, 2020). Online advertisements on social media platforms were utilized to recruit the sample; therefore, an incidental sampling procedure was followed. Respondents were given a brief description of this research and were informed about the voluntary nature of their participation as well as the anonymity and confidentiality of their responses. Then, they provided informed consent to participate and proceeded to complete the online survey presented in Spanish, their language of education. After filling in the survey, participants were thanked for their time and were provided with the e-mail address of one of the researchers behind this study in case they were interested in accessing further details of this project. Participants did not receive any type of compensation for their involvement in the study. This research was conducted in conformity with the ethical guidelines of the responsible institution and the Declaration of Helsinki. This research is affiliated with a larger project that received ethical approval from the Intercultural Institute at Shanghai International Studies University (Research Project Protocol # 2020-UNI-0211).

Data Analysis

In the assessment of internal reliability coefficients, we computed both Cronbach's alpha and McDonald's omega. We then calculated the descriptive statistics (ie, means, standard deviations, skewness, and kurtosis) of all research variables. We tested the existence of potential gender effects by computing an independent samples *t*-test with gender as a grouping variable (supplemented with an effect size calculation, Cohen's *d*). Pearson product-moment coefficient correlations with age were also calculated.

To assess the linkages between all the COVID-19-related research variables, we analyzed their zero-order and partial (controlling for gender and age) correlations. Based on Gignac and Szodorai,²⁹ the magnitudes of the correlation effects were set at 0.11/.19/.29 for small/medium/large coefficients.

To empirically test the shared and unique effects of these COVID-19-related variables on anxiety, we conducted a hierarchical regression analysis with demographics (ie, age, gender, household size, and educational attainment), coping strategies (ie, primary and secondary), information sources linked to the COVID-19 pandemic (ie, traditional media and social media), and perceived COVID-19 impact measures (ie, perceived life differences and global perceived personal impact) as predictors, and anxiety as the outcome variable. Demographics were entered in Step 1 (method: enter) and the COVID-19-related measures were included in Step 2 (method: enter). We verified whether collinearity coefficients (eg, Variance Inflation Factor [VIF]) were all within adequate limits (<5). Moreover, to interpret the effect size of each step,³⁰ we computed the standardized regression effect sizes ($\Delta f^2 \geq 0.02/0.15/0.35$ indicate small/medium/large effects) on the basis of changes in R^2 .

Lastly, mediation analyses were calculated by using the PROCESS macro for SPSS.³¹ In the first place, by means of Model 6, we sequentially tested the indirect effect of secondary coping on anxiety through perceived life differences and COVID-19 personal impact. Secondly, we also tested whether the use of conventional media and social media platforms for gathering COVID-19-related information independently mediated the link between secondary coping and anxiety (Model 4).³¹ In all of the above cases, bias-corrected bootstrapping was generated based on 10,000 iterations (95% confidence interval [CI]). Indirect effects were considered significant ($p < 0.05$) when 95% CIs did not include 0. Analyses were performed using the 25.0 *Statistical Package for the Social Sciences* (SPSS). The data of this research are available at https://osf.io/phacm/?view_only=03df0c4e627e4076a10ed7858955c674.

Results

Preliminary Analysis: Descriptive Results

Reliability estimates, descriptive statistics, gender differences in all variables examined in this research, and their Pearson product-moment coefficient correlations with age are presented as an OSF Supplementary Material ([Table S1](#)).

Internal consistency values of all multi-item measurements were adequate for research purposes ($\alpha/\omega \geq 0.68$). Skewness and kurtosis values reflected that scores' distributions did not significantly deviate from normality. Mean scores did not substantially differ as a function of gender. Older age was indicative of both greater primary ($r = 0.24, p < 0.001$) and secondary ($r = 0.13, p = 0.011$) coping strategies. Older participants were also more inclined to use conventional media for gathering COVID-19-related information ($r = 0.19, p < 0.001$). Lastly, younger age participants were more prone to show higher scores in anxiety ($r = -0.30, p < 0.001$).

Relationships of Coping Strategies with All Research Variables

[Table 1](#) gives both bivariate and partial (controlling for gender and age) correlations among all COVID-19-related research variables. As no substantial differences emerged from both analysis strategies, zero-order bivariate correlations are described hereafter.

Table 1 Zero-Order Observed Correlation and Partial Correlation Matrixes for All COVID-19-Related Research Variables

Scales	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Primary Coping	—	0.32***	0.17**	0.15**	0.06	0.06	-0.04
(2) Secondary Coping	0.35***	—	0.06	0.03	-0.16**	-0.14**	-0.33***
(3) Use of Traditional Media	0.18***	0.06	—	0.41***	0.04	0.08	0.13**
(4) Use of Social Media	0.14**	0.04	0.40***	—	0.02	0.09	0.19***
(5) Perceived Life Differences	0.04	-0.17**	0.05	0.01	—	0.31***	0.34***
(6) COVID-19 Global Impact	0.05	-0.14**	0.10*	0.09	0.30***	—	0.36***
(7) Anxiety	-0.11*	-0.36***	0.07	0.16**	0.32***	0.33***	—

Notes: Bivariate/Partial (Controlling for Gender and Age) Correlations (below/above diagonal). $p < 0.05^*$; $p < 0.01^{**}$; $p < 0.001^{***}$.

Concerning COVID-19 coping strategies (positively intercorrelated with each other [$r = 0.35, p < 0.001$]), correlational analyses showed that primary and secondary coping differed in their linkages with the rest of COVID-19-related measures. Although higher levels of both coping strategies were significantly related to reduced anxiety—with numerically higher correlation coefficient for secondary coping ($r = -0.36, p < 0.001$) as compared to primary coping ($r = -0.11, p = 0.021$)—only primary coping was significantly related to the use of both conventional media ($r = 0.18, p < 0.001$) and social media ($r = 0.14, p = 0.006$) as information sources related to the COVID-19 pandemic. Furthermore, secondary coping, unlike primary coping, was negatively and significantly associated with both perceived life differences after COVID-19 ($r = -0.17, p = 0.001$) and global perceived COVID-19 personal impact ($r = -0.14, p = 0.005$).

Hierarchical Regression Analysis Predicting Anxiety

Table 2 displays the results of the hierarchical regression analysis predicting levels of anxiety during the lockdown from demographics and COVID-19-related measures.

As regards Step 1, regression analysis indicated that only respondents' age emerged as a significant predictor of anxiety. In particular, older participants tended to score lower in anxiety ($\beta = -0.30, p < 0.001$). Step 1 accounted for 9.6% of the variance in anxiety.

Among the COVID-19 related indicators entered in Step 2, deploying secondary coping strategies predicted lower levels of anxiety ($\beta = -0.26, p < 0.001$). Interestingly, only secondary coping strategies (and not primary coping) were identified as a significant and negative predictor of anxiety. Moreover, more frequent use of social media, but not of traditional media, for gathering COVID-19-related information predicted increased anxiety ($\beta = 0.14, p = 0.002$). Lastly, higher levels of perceived life differences after the COVID-19 outbreak ($\beta = 0.21, p < 0.001$) and of global COVID-19 perceived personal impact ($\beta = 0.22, p < 0.001$) contributed to the prediction of increased anxiety. Altogether, these COVID-19-related predictors accounted for 25.5% of the inter-individual variance in COVID-19 anxiety.

Testing the Mediating Role of Perceived COVID-19 Personal Impact Measures and COVID-19-Related Information Sources

Our next interest was to determine whether people who tend to use secondary coping strategies would perceive fewer life differences due to COVID-19, which subsequently reduce the perceived global impact of the pandemic at the personal level, thereby reducing anxiety.

Table 2 Hierarchical Regression Analysis Predicting Anxiety

Model	Predictor	β	p	R^2	ΔR^2	f^2
1	Age	-0.30	<0.001	0.096***		0.106
	Gender	0.02	0.730			
	Household Size	0.04	0.376			
	Educational Attainment	0.02	0.703			
2	Age	-0.28	<0.001	0.352***	0.255***	0.395
	Gender	0.01	0.773			
	Household Size	0.04	0.347			
	Educational Attainment	0.00	0.926			
	Primary Coping	-0.01	0.890			
	Secondary Coping	-0.26	<0.001			
	Traditional Media	0.06	0.235			
	Social Media	0.14	0.002			
	Perceived Life Differences	0.21	<0.001			
	COVID-19 Global Impact	0.22	<0.001			

Notes: Gender: 0 = Male; 1 = Female; Household size was assessed by the participant reporting the number of people living in their current household. Education was coded as 1 (less than high school) to 7 (PhD holder or higher). *** $p < 0.001$; All VIFs ≤ 1.27 .

As Figure 1 illustrates, all paths were significant. In particular, using secondary coping responses to the COVID-19 pandemic reduced individuals' perceived changes in their lives due to the pandemic ($b = -0.31, SE = 0.08, p < 0.001$), which, in turn, led to a lower perceived global impact of the COVID-19 at a personal level ($b = 0.55, SE = 0.10, p < 0.001$), resulting in a reduction of anxiety ($b = 0.11, SE = 0.02, p < 0.001$).

All indirect effects examined were significant since their bootstrap confidence intervals did not include the value 0: (a) first indirect effect (secondary coping → perceived life differences → anxiety): $IE = -0.07, SE = 0.03, 95\% CI [-0.11, -0.03]$; (b) second indirect effect (secondary coping → COVID-19 personal impact → anxiety): $IE = -0.04, SE = 0.02, 95\% CI [-0.07, -0.01]$; and (c) third indirect effect (secondary coping → perceived life differences → COVID-19 personal impact → anxiety): $IE = -0.02, SE = 0.01, 95\% CI [-0.04, -0.01]$. The effect of secondary coping on anxiety remained significant after the addition of the two mediating variables (Figure 1), indicating the existence of a partial mediation.

Pairwise contrasts of the indirect effects showed statistically significant differences between the first indirect effect (secondary coping → perceived life differences → anxiety) and the third indirect effect (secondary coping → perceived life differences → COVID-19 personal impact → anxiety) ($-0.05, 95\% CI [-0.09, -0.01]$), showing a higher indirect effect in the following route: secondary coping → perceived life differences → anxiety.

Figure 2 illustrates an alternative mediational model with COVID-19-related information sources (traditional vs social media use) as potential routes of the connection between secondary coping and anxiety. In this case, none of the indirect effects were significant because their bootstrap confidence intervals include the value 0: (a) secondary coping → use of

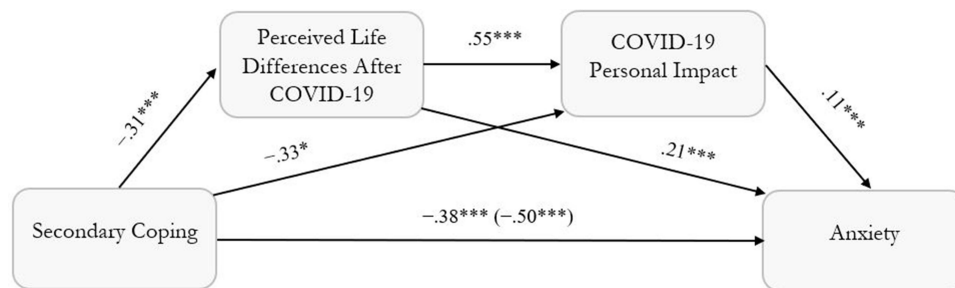


Figure 1 Sequential mediation model for Secondary Coping, Perceived Life Differences, Perceived Personal Impact, and Anxiety. Covariates: Primary Coping, Age, Gender, Household Size, Education, and Use of Traditional and Social Media. $p < 0.05^*$; $p < 0.001^{***}$.

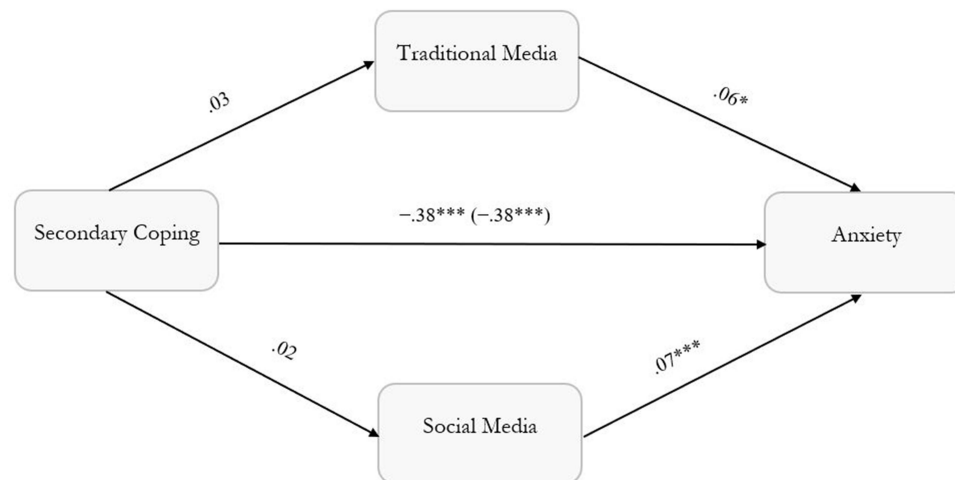


Figure 2 Mediation models for Secondary Coping, Use of Traditional Media and Social Media as mediators, and Anxiety. Covariates: Primary Coping, Age, Gender, Household Size, Education, Perceived Life Differences, and Perceived Personal Impact. $p < 0.05^*$; $p < 0.001^{***}$.

traditional media → anxiety: $IE = 0.002$, $SE = 0.01$, 95% CI $[-.02, 0.02]$; (b) secondary coping → use of social media → anxiety: $IE = 0.002$, $SE = 0.01$, 95% CI $[-.03, 0.03]$.

Discussion

Does endorsing more secondary coping (vs primary coping) relate to lower levels of anxiety during the first wave of the COVID-19 outbreak in Spain? Our findings revealed that both primary and secondary coping were associated with less anxiety, yet, as expected, secondary coping outperformed primary coping in its prediction.

This finding provides further support for how individuals in Western countries utilized coping strategies to overcome the initial shock of the pandemic. Our results corroborate the idea that acceptance and positive reframing (as measured by secondary coping), rather than active attempts to control or remove the source of stress, predicted lower levels of negative mental health outcomes in times of COVID-19, which fits well with prior data from other western countries.^{2,14,15,32} Thus, our study provides valuable supporting evidence for the generalizability of coping strategies that played a helpful role in reducing anxiety during lockdown.

The effectiveness of secondary coping in reducing anxiety also theoretically supports the goodness-of-fit hypothesis^{11,18}. Once the first lockdown was introduced, individuals could have appraised the lockdown situation as uncontrollable. In many aspects, the first phase of lockdowns around the world was a naturalistic setting in which there was a great deal of uncertainty due to the pandemic, stay-at-home measures, and unfamiliarity with the disease, all of which reasonably explain how secondary coping rather than primary coping, was associated with less anxiety. Indeed, the negative connection between the tendency to engage in primary coping strategies and anxiety was of a small magnitude and even disappeared after controlling for gender and age, which seems to reinforce the ineffectiveness of these problem-solving strategies when dealing the COVID-19 consequences.

What is noteworthy is that while secondary coping outperformed primary coping by itself, it also remained a robust predictor of lower levels of anxiety when accounting for a large number of control variables. It is our belief that this underpins the value of secondary coping, which has received some mixed attention in the literature.³³ Perhaps when individuals experience a potential threat, they evaluate the severity of the threat and set their coping responses accordingly. In this case, a countrywide lockdown and public health crisis would result in a more intense coping reaction, so secondary coping appeared to be more effective because lockdown life during the pandemic might have exceeded people's ordinary limits to use primary coping (active in nature). This supports the idea that situational factors, in combination with personality traits, should be taken into account when individuals decide which coping strategies to use.

Interestingly, as predicted in our hypothesized mediation model, perceived life differences and perceived COVID-19 global impact indirectly impacted the relationship between secondary coping and anxiety. When perceiving more life changes as a result of COVID-19 and being (from a general perspective) directly impacted by COVID-19, the pathway to more anxiety was enhanced. Our results suggest that the tendency to engage in secondary coping strategies might act as a protective mechanism of both types of personal impacts. To implement coping strategies based on the acceptance or (positive) reevaluation of the COVID-19 consequences may help individual to witness their life changes as less acute or severe and then directly perceiving a less global impact derived from the COVID-19. These connections would have a positive impact in individual's mental health (in this case, lower levels of anxiety). The data from the mediation model also fit well with the idea that even for individuals and households free from COVID-19, the outbreak still serves as a strong stressor and major life change that includes risks of anxiety and self-isolation; all of which have been highlighted in the theoretical framework of social and behavioral research in response to the pandemic.³⁴ There are a couple of explanations for how individuals are experiencing COVID-19 lifestyle changes in such a way. Theoretically, it is reasonable that perceiving COVID-19 life changes became a surreal experience and this justified their coping response (acceptance vs active control). Individuals accepted reality and fit themselves into the situation³⁵ as they cannot control major changes in their lifestyles (eg, staying at home, reducing contact with others, wearing masks, and practicing social distancing). Questions on this scale included how people perceived the COVID-19 social environment: living habits, practicalities of getting around, food and eating, family life interactions, social norms, values and beliefs, people

interactions, and friend interactions. In a way, recognition of these new life changes due to COVID-19 makes complete sense as nearly every way of life has been impacted by COVID-19.

Another important finding is that our results pinpointed ways in which individuals reported seeking COVID-19 information. Researchers found that social media was the most frequent source of obtaining COVID-19 information, and it was moderately correlated with anxiety.³⁶ Our present study shows a similar finding: the use of social media predicted increased anxiety after accounting for other variables ($\beta = 0.14, p = 0.002$). Interestingly, information sources were also weakly correlated with primary coping but not secondary coping, thus supporting the statements from health officials that highlight the importance of self-care, balancing free time with other activities, and monitoring the amount of time spent watching the news or receiving information from media.³⁷ Unexpectedly, the sources of COVID-19 related information (social media and traditional media) did not mediate the relationship between secondary coping and anxiety. Instead, these factors were directly related to more anxiety. This finding suggests that paying too much attention to information about the epidemic before sleep has negative consequences, including sleep deprivation or increased anxiety.³⁸

Limitations and Future Directions

The study is a cross-sectional online study that was conducted at the start of the pandemic. This method was essential for rapidly collecting data. Given this limitation, the sample and time window may limit the generalizability of the results. Longitudinal studies to follow up with participants over time and explore how coping strategies might lead to lower levels of anxiety should be conducted in other phases of the pandemic. Moreover, given the sample size, we only incorporated a limited number of predictors that can influence the coping-anxiety link (ie, control variables). There may be other alternative factors that could modulate the impact of coping strategies during turbulent times. For instance, it would be interesting to substantiate the role of spirituality and workplace health promotion programs in coping with adverse situations and life stressors linked to the pandemic.^{39,40} Furthermore, although we used well-validated self-reported scales, results may have differed if objective measures of biometrics, daily measures, or follow-up interviews had been used. In particular, it is unclear how frequently and effectively coping strategies were actually used by participants over the course of the lockdown. Other studies could also consider more detailed analyses of coping strategies that were applicable to COVID-19 lockdown life (ie, fine-grained classifications including specific types of secondary vs primary coping strategies: eg, humor⁴¹). This might improve our understanding of how people face COVID-19.

Conclusions

The findings from this research advance our understanding of which coping strategies may be most relevant in determining individuals' mental health in the backdrop of a highly stressful and uncertain event (preventive nationwide COVID-19 lockdown). Our research contributes to clarifying the psychological pathways through which such beneficial coping actions (ie, secondary coping) might be conducive to reduced levels of anxiety, emphasizing the need to consider how people perceive the impact of the pandemic at the personal level and their exposure to information sources as the pandemic was unfolding. These data might be informative to policymakers and health professionals trying to promote more efficient programs aimed at alleviating the adverse psychological impact of future public health emergency situations.

Data Sharing Statement

The data of this research are available at https://osf.io/phacm/?view_only=8a457b7dba414cdbb69e2b69c7f20f98.

Ethics Statement

This research was conducted in conformity with the ethical guidelines of the responsible institution and the Declaration of Helsinki. All procedures received ethical approval from the responsible academic institution (Research Project Protocol # 2020-UNI-0211).

Disclosure

The authors report no conflicts of interest in this work.

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