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**Invisible String: Deficiencies in Coping with Stress and Emotion Regulation  
as Predictors of Conspiracy Beliefs**

[Niewidzialna nić: Deficyty w radzeniu sobie ze stresem i w regulacji emocji  
jako predyktory wiary w teorie spiskowe]

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## Abstract

This dissertation aims to examine how deficits in coping with stress and emotion regulation contribute to the endorsement of conspiracy beliefs. Across 13 studies conducted in various national contexts (Poland, the UK, and the US), this research integrates diverse psychological perspectives to explore these relationships. The work builds on the premise that conspiracy beliefs, often fueled by anxiety, stress, or uncertainty, may serve as a response to perceived threats. I addressed a critical gap in understanding the predictors of conspiracy beliefs, proposing that deficits in stress coping and emotion regulation play a key role in increasing susceptibility to such beliefs. These two interrelated processes are essential for well-being and social functioning. Because maladaptive coping strategies (e.g., avoidance) and emotion dysregulation are linked to negative outcomes like intrusive thoughts and threat-related attention biases, individuals with these deficits may be more likely to interpret the world as hostile. This, in turn, could make them more likely to adopt conspiracy explanations centered on malevolent actors and their clandestine actions. I also examined the role of national narcissism—a defensive form of national identity characterized by perceived in-group superiority and underappreciation, rooted in individual shortcomings. As individuals with heightened national narcissism may amplify external threats and adopt conspiratorial narratives as a defense, I hypothesized that national narcissism might explain the relationships between coping, emotion regulation, and conspiracy beliefs.

The findings revealed that deficiencies in coping — particularly avoidance — consistently predicted higher conspiracy beliefs, both in general contexts and during the COVID-19 pandemic. Importantly, priming avoidance coping strategies increased conspiracy beliefs. Religious coping showed mixed results: in some studies it was positively related to conspiracy beliefs, in others this relationship was not significant or religious coping correlated with greater compliance with pandemic safety measures. This duality highlights the complex nature of religious coping. Furthermore, emotion dysregulation robustly correlated with conspiracy beliefs across various political and cultural contexts, suggesting the universality of this link.

In the last two papers, national narcissism was predicted by deficiencies in coping (i.e., low self-sufficient coping) and emotion regulation. Notably, inducing self-sufficient coping strategies decreased conspiracy beliefs by attenuating national narcissism. This defensive identity also mediated the link between emotion regulation and conspiracy beliefs, reflecting its role as a compensatory strategy. I discuss the potential implications and limitations of my studies.

This research advances knowledge of how individuals' regulatory deficits translate into broader social phenomena. By linking individual difficulties to collective attitudes and behavioral tendencies, my findings inform interventions targeting maladaptive coping and emotion dysregulation, with potential applications in public health communication and education.

**Keywords:** conspiracy beliefs, conspiracy theories, coping with stress, avoidance, emotion dysregulation, negative emotions, national narcissism

## Streszczenie

Niniejsza rozprawa doktorska ma na celu zbadanie, jak deficyty w radzeniu sobie ze stresem oraz regulacji emocji kształtują podatność na teorie spiskowe. Zależności te były analizowane w ramach 13 badań przeprowadzonych w różnych kontekstach narodowych (Polska, Wielka Brytania, Stany Zjednoczone), łączących różne perspektywy psychologiczne. Hipotezy weryfikowane w tej pracy bazują na założeniu, że teorie spiskowe, często wzmacniane przez lęk, stres czy niepewność, mogą stanowić odpowiedź na postrzegane zagrożenia. Celem moich badań jest wypełnienie istotnej luki w wiedzy dotyczącej predyktorów wiary w teorie spiskowe, poprzez systematyczną analizę przewidywania, że deficyty w radzeniu sobie ze stresem oraz regulacji emocji odgrywają kluczową rolę w zwiększaniu podatności na takie przekonania. Te dwa wzajemnie powiązane procesy są niezbędne dla podtrzymywania dobrostanu jednostki oraz jej funkcjonowania w społeczeństwie. Ponieważ nieprzystosowawcze strategie radzenia sobie ze stresem (np. unikanie) oraz dysregulacja emocji są związane z negatywnymi konsekwencjami, takimi jak natrętne myśli czy tendencyjne skupianie uwagi na zagrożeniach, osoby z takimi deficytami mogą być bardziej skłonne do interpretowania świata jako wrogiego. To z kolei może zwiększać prawdopodobieństwo, że przyjmą wyjaśnienia spiskowe koncentrujące się na złowrogich aktorach i ich ukrytych działaniach.

W pracy badam również rolę narcyzmu narodowego — defensywnej formy identyfikacji narodowej, charakteryzującej się postrzeganą wyższością grupy oraz poczuciem jej niedoceny, której źródłem są indywidualne niedoskonałości. Osoby o wyższym poziomie narcyzmu narodowego mogą wyolbrzymiać zagrożenia zewnętrzne i przyjmować narracje spiskowe jako sposób obrony obrazu grupy. Postawiłam więc hipotezę, że narcyzm narodowy może wyjaśniać zależności między radzeniem sobie ze stresem, regulacją emocji a wiarą w teorie spiskowe.

Wyniki badań wykazały, że deficyty w radzeniu sobie ze stresem — szczególnie strategie unikania — konsekwentnie przewidywały wyższy poziom przekonań spiskowych, zarówno w ogólnych kontekstach, jak i w czasie pandemii COVID-19. Co ważne, aktywizacja strategii unikania zwiększała wiarę w teorie spiskowe. Wyniki dotyczące roli religijnego radzenia sobie okazały się mieszane: w niektórych badaniach strategia ta była pozytywnie związana z wiarą w teorie spiskowe, w innych związek ten nie był istotny lub religijne radzenie sobie było związane z większym przestrzeganiem pandemicznych zaleceń bezpieczeństwa. Ta dwoistość podkreśla złożoną naturę religijnego radzenia sobie ze stresem.

Ponadto dysregulacja emocji silnie korelowała z wiarą w teorie spiskowe w różnych kontekstach politycznych i kulturowych, sugerując uniwersalność tej zależności.

W ostatnich dwóch manuskryptach wykazałam, że narcyzm narodowy był przewidywany przez deficyty w radzeniu sobie ze stresem (tj. niski poziom radzenia sobie opartego na Ja/self-sufficient) oraz regulacji emocji. Co istotne, indukowanie strategii opartej na Ja (self-sufficient) zmniejszyło wiarę w teorie spiskowe właśnie poprzez osłabienie narcyzmu narodowego. Ta defensywna identyfikacja grupowa pełniła także rolę mediatora w zależności między dysregulacją emocji a wiarą w teorie spiskowe, co dalej odzwierciedla jej kompensacyjną funkcję. W pracy dyskutuję potencjalne implikacje oraz ograniczenia moich badań.

Niniejsze badania poszerzają wiedzę na temat tego, jak deficyty regulacyjne jednostek przekładają się na szersze zjawiska społeczne. Poprzez łączenie trudności jednostki z postawami i tendencjami kolektywnymi, wyniki moich badań mogą stanowić podstawę do opracowania interwencji ukierunkowanych na nieadaptacyjne radzenie sobie ze stresem oraz dysregulację emocji, z potencjalnym zastosowaniem w komunikacji zdrowia publicznego oraz edukacji.

**Słowa kluczowe:** wiara w teorie spiskowe; teorie spiskowe; radzenie sobie ze stresem; unikanie; dysregulacja emocji; negatywne emocje; narcyzm narodowy

## **Invisible String: Deficiencies in Coping with Stress and Emotion Regulation as Predictors of Conspiracy Beliefs**

From the Black Death to the COVID-19 pandemic, negative emotions and stress have accompanied major global crises, driving individuals to seek explanations for the causes and consequences of these events, often fostering an ‘us versus them’ mindset that can lead to scapegoating. For example, during the Black Death, accusations emerged that the Mongols had deliberately spread the plague as a form of biological warfare, while the COVID-19 pandemic fueled suspicions that China secretly engineered and disseminated the virus for strategic purposes (Wagner & Reifegerste, 2022). While such crises generally arouse aversive experiences, not everyone embraces conspiracy beliefs. Who then might be more (vs. less) prone to believe in theories accusing others of secret plotting?

While existing research has indicated that conspiracy theories usually arise after impactful events or societal crises that frequently cause aversive states such as stress or negative emotions (e.g., van Prooijen & Douglas, 2017; 2018), there has been little focus on how individual differences in stress coping and emotion regulation influence our perceptions of the social world. In fact, people respond to negative emotions and stress in vastly different ways, and I argue that understanding these differences is crucial for explaining why some individuals are more prone to conspiracy beliefs than others. In this context, deficits in these regulatory processes may predispose individuals to endorse conspiracy beliefs as a means of making sense of their environment, especially when faced with uncertainty or fear.

This dissertation aims to go beyond the existing literature by addressing this overlooked aspect of stress and emotion regulation. It contributes to political psychology, social psychology, and the psychology of emotions by exploring the psychosocial foundations of conspiracy beliefs—alternative explanations for social events that can fuel mistrust, social division, and scapegoating. Given that these beliefs can reduce willingness to engage in behaviors like vaccination, challenging them is crucial, as they pose a real threat to public health and social cohesion (e.g., van Mulukom et al., 2022).

### **Conspiracy Beliefs**

Conspiracy theories refer to hidden plots orchestrated by sinister secret groups whose plotting is allegedly supposed to stand behind major global events (e.g., Douglas et al., 2019). In line with past theorizing (e.g., Douglas et al., 2017), conspiracy beliefs have been fueled by various forms of psychological threats and aversive experiences, such as anxiety (e.g., Grzesiak-Feldman, 2013), stress (e.g., Swami et al., 2016), lack of control (e.g., Kofta et al., 2020) or uncertainty (e.g., van Prooijen & Jostmann, 2013). Scholars suggested that adopting

conspiracy beliefs (in this case, regarding the COVID-19 pandemic) might constitute a defense strategy to decrease anxiety or stress (Jutzi et al., 2020) by searching for supposed enemies who can be held responsible for the situation. Indeed, conspiracy theories were widely adopted after events like the 9/11 attacks in New York (Bell, 2018) or the 2010 Smolensk air disaster (Cichocka et al., 2016).

Given the prevalence of conspiracy theories, especially on the Internet—which provides ample space for disseminating such theories (e.g., Kuzelewska & Tomaszuk, 2022)—and the adverse consequences of belief in these theories, such as prejudice (Marchlewska et al., 2019), lower adherence to safety guidelines during the COVID-19 pandemic (Kowalski et al., 2020; Pummerer et al., 2022), and reduced intentions to vaccinate (Cislak et al., 2021; Marchlewska, Hamer, et al., 2022), it is crucial to thoroughly examine the antecedents of conspiracy beliefs.

### **Coping with Stress**

In this thesis, I argue that strategies of coping with stress might be potential antecedents of conspiracy beliefs, as they were found to shape individuals' responses to threats—one of the key factors driving out-group hostility (Riek et al, 2006). Coping involves responding to a stressor—an adverse interaction between a person and their environment—through efforts to manage specific requirements (Lazarus, 1993). Importantly, coping with stress is an essential process for human functioning, present from early development and evolving throughout life (e.g., Aldwin, 2011). Coping can be considered adaptive when it reduces stress, supports goal achievement, and enhances daily functioning, or maladaptive when it sustains or worsens distress. Previous research has proposed categorizing coping strategies as adaptive *versus* maladaptive, typically distinguishing between approach *versus* avoidance responses (e.g., Taylor & Stanton, 2007; Zimmer-Gembeck & Skinner, 2016).

Approach coping includes various strategies aimed at managing stress or adversity (Clarke, 2006) and consists of two main factors: self-sufficient/problem-focused strategies (e.g., planning, active coping) and social support/emotion-focused coping (e.g., venting emotions, instrumental and emotional support<sup>1</sup>; Litman, 2006). Approach coping (especially self-sufficient) is linked to better mental and physical health, as well as greater social competence, suggesting its adaptive nature (e.g., Krattenmacher et al., 2013). As such,

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<sup>1</sup> Importantly, I did not posit any direct hypotheses regarding social support coping, as the scales measure seeking support as a strategy, which is distinct from perceived or received support (see Stowell et al., 2001). However, examining seeking social support as a strategy without analyzing the effects of social support would not be adequate. Therefore, this coping strategy lies outside the immediate focus of this project.

approach coping may be linked to lower threat, and thus negatively linked to conspiratorial tendencies.

In contrast, avoidance coping involves withdrawing from or ignoring stressors and using strategies like denial, substance use, or disengagement (Litman, 2006). It is considered maladaptive, as it is linked to negative outcomes such as increased psychological distress, health issues, and lower well-being (e.g., Nielsen & Knardahl, 2014). Interestingly, research on the COVID-19 pandemic found that avoidance strategies (e.g., denial) were linked to lower adherence to guidelines, such as not keeping physical distance from others (e.g., Chong et al., 2020). Avoiding stressors may coincide with reduced readiness to follow public health recommendations, as compliance generally aligns with active, rather than avoidant, behavior.

Religious coping—a tendency to turn to faith during stressful events (Carver et al., 1989)—represents a distinct dimension of coping and is often analyzed as a separate factor (e.g., Pargament, 2011; Stowell et al., 2001). While religious coping serves various purposes and can be both beneficial and harmful, its broad measurement makes it challenging to classify as either approach or avoidant (Pargament, 2011; Stowell et al., 2001). Notably, conspiracy beliefs have also been linked to religious fundamentalism (Łowicki et al., 2022). Thus, it is possible that religious coping may also be related to conspiracy beliefs.

### **Emotion (Dys)regulation**

Another potentially impactful group of regulatory processes is emotion regulation, which, as I argue, can also affect the way we perceive the social world. Emotion regulation concerns the processes by which a person influences their emotions, including aspects of arousal, experience, and expression (Gross, 1998). These processes have a neural and genetic basis, beginning in infancy, and their development is considered a key goal of socialization, evolving throughout childhood and adolescence (Caspi et al., 2010; Johnstone & Walter, 2014; Thompson, 2014). Notably, regulating emotions is essential for effective task performance and the maintenance of mental health and well-being (Aldao et al., 2010; 2015).

However, dysfunction in emotion regulation can lead to emotion dysregulation (or difficulties with emotion regulation),<sup>2</sup> often associated with various disorders (Gratz & Roemer, 2004). Gratz and Roemer (2004) identified key components of emotion (dys)regulation that can impact mental health and well-being and developed the Difficulties in Emotion Regulation Scale (DERS) to measure these deficits. These components include lack

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<sup>2</sup> Following Gratz and Roemer (2004), I use ‘emotion dysregulation’ and ‘difficulties in emotion regulation’ interchangeably throughout the dissertation.

of emotional awareness and clarity, non-acceptance of emotions, difficulties with impulse control and commitment to goal-directed behaviors, and restrained access to regulation strategies. Emotion dysregulation is regarded as central to mood-related mental health disorders, such as depression, anxiety disorders, and posttraumatic stress disorder (e.g., Bradley et al., 2011; Hofmann et al., 2012). Moreover, emotion dysregulation has been linked to threat-related attention bias, indicating that individuals with emotion dysregulation exhibit attentional dyscontrol in the presence of perceived threats (Bardeen et al., 2017; Klanecky Earl et al., 2020). Notably, previous research has shown that emotion dysregulation also affects social phenomena, such as group processes and intergroup relations, including prejudice, reduced out-group acceptance, and support for aggressive policies (e.g., Halperin et al., 2013; Steele et al., 2019). However, to my knowledge, no past research has systematically examined how emotion dysregulation relates with the tendency to endorse conspiracy beliefs.

### **Deficits in Coping and Emotion Regulation — Why Linked to Conspiracy Beliefs?**

In this research, I aim to address a critical gap in our understanding of the predictors of conspiracy beliefs by proposing a new perspective: deficits in stress coping and emotion regulation may play a pivotal role in increasing susceptibility to conspiracy beliefs. Although distinct, coping and emotion regulation are related and can be seen as parts of the broad concept of affect regulation (Gross, 2014; Hofmann et al., 2012). Both of these regulatory processes play a significant role in maintaining well-being and explaining social sphere phenomena (e.g., Chong et al., 2020; Thompson, 2014). But why might they be associated with higher conspiracy beliefs?

As stated earlier, coping and emotion regulation are consequential. For example, the use of maladaptive coping strategies (especially avoidance) can result in adverse outcomes for individuals, such as intrusive and negative thoughts (Roth & Cohen, 1986; Seiffge-Krenke & Klessinger, 2000; Woodhead et al., 2014). Similarly, studies have shown that emotion dysregulation is associated with threat-related attention biases (Bardeen et al., 2017). Importantly, biased information processing may lead to a focus on negative aspects of the environment and interpreting ambiguous stimuli as threatening or hostile (Eysenck et al., 1991; Gotlib & Krasnoperova, 1998; Smith et al., 2016). Since deficiencies in both coping and emotion regulation have negative emotional outcomes, which, in turn, bias information processing toward viewing the world as malevolent, I argue that individuals with greater deficiencies in coping and emotion regulation would be more inclined to focus on malign cues and interpretations and, thus, be more likely to adopt conspiracy explanations involving secret, malevolent actors and their clandestine actions.

### **The Role of Collective (National) Narcissism**

Finally, I also explored the role that collective narcissism concerning the national in-group (i.e., national narcissism; Marchlewska, Cichocka, et al., 2022) might play in linking coping and emotion (dys)regulation to the adoption of conspiracy beliefs. I assumed that individuals experiencing stress and emotion regulation difficulties may turn to defensive group identities, such as national narcissism, as a means of obtaining psychological strength and compensating for the resources they lack (Fromm, 1973). This defensive identity could, in turn, amplify perceptions of external threats and foster a propensity to search for hidden enemies. Consequently, such a posture may increase susceptibility to conspiracy beliefs.

Collective narcissism encompasses grandiose beliefs about the in-group's greatness with a simultaneous conviction that others do not adequately appreciate the group (Golec de Zavala et al., 2009). Both classic theorizing (Adorno, 1963/1998; Fromm, 1973) and contemporary research (e.g., Cichocka et al., 2018; Marchlewska et al., 2024) indicate that individual's deficits (e.g., low self-esteem; Golec de Zavala et al., 2020; decreased personal control; Cichocka et al., 2018; anxious attachment style; Marchlewska et al., 2024) are at the core of national narcissism, implying that acquiring collective narcissism may serve a compensatory function (Cichocka, 2016). Therefore, although ostensibly embedded in a group context, collective narcissism provides an accessible group-based ego-enhancement strategy thereby ultimately serving individuals' own psychological needs (Cichocka & Cislak, 2020). Thus, deficits in the primary, crucial processes of an individual's stress coping and emotion regulation might also predict national narcissism, as suggested in past literature (Golec de Zavala, 2019; Golec de Zavala et al., 2019). Given the defensive nature of collective narcissism, it has negative consequences on intra- and inter-group relations (Cislak & Cichocka, 2023), such as in-group disloyalty (Marchlewska et al., 2020), as well as prejudice and hostility towards out-groups (Golec de Zavala & Cichocka, 2012). Most importantly, the deep absorption in the in-group's image among those high in national narcissism heightens their sensitivity to the perceived threats against the group's reputation, leading to an intense focus on defending the in-group from real and imagined enemies. Consequently, these individuals are more prone to believing in conspiracy theories (Cichocka et al., 2016).

Since collective narcissism was suggested to "be underlined by dispositional deficits in (...) the ability to constructively self-soothe in face of adversity" (Golec de Zavala, 2019, p. 12) as well as that "deficits in the ability to regulate negative emotions may be associated with likelihood to uphold the collective narcissist belief about the in-group" (Golec de Zavala et al., p. 60), I propose that it might be linked to deficiencies in coping with stress and

emotion regulation. Considering collective narcissism's robust associations with conspiracy beliefs (e.g., Cislak et al., 2021; Górska et al., 2023; Sternisko et al., 2023), I assume it may explain the relationship between the regulatory deficiencies and conspiracy beliefs.

### **The Aims of This Research**

This research aimed to expand past work on the predictors of conspiracy beliefs, such as stress and anxiety (e.g., Grzesiak-Feldman, 2013; Swami et al., 2016) by focusing on the way people deal with adversities. Namely, these studies were focused on the role of individual deficiencies in coping with stress and emotion regulation. As deficits in coping and emotion regulation lead to negative emotional outcomes that bias information processing toward perceiving the world as hostile (e.g., Bardeen et al., 2017; Smith et al., 2016), I hypothesized that individuals with such deficiencies are more likely to interpret the world negatively and, consequently, are more susceptible to adopting conspiracy explanations. Based on the cues from the literature, the following main research questions were formulated:

**Research Question 1:** Are deficiencies in coping with stress (i.e., more frequent use of maladaptive and less frequent use of adaptive strategies) linked to conspiracy beliefs? I hypothesized that higher avoidance (**H1a**) and religious (**H1b**) coping but lower self-sufficient coping (**H2**) would be linked to conspiracy beliefs. These hypotheses were tested in the pre-pandemic context and in the pandemic context, regarding COVID-19 conspiracy beliefs.

**Research Question 2:** Are deficiencies in emotion regulation (i.e., experiencing more difficulties in emotion regulation) linked to conspiracy beliefs? I hypothesized that higher emotion dysregulation would be linked to different forms of conspiracy beliefs (**H3**) and aimed to indicate the importance of emotion (dys)regulation in the social processes.

**Research Question 3:** What is the role of national (collective) narcissism in processes related to coping with stress, emotion (dys)regulation, and conspiracy beliefs? I hypothesized that deficiencies in coping (higher avoidance and lower self-sufficient coping; **H4a, H4b**) and emotion regulation (**H5**) processes should be related to higher national narcissism. I also hypothesized national narcissism would mediate the link between coping with stress and conspiracy beliefs (**H6a**) as well as between emotion dysregulation and conspiracy beliefs (**H6b**). Building on existing literature on religious coping (e.g., Pargament, 2011; Pargament et al., 2011) and findings from my own research, this coping strategy cannot be classified as definitively adaptive or maladaptive. Its relationship with national narcissism and its potential effects on conspiracy beliefs may depend on additional moderators beyond

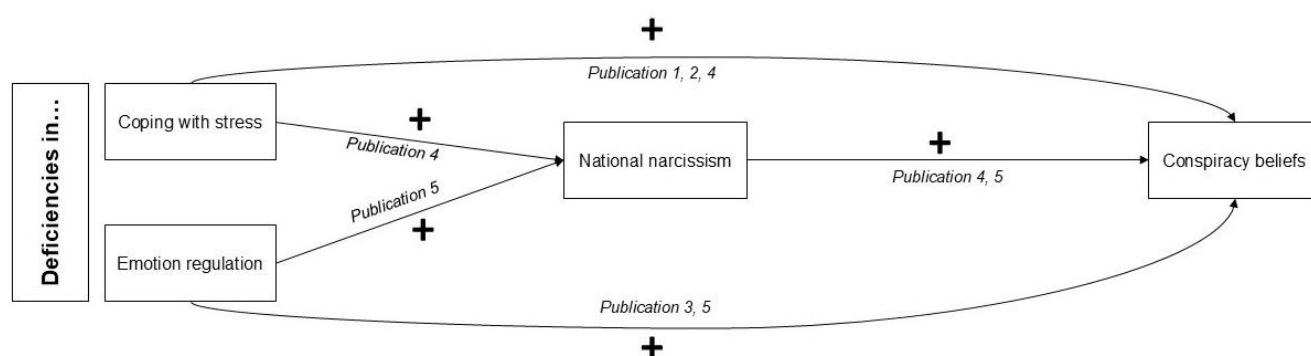
the scope of this project. Consequently, religious coping was not included in all studies examining the mediation models (i.e., Publications 4 and 5).

### Presentation of Own Research and Main Results

Below, I summarize each publication included in my PhD thesis, with detailed methods, results, and discussions provided in the individual articles comprising this dissertation. The figure below summarizes and illustrates the tested hypotheses and shows specific publication in which these assumptions were examined.

#### Figure 1

*Conceptual Model of the Dissertation Research, Indicating in Which Publication the Associations Were Tested*



In this dissertation, I present a series of 13 studies conducted in various national contexts (Polish, U.K., and U.S.) focusing on exploring the relationships between coping with stress, emotion dysregulation, and conspiracy beliefs, additionally examining the potential mediating role of national (collective) narcissism in these processes. These studies aimed to investigate the importance of deficiencies in coping and emotion dysregulation in the context of conspiracy beliefs. Various methods have been used, including traditional cross-sectional surveys, longitudinal (two-wave) design, and experimental research. Furthermore, I explored other crucial variables, such as adherence to safety and self-isolation guidelines during the COVID-19 pandemic (as a potential negative concomitant of COVID-19 conspiracy beliefs). Importantly, in each study across all articles, I obtained informed consent from all participants involved. Additionally, I received approval from the Research Ethics Committee (IP PAS). Datasets, syntaxes, and materials are available in the Open Science Framework repository. These details are described in the articles.

**Publication 1:** Marchlewska, M., Green, R., Cichocka, A., **Molenda, Z.**, & Douglas, K. (2022). From bad to worse: Avoidance coping with stress increases conspiracy beliefs. *British Journal of Social Psychology*, *61*(2), 532-549. <https://doi.org/10.1111/bjso.12494>

We conducted two cross-sectional and one experimental studies among British participants. In Study 1 ( $N = 199$ )<sup>3</sup>, we investigated the links between coping with stress strategies and specific conspiracy beliefs (i.e., regarding the UK government's Investigatory Powers Act 2016, which was aimed to provide UK security services and police with powers suited to the digital era, however, conspiracy theories arisen around this act, accusing the government of exploiting concerns about national security as a pretext to spy on the citizens). The participants were asked to complete a computer-assisted survey in which they filled in the measures of conspiracy beliefs (we designed a four-item questionnaire), coping with stress strategies (COPE inventory; Carver et al., 1989), which - after factor analyses - was used as a four-factor measure of the primary forms of strategies: self-sufficient coping, social support coping, avoidance coping, and religious coping, as well as demographic details<sup>4</sup> and political conservatism. The regression analysis testing the effects of coping strategies on conspiracy beliefs (controlling for covariates) showed<sup>5</sup> that avoidance and religious coping were significant positive predictors of conspiracy beliefs.

In Study 2 ( $N = 411$ ), we applied the same design (cross-sectional, online survey), but this time – to increase the generalizability of the results – we measured generic conspiracist ideation. Thus, we used the 15-item Generic Conspiracist Beliefs scale (GCB; Brotherton et al., 2013), as well as coping strategies (as in Study 1), and covariates. Similar regression analysis with generic conspiracy beliefs as a dependent variable and four coping strategies as predictors (including covariates) demonstrated a positive significant effect of avoidance coping on conspiracy beliefs. However, contrary to our previous study, the effect of religious coping was non-significant.

In Study 3 ( $N = 398$ ), to investigate the causality of the postulated effect, we employed an experimental design in which we manipulated a specific coping strategy (avoidance vs. self-sufficient coping vs. control condition). More precisely, individuals (recruited and participated online) were randomly assigned to one of three conditions in which they were asked to recall a stressful situation. In the avoidance coping condition, they recalled a stressful event they denied had happened; in the self-sufficient coping condition, they recalled a stressful situation they confronted and accepted it had happened, and in the control condition they were only asked to recall a stressful event without any cues on the specific coping

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<sup>3</sup> The details of each sample and its size (e.g., power analyses) are described in the articles.

<sup>4</sup> Although I included demographic covariates in most of the studies, the results related to them are not reported here due to space constraints. For details on the demographic variables, please refer to the articles attached to this dissertation.

<sup>5</sup> Please see the details of all the models in the articles.

strategy. Participants had a few moments to recall this situation in their minds vividly, and they were asked to describe it. Then, they completed a measure of conspiracy beliefs (GCB, as in Study 2). By using a one-way ANCOVA to compare the effects of avoidance and self-sufficient coping and a neutral condition on conspiracy belief (controlling for covariates), we found a significant main effect of group (i.e., experimental condition) on conspiracy beliefs. Post-hoc tests demonstrated that participants in the avoidance coping condition scored significantly higher on conspiracy beliefs than participants in the control and self-sufficient coping condition. However, there was no significant difference between self-sufficient coping and the neutral condition.

In a series of three studies, we found that avoidance coping was consistently linked to higher conspiracy beliefs and priming avoidance coping increased such beliefs (H1a). Results regarding religious coping (H1b) were inconsistent – it had either a positive (Study 1) or non-significant (Study 2) effect on the dependent variable. However, across these studies, we did not find support for the notion that lower self-sufficient coping would be related to higher conspiracy beliefs (H2). Overall, these studies suggest that deficiencies in coping with stress (especially avoidance coping) are associated with a greater inclination toward conspiracy theories. My contribution to this publication was substantial: I was involved in conducting research, preparing and analyzing the data, as well as writing the manuscript. This work allowed me to gain necessary experience to serve as a first author in all other research lines.

**Publication 2: Molenda, Z.,** Marchlewska, M., Karakula, A., Szczepańska D., Rogoza, M., Green, R., Cislak, A., & Douglas, K. M. (2024). Coping strategies and belief in COVID-19 conspiracy theories. *British Journal of Social Psychology*, 63(1), 319-339. <https://doi.org/10.1111/bjso.12684>

I continued the previously investigated problem, aiming to replicate these findings in the new context - during the COVID-19 pandemic. I hypothesized that higher avoidance and religious but lower self-sufficient coping would be linked to conspiracy beliefs (H1a, H1b, H2), but this time, I also explored concomitants of conspiracy beliefs—adherence to pandemic guidelines—and predicted that conspiracy beliefs would mediate the relationships between coping strategies and the adherence to the guidelines. Moreover, aiming to unravel the relationships between threat, feelings of fear, coping, and conspiracy beliefs, I tested whether COVID-19 threat salience (vs. control condition) by boosting feelings of fear would further translate into higher conspiracy beliefs, but only among those with deficiencies in coping.

This time, I planned these studies as a first author and conducted them with a team of collaborators. We conducted two studies among Polish participants via online surveys. In the

cross-sectional Study 1 ( $N = 1000$ ), we examined the link between coping with stress strategies (COPE Inventory; Carver et al., 1989; four factors, as previously; Marchlewska, Green, et al., 2022), COVID-19 conspiracy beliefs (16-item questionnaire based on Kowalski et al. 2020), and adherence to safety and self-isolation guidelines (Kowalski et al. 2020). The regression analysis examining the effects of coping strategies on COVID-19 conspiracy beliefs (controlling for covariates) showed that both avoidance and religious coping had significant positive effects on the dependent variable. Then, we conducted hierarchical regression analysis to examine the effects of coping strategies and demographics (Step 1) and COVID-19 conspiracy beliefs (Step 2) on the adherence to safety and self-isolation guidelines. We found significant negative effects of avoidance and positive effects of religious coping, as well as significant negative effect of COVID-19 conspiracy beliefs on the adherence to pandemic guidelines. Finally, we conducted mediation analyses (model 4; Process; Hayes, 2018) and found significant indirect effect of avoidance coping on adherence to the guidelines via COVID-19 conspiracy beliefs, similar to the indirect effect of religious coping in the second mediation analysis.

In the experimental Study 2 ( $N = 616$ ), participants filled in demographic variables and coping measure (as in Study 1). Then, they were randomly assigned to one of two experimental conditions: threat ( $n = 301$ ) and control ( $n = 315$ ), in which they read a mock newspaper clipping about a dangerous coronavirus mutation (threat condition) or the pearl collection (control condition). After that, they completed measures of the state of fear (six items from the fear subscale from the Positive and Negative Affect Schedule-Expanded Form; Fajkowska & Marszał-Wiśniewska, 2009; Watson & Clark, 1994) and COVID-19 conspiracy beliefs (as in Study 1). We checked for the effects of the threat condition on the state of fear using the regression analysis (controlling for covariates) and found a significant positive effect of threat on the state of fear. Afterward, we conducted a hierarchical regression analysis to examine the predictors of COVID-19 conspiracy beliefs and found that although the entered experimental condition was non-significant, the state of fear turned out to be a significant positive predictor of COVID-19 conspiracy beliefs. Moreover, after adding coping with stress strategies and their interactions with a state of fear, the state of fear itself ceased to be significant, but we found significant positive effects of avoidance and religious coping, as well as significant positive effects of the interaction between the state of fear and avoidance coping. Thus, we conducted a moderated mediation analysis (model 14; Process; Hayes, 2018), investigating whether avoidance coping moderated the mediational effect of the condition (threat vs. control) on COVID-19 conspiracy beliefs via the state of fear. The results

were significant (including the index of the moderated mediation), and we demonstrated that the indirect effect of threat condition on COVID-19 conspiracy beliefs via the state of fear was significant only among those high in avoidance coping. We conducted a similar moderated mediation analysis but with religious coping as a moderator, but the results were non-significant. Due to non-significant results regarding self-sufficient coping, we did not process this analysis with this type of coping.

In sum, we replicated previous results showing that avoidance and religious coping were related to higher conspiracy beliefs, this time regarding the COVID-19 pandemic (H1a, H1b). Again, we did not find significant results for the role of self-sufficient coping (H2). Moreover, avoidance coping had a negative but religious coping positive effect on adherence to safety and self-isolation guidelines, and these effects were mediated by conspiracy beliefs. Such a pattern did not occur for self-sufficient coping. Finally, we found that exposure to threatening news about coronavirus increased the state of fear, which further translated into higher COVID-19 conspiracy beliefs but only among those in high avoidance coping. We did not observe similar effects for high religious or low self-sufficient coping.

**Publication 3: Molenda, Z.,** Green, R., Marchlewska, M., Cichocka, A., & Douglas, K. M. (2023). Emotion dysregulation and belief in conspiracy theories. *Personality and Individual Differences*, 204, Article 112042. <https://doi.org/10.1016/j.paid.2022.112042>

In this set of studies, I initiated a research line focused on the role of emotion (dys)regulation in response to Research Question 2. Considering the negative effects of emotion dysregulation on experienced emotions and well-being, which can further bias information processing including focusing on negative aspects of environment (e.g., Newheiser et al., 2011; Smith et al., 2016), I tested whether emotion dysregulation can also translate into higher conspiracy beliefs (H3).

We conducted three cross-sectional studies among British, American, and Polish participants via online surveys. Study 1 (U.S. sample,  $N = 391$ ) examined the relationship between emotion dysregulation (the 18-item Difficulties in Emotion Regulation Scale; DERS-18; Victor & Klonsky, 2016) and general conspiracy beliefs (the 15-item GCB; Brotherton et al., 2013), controlling for basic demographic covariates. Regression analysis showed that emotion dysregulation was a significant positive predictor of conspiracy beliefs over and above the covariates. Then, in Study 2 (U.K. sample,  $N = 411$ ), aiming to replicate our results in a different context, we used the same measures for emotion dysregulation and conspiracy beliefs, but we added social and economic political orientation to the covariates. The results

replicated previous findings, demonstrating that emotion dysregulation had a significant effect on conspiracy beliefs even after adding political variables.

Finally, in Study 3 (Polish sample,  $N = 558$ ), aiming to conceptually replicate our findings, we not only changed the context but also a measure of conspiracy beliefs - instead of measuring general conspiracy beliefs, we measured four specific conspiracy beliefs, regarding gender 'ideology' (three items; Marchlewska et al., 2019), vaccination (five items based on Jolley & Douglas, 2014b), climate change (three items adapted from Jolley & Douglas, 2014a), and Polish presidential election conspiracy beliefs measured with four items about conspiracies around electoral fraud regarding Polish presidential election in 2020 in which conservative candidate won. We measured emotion dysregulation and covariates as in Study 2. We executed four separate regression analyses for each specific conspiracy beliefs as dependent variables and emotion dysregulation as independent variable, controlling for covariates (as in Study 2). We demonstrated that emotion dysregulation was a significant positive predictor of four specific conspiracy beliefs, regardless of the political slant of these conspiracy theories (e.g., while the presidential election conspiracy theory was related to social political conservatism negatively, the remaining three theories had a positive association with social political conservatism). Therefore, these studies supported that emotion dysregulation is linked to higher conspiracy beliefs (H3), both general and specific. Notably, this effect occurred for both politically right- and left-wing conspiracy theories, suggesting that emotion dysregulation might be crucial for different conspiracy beliefs.

These research lines allowed for the examination and verification of the links between deficiencies in coping and emotion regulation and susceptibility to belief in conspiracy theories, including causal relationships. In the next steps, I focused on verifying the hypothesized underlying mechanism and the mediating role of national narcissism.

**Publication 4: Molenda, Z.,** Marchlewska, M., Rogoza, M., & Szczepańska, D. (2023). Shake it off! Adaptive coping with stress reduces national narcissism. *British Journal of Social Psychology*, 62(4), 1856-1874. <https://doi.org/10.1111/bjso.12660>

In this set of two studies, I explored the role of national narcissism, which is theorized to be rooted in an individual's deficiencies (e.g., Cichocka & Cislak, 2020). Thus, I tested whether deficits in coping with stress would be linked to higher national narcissism (H4a, H4b). By employing conspiracy beliefs in the experimental study, I aimed to replicate the hypotheses regarding the effects of deficiencies in coping on these beliefs (H1a, H2), but I also tested whether national narcissism would mediate the link between coping and conspiracy beliefs (H6a).

Cooperating with a team of collaborators, I conducted two studies (one two-wave longitudinal and one experimental) among Polish participants via online surveys. In Study 1 ( $N = 603$ ), the data were obtained with two-time occasions separated by a 6-month interval. We measured coping strategies (COPE inventory; Carver et al., 1989; as previously; Marchlewska, Green, et al., 2022), national narcissism (Golec de Zavala et al., 2013), national identification (i.e., group identification with the national in-group as a reference) with a shortened, three-item Social Identification Scale adapted from Cameron (2004), and covariates. To examine our predictions, we estimated an autoregressive cross-lagged path model (CLPM) using MPlus 8.0 (Muthén & Muthén, 2017). Of importance, results showed that self-sufficient coping at Time 1 (T1) was linked to lower national narcissism at Time 2 (T2), while national narcissism at T1 was related to higher avoidance coping at T2. Moreover, national identification at T1 was associated with higher self-sufficient coping at T2.<sup>6</sup>

Since this two-wave study initially supported some of our hypotheses, we conducted an experimental Study 2 ( $N = 337$ ), in which we manipulated specific coping strategies (avoidance vs. self-sufficient vs. control condition) to examine their effects on national narcissism and conspiracy beliefs. Participants were randomly assigned to one of three conditions in which they were requested to imagine a stressful situation that might happen to them. The conditions differed in the coping strategy the participants were asked to use: in the self-sufficient coping condition, they were instructed to imagine a stressful situation they would handle by using an active coping strategy; in the avoidance coping — by using denial; and in the control condition, they were requested to imagine any stressful event (no emphasis on coping strategy). Next, participants were asked to describe this situation in the textbox. Then, they filled out the dependent variables: national narcissism and national identification (as in Study 1), and general conspiracy beliefs with five items from the GCB (Brotherton et al., 2013). When analyzing data, we first conducted a regression analysis to investigate the effects of the experimental manipulation on national narcissism (controlling for national identification<sup>7</sup> and covariates), and we found a negative effect of induced self-sufficient coping on national narcissism and non-significant effect of avoidance coping. Then, we conducted a hierarchical regression analysis to examine the effects of induced coping

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<sup>6</sup> The details of the remaining paths are described in the article.

<sup>7</sup> We also assessed conventional national identification (Cameron, 2004) to account for secure national identity — characterized by a genuine connection to the in-group, unaffected by external validation (Golec de Zavala et al., 2013). Applying an established methodological approach (e.g., Marchlewska, Cichocka, et al., 2022), we separated the shared variance between national narcissism and conventional national identification. This allowed us to isolate the unique effects of narcissistic (defensive) and secure (non-narcissistic) national identities.

strategies (Step 1) and national narcissism (along with national identification; Step 2) on conspiracy beliefs. Self-sufficient coping (but not avoidance coping) had a significant negative effect on conspiracy beliefs. However, this effect became non-significant after including national narcissism, which showed a significant positive effect on the dependent variable. Finally, we conducted a mediation analysis (model 4, Process; Hayes, 2018), examining the mediating role of national narcissism, and we obtained a significant indirect effect of a self-sufficient coping strategy on conspiracy beliefs via national narcissism, suggesting that national narcissism might be a mechanism of this relationship.

Both studies suggested that low adaptive (self-sufficient) coping can lead to higher national narcissism, and inducing such strategies might decrease it (H4b). However, we did not find support for the heightened (or induced) avoidance coping in increasing national narcissism (H4a), but rather a suggestion that national narcissism might further exacerbate maladaptive coping. We also did not find significant effects of induced avoidance coping on conspiracy beliefs (H1a); however, we demonstrated that inducing a self-sufficient coping strategy has the potential to decrease conspiracy beliefs (H2). Finally, we found that national narcissism indeed mediated the link between (self-sufficient) coping and conspiracy beliefs (H6a). Overall, these results suggested that deficiencies in coping might translate into negative social phenomena, and addressing these deficits could be a way to decrease these phenomena.

**Publication 5: Molenda, Z., Marchlewska, M., & Cislak, A. (2024). *Emotion (dys)regulation and national narcissism*. PsyArXiv. <https://doi.org/10.31219/osf.io/zuwcv>**

Finally, I explored the role of national (collective) narcissism in processes related to deficits in emotion regulation and conspiracy beliefs. Considering that national narcissism derives from an individual's shortcomings (e.g., Marchlewska et al., 2024) and has been linked to negative emotionality (Golec de Zavala, 2019), I tested whether emotion dysregulation is related to higher national narcissism (H5). Aiming to replicate our previous findings, I added conspiracy beliefs to investigate its association with emotion dysregulation (H3). Importantly, I also examined whether national narcissism would be a potential mechanism of postulated association and checked if it would mediate the link between emotion dysregulation and conspiracy beliefs (H6b).

We conducted three cross-sectional studies among British, American, and Polish participants via online surveys. Study 1 ( $N = 473$ ; U.K. sample) was an initial test for the hypothesis, so we used only six items (covering all the subscales from the measure) borrowed from the DERS (Gratz & Roemer, 2004). We also measured national narcissism (five-item

scale; Golec de Zavala et al., 2013) and national identification (three items adapted from Cameron, 2004; Górska et al., 2020), and added covariates. A regression analysis (controlling for national identification and covariates) demonstrated a significant positive effect of emotion dysregulation on national narcissism. Thus, aiming to replicate these findings, we conducted Study 2 ( $N = 444$ ; U.S. sample), in which we used full measures of main variables, that is, the 36-item DERS, the nine-item Collective Narcissism Scale (Golec de Zavala et al., 2009) adapted to the national context, and 12-item (national) Social Identification Scale (Cameron, 2004), and included the same covariates as in Study 1. Performing a similar analysis, we found a consistent pattern – emotion dysregulation was a positive predictor of national narcissism. Then, in Study 3 ( $N = 633$ ; Polish sample), we added conspiracy beliefs measured with the GCB (Brotherton et al., 2013), and we measured national narcissism and identification as in Study 1 and Study 2, respectively, emotion dysregulation with a brief 18-item version of DERS (Victor & Klonsky, 2016), and similar covariates. A regression analysis revealed the same pattern as in previous studies, that is, a positive effect of emotion dysregulation on national narcissism. Then, we conducted a hierarchical regression analysis investigating the effects of emotion dysregulation (controlling for covariates; Step 1) – which turned out to be a significant positive predictor of conspiracy beliefs – and national narcissism (with national identification; Step 2) – which had positive significant effect (contrary to national identification which had a negative effect) on conspiracy beliefs. Finally, we performed a mediation analysis (model 4, Process; Hayes, 2021), investigating the mediating role of national narcissism and the results demonstrated a significant indirect effect of emotion dysregulation on conspiracy beliefs via national narcissism.

In all studies conducted in three different national contexts, emotion dysregulation has been linked to higher national narcissism (H5). Moreover, we replicated the effect of emotion dysregulation on higher national narcissism (H3) and showed that national narcissism mediates this relationship (H6b). In sum, these results suggested that deficiencies in emotion regulation may be an important underlying mechanism of social phenomena, such as narcissistic identification with one's national group and, further, with endorsing conspiracy beliefs.

### **General Discussion**

In a collection of five manuscripts encompassing 13 studies (including cross-sectional, longitudinal, and experimental designs) conducted with participants from three countries (Poland, the U.K., and the U.S.), I investigated whether deficits in coping and emotion regulation processes are linked to higher conspiracy beliefs and if national narcissism

mediates these associations. Although not all results across studies were fully consistent, the overall findings indicated that deficiencies in coping and emotion regulation might translate into higher adverse social phenomena I examined.

First of all, I demonstrated that deficits in coping in the form of heightened avoidance strategies are linked to higher conspiracy beliefs – both in pre-pandemic and pandemic context (Publication 1 & 2) – and priming such strategies might increase these beliefs. These findings support the idea that conspiracy beliefs may serve as a response to threat or stress (Jutzi et al., 2020), but especially among those who lack the individual resources to deal with such stimuli. Specifically, individuals who rely on avoidance techniques rather than actively confronting adversities may gravitate toward deflecting narratives about the social world, adopting conspiracy beliefs that help divert their attention from a difficult reality. However, whether, and if so how, conspiracy beliefs act as a form of stress reaction strategy remains an open question for further research. Notably, avoidance coping was also associated with lower adherence to pandemic containment behaviors (Publication 2), with (COVID-19) conspiracy beliefs mediating this relationship, which suggest that both coping and conspiracy beliefs can play important roles in shaping public health behaviors. Importantly, I also identified a potential mechanism: in the experimental study, I found that exposure to threatening information about the COVID-19 pandemic heightened fear, which, in turn, led to stronger COVID-19 conspiracy beliefs—but only among individuals with high levels of avoidance coping. This study integrates two research areas—negative emotions and stress coping — as potential foundations for conspiracy beliefs, identifying conditions under which fear-inducing information may increase these beliefs. While previous research (e.g., Grzesiak-Feldman, 2013) linked fear to conspiracy beliefs, I propose that fear intensifies these beliefs particularly among individuals relying on maladaptive avoidance coping (i.e., lacking adaptive resources to deal with adversities).

Second, this research highlighted the potential role of religious coping. However, the findings were less consistent, showing either a positive or non-significant relationship with conspiracy beliefs (Publications 1 & 2). Interestingly, religious coping was also associated with higher adherence to pandemic guidelines. These results suggest that although religious coping might be important for conspiracy beliefs and related outcomes, its role appears to be more complex. A strong reliance on God and prayer in stressful situations may resemble avoidance coping (potentially linking it to conspiracy beliefs), yet religious coping — due to its associations with submissiveness and agreeableness (Saroglou et al., 2009; Tsang et al., 2021) — may also promote greater adherence to pandemic guidelines. These findings support

the notion that religious coping can yield both beneficial and harmful effects (Pargament, 2011); however, more detailed measures of religiosity are necessary for thorough examination (Łowicki et al., 2022; Pargament et al., 2011), as well as a more thorough investigation of potential moderators that could explain mixed effects observed so far.

Third, I found mixed results regarding deficits in coping regarding low self-sufficient coping. While several studies (especially cross-sectional) did not show a significant link between self-sufficient coping and conspiracy beliefs (Publications 1 & 2), the final experimental study (Publication 4) revealed significant results, suggesting that priming this type of coping has the potential to attenuate conspiracy beliefs. Surprisingly, in that study, I did not find significant effects of avoidance coping priming on conspiracy beliefs. While this indicates that deficiencies in coping (low self-sufficient or high avoidance coping) are associated with higher conspiracy beliefs, it contradicts findings from the first publication (Marchlewska, Green, et al., 2022), which showed significant effects of avoidance coping but non-significant effects of self-sufficient coping. These discrepancies may be due to several factors, such as the timing and context of the studies—before the COVID-19 pandemic in the U.K. (Marchlewska, Green, et al., 2022) versus during the pandemic in Poland (Molenda, Marchlewska, et al., 2023). These contextual differences may have influenced general perceptions of threat, stress, and, consequently, coping strategies. Additionally, there were key differences in the experimental procedures between the two studies: the first publication (Marchlewska, Green, et al. 2022; Study 3), we used a memory recollection technique and acceptance (vs. denial) as the adaptive (vs. maladaptive) coping strategy, while Molenda et al., 2023 (Study 2) used imagination instead of memory and active coping as the adaptive strategy (vs. denial as maladaptive). Since acceptance can be seen as an ambiguous strategy, sometimes considered passive (e.g., Nakamura & Orth, 2006), active coping might be more beneficial, which could explain the differences in results. Future research could also consider and examine whether different methods of priming coping strategies are more (vs. less) efficient for various specific strategies. These issues, however, require further investigation.

Fourth, my research consistently demonstrated that emotion dysregulation is associated with higher conspiracy beliefs — both general and specific (Publications 3 & 5). This relationship was examined across three countries using various measures of conspiracy beliefs. Notably, this effect appears to be quite universal, applying to individuals across different sides of the political spectrum. By amplifying negative emotional outcomes, emotion dysregulation may predispose individuals to perceive the world as hostile (e.g., Eysenck et al.,

1991), potentially making them more susceptible to conspiracy beliefs about malevolent plots. This mechanism, however, calls for further exploration.

Finally, I demonstrated the role of national narcissism (Publications 4 & 5) as a potential mechanism linking low regulatory resources to higher conspiracy beliefs. In line with past theories and studies (e.g., Fromm, 1973; Marchlewska et al., 2024), I found that individual's psychological deficits - this time, in low self-sufficient coping and emotion dysregulation - are related to higher national narcissism (Publication 4). It is worth noting that because this study employed the CLPM to estimate the relationships, the results should be interpreted cautiously due to the model's inherent limitations (e.g., Hamaker et al., 2015). Importantly, in the experimental study, I showed that inducing an adaptive self-sufficient coping strategy temporarily decreased national narcissism. To my knowledge, this is the first study to show a way to temporarily decrease national narcissism. I also showed that national narcissism mediated the relationship between (self-sufficient) coping and conspiracy beliefs, suggesting that adaptive coping might lower national narcissism, which may further translate into lower conspiracy beliefs.

In the last publication, I showed that emotion dysregulation was consistently linked to higher national narcissism, supporting previous theoretical insights that emotional deficits may underpin national narcissism (Golec de Zavala et al., 2019). Although this relationship was observed in regression analyses (controlling for national identification) but not in simple correlations, it is important to note that my approach aligns with the current paradigm, which emphasizes accounting for the shared variance between national narcissism and identification in order to examine the "clean" effects of these constructs (e.g., Marchlewska, Cichocka, et al., 2022). Furthermore, the positive association between emotion dysregulation and conspiracy beliefs was mediated by national narcissism. Thus, emotion dysregulation, potentially underpinning national narcissism, might contribute to greater suspiciousness and hostile interpretations in the form of conspiracy beliefs. In sum, those with psychological deficits in the domain of stress and emotion regulation might turn to strong collective and narcissistically identify with it to compensate for individual shortcomings. This narcissistic identification might, in turn, increase their perceptions of external threats and incline a tendency to search for hidden enemies, resulting in higher conspiracy beliefs.

### **Implications and Significance**

I believe that the broad set of studies included in my dissertation bridges various fields of psychology and contributes meaningfully to advancing both theoretical understanding and practical applications across multiple domains. First, this research has deepened our

understanding of how coping strategies and emotion regulation are intertwined with conspiracy beliefs. By identifying these links, I have advanced theoretical insights into how individuals respond to perceived social threats depending on their psychological resources. Furthermore, the connection between national narcissism and deficits in self-sufficient coping offers insights into the psychological roots of narcissistic in-group identity. This work enhances our understanding of how individual vulnerabilities translate into collective outcomes (see also Cichocka & Cislak, 2020; Cislak & Cichocka, 2023), thus contributing to social and political psychology. My studies are also important for research on coping with stress and emotion regulation, as they consistently show that these regulatory processes have implications not only for well-being but also for perceptions of the social world. This underscores the need to identify effective prevention strategies and interventions to address the far-reaching consequences of inadequate coping with stress and emotion dysregulation, which extend beyond the individual level. Importantly, this research implies that interventions focused on coping strategies indeed may reduce both narcissistic in-group identification and, consequently, susceptibility to conspiracy theories.

Moreover, this research has significant implications for health psychology, particularly in understanding public responses to crises like the COVID-19 pandemic, since I demonstrated that both avoidance coping and conspiracy beliefs are linked to lower adherence to pandemic guidelines. These findings highlight the need for targeted interventions to address psychological factors, such as fear and maladaptive coping, in health communication strategies. Overall, my work provides a comprehensive framework that ties together individual psychological vulnerabilities regarding regulatory processes and broader societal outcomes, offering valuable contributions across multiple psychological disciplines. These insights not only advance theoretical understanding but also have the potential to inform practical interventions in diverse contexts.

### **Limitations and Future Directions**

Although this extensive set of studies provides new insights into the antecedents of conspiracy beliefs, it has certain limitations. While I included samples from three countries (Poland, the U.K., and the U.S.), future research should incorporate a wider range of contexts, especially outside WEIRD (i.e., Western, educated, industrialized, rich, and democratic; Henrich et al., 2010) societies, to better assess whether the examined relationships are generalizable as citizens of WEIRD countries may constitute less than 15% of the global population (Arnett, 2008; Henrich et al., 2010). Moreover, although I conducted some experimental and longitudinal studies, more research of these types of designs are urgently

needed in this area, particularly on emotion (dys)regulation, which was regrettably not explored experimentally or longitudinally in this thesis. Thus, the conclusions drawn here should be expanded with experimental (e.g., exploring emotion regulation self-efficacy; Benfer et al., 2018) or longitudinal approaches (e.g., using ecological momentary assessment; Lavender et al., 2017) in future studies. Further research would also benefit from incorporating not only self-reported measures but also assessments of actual behavior or using existing data, for example, from social media platforms. Employing a variety of designs, methods, and contexts in future studies may also help to resolve some of the inconsistencies observed in the findings across the different publications.

### **Conclusions**

Overall, my research integrates theories and findings from diverse areas of psychology, including stress coping, emotion regulation, and social identity, to address pressing challenges in both individual and societal contexts. Across 13 studies within five research lines, these findings offer significant insights into the antecedents and mechanisms underlying the adoption of conspiracy beliefs. I hypothesized and found that, in general, deficits in coping with stress and emotion regulation might contribute to a higher endorsement of conspiracy beliefs. These beliefs may be particularly appealing to individuals who lack individual resources to effectively manage difficult feelings. This could be because conspiracy theories provide a narrative that diverts attention from stressful realities or appeal to those prone to hostile interpretations. A potential mechanism for these relationships could be national narcissism—defensive identification with one’s nation rooted in individual psychological deficits— which mediated the associations between stress and emotion management and conspiracy beliefs. Underpinned by these deficits, national narcissism might further translate into susceptibility to conspiracy theories, especially those that highlight that powerful out-groups conspire against the in-group because such conspiratorial narratives highlight in-group greatness and provide an accessible explanation for in-group failures. Finally, this research suggests that interventions employing training in adaptive coping and emotion regulation (with careful debriefing and debunking) could be a promising avenue for reducing the endorsement of conspiracy beliefs.

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## Appendices

## Publication 1

Marchlewska, M., Green, R., Cichocka, A., **Molenda, Z.**, & Douglas, K. (2022). From bad to worse: Avoidance coping with stress increases conspiracy beliefs. *British Journal of Social Psychology*, *61*(2), 532-549. <https://doi.org/10.1111/bjso.12494>



# From bad to worse: Avoidance coping with stress increases conspiracy beliefs

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The present research empirically examines how different types of coping strategies are associated with belief in conspiracy theories. Conspiracy beliefs have been linked to the frustration of basic needs and seem to increase during major world events that evoke stress. Thus, we hypothesized that they may serve as a psychological response to maladaptive coping strategies. This hypothesis was tested among British participants and conceptually replicated across three studies. Cross-sectionally, we examined coping strategies (i.e., self-sufficient, social-support, avoidance, and religious) and belief in a specific conspiracy theory (Study 1,  $n = 199$ ) and belief in general notions of conspiracy (Study 2,  $n = 411$ ). In Study 3 ( $n = 398$ ), we experimentally primed different coping styles via a mnemonic recollection procedure and measured belief in notions of conspiracy. Avoidance coping (recognized as being maladaptive and leading to at least temporary disengagement and abandonment of goal-related behaviours) positively predicted belief in conspiracy theories (Studies 1 and 2). In Study 3, priming avoidance coping (vs. self-sufficient coping or no coping strategy) significantly increased belief in conspiracy theories. These findings suggest that using maladaptive coping strategies (either dispositional or situationally induced) may foster conspiracy beliefs.

## **Belief in conspiracy theories**

Since March 2020 when the World Health Organization declared the spread of COVID-19 a global pandemic, stress levels everywhere have mounted (APA, 2020; Jia et al., 2020). One type of response to this crisis was quickly observable via social media – that conspiracy beliefs were on the rise (Kowalski, Marchlewska, Molenda, Górska, & Gawęda, 2020; Rocha, 2020). Significant world events often lead people to adopt conspiracy explanations (van Prooijen & Douglas, 2017), such as the death of Princess Diana in the United Kingdom in 1997 (Griffin, 2020), the 9/11 attacks in the United States in 2001 (Bell, 2018), and the fire at the Notre Dame cathedral in France in 2019 (Manavis, 2019). Thus, it seems that significant world events that are likely to evoke stress are commonly – at least among some individuals – related to the adoption of explanations that involve secret plots by powerful and malevolent groups (van Prooijen & Douglas, 2017).

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Indeed, previous research has linked conspiracy beliefs to different types of psychological threats, including perceived stress (Swami et al., 2016), general and attachment anxiety (Green & Douglas, 2018; Grzesiak-Feldman, 2013), lack of control (Kofta, Soral, & Bilewicz, 2020; Whitson & Galinsky, 2008), uncertainty (Marchlewska, Cichocka, & Kossowska, 2018; van Prooijen & Jostmann, 2013; Whitson, Galinsky, & Kay, 2015), powerlessness (Abalakina-Paap, Stephan, Craig, & Gregory, 1999; Jolley & Douglas, 2014), feelings of relative deprivation (Bilewicz, Winiewski, Kofta, & Wójcik, 2013), and threats to one's feelings of self-worth (Cichocka, Marchlewska, & Golec de Zavala, 2016), in-group image (Cichocka, Marchlewska, Golec de Zavala, & Olechowski, 2016; Cisłak et al., 2021; Marchlewska, Cichocka, Łozowski, Górska, & Winiewski, 2019) or social system (Jolley, Douglas, & Sutton, 2018). The most common explanation for this phenomenon is that conspiracy beliefs are adopted in part as an attempt to satisfy unmet psychological needs, including the need to feel safe, secure, and in control (Douglas, Sutton, & Cichocka, 2017).

Finding enemies who can be blamed for threatening events or one's disadvantaged position may – at least temporarily – help alleviate psychological distress by shifting one's attention from the stressor to particular people who ought to be punished for their alleged wrongdoings (Douglas et al., 2017). In line with this logic, van Prooijen (2020) proposed a theoretical model in which existential threat (e.g., terrorist attacks) leads to sense-making processes, which in turn may lead to endorsement of conspiracy theories. In another recently proposed – and empirically tested – model, Jutzi, Willardt, Schmid, and Jonas (2020) classified endorsement of COVID-19 conspiracy theories as a distal defensive strategy aimed at alleviating the stress brought about by the current pandemic. Taken together, these theoretical developments suggest that – for some people – endorsement of conspiracy theories is a type of stress-avoiding coping response. Surprisingly, however, no empirical research to date has directly investigated the relationship between people's predisposed stress coping strategies and their endorsement of conspiracy theories. The current research aims to fill this gap in the literature.

### **Coping with stress**

Coping is generally considered adaptive when it leads to a greater likelihood of making progress and attaining desired goals, such as overcoming a stressful situation. Carver, Scheier, and Weintraub (1989) distinguished between approach coping strategies that actively deal with the stressor or related emotion, and avoidance coping strategies that allow a person to avoid thinking about the stressful situation and to avoid experiencing uncomfortable feelings. Approach coping responses are perceived as adaptive because they are more likely to facilitate goal attainment and the experience of positive affect. Two underlying coping styles that make these positive outcomes more likely have been shown in the literature. These are problem-focused coping style (e.g., accepting the reality of a stressful event and actively dealing with it) and use of social support (e.g., instrumental and emotional social support; see Fortune, Richards, Griffiths, & Main, 2002; Stowell, Kiecolt-Glaser, & Glaser, 2001). In contrast to approach coping, avoidance coping responses are recognized as being maladaptive because they lead to disengagement and abandonment of goal-related behaviours (Mackay, Charles, Kemp, & Heckhausen, 2011). Previous research demonstrated that approach-oriented coping was negatively related to depression and functional disability (Greenglass, Fiksenbaum, & Eaton, 2006). In contrast, avoidance-oriented coping (e.g., cognitive avoidance, seeking alternative rewards, and emotional discharge) was positively related to powerlessness, depression, addictions, and

lower well-being (Billings & Moos, 1984; Haley, Levine, Brown, & Bartolucci, 1987; Sagone & De Caroli, 2014).

Stowell et al. (2001) differentiated an additional factor, which did not fully match either approach or avoidance type of coping – namely, religious coping. Although religious coping could be used for many different reasons (see also Carver et al., 1989), it was previously linked to negative outcomes, such as heightened anxiety reactivity (Pang, Strodl, & Oei, 2013) and prolonged recovery for negative emotions (Ano & Vasconcelles, 2005; Bjorck & Thurman, 2007).

### **Coping strategies and conspiracy theory endorsement**

We propose that conspiracy theories might be associated with self-defeating or maladaptive ways of coping with stressors (i.e., events, experiences or environmental stimuli that cause a feeling of strain and pressure; Lazarus, 1993). As reviewed above, many scholars have concluded that conspiracy theories offer a means to decrease the threat of a related stressor (e.g., COVID-19, Jutzi et al., 2020). That is, the adoption of conspiracy theories could be considered as a stress coping response in itself. What we also noted, however, is that no research to date has directly investigated the relationship between specific coping strategies and belief in conspiracy theories. Considering that conspiracy theories tend to deflect from the realities of a particular stressful event, we expect that people who have a tendency to adopt avoidance (vs. approach) coping strategies will find conspiracy theories appealing, as they offer an easy way to avoid the stressor at hand.

Several studies do provide some indirect evidence for this hypothesis. For example, Callaghan and Irwin (2003) demonstrated that paranormal beliefs (which are strongly positively related to conspiracy beliefs; see Lobato, Mendoza, Sims, & Chin, 2014), were positively associated with avoidance coping. Conspiracy and paranormal beliefs have much in common as they are linked to similar information processing and reasoning biases, such as magical thinking or a threat related to external agents (Barron et al., 2018; Bentall, 2000). Thus, the present research examined how different coping styles (those less vs. more adaptive) would predict conspiracy beliefs. Given the preliminary evidence linking conspiracy beliefs to poorer psychological adjustment (Abalakina-Paap et al., 1999; Jolley & Douglas, 2014; Jolley et al., 2018), we expect conspiracy beliefs to be associated with maladaptive, avoidance coping. We did not expect the same to be found for approach coping – both self-sufficient and use of social support – however, we explored the possibility that they might be associated with decreased belief in conspiracy theories.

Finally, past research has linked conspiracy beliefs to higher anxiety (Green & Douglas, 2018; Grzesiak-Feldman, 2013;) and religiosity (Alper, Bayrak, & Yilmaz, 2020; Jasinskaja-Lahti & Jetten, 2019). Further, it has been argued that conspiracy theories are quasi-religious representations (*quasi* because they lack the institutional features of religion), in that their contents, forms, and functions are akin to beliefs in institutionalized religions (Franks, Bangertner, & Bauer, 2013). Franks et al. (2013) suggested that conspiracy theories, like religion, provide another means for people to interpret sudden and threatening events, thereby defusing some of the anxiety brought about by the event. Therefore, we also predicted that religious forms of coping would also be positively related to belief in conspiracy theories.

## Overview

The aim of our research was to examine the role of adaptive versus maladaptive coping strategies in the adoption of conspiracy theories, whilst controlling for demographic variables. We conducted three studies (two correlational and one experimental) among British participants. In Studies 1 and 2, we measured coping strategies and belief in conspiracy theories. We relied on the COPE inventory (Carver et al., 1989), which captures four factors reflecting approach (i.e., 1. self-sufficient and 2. socially supported coping scales), 3. avoidance, and 4. religious coping. We predicted that avoidance and religious (but not approach) coping styles would be positively related to conspiracy beliefs. In Study 3, we manipulated coping strategies with the use of a mnemonic task. This allowed us to experimentally test whether different coping strategies can affect levels of conspiracy beliefs.<sup>1</sup>

## STUDY 1

In Study 1, we explored the relationships between different coping strategies and belief in a particular conspiracy theory. Specifically, the conspiracy theory was regarding the UK government's Investigatory Powers Act 2016 (also known as the Snooper's Charter). The aim of this act was to ensure that security services and police in the United Kingdom have powers that are fit for the digital age (e.g., to protect the United Kingdom against terrorist attacks). Many British people, however, were threatened by this situation and believed in a conspiracy theory that the government was using terrorism and national security matters just as excuses to spy on law-abiding citizens by extending the reach of state surveillance (Travis, 2016). The United Kingdom is often viewed as an excessively surveilled society (Bentham, 2019). However, the Investigatory Powers Act is supposed to be in place to thwart terrorists and criminals, rather than to nefariously exert total control over the general population. It is these conspiracy notions that we aim to tap into. Unless it is proven that the UK Government has used this act in nefarious ways (i.e., the conspiracy theory turns out to be true), these are conspiracy theories and observing their psychological correlates is important. We predicted that people who tend to adopt avoidance coping strategies when dealing with life's problems will most likely find the Snooper's Charter conspiracy theory appealing. We also assumed that religious coping might also positively predict belief in this conspiracy theory. Demographic covariates are included.

## Method

### *Participants and procedure*

We aimed to recruit enough participants to detect an average effect size ( $r = .21$ ) for social psychology with the power of .80 (Vazire, 2015). Gpower analysis suggested we should recruit at least 173 participants. Three hundred and seven participants were recruited via Facebook ( $n = 91$ ) or in the foyer of a university library ( $n = 216$ ).<sup>2</sup> They were asked to complete measures of coping strategies and belief in conspiracy theories in a random

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<sup>1</sup> It should be noted that the current studies were conducted before the Covid-19 pandemic.

<sup>2</sup> Controlling for method of data collection did not affect the pattern of results (see Table S5 for details).

order, and demographic measures always appeared in the same order at the end of the questionnaire.<sup>3</sup> We excluded participants who were not British ( $n = 55$ ) or did not complete the main variables of interest ( $n = 53$ ). The remaining participants ( $N = 199$ ; 111 women, 85 men, 2 other,  $M_{\text{age}} = 24.45$  years,  $SD = 9.30$ , range = 18–70 years) were included in the final analyses.<sup>4</sup>

## Measures

### Conspiracy beliefs

We created four statements regarding the UK government's Investigatory Powers Act 2016, each reflecting common definitional components of a conspiracy theory (i.e., a secret plot by powerful actors which attempt to violate people's rights, Douglas et al., 2019)<sup>5</sup>: 'The 'Snooper's Charter' is not directed against terrorists or criminals, but ordinary British citizens', 'The UK government extends the reach of state surveillance in order to manipulate British citizens', 'The UK government extends the reach of state surveillance to gain absolute power over innocent people', and 'The UK government hides the real reasons for extending the reach of state surveillance', ( $\alpha = .88$ ). Participants responded on a scale from 1 = *strongly disagree* to 7 = *strongly agree*.

### Coping strategies

We used the COPE inventory (Carver et al., 1989), which is comprised of 15 four-item scales exploring adaptive and maladaptive coping strategies. Participants were asked to answer what they do and feel when they experience stressful events. Exploratory and confirmatory factor analyses were performed to determine the factor structure of the 15 sub-factor coping strategies (see Tables S1–S3 for further details on these analyses). The most reasonable fit came in the form of four factors: *self-sufficient coping* (measuring planning, e.g., 'I try to come up with a strategy about what to do', active coping, e.g., 'I take direct action to get around the problem', positive reframing, e.g., 'I look for something good in what is happening', suppression of other activities, e.g., 'I try hard to prevent other things from interfering with my efforts at dealing with this', and restraint e.g., 'I make sure not to make matters worse by acting too soon';  $\alpha = .87$ ), *social-support* (measuring use of instrumental social support, e.g., 'I talk to someone to find out more about the situation', emotional social support, 'I talk to someone about how I feel', and venting of emotions, e.g., 'I let my feelings out';  $\alpha = .91$ ), *avoidance coping* (measuring denial, e.g., 'I act as though it didn't happen', behavioural disengagement, e.g., 'I just give up trying to reach my goal', mental disengagement, 'I go to the movies or watch TV, to think about it less', humour, e.g., 'I make fun of the situation', and substance use, e.g., 'I try to lose myself for a while by drinking or taking drugs';  $\alpha = .84$ ); *religious coping* (e.g., 'I put my trust in God';  $\alpha = .95$ ) was its own factor. Items were scored on a four-point scale, where higher scores indicated a higher disposition towards the coping strategy (1 = *I usually do not do this at all* and 4 = *I usually do this a lot*).

<sup>3</sup> This data set was part of a wider study. Among other variables, the study included a manipulation of control. Controlling for the effect of the manipulation did not affect the pattern of the results (please see Table S6 for details). For all these studies we report all relevant measures, manipulations and exclusions (see Supporting Information for remaining measures and analyses).

<sup>4</sup> One participant did not report their age or gender.

<sup>5</sup> The Investigatory Powers Act 2016 was made salient prior to participants responding to the statements.

**Table 1.** Means, standard deviations, and zero-order correlations

Measure	M	SD	1	2	3	4	5	6
1. Conspiracy beliefs	3.98	1.25	–	–.06	–.15*	.26***	.20**	–.18*
2. Self-sufficient coping	2.59	0.41		–	.25***	–.12	.09	.13
3. Social-support	2.51	0.70			–	–.12	.02	–.01
4. Avoidance coping	1.93	0.44				–	.18**	–.06
5. Religious coping	1.33	0.73					–	.01
6. Conservatism	3.50	1.30						–

Note. *N* per correlation ranged from 198 to 199.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

### Covariates

Finally, participants were asked to provide demographic details. In addition to age and gender, participants were asked to rate their education level (1 = *none of the above*, 2 = *degree*, 3 = *masters*, 4 = *PhD*) and political conservatism on a single item measure (1 = *extremely left-wing* and 7 = *extremely right-wing*).<sup>6</sup>

After participants completed the questionnaire, they were debriefed, and thanked for their time.

## Results

All means, standard deviations, and zero-order correlations can be found in Table 1. Belief in conspiracy theories significantly positively correlated with avoidance coping ( $p < .001$ ) and religious coping ( $p = .005$ ), and significantly negatively correlated with social-support coping ( $p = .038$ ) and political conservatism ( $p = .011$ ).

To test which coping style(s) predicts belief in conspiracy theories, we included self-sufficient coping, social-support, avoidance coping, and religious coping as predictors in a multiple regression analysis. We also included age, gender, education, and political conservatism as covariates. As there were some missing data in our covariates, we performed the pairwise deletion method. Findings of the final model are presented in Table 2.<sup>7</sup> The overall regression model was significant,  $F(8, 186) = 4.033$ ,  $p < .001$ , and accounted for 15% of variance in belief in conspiracy theories. In line with our hypotheses, both avoidance coping and religious coping significantly positively predicted belief in conspiracy theories. Although correlation analysis showed a significant negative relationship between social-support coping (a type of approach coping) and conspiracy beliefs, this effect was no longer significant when we accounted for the overlap between different coping styles.

Of the covariates, only political conservatism significantly negatively predicted belief in conspiracy theories. The main pattern of results for self-sufficient coping, social-support, avoidance coping, and religious coping the same when covariates are not included ( $\beta = -.02$ ,  $p = .758$ ,  $\beta = -.12$ ,  $p = .091$ ,  $\beta = .21$ ,  $p = .003$ ,  $\beta = .17$ ,  $p = .019$ , respectively).

<sup>6</sup> Previous research has shown that political orientation has a curvilinear relationship with belief in conspiracy theories (van Prooijen et al., 2015). Therefore, we also computed a quadratic term for our political ideology items so that we could test for these effects in our regression analyses. See Table S7 for further details.

<sup>7</sup> Unless otherwise stated, there no multicollinearity problems in our regression models.

**Table 2.** Predictors of conspiracy beliefs

Variable	Conspiracy beliefs			
	B	95% CI	$\beta$	<i>p</i>
Self-sufficient coping	0.03	[-0.41, 0.47]	.01	.896
Social-support	-0.24	[-0.52, 0.04]	-.14	.086
Avoidance coping	0.57	[0.17, 0.96]	.20	.005
Religious coping	0.28	[0.04, 0.52]	.16	.021
Age	-0.01	[-0.03, 0.01]	-.05	.549
Gender (Male = 0, Female = 1)	0.10	[-0.30, 0.49]	.04	.628
Education	-0.28	[-0.65, 0.08]	-.11	.126
Conservatism	-0.17	[-0.30, -0.04]	-.18	.013
$R^2$		.15		
<i>F</i>		$F(8, 186) = 4.033^*$		

Note. \* $p < .001$ .

## STUDY 2

In Study 1, the ‘Snoopers Charter’ conspiracy theory beliefs may have been confounded by the fact that the United Kingdom is already perceived by many to be a surveillance state (Bentham, 2019). Therefore, in Study 2, we aimed to conceptually replicate the results obtained in Study 1 with a different operationalization of conspiracy beliefs. Specifically, instead of focusing on one specific conspiracy theory, we broadened our hypothesis to a more general context and measured individual differences in generic conspiracist ideation (i.e., a belief system which consists of a small number of generic assumptions about the typicality of conspiratorial activity in the world; Brotherton, French, & Pickering, 2013). In such a way, we wanted to check the relationships between different types of coping strategies and a general tendency to engage with conspiracist explanations for different events. We predicted that – in line with the previous study – avoidance and religious coping will positively predict belief in general notions of conspiracy. Demographic covariates were included.

## Method

### **Participants and procedure**

In Study 2, we were able to increase sample size to detect even relatively small ( $r = .14$ ; see Fritz & MacKinnon, 2007) effect sizes. Based on Gpower analyses, we aimed to recruit at least 395 participants. Four hundred and thirty-two participants were recruited via the crowdsourcing platform Prolific. As in Study 1, participants were asked to complete measures of coping strategies and belief in conspiracy theories in random order, and demographic measures always appeared in the same order at the end of the questionnaire. We excluded participants who were not British ( $n = 3$ ) or did not complete main variables of interest or did not report their nationality ( $n = 18$ ). The remaining participants ( $N = 411$ ; 307 women, 104 men,  $M_{\text{age}} = 35.7$  years,  $SD = 10.6$ , range = 18–71 years) were included in the final analyses.

**Table 3.** Means, standard deviations, and zero-order correlations

Measure	M	SD	1	2	3	4	5	6	7
1. Conspiracy beliefs	2.77	0.88	–	.03	.02	.23***	.05	.07	–.09
2. Self-sufficient coping	2.58	0.50	–	–	.26***	.02	.19***	.09	.08
3. Social-support	2.43	0.69	–	–	–	.14**	.11*	–.08	–.09
4. Avoidance coping	1.79	0.42	–	–	–	–	.01	–.13*	–.16***
5. Religious coping	1.36	0.76	–	–	–	–	–	.21***	.13*
6. Social conservatism	4.61	2.34	–	–	–	–	–	–	.74***
7. Economic conservatism	4.99	3.31	–	–	–	–	–	–	–

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

## Measures

### Conspiracy beliefs

We used Brotherton et al. (2013) Generic Conspiracist Beliefs scale (GCB). There were 15 statements, such as ‘Certain significant events have been the result of the activity of a small group who secretly manipulate world events’ ( $\alpha = .94$ ). Participants responded on a scale from 1 = *definitely not true* to 5 = *definitely true*.

### Coping strategies

As in Study 1, we used the COPE inventory (Carver et al., 1989). The same four-factor structure identifying self-sufficient coping ( $\alpha = .92$ ), social-support ( $\alpha = .91$ ), avoidance coping ( $\alpha = .85$ ), and religious coping ( $\alpha = .95$ ) as in Study 1 was deemed the most reasonable fit in Study 2 (see Tables S1, S2, and S4 for further details).

### Covariates

In addition to age and gender, participants were asked to indicate their political orientation with respect to social and economic issues, each on a single item measure (1 = *extremely liberal* and 11 = *extremely conservative*).<sup>8</sup>

After participants completed the questionnaire, they were debriefed, thanked, and paid for their time.

## Results

All means, standard deviations, and zero-order correlations can be found in Table 3. Belief in conspiracy theories was significantly positively correlated with avoidance coping ( $p < .001$ ) only. This time, we did not observe a significant relationship between religious coping and conspiracy beliefs ( $p = .338$ ).

To test which coping style(s) predicts belief in conspiracy theories, we included self-sufficient coping, social-support, avoidance coping, and religious coping as predictors in a multiple regression analysis. We also included age, gender, and social and economic conservatism as covariates. Findings of the final model are presented in Table 4. The overall regression model was significant,  $F(8, 402) = 6.221, p < .001$ , and accounted for

<sup>8</sup> See Table S9 for analyses including the quadratic term of these political ideology items.

**Table 4.** Predictors of conspiracy beliefs

Variable	Conspiracy beliefs			
	B	95% CI	$\beta$	<i>p</i>
1. Self-sufficient coping	0.09	[-0.08, 0.27]	.05	.295
2. Social-support	-0.06	[-0.20, 0.07]	-.05	.388
3. Avoidance coping	0.45	[0.25, 0.65]	.22	<.001
4. Religious coping	0.02	[-0.09, 0.13]	.02	.693
5. Age	-0.01	[-0.02, 0.01]	-.08	.105
6. Gender (Male = 0, Female = 1)	0.12	[-0.08, 0.32]	.06	.241
7. Social conservatism	0.11	[0.06, 0.16]	.30	<.001
8. Economic conservatism	-0.10	[-0.16, -0.05]	-.27	<.001
$R^2$		.11		
<i>F</i>		$F(8, 402) = 6.221^*$		

Note. \* $p < .001$ .

11% of variance in belief in conspiracy theories. In line with our hypotheses, and replicating Study 1, avoidance coping significantly positively predicted belief in conspiracy theories. Thus, withdrawal and seeking to avoid problems and stressors in life seems to be linked to engaging with conspiracist explanations for major events. In Study 2, we did not find significant relationship between religious coping and conspiracy beliefs.

Of the covariates, social conservatism significantly positively, and economic conservatism significantly negatively, predicted conspiracy beliefs. The main pattern of results for self-sufficient coping, social-support, avoidance coping, and religious coping the same when covariates are not included ( $\beta = .03$ ,  $p = .583$ ,  $\beta = -.02$ ,  $p = .686$ ,  $\beta = .23$ ,  $p < .001$ ,  $\beta = .04$ ,  $p = .398$ , respectively).

### STUDY 3

In Study 3, we focused on avoidance coping, which was a robust predictor of conspiracy beliefs in correlational Studies 1 and 2. This time, however, we employed an experimental design to test whether avoidance coping affects conspiracy beliefs. We manipulated coping strategies with the mnemonic task procedure, previously used in a research on personal control (Cichocka et al., 2018; Study 2, 3; Whitson & Galinsky, 2008; Study 4). Whitson and Galinsky demonstrated that stressor manipulations increase conspiracy beliefs. Therefore, in all conditions, participants were asked to recall a stressful situation in which they employed a particular coping style. This allowed us to test the effects of approach and avoidance coping styles under the same stressful context. We expected that inducing a form of avoidance coping (i.e., denial) versus approach coping (i.e., acceptance) versus neutral condition (i.e., no coping strategy induced) would result in an increase in conspiracy beliefs.

### Methods

#### Participants and procedure

We aimed to power the experiment to detect average effect sizes for social psychology of  $d = .43$  for each comparison (Vazire, 2015). Because we have two comparisons, we

estimated our sample size with GPower assuming power of .90 for differences between two independent means (two-tailed), which results in a total power of .81 (.90 × .90). This analysis yielded at least 115 participants per condition. We aimed to over-recruit to allow for exclusions. Four hundred and seventy-three participants were recruited via Prolific. We excluded participants who were not British ( $n = 4$ ), did not report their nationality ( $n = 2$ ), and did not provide the description required in the experimental manipulation or complete main variables of interest ( $n = 69$ ). The remaining participants ( $N = 398$ ; 255 women, 141 men, 2 other,  $M_{\text{age}} = 35.1$  years,  $SD = 11.84$ , range = 18–73 years) were included in the final analyses. The design of the study was experimental. We manipulated avoidance and approach coping and included a neutral condition. The dependent variable was the tendency to believe in conspiracy theories.

Participants were then randomly assigned to one of three experimental conditions. In each condition, participants were asked to recall a stressful situation. The conditions differed by the coping style we asked the participants to bring to mind that they employed during this stressful situation.

Participants in the avoidance coping condition were asked to recall a stressful situation in which they denied that it had happened (i.e., *to cope with this situation you decided to pretend that it did not really happen, acted as though it did not happen and in general refused to believe that it was real*). Participants in the self-sufficient coping condition were asked to recall a stressful situation in which they accepted that it had happened (i.e., *to cope with this situation you decided to accept that it happened, engaged with what was happening and in general came to terms that it was real*). In the neutral condition, participants were simply asked to recall a stressful situation with no emphasis on how they coped with it. In each condition, participants were asked to take a few moments to replay this recollection in their minds. To strengthen the manipulation, participants were asked to report how vivid and clear (one item each) their recollections were, each on a seven-point scale (1 = *not at all* and 7 = *very much*). We also asked participants to describe their recollections in a textbox that was provided.

## Measures

### Conspiracy beliefs

As in Study 2, we used the Generic Conspiracist Beliefs scale (Brotherton et al., 2013;  $\alpha = .94$ ).<sup>9</sup>

### Covariates

In addition to age and gender, participants were asked to rate their education level (1 = *no formal education*, 2 = *primary level education*, 3 = *secondary level education*, 4 = *college or university education [Bachelor's degree]*, 5 = *college or university education [Graduates degree]*) and their social and economic conservatism, each on a single item measure (1 = *extremely liberal* and 11 = *extremely conservative*).<sup>10</sup>

After participants completed the questionnaire, they were debriefed, thanked, and paid for their time.

<sup>9</sup> We also explored two measures of conspiracy beliefs after our main conspiracy beliefs DV. Please see Supporting Information for further details on these analyses.

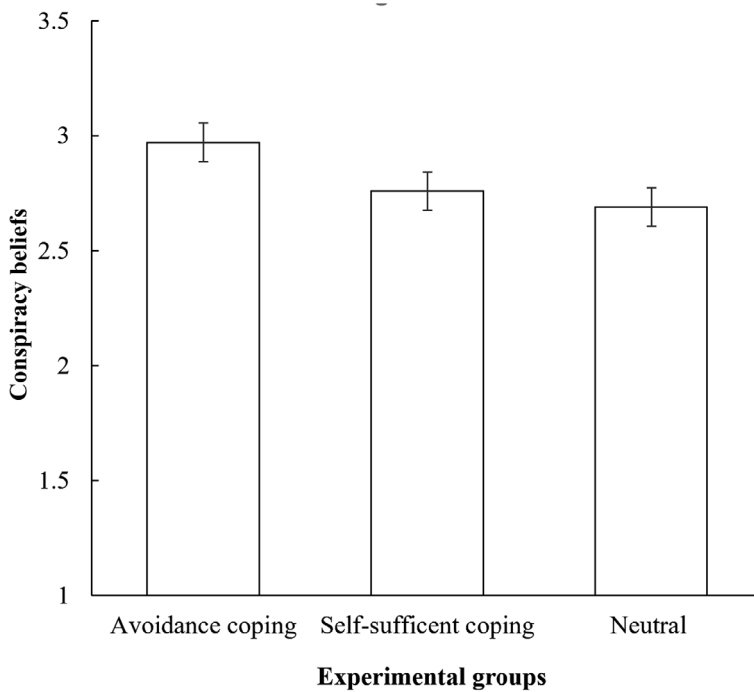
<sup>10</sup> See Supporting Information for analyses including the quadratic term of the political ideology items.

## Results

Means and standard deviations for conspiracy beliefs in the avoidance ( $n = 134$ ) and self-sufficient coping ( $n = 137$ ) and neutral ( $n = 127$ ) conditions can be found in Figure 1.

A one-way ANCOVA was conducted to compare the effects of avoidance coping, self-sufficient coping, and a neutral condition on conspiracy belief whilst controlling for age, gender, education, and social and economic conservatism. Levene's test and normality checks were carried out and the assumptions were met. The main effect of group (i.e., experimental condition) was significant,  $F(2, 388) = 4.177$ ,  $p = .016$ . Post-hoc tests showed there was a significant difference between avoidance coping and the neutral condition ( $p = .006$ ) and avoidance coping and self-sufficient coping ( $p = .032$ ), but not between self-sufficient coping and the neutral condition ( $p = .517$ ). Comparing the estimated marginal means showed that the highest conspiracy beliefs were found in the avoidance coping condition compared with self-sufficient coping and the neutral condition, respectively.

Of the covariates, social conservatism ( $p < .001$ ) significantly positively, and economic conservatism ( $p = .002$ ) and education ( $p = .009$ ) significantly negatively, predicted belief in conspiracy theories. The main pattern of results remained the same when covariates were excluded (please refer to Supporting Information for these analyses).



**Figure 1.** Mean Conspiracy Beliefs for Participants in the Avoidance Coping ( $M = 2.97$ ,  $SD = 0.81$ ), Self-Sufficient Coping ( $M = 2.76$ ,  $SD = 0.85$ ), and Neutral ( $M = 2.69$ ,  $SD = 0.83$ ) Conditions. Note. Error bars represent standard errors.

## GENERAL DISCUSSION

The aim of this research was to examine the link between different types coping strategies and conspiracy beliefs. Across three studies (two correlational and one experimental), we hypothesized and found that avoidance coping, which is a maladaptive form of dealing with stress, was a significant predictor of belief in conspiracy theories. We obtained these results both in the case of a context specific conspiracy theory (i.e., the UK governments Investigatory Powers Act 2016) and generic conspiracy assumptions which refer to many different aspects of life (e.g., the spread of viruses or terrorism acts). On the other hand, approach coping styles (namely use of social support) showed mixed relationships with belief in conspiracy theories across both correlational studies (Studies 1 and 2): use of social support was associated with decreased belief in conspiracy theories in Study 1 but showed no association in Study 2. Self-sufficient coping was not associated with conspiracy belief in both of these studies. Finally, religious coping also showed mixed correlational results; being positively associated with belief in conspiracy theories in Study 1 but showing no association in Study 2.

### *Theoretical implications*

Our findings corroborate and extend previous research on the role of psychological threats in conspiracy beliefs. Previous research has shown that high levels of stress are linked to the endorsement of conspiracy theories (Swami et al., 2016). Our results suggest that this may be the case especially among those individuals who either have dispositional tendencies to use maladaptive forms of coping with stress or are situationally reminded of situations in which they used such coping strategies, namely avoidance coping strategies.

Using a strategy that makes people avoid thinking about the stressful situation (by temporarily focusing on a different stimulus) further seems to lead not only to decreased psychological well-being (Billings & Moos, 1984; Haley et al., 1987) but also searching for 'hidden enemies' who can be blamed for the psychological discomfort evoked by the stressor. Van Prooijen (2020) also suggests that stress from an existential threat and subsequent conspiracy belief may have a cyclical relationship, with conspiracy theories possibly leading to increased stress beyond the initial existential crisis. Therefore, future studies might investigate whether this process is further linked to abandonment of goal-related behaviours and disengagement, just as avoidance coping is (Mackay et al., 2011), or whether it would even lead to revenge-seeking behaviours in a long term.

Future research would also do well to compare the effects of inducing different types of avoidance coping strategies (e.g., behavioural and mental disengagement) on conspiracy beliefs. In the experimental Study 3, we focused on a denial coping mechanism which disturbs and prevents effective coping but is usually used at the beginning of a stressful situation. It is possible that the effects of mental and behavioural disengagement strategies on conspiracy beliefs would be even stronger as they are highly ineffective in reducing distress strategies and are usually used over a long-term period (Carver et al., 1989).

Of the approach coping styles which we explored, self-sufficient coping was consistently not associated with belief in conspiracy theories (Studies 1 and 2). On the one hand, Study 1 showed that use of social support was negatively correlated with belief in the Snooper's Charter conspiracy theory but only marginally associated with this belief in subsequent regression analyses. In Study 2, however, when measuring belief in general notions of conspiracy, no such relationship was found. This inconsistency could be due to

the fact that the sample of Study 1 was made up predominantly of students (mean age was 24), whereas the sample of Study 2 was not (mean age was 37). This suggests that use of social support may be negatively associated with belief in conspiracy theories in younger (vs. older) adults. Alternatively, it could be an artefact of the different conspiracy belief measures that were employed in each study (specific vs. general conspiracy beliefs). Future research could examine these possible explanations, whilst controlling for different measures of conspiracy beliefs.

Our predictions regarding religious coping were only partially confirmed. Religious coping was a significant predictor of conspiracy beliefs in Study 1, but not in Study 2. Religious coping may be used for many different reasons (Carver et al., 1989) and also in many different ways (Stowell et al., 2001). In some cases, it is focused on taking part in religious rituals and believing in a just benevolent God who will solve every problem; in others God may be perceived as a supportive partner in coping (Pargament et al., 1990). Thus, the link between religious coping and the endorsement of conspiracy theories seems complex and requires further investigation. Moreover, our studies were conducted on British participants and although there is no reason to believe that these processes should look differently in non-British samples, this issue should be further explored.

In terms of methodology, future research could employ nationally representative samples of participants and avoid convenience sampling as in the present research. Another limitation of the current research is that our conclusions are all based on self-report measures. Finally, the link between avoidance coping and conspiracy beliefs could be further explored by examining potential mediators. For example, previous research showed that the tendency to adopt avoidance coping strategy is linked to anxiety (Weiner & Carton, 2012), which was also previously linked to conspiracy beliefs (Green & Douglas, 2018; Grzesiak-Feldman, 2013). Thus, a potential avenue for future research would be to check whether inducing maladaptive coping strategies may lead to conspiracy beliefs due to increased levels of anxiety. Future studies would also do good to better explore cognitive processes that may link avoidance coping to conspiracy beliefs. In fact, just as avoiding coping is related to switching attention from the stressor to the less relevant stimuli, conspiracy believers may switch their thoughts from the official explanations to alternative, usually less reliable, ones (Marchlewska et al., 2018). These similarities and the mechanisms responsible for the relationship between avoidance coping and conspiracy beliefs require further empirical investigation.

### **Practical implications**

Previous research has demonstrated many negative consequences that come with being exposed to, or believing in, conspiracy theories (e.g., vaccine hesitancy, Cislak et al., 2021; Jolley & Douglas, 2017; climate change inaction, Jolley & Douglas, 2014; see Douglas, 2021, also for a review). This body of research speaks to the importance of discovering psychological factors that make belief in conspiracy theories more likely, in order to better inform future studies that might attempt to reduce these harmful beliefs.

The current findings demonstrate again that belief in conspiracy theories is associated with maladaptive psychological factors (i.e., maladaptive coping with stress). We argue that these findings may also provide another clue in how to make conspiracy theories seem less appealing. Specifically, improving people's ability to cope with stress might inadvertently reduce the appeal of conspiracy theories – without necessarily needing to counter the theories directly. Indeed, Douglas, Sutton, Jolley, and Wood (2015) have previously argued for such an approach. They distinguished between reactive (e.g.,

cognitive infiltration, counterinformation) and proactive (e.g., addressing underlying needs) approaches, and noted that the latter was under-researched but might prove fruitful. As a direct example of this approach, interventions from clinical psychology that have reduced avoidance coping over time (Sikkema et al., 2013) could be adapted and tested to see if they are also able to attenuate conspiracy beliefs. Further, other research has shown that with extensive training enhancing resilience, people used more problem-focused, and used less avoidant, coping strategies (Steinhardt & Dolbier, 2008). This suggests that, as well as trying to reduce avoidant coping to diminish the appeal of conspiracy theories, future research might also attempt improve people's adaptive coping, which appears to lead to lower maladaptive coping in the process. This might also reduce the appeal of conspiracy theories.

### **Conclusion**

The current findings are consistent with past theorizing suggesting that conspiracy beliefs constitute maladaptive ways of managing psychological distress (Douglas et al., 2017). Indeed, conspiracy theories are characterized by features that make them unlikely to offer psychological support – they offer little clarity, represent the public as dependent on powerful others, and present others as antisocial and unsupportive. Thus, even though they are likely to be activated as a defence towards different psychological threats, ironically, they may lead to further distress and make things worse than they already were. An important task for future research will be to see whether improving ways to deal with psychological distress can lead to a reduction in conspiracy beliefs.

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### **Conflicts of interest**

All authors declare no conflict of interest.

### **Author contribution**

**Marta Marchlewska:** Conceptualization; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Supervision; Writing – original draft; Writing – review & editing. **Ricky Green:** Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Visualization; Writing – original draft; Writing – review & editing. **Aleksandra Cichocka:** Formal analysis; Investigation; Writing – review & editing. **Zuzanna Molenda:** Data curation; Formal analysis; Investigation; Validation; Writing – review & editing. **Karen Douglas:** Writing – review & editing.

### **Data availability statement**

The data that support current findings are openly available in Open Science Framework depository at [https://osf.io/7ymf6/?view\\_only=6d47361b38194a54880850d1c217dc9d](https://osf.io/7ymf6/?view_only=6d47361b38194a54880850d1c217dc9d)

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### Supporting Information

The following supporting information may be found in the online edition of the article:

**Appendix S1.** Supplementary Analyses.

## Publication 2

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## ARTICLE

# Coping strategies and belief in COVID-19 conspiracy theories

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## Abstract

Conspiracy beliefs have been related to aversive emotional experiences often accompanying major world events and have also been linked to maladaptive ways of coping with stress. In this research, we examined how different coping strategies (i.e. self-sufficient, social-support, avoidance and religious) predicted the adoption of COVID-19 conspiracy theories. In two studies (Study 1,  $n=1000$  and Study 2,  $n=616$ ) conducted among Polish participants, we found that avoidance and religious coping were positively linked to COVID-19 conspiracy beliefs. In Study 1, conspiracy beliefs also mediated the positive relationships between avoidance and religious coping and adherence to safety and self-isolation guidelines during the COVID-19 pandemic. Study 2 additionally showed that the relationship between fear, induced by reading threatening news on COVID-19, and conspiracy beliefs was the strongest among those high in avoidance coping. These studies highlight the role of coping strategies in the adoption of COVID-19 conspiracy beliefs.

## KEYWORDS

avoidance coping, coping strategies, COVID-19 conspiracy beliefs, religious coping

## BACKGROUND

The COVID-19 pandemic impacted people's lives on many different levels, including their everyday leisure and labour activities, physical and mental health and their general well-being. The uncertainty related to the global public health emergency that followed the disease's outbreak was associated with an intensification of psychological problems such as stress, anxiety, depression and frustration (APA, 2020; Duan & Zhu, 2020; Serafini et al., 2020). Moreover, the urge to identify the origins of the virus, fuelled by the need to alleviate the psychological effects of the situation, seemed to give rise to several conspiracy theories (Kowalski et al., 2020). Previous research has shown that adopting conspiracy beliefs in the

context of a global pandemic may lead to maladaptive outcomes, such as a refusal to vaccinate against COVID-19 (e.g. Marchlewska, Hamer, et al., 2022) or lower adherence to safety and self-isolation guidelines (e.g. Łowicki et al., 2022; Sternisko et al., 2023). Literature on the potential psychological concomitants of general conspiracy beliefs is vast, for example, linking it to maladaptive stress-coping strategies (Marchlewska, Green, et al., 2022). However, less is known about the relationships between coping and conspiracy beliefs in the context of the COVID-19 pandemic (Pfeffer et al., 2022), which is the area our studies aim to address. Specifically, in the present paper, we explore the potential consequences of COVID-19-related conspiracy beliefs and the role of fear in adoption of such explanations among individuals with maladaptive stress responses.

## COVID-19 conspiracy beliefs

Conspiracy theories are typically defined as secret plots by malevolent groups, whose actions allegedly cause important events of public interest (e.g. Douglas et al., 2019; Douglas & Sutton, 2023). COVID-19 conspiracy beliefs included speculations that the virus was purposely manufactured by the Chinese or the Americans to give them a head start in the economic war, or that the pandemic was a hoax designed to cover up some political actions and influence people's behaviour (e.g. Douglas, 2021; Liekefett et al., 2023; Marchlewska, Górka, et al., 2022). Past research on COVID-19 conspiracy beliefs has demonstrated that endorsement of such theories was associated with feelings of anxiety (Liekefett et al., 2023), lack of control (Šrol et al., 2021) and stress (Pfeffer et al., 2022).

Both past theorizing and empirical research seem to concur with the view that conspiracy beliefs have emotional underpinnings, such as feelings of anxiety during difficult situations (van Prooijen & Douglas, 2017). However, recent findings have shown that while aversive experiences or negative emotional states seem to play a role in explaining why people endorse conspiracy theories, how people deal with these adversities is also important (Marchlewska, Green, et al., 2022; Molenda et al., 2023; Pfeffer et al., 2022). For example, Marchlewska, Green, et al. (2022) showed that maladaptive stress-coping strategies (i.e. avoidance coping) predicted higher belief in conspiracy theories and experimentally primed avoidance coping increased conspiracy beliefs (see also Pfeffer et al., 2022). Thus, it seems that stress coping—especially avoidance coping—may be related to the adoption of conspiracy explanations. This might be the case because conspiracy theories represent an avoidant response or simply occur as a rationale for avoiding confrontation with a stressor (Marchlewska, Green, et al., 2022). Indeed, they divert attention from the reality of the stressful situation (e.g. the COVID-19 pandemic) to conspiracy explanations, which may temporarily alleviate the stress. However, rather than helping, this could be even more detrimental during a pandemic, since these stress-avoidant tendencies might translate into lower compliance with public health guidelines and thus jeopardize the mitigation of the pandemic (e.g. Chong et al., 2020).

Importantly, COVID-19 conspiracy beliefs could result from aversive experiences (e.g. stress) and may have severe concomitants and consequences (Douglas, 2021; van Mulukom et al., 2022). The endorsement of COVID-19 conspiracy theories has been previously linked to lower adherence to safety and self-isolation guidelines (Kowalski et al., 2020; Łowicki et al., 2022; Pummerer et al., 2022), lower intentions to vaccinate against COVID-19 (Bertin et al., 2020; Marchlewska, Hamer, et al., 2022) and lower psychological well-being (van Mulukom et al., 2022), making conspiracy beliefs a potential threat to public health. Thus, in the current research, we aimed to investigate the relationships between COVID-19 conspiracy beliefs, stress-coping strategies and public health-related concomitants of the pandemic.

## Coping with stress—forms and concomitants

Coping can be defined as the execution of a response to a stressor (Carver et al., 1989; Lazarus, 1993) and is considered fundamental to human functioning (Aldwin, 2011; Zimmer-Gembeck & Skinner, 2016).

People cope with stress using various strategies, which bears consequences for mental health (Clarke, 2006; Taylor & Stanton, 2007). Thus, coping can be adaptive or maladaptive, depending on the stress-related outcome achieved in the process (Taylor & Stanton, 2007). Thus, coping is considered adaptive when it leads to a progression in achieving one's goals, an extenuation of distress or an improvement of functioning in general, whereas maladaptive coping results in sustained levels of stress (Marchlewska, Green, et al., 2022; Nielsen & Knardahl, 2014; Zeidner & Saklofske, 1996).

Moreover, based on the way people tackle stressful events, previous research has distinguished between avoidance and approach coping (e.g. Finset et al., 2002; Roth & Cohen, 1986). Avoidance coping 'includes both cognitive and behavioural responses that serve the function of avoiding the distressing event or circumstances' (Zimmer-Gembeck & Skinner, 2016, p. 490) and avoidance strategies involve such responses as mental or behavioural disengagement, denial or substance use (e.g. Litman, 2006). Avoidance coping can be considered maladaptive, because it has been associated with unfavourable outcomes, such as higher psychological distress, more health-related problems and lower well-being (Krattenmacher et al., 2013; Nielsen & Knardahl, 2014). Approach coping encompasses those behavioural and cognitive responses that aim to manage adversities or stressful situations (Clarke, 2006; Finset et al., 2002). Approach coping responses can be twofold: self-sufficient/problem-focused, comprised of such strategies as planning or active coping (Litman, 2006; Marchlewska, Green, et al., 2022) and social support/emotion-focused coping, which includes venting of emotions and other subtypes of social support (instrumental and emotional; e.g. Stowell et al., 2001). Approach (particularly self-sufficient/problem-focused) coping tends to be related to better mental and physical health, higher academic performance and greater social competence (Clarke, 2006; Krattenmacher et al., 2013; Stowell et al., 2001; Taylor & Stanton, 2007; Zimmer-Gembeck & Skinner, 2016), indicating that approach coping might be deemed adaptive.

A different form of coping with stress is religious coping—a propensity for focusing on religion during stressful times (Carver et al., 1989). This form of coping appears distinct from other coping strategies and is at times treated as a separate factor or excluded from further analyses (e.g. Heydecke et al., 2004; Marchlewska, Green, et al., 2022; Stowell et al., 2001). Indeed, researchers focused on religious coping argued that this type of stress coping could constitute a unique dimension of the coping processes (Pargament, 2011). This introduces some complexity: While religious coping is often measured in a general way (as in the widely used multi-factor scales; e.g. Carver, 1997; Carver et al., 1989), it might also be equivocal. It may occur because religious coping can be employed for different reasons, making it difficult to know whether it was active or avoidant (Stowell et al., 2001; see also Carver et al., 1989), which is why some scholars emphasized that it can be both detrimental and beneficial (Pargament, 2011). Overall, coping with stress is consequential for individuals' health and psychosocial functioning (e.g. Clarke, 2006; Taylor & Stanton, 2007).

Interestingly, recent research conducted in the context of the COVID-19 pandemic revealed that avoidance coping strategies (e.g. denial) were also related to lower adherence behaviours (e.g. not maintaining social distance; Bailey et al., 2021; Chong et al., 2020). Avoiding the stressor might accompany a lower willingness to act in line with public health guidelines, as indeed, compliance with pandemic-related restrictions seems more of an active behaviour, not an avoidant one. In line with this reasoning, in the present research, we proposed that different coping strategies would be associated with adherence to public health guidelines and that this would be accounted for by COVID-19 conspiracy beliefs.

## COVID-19 conspiracy beliefs and coping with stress

Recent findings have demonstrated that conspiracy beliefs might constitute 'a stress-avoiding coping response' (Marchlewska, Green, et al., 2022, p. 533), according to which adopting conspiracy explanations can be used as a maladaptive way to deal with a stressor by shifting one's attention away from it instead of actively facing it. In the current research, we aimed to check if avoidance

coping would be related to higher endorsement of COVID-19 conspiracy theories too. Moreover, we hypothesized that religious coping might show similar associations as avoidance coping; that is, it might displace coping efforts from pursuing the resolution of the stressor to focusing on one's religion only. Therefore, both avoidance and religious coping could be related to higher COVID-19 conspiracy beliefs.

Since coping implies executing a response to a stressor (e.g. Lazarus, 1993), the role of coping strategies should be more pronounced in the presence of stressful stimuli, for example, while processing fear-inducing, threatening information (Roth & Cohen, 1986). Thus, we further aimed to explore the role of fear in adopting conspiracy explanations, since anxiety and fear have been linked to both pre-pandemic conspiracy beliefs (e.g. Grzesiak-Feldman, 2013), as well as to COVID-19 pandemic-related conspiracy beliefs (Barahmand et al., 2022). Recent research suggested that experimentally manipulated COVID-19 threat salience increased feelings of fear, which in turn was related to conspiracy beliefs (Jutzi et al., 2020). Thus, combining the lines of research regarding the role of (a) fear and (b) coping with stress in conspiracy beliefs, we assumed that if induced fear leads to higher conspiracy beliefs and maladaptive coping is related to these beliefs, then experimentally increased fear should be linked to greater endorsement of conspiracy theories, especially among those who do not have the resources to deal with these aversive experiences (i.e. those high in maladaptive coping). In such a way, we aimed to investigate not only the role of fear or coping strategies but also the interplay between them in predicting conspiracy beliefs.

## Overview of the current research

The main aim of our research was to replicate and scrutinize past findings regarding the role of stress coping in the endorsement of conspiracy theories, additionally enhancing our designs by examining possible adverse outcomes of the COVID-19 conspiracy beliefs (Study 1, correlational) and investigating how dispositional use of coping strategies may shape the response towards fearful situations (Study 2, experimental). Both studies were conducted among Polish participants and we used the COPE inventory (Carver et al., 1989), and the COVID-19 conspiracy beliefs questionnaire (Kowalski et al., 2020).

We hypothesized that avoidance (H1A) and religious (H1B) coping should be related to higher conspiracy beliefs (these hypotheses were tested in both studies). Moreover, in Study 1, we also tested the hypotheses that avoidance (H2A) and religious (H2B) coping strategies would be linked to lower adherence to safety and self-isolation guidelines, and that these relationships would be mediated by COVID-19 conspiracy beliefs. In Study 2, we manipulated feelings of fear (by exposure to COVID-19 threat; Jutzi et al., 2020) to examine the role of an induced state of fear in adopting COVID-19 conspiracy explanations, additionally utilizing the coping with stress framework (Marchlewska, Green, et al., 2022). Specifically, we hypothesized that COVID-19 threat salience (compared to a control condition) should boost feelings of fear (mediator; H3), which would further be related to higher conspiracy beliefs, although—in line with previous hypotheses (H1A, H1B)—only among individuals high in avoidance (H4A) and religious coping (H4B). Our studies were not preregistered. In both studies, we aimed to include at least 400 participants, which gave us a power of 0.80 for detecting small associations between variables; for  $r = .14$  (Cohen, 1988), G\*Power 3.1 (Faul et al., 2009) provides a target of 398 participants. All participants issued informed consent to participate in the studies. Both studies were conducted in March 2021. Data and code for both studies are posted at <https://osf.io/ey4cf/>.

## STUDY 1

In Study 1, we tested the hypotheses that avoidance (H1A) and religious (H1B) coping would positively predict conspiracy beliefs. We therefore aimed to replicate the pattern of results obtained by

Marchlewska, Green, et al. (2022) in a different context related to a global crisis (i.e. the COVID-19 pandemic). We also investigated the possible outcomes of conspiracy beliefs, assuming that avoidance (H2A) and religious (H2B) coping would be negatively linked to the adherence to safety and self-isolation guidelines, and that these relationships would be mediated by COVID-19 conspiracy beliefs.

## Method

### Participants and procedure

Data for Study 1 were obtained through an online survey (CAWI), conducted on a nationwide sample of Poles, representative in terms of gender, age and settlement size. Data were collected by an external research company, used in academic studies before (e.g. Kowalski et al., 2020). The final sample for this study included 1000 Polish participants (549 women), aged between 18 and 85 ( $M_{\text{age}} = 47.99$ ,  $SD = 16.49$ ).<sup>12</sup>

### Measures

*Coping strategies* were measured using the COPE inventory (Carver et al., 1989), which is comprised of 15 four-item scales exploring adaptative and maladaptive coping strategies. Participants were asked to answer what they did and felt when they experienced stressful events. In line with Marchlewska, Green, et al. (2022), we differentiated four factors: *self-sufficient coping* (measuring planning, e.g. 'I try to come up with a strategy about what to do'; acceptance, e.g. 'I get used to the idea that it happened'; active coping, e.g. 'I take direct action to get around the problem'; positive reframing, e.g. 'I look for something good in what is happening'; suppression of other activities, e.g. 'I try hard to prevent other things from interfering with my efforts at dealing with this'; and restraint, e.g. 'I make sure not to make matters worse by acting too soon';  $\alpha = .90$ ); *social support* (measuring the use of instrumental social support, e.g. 'I talk to someone to find out more about the situation'; emotional social support, e.g. 'I talk to someone about how I feel'; and venting of emotions, e.g. 'I let my feelings out';  $\alpha = .89$ ); *avoidance coping* (measuring denial, e.g. 'I act as though it didn't happen'; behavioural disengagement, e.g. 'I just give up trying to reach my goal'; mental disengagement, e.g. 'I go to the movies or watch TV, to think about it less'; humour, e.g. 'I make fun of the situation'; and substance use, e.g. 'I try to lose myself for a while by drinking or taking drugs';  $\alpha = .87$ ); and *religious coping* (e.g. 'I put my trust in God';  $\alpha = .94$ ) which was its own factor.<sup>3</sup> Items were scored on a four-point scale, where higher scores indicated a higher disposition towards the coping strategy (1 = *I usually do not do this at all* and 4 = *I usually do this a lot*).

*COVID-19 Conspiracy Beliefs* were measured with a 16-item questionnaire, based on a scale previously used by Kowalski et al. (2020).<sup>4</sup> We measured various types of COVID-19 conspiracy beliefs, such as 'Coronavirus was created by ecologists to reduce population and help the environment' or 'Coronavirus was created by pharmaceutical organizations'. Participants responded on a scale from 1 = *definitely disagree* to 5 = *definitely agree*,  $\alpha = .96$ .

*Adherence to safety and self-isolation guidelines* was measured with a six-item questionnaire, based on a scale previously used by Kowalski et al. (2020): 'To avoid coronavirus infection, I limit my contacts with relatives and friends', 'Due to the epidemic, I wash my hands more often and longer than usual', 'I always

<sup>1</sup>Besides variables reported here, Study 1 also involved measures of prejudice and social psychological variables (e.g. climate change conspiracy beliefs) included for the purposes of different projects. Please contact the first author for details.

<sup>2</sup>Complete information about demographics for both studies can be found in the supplements (Table S3).

<sup>3</sup> See the Supplements for further details regarding factor structure and factor loadings of the COPE inventory.

<sup>4</sup>For more information regarding the scale's factor structure, see the Supplements.

TABLE 1 Means, standard deviations and zero-order correlations (Study 1).

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. COVID-19 conspiracy beliefs	2.40	1.04	–	–.04	.04	.25***	.23***	–.37***	–.18***
2. Self-sufficient coping	2.70	0.37		–	.43***	.16***	.18***	.12***	.25***
3. Social support	2.54	0.50			–	.23***	.19***	.03	–.06
4. Avoidance coping	2.01	0.41				–	.16***	–.18***	–.19***
5. Religious coping	2.18	0.94					–	.05	–.05
6. Adherence to safety and self-isolation guidelines	4.13	0.92						–	.38***
7. Age	47.99	16.49							–

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

wear the mask so that it also covers my nose', 'I try to keep distance from others when I am outside the home', 'I go shopping wearing a mask', 'I participate in big events, for example big house parties (reverse coded item)'. Participants responded on a scale from 1 = *definitely false* to 5 = *definitely true*,  $\alpha = .87$ .

## Results and discussion

### Zero-order correlations

First, we computed correlations between continuous variables (see Table 1). In line with our predictions, COVID-19 conspiracy beliefs were linked to avoidance and religious coping. Adherence to safety and self-isolation guidelines was positively associated with self-sufficient coping but negatively with avoidance coping. COVID-19 conspiracy beliefs and adherence to safety and self-isolation guidelines were negatively related to each other.<sup>5</sup>

### Regression analyses

#### *COVID-19 conspiracy beliefs (DV1)*

Second, we computed a multiple regression analysis to investigate the effects of self-sufficient coping, social support, avoidance coping and religious coping on COVID-19 conspiracy beliefs (Table 2). We also included demographic variables (i.e. gender and age) as covariates. In line with our assumptions, both avoidance and religious coping were positively linked to COVID-19 conspiracy beliefs.

#### *Adherence to safety and self-isolation guidelines (DV 2)*

Finally, we computed a hierarchical multiple regression analysis to investigate the effects of self-sufficient coping, social support, avoidance coping, religious coping and COVID-19 conspiracy beliefs on adherence to safety and self-isolation guidelines (Table 3). We also included gender and age as covariates. In Step 1, we introduced coping strategies and demographic variables. We found a significant and negative relation between avoidance coping and our dependent variable. We also found a significant, but positive, link between religious coping and adherence to safety and self-isolation guidelines. In Step 2,

<sup>5</sup>To investigate if there were any differences between genders (male = 0, female = 1), we computed an independent *t*-test for the main variables. There was a significant effect of gender on COVID-19 conspiracy beliefs (male  $M = 2.27$ ,  $SD = 0.95$ ; female  $M = 2.52$ ,  $SD = 1.10$ ),  $t(995.832) = -3.88$ ,  $p < .001$ , social support (male  $M = 2.48$ ,  $SD = 0.49$ ; female  $M = 2.58$ ,  $SD = 0.51$ ),  $t(998) = -3.19$ ,  $p = .001$ , religious coping (male  $M = 2.11$ ,  $SD = 0.91$ ; female  $M = 2.24$ ,  $SD = 0.96$ ),  $t(978.938) = -2.25$ ,  $p = .024$ . There was no significant effect of gender on self-sufficient coping,  $t(998) = 0.33$ ,  $p = .738$ , avoidance coping,  $t(998) = 1.60$ ,  $p = .111$ , adherence to safety and self-isolation guidelines,  $t(998) = -0.86$ ,  $p = .392$ .

TABLE 2 Predictors of COVID-19 conspiracy beliefs (Study 1).

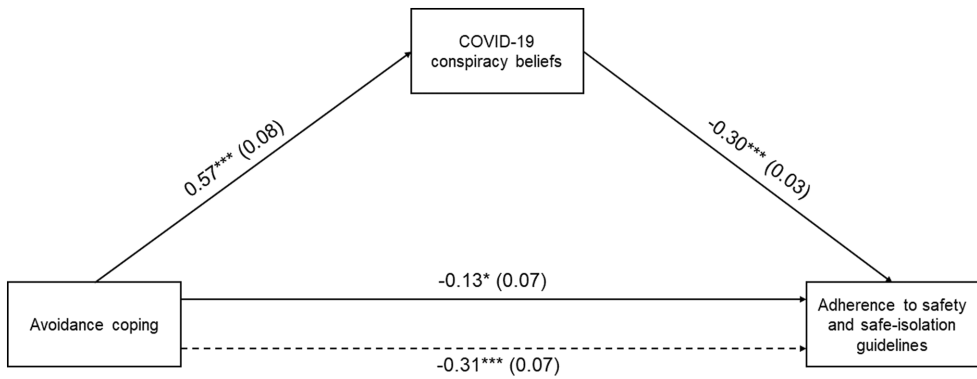
Variable	B	95% CI		p	SE B	$\beta$	R <sup>2</sup>	F
		LL	UL					
Gender (male = 0, female = 1)	0.25	0.13	0.37	<.001	0.06	.12	.14	F(6, 993) = 26.17***
Age	-0.01	-0.01	-0.003	<.001	0.002	-.11		
Self-sufficient coping	-0.18	-0.37	0.01	.067	0.10	-.06		
Social support	-0.08	-0.22	0.05	.235	0.07	-.04		
Avoidance coping	0.57	0.42	0.73	<.001	0.08	.22		
Religious coping	0.23	0.16	0.29	<.001	0.03	.20		

\*p < .05; \*\*p < .01; \*\*\*p < .001.

TABLE 3 Predictors of adherence to safety and self-isolation guidelines (Study 1).

Variable	B	95% CI		P	SE B	$\beta$	R <sup>2</sup>	$\Delta R^2$	F
		LL	UL						
Step 1									
Gender (male = 0, female = 1)	0.03	-0.07	0.14	.587	0.05	.02	.17		$F(6, 993) = 34.03^{***}$
Age	0.02	0.02	0.02	<.001	0.002	.36			
Self-sufficient coping	0.05	-0.12	0.21	.574	0.09	.02			
Social support	0.10	-0.02	0.22	.108	0.06	.05			
Avoidance coping	-0.31	-0.44	-0.17	<.001	0.07	-.14			
Religious coping	0.07	0.02	0.13	.012	0.03	.08			
Step 2									
Gender (male = 0, female = 1)	0.11	0.01	0.21	.040	0.05	.06	.27	.10	$F(7, 992) = 53.24^{***}$
Age	0.02	0.02	0.02	<.001	0.002	.32			
Self-sufficient coping	-0.01	-0.16	0.15	.929	0.08	-.003			
Social support	0.07	-0.04	0.19	.204	0.06	.04			
Avoidance coping	-0.13	-0.26	-0.001	.048	0.07	-.06			
Religious coping	0.14	0.09	0.20	<.001	0.03	.15			
COVID-19 conspiracy beliefs	-0.30	-0.36	-0.25	<.001	0.03	-.35			

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .



**FIGURE 1** Indirect effect of avoidance coping on adherence to safety and safe-isolation guidelines via COVID-19 conspiracy beliefs, controlling for self-sufficient, social support and religious coping, gender and age (Study 1). *Note:* Entries are unstandardized coefficients. Dotted line indicates total effect (not controlling for the third variable).

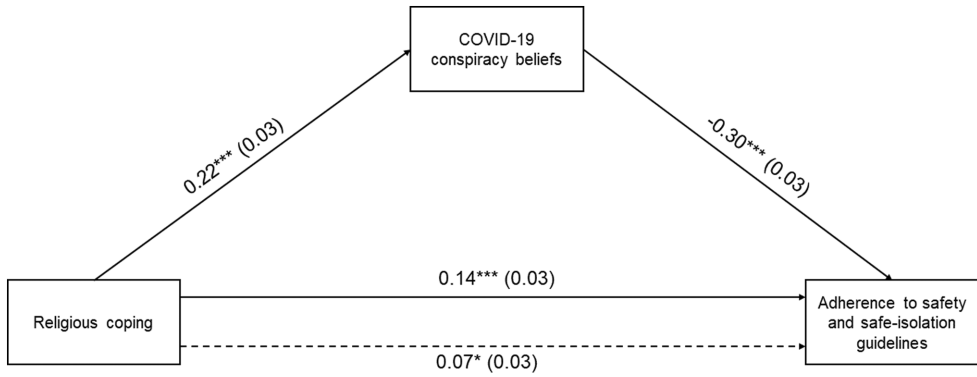
\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

we added COVID-19 conspiracy beliefs and found a negative relation with adherence to safety and self-isolation guidelines. After introducing COVID-19 conspiracy beliefs into the equation, we still found a significant, though weaker, negative link between avoidance coping and an adherence to safety and self-isolation guidelines. Religious coping also remained a significant, but positive, predictor of the dependent variable.

In order to perform a full test of our hypotheses, we conducted a mediation analysis using Model 4 with one mediator in the Process Software 3.5 (Hayes, 2018). We examined whether COVID-19 conspiracy beliefs mediated the path between avoidance coping and adherence to safety and self-isolation guidelines. As covariates, we used gender, age, self-sufficient coping, social support and religious coping (Figure 1). Significance was tested with bootstrapped 95% confidence intervals for the unstandardized indirect effects, constructed with 5000 resamples. The indirect effect of avoidance coping on adherence to safety and self-isolation guidelines via COVID-19 conspiracy beliefs was significant and negative,  $b = -0.17$ ,  $SE = 0.03$ , 95% CI  $[-0.24, -0.12]$ .

We conducted a second mediation analysis (model 4) to test whether COVID-19 conspiracy beliefs mediated the path between religious coping and adherence to safety and self-isolation guidelines (see Figure 2). As covariates we used gender, age, self-sufficient coping, social support and avoidance coping. The indirect effect of religious coping on adherence to safety and self-isolation guidelines via COVID-19 conspiracy beliefs was also significant and negative, estimate =  $b = -0.07$ ,  $SE = 0.01$ , 95% CI  $[-0.09, -0.04]$ .

Study 1 confirmed our basic prediction about the importance of avoidance coping in explaining the relationship between higher endorsement of COVID-19 conspiracy beliefs and lower adherence to safety and self-isolation guidelines. In line with previous research (Marchlewska, Green, et al., 2022), we found that those who had dispositional tendencies to avoid thinking about the stressful situation by temporarily focusing on a different stimulus were more willing to believe in ‘hidden enemies’ who could be blamed for the COVID-19 pandemic. They also seemed less willing to adhere to safety and safe-isolation guidelines. Interestingly, we also found that religious coping was positively linked to COVID-19 conspiracy beliefs, which also served as a partial replication of previous findings on the relationship between conspiracy beliefs and religious coping (Marchlewska, Green, et al., 2022). However, mere religious coping served as a positive predictor of adherence to safety and self-isolation guidelines. This would suggest that religious coping, though related to conspiracy beliefs, in some cases may be positively linked to healthy behaviours during pandemic—this seemed to be the case especially after accounting for the shared variance between religious coping and conspiracy beliefs.



**FIGURE 2** Indirect effect of religious coping on adherence to safety and safe-isolation guidelines via COVID-19 conspiracy beliefs, controlling for self-sufficient, social support and avoidance coping, gender and age (Study 1). *Note:* Entries are unstandardized coefficients. Dotted line indicates total effect (not controlling for the third variable).

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

## STUDY 2

The aim of Study 2 was twofold: first, we aimed to extend the results of Study 1 on the role of avoidance (H1A) and religious (H1B) coping on COVID-19 conspiracy theory endorsement; second, we examined whether the dispositional tendency to use (vs. not) these strategies might boost the effects of fear on COVID-19 conspiracy beliefs. According to Freckelton (2020), threats related to the COVID-19 pandemic generated fear that could lead to undesirable community phenomena, including scapegoating and trusting conspiracy explanations rather than scientifically based information. Indeed, previous research found that high-anxiety situations increased conspiracy beliefs (Grzesiak-Feldman, 2013). Importantly, Jutzi et al.'s (2020) findings suggested that COVID-19 threat salience increased fear, which then translated to higher endorsement of conspiracy theories. In Study 2, we expected that the effect of fear on conspiracy beliefs would be stronger among those who used maladaptive ways of coping because they lacked the resources to deal with their fears. Thus, in fear-inducing situations, such as COVID-19 threat salience, those who predominantly relied on maladaptive coping strategies (i.e. avoidance and religious coping) would not be able to manage their feelings effectively and, as a result, they would be especially prone to respond with conspiracy beliefs. To shed new light on a possible mechanism described in past studies regarding the role of fear and coping with stress in adopting conspiracy explanations (e.g. Marchlewska, Green, et al., 2022), we aimed to investigate how the interplay between them is related to conspiracy beliefs. Specifically, we examined if experimentally induced fear would be related to higher conspiracy beliefs, especially among those who predominantly relied on maladaptive strategies while dealing with adversities. To test these hypotheses, we manipulated the COVID-19 threat by suggesting (or not) that the media reported a new, very dangerous COVID-19 variant that made more people seriously ill and was harder to treat than the earlier versions of the coronavirus. We expected this manipulation to boost feelings of fear (mediator; H3) that should be further linked to increased COVID-19 conspiracy beliefs only among those high in avoidance (moderator; H4A) and religious coping (moderator; H4B).

## Method

### Participants and procedure

Data for Study 2 were obtained through an online survey (CAWI), conducted on a nationwide sample of Poles, representative in terms of gender, age and settlement size. Data were collected by an external

research company, which had been used in academic studies before (e.g. Kowalski et al., 2020). We recruited 724 participants, but this time, due to the experimental character of the study, we included an attention check (participants were asked about the content of the text that was used as a manipulation). Aiming to increase internal validity, we excluded from the analyses the data from those participants who failed the attention check.<sup>6</sup> This resulted in a final sample of 616 respondents (319 women), aged between 18 and 81 ( $M = 47.49$ ,  $SD = 16.08$ ).

At the beginning of the study, all respondents were asked to complete demographic variables and the coping strategies questionnaire. Then, participants were randomly assigned to one of two experimental conditions: threat ( $n = 301$ ) and control ( $n = 315$ ). In both conditions, participants were asked to read a mock newspaper clipping. These articles were graphically prepared to imitate an internet news website (see the [Supplements](#) for the graphics with the manipulation). The threat condition contained an article about a coronavirus mutation and its dangers. In the control condition, participants read an article about pearls and how to collect them (see the [Supplements](#)). Afterwards, participants completed a state of fear measure and COVID-19 conspiracy beliefs scale. Then, they were asked to provide an answer to the attention check question. After participants completed the questionnaire, they were thanked and debriefed.

## Measures

*Coping strategies* were measured with the COPE inventory (Carver et al., 1989). As in Study 1, the four-factor structure identifying self-sufficient coping ( $\alpha = .90$ ), social support ( $\alpha = .91$ ), avoidance coping ( $\alpha = .87$ ) and religious coping ( $\alpha = .95$ ) was deemed the most reasonable fit in Study 2 (see the [Supplements](#) for further details).

*State of fear* was measured with six items, namely: 'afraid', 'scared', 'frightened', 'nervous', 'jittery', 'shaky'. We used the fear subscale from the Positive and Negative Affect Schedule-Expanded Form (Watson & Clark, 1994; Polish adaptation Fajkowska & Marszał-Wiśniewska, 2009). Participants were instructed to indicate the extent to which they felt each affect at that moment on the scale from 1 = *very slightly or not at all* to 6 = *extremely*,  $\alpha = .93$ .

*COVID-19 conspiracy beliefs* were measured as in Study 1 (Kowalski et al., 2020), on a scale from 1 = *definitely disagree* to 5 = *definitely agree*,  $\alpha = .97$ .

## Results and discussion

### Zero-order correlations

First, we computed correlations between all the variables across both conditions (Table 4). Similarly to Study 1, we found positive correlations between COVID-19 conspiracy beliefs and both types of coping: avoidance and religious. We also found a positive relationship between COVID-19 conspiracy beliefs and the state of fear measure. State of fear was also positively and significantly associated with social support, avoidance coping and religious coping.<sup>7</sup>

<sup>6</sup>When these participants were not excluded, the pattern of results remained the same.

<sup>7</sup>To investigate if there were any differences between genders (male = 0, female = 1), we computed independent *t*-test for the main variables. There was significant effect of gender on COVID-19 conspiracy beliefs (male  $M = 2.18$ ,  $SD = 0.98$ ; female  $M = 2.40$ ,  $SD = 1.14$ ),  $t(609.895) = -2.57$ ,  $p = .011$ , social support (male  $M = 2.37$ ,  $SD = 0.53$ ; female  $M = 2.64$ ,  $SD = 0.55$ ),  $t(614) = -6.12$ ,  $p < .001$ , state of fear (male  $M = 2.23$ ,  $SD = 1.17$ ; female  $M = 2.55$ ,  $SD = 1.38$ ),  $t(608.699) = -3.07$ ,  $p = .002$ . There was no significant effect of gender on self-sufficient coping,  $t(614) = 0.43$ ,  $p = .658$ , avoidance coping,  $t(614) = 1.57$ ,  $p = .116$  or religious coping,  $t(614) = -1.88$ ,  $p = .061$ .

TABLE 4 Means, standard deviations and zero-order correlations (Study 2).

Measure	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. COVID-19 conspiracy beliefs	2.29	1.07	–	–.02	.05	.20***	.19***	.11**	–.20***
2. Self-sufficient coping	2.75	0.37		–	.35***	.19***	.16***	–.03	.16***
3. Social support	2.51	0.56			–	.22***	.15***	.18***	–.12**
4. Avoidance coping	1.93	0.40				–	.14***	.21***	–.23***
5. Religious coping	2.13	0.93					–	.10*	–.002
6. State of fear	2.40	1.29						–	–.03
7. Age	47.49	16.08							–

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

TABLE 5 Predictors of state of fear (Study 2).

Variable	<i>B</i>	95% CI		<i>p</i>	SE <i>B</i>	$\beta$	<i>R</i> <sup>2</sup>	<i>F</i>
		LL	UL					
							.12	<i>F</i> (3, 612) = 28.54***
Condition (control = -1; threat = 1)	0.42	0.33	0.52	<.001	0.05	.33		
Age	-0.001	-0.01	0.01	.935	0.003	-.003		
Gender (male = 0, female = 1)	0.33	0.14	0.52	<.001	0.10	.13		

\**p* < .05; \*\**p* < .01; \*\*\**p* < .001.

## Regression analyses

### *State of fear (DV1)*

Second, we computed a multiple regression analysis to investigate the effects of the threat condition on state of fear (Table 5). As in Study 1, we controlled for basic demographic variables (i.e. gender and age). We found a significant positive effect of the threat condition on state of fear.<sup>8</sup>

### *COVID-19 conspiracy beliefs (DV2)*

Finally, we computed a hierarchical regression analysis to check whether there was an indirect effect of the threat manipulation on COVID-19 conspiracy beliefs via state of fear only among those high (vs. low) in avoidance and religious coping. To this end, we investigated the effects of the experimental condition (threat vs. control), state of fear, self-sufficient coping, social support, avoidance coping, religious coping and interactions of state of fear and coping strategies on COVID-19 conspiracy beliefs (Table 6). We also included demographic variables, such as gender and age as covariates.

In Step 1, we introduced variable coding in the experimental condition (control = -1 vs. threat = 1) and demographics. The effect of the experimental condition (control vs. threat) on COVID-19 conspiracy beliefs was not significant. In Step 2, we added state of fear and found its significant and positive effect on COVID-19 conspiracy beliefs. In Step 3, we entered self-sufficient coping, social support, avoidance coping, religious coping and interactions of state of fear with coping strategies. As in Study 1, we found positive effects of avoidance and religious coping on COVID-19 conspiracy beliefs. After controlling for coping strategies, the effect of fear became non-significant, but we found a positive and significant effect of the interaction between fear and avoidance coping on COVID-19 conspiracy beliefs.

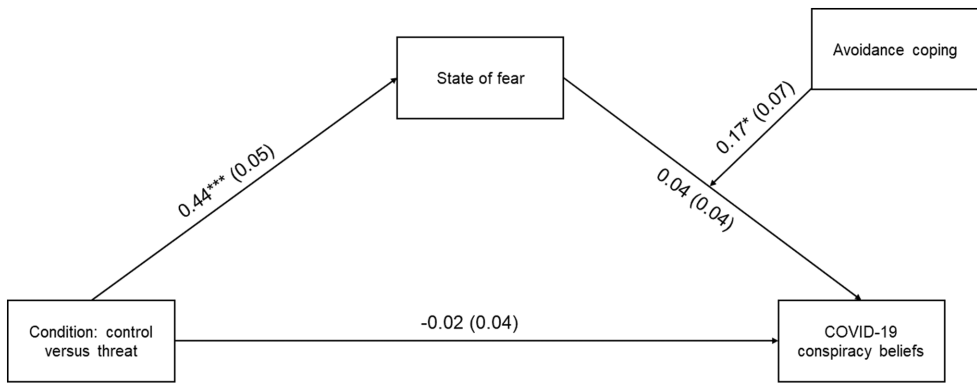
In order to perform a full test of our hypotheses, we conducted a moderated mediation analysis, examining avoidance coping as a moderator, using model 14 in Process 3.5 (Hayes, 2018). Significance was tested with bootstrapped 95% confidence intervals for the unstandardized indirect effects, constructed with 5000 resamples. The analysis displayed in Figure 3 examined whether avoidance coping moderated the mediational effect of the condition (threat vs. control) on COVID-19 conspiracy beliefs via state of fear. Avoidance coping was introduced as a moderator between state of fear and COVID-19 conspiracy beliefs. As covariates, we used gender, age, self-sufficient coping, social support and religious coping. The interaction between state of fear and avoidance coping positively and significantly predicted COVID-19 conspiracy beliefs,  $b = 0.17$ ,  $SE = 0.07$ , 95% CI [0.03, 0.31],  $p = .017$ . The index of the moderated mediation was positive and significant,  $b = 0.07$ ,  $SE = 0.04$ , 95% CI [0.002, 0.141]. Thus, the results showed that the indirect effect of threat (vs. control) condition

<sup>8</sup>When we did not control for the effects of gender and age, the pattern of results remained the same.

TABLE 6 Predictors of COVID-19 conspiracy beliefs (Study 2).

Variable	95% CI		UL	P	SE B	$\beta$	$R^2$	$\Delta R^2$	F
	B	LL							
Step 1							.05		$F(3, 612) = 10.45^{***}$
Age	-0.01	-0.02	-0.01	<.001	0.003	-.20			
Gender (male = 0, female = 1)	0.19	0.03	0.36	.023	0.09	.09			
Condition (control = -1; threat = 1)	-0.04	-0.12	0.05	.384	0.04	-.03			
Step 2							.06	.01	$F(4, 611) = 9.90^{***}$
Age	-0.01	-0.02	-0.01	<.001	0.003	-.20			
Gender (male = 0, female = 1)	0.16	-0.01	0.33	.059	0.09	.08			
Condition (control = -1; threat = 1)	-0.08	-0.17	0.01	.080	0.05	-.07			
State of fear	0.10	0.03	0.17	.005	0.04	.12			
Step 3							.12	.01	$F(12, 603) = 7.02^{***}$
Age	-0.01	-0.02	-0.01	<.001	0.003	-.15			
Gender (male = 0, female = 1)	0.22	0.05	0.39	.013	0.09	.10			
Condition (control = -1; threat = 1)	-0.02	-0.11	0.07	.678	0.05	-.02			
State of fear	0.03	-0.05	0.10	.455	0.03	.03			
Self-sufficient coping	-0.15	-0.41	0.10	.244	0.13	-.05			
Social support	-0.06	-0.23	0.11	.500	0.09	-.03			
Avoidance coping	0.40	0.18	0.62	<.001	0.11	.15			
Religious coping	0.19	0.10	0.28	<.001	0.05	.17			
State of fear $\times$ Self-sufficient coping	-0.10	-0.29	0.08	.277	0.09	-.05			
State of fear $\times$ Social support	0.11	-0.02	0.24	.103	0.07	.07			
State of fear $\times$ Avoidance coping	0.16	0.01	0.31	.037	0.08	.09			
State of fear $\times$ Religious coping	0.03	-0.04	0.10	.780	0.04	.03			

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .



**FIGURE 3** Moderated mediation of avoidance coping on condition and COVID-19 conspiracy beliefs via state of fear controlling for self-sufficient, social support, religious coping, gender and age (Study 2). *Note:* Entries are unstandardized coefficients.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

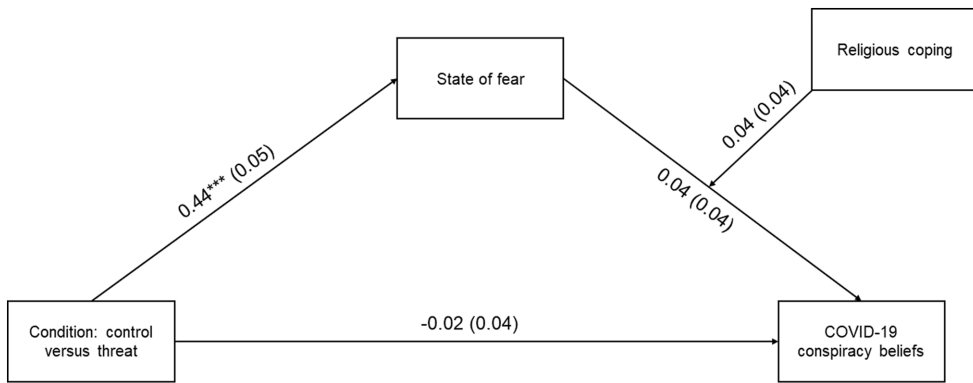
on COVID-19 conspiracy beliefs via state of fear was significant only among individuals who scored high ( $b = 0.05$ ,  $SE = 0.02$ , 95% CI [0.004, 0.09]) versus low ( $b = -0.01$ ,  $SE = 0.02$ , 95% CI [-0.05, 0.03]) on avoidance coping.

Next, we conducted another moderated mediation analysis, examining religious coping as the moderator, using the same process as above (see Figure 4). The analysis displayed in Figure 4 examined whether religious coping moderated the mediation between condition (threat vs. control) and COVID-19 conspiracy beliefs via state of fear. Religious coping was the moderator between state of fear and COVID-19 conspiracy beliefs. As covariates, we used gender, age, self-sufficient coping, social-support and avoidance coping. The effect of the interaction between state of fear and religious coping on COVID-19 conspiracy beliefs was not significant,  $b = 0.04$ ,  $SE = 0.03$ , 95% CI [-0.02, 0.11],  $p = .214$ . The index of the moderated mediation was not significant,  $b = 0.02$ ,  $SE = 0.02$ , 95% CI [-0.01, 0.05].

In Study 2, we replicated the results obtained in Study 1, suggesting that both avoidance and religious coping may play an important role in predicting COVID-19 conspiracy beliefs. Study 2 additionally revealed that threats related to the COVID-19 pandemic generated fear that can lead to seizing on conspiracy explanations especially among those scoring high on avoidance coping. We did not find a similar effect for people high in religious coping. Thus, it seemed that while dispositional use of both avoidance and religious coping strategies was linked to adopting COVID-19 conspiracy theories, avoidance coping additionally boosted such convictions when faced with higher levels of fear. This suggests that avoidance coping may play an extremely important role in shaping conspiracy beliefs related to the COVID-19 pandemic.

## GENERAL DISCUSSION

In two studies, we replicated and extended previous findings (Marchlewska, Green, et al., 2022), showing that avoidance coping is related to higher conspiracy beliefs. This time, however, we demonstrated that this process was observable also in the case of a global, unexpected, fear-enhancing event (i.e. the COVID-19 global pandemic; H1A). We also showed that using avoidance strategies was linked to lower adherence to safety guidelines regarding the pandemic, as suggested in past studies (Bailey et al., 2021), and this relationship was mediated by COVID-19 conspiracy beliefs (H2A). In both studies, religious coping was also positively related to COVID-19 conspiracy beliefs (H1B), as in previous research (Marchlewska, Green, et al., 2022; Study 1). However, the relationship between religious coping



**FIGURE 4** Moderated mediation of religious coping on condition and COVID-19 conspiracy beliefs via state of fear controlling for self-sufficient, social support, avoidance coping, gender and age (Study 2). *Note:* Entries are unstandardized coefficients.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

and adherence to safety guidelines was more complex: on the one hand, religious coping was related to higher conspiracy beliefs (H1B), but on the other hand, after accounting for the shared variance between religious coping and conspiracy beliefs, it was a positive predictor of aligning with health-related guidelines. As expected, the relationship between religious coping and aligning with the guidelines was mediated by COVID-19 conspiracy beliefs (H2B). In Study 2, we extended past work and showed that an experimental manipulation involving threatening information about the COVID-19 pandemic increased feelings of fear (H3), leading to a higher propensity to endorse conspiracy explanations, but only among those who frequently used avoidance coping (moderated mediation, H4A). However, this effect did not occur for religious coping (H4B).

## Theoretical implications

The results of our studies showed that both avoidance and religious coping were related to higher conspiracy beliefs. This is in line with past theorizing that individuals with a tendency to avoid the stressor might be more prone to believing in conspiracy explanations, because these explanations could constitute an avoidant response themselves, which deflects attention away from the stressful situation—in this case, the COVID-19 pandemic (Marchlewska, Green, et al., 2022). We also extended past findings, showing that those who tended to use avoidance coping with stress seemed more inclined to endorse conspiracy theories and this further translated to a decreased compliance with the pandemic-related guidelines, as the latter seems to require undertaking some actions related to the stressor and not avoiding it. These results are also in line with previous research suggesting that some avoidance coping behaviours were linked to lower alignment with safety guidelines during the pandemic (Chong et al., 2020), as well as with extensive research on potential consequences of COVID-19 conspiracy beliefs (e.g. Kowalski et al., 2020; Łowicki et al., 2022).

With regard to religious coping, it seems to be a matter of even greater complexity. On the one hand, we found that religious coping was related to higher conspiracy beliefs, which aligns with some previous research (Marchlewska, Green, et al., 2022; Study 1). This could suggest that religious coping (at least measured in a general, non-specific way as in the COPE inventory) is somewhat similar in its relationship with conspiracy beliefs to avoidance coping: perhaps a strong reliance on God and increased praying could be, in fact, aimed at avoiding the stressful situation. Thus, people scoring higher on religious coping might be more attracted to conspiracy explanations—but this issue requires further research

since the role of religiosity and religious coping seems more complex. Specifically, on the other hand, after we accounted for conspiracy beliefs, mere religious coping was linked to higher compliance with the pandemic-related guidelines. The findings regarding religiosity partially support the positive relationship between religious coping and adherence to health-related guidelines: It has been demonstrated that religiosity was associated with submissiveness and agreeableness (Saroglou et al., 2009; Tsang et al., 2021), which might incline people to align with pandemic-related recommendations. Overall, our results seem to corroborate previous theorizing that religious coping can be both deleterious and advantageous (Pargament, 2011).

We also explored the role of manipulated feelings of fear (via exposure to a threatening article about COVID-19) and dispositional use of coping strategies on conspiracy beliefs, demonstrating that reading a text about the pandemic increased levels of fear, which further led to higher COVID-19 conspiracy beliefs, but only among those with a higher (vs. lower) tendency to use avoidance coping. Thus, this study combined two lines of research and theorizing (regarding negative emotions and coping with stress) on the possible underpinnings of conspiracy beliefs, suggesting a possible mechanism when threatening information that arouses fear might result in increased conspiracy beliefs. While, according to past research (e.g. Grzesiak-Feldman, 2013), fear itself was linked to higher conspiracy beliefs, we propose that it may boost conspiracy beliefs especially among those who do not have the resources needed to deal with these kinds of feelings, that is those who rely on maladaptive avoidance coping strategies. Of course, these suggestions await further investigation. It is worth noting that we did not find a similar interaction effect for religious coping, which emphasizes even more that it makes a worthwhile avenue for future studies to examine in more detail.

## Limitations and future directions

Although our research sheds new light on the possible role of the coping strategies in explaining COVID-19 conspiracy beliefs and adherence to safety and self-isolation guidelines, it is not without limitations. Both studies were conducted in one socio-political and cultural context (i.e. Poland), and it is unclear how the findings would apply in other contexts. Therefore, future research should use samples drawn from different countries and cultures, in particular beyond WEIRD contexts (Henrich et al., 2010). Also, it is worth noting that our sample sizes were significantly greater than we initially calculated, which enhanced the risk of oversampling since even marginal effects in such sample sizes can be statistically significant. Thus, future studies should not recruit beyond a priori established sample sizes. Moreover, the conclusions from our studies are based on self-reported measures and thus, a research design focused on real behaviour or existing data, for example, obtained from social media platforms, is needed. Another drawback that needs to be noted is that although in the experimental Study 2, we included an attention check to see if participants read questions carefully, we did not include any attention check in the correlational Study 1. Considering the challenges of online data collection (e.g. not seeing participants face to face to watch if they are completing the questionnaires attentively), such an attention check is necessary, and future studies should include one.

Despite showing the effect of experimentally induced fear on conspiracy beliefs only among participants frequently using avoidance coping strategies, we did not manipulate coping strategies directly. A potential avenue for future studies would be to examine if experimentally activated coping strategies have an effect on COVID-19 conspiracy beliefs (e.g. similar to Marchlewska, Green, et al., 2022; Study 3). Another possible future direction in this area would be to investigate if long-term interventions aimed at improving stress-coping skills (i.e. using less maladaptive and more adaptive coping strategies) could result in a decrease in belief in conspiracy theories. A similar intervention could also examine if improving stress management skills would indirectly (e.g. by reducing conspiracy beliefs) strengthen prosocial behaviours in the domain of public health (e.g. adherence to safety and self-isolation guidelines).

Finally, considering the more complex nature of the link between religious coping, COVID-19 conspiracy beliefs and compliance with the pandemic-related guidelines, future research should also examine religious coping and religiosity more thoroughly. For example, Łowicki et al. (2022) investigated different types of religiosity and demonstrated that religious fundamentalism, but not the centrality of religiosity was related to higher COVID-19 conspiracy beliefs, which further translated into more socially undesirable pandemic-related behaviour (e.g. lower adherence to the guidelines). Similarly, one could employ a more detailed inventory that measures different types of religious coping (e.g. positive and negative; Pargament et al., 2011) to meticulously examine the relationships of this coping strategy with social phenomena (e.g. conspiracy beliefs).

## Conclusions

The present research provides new insight regarding the role of different stress-coping strategies in shaping the endorsement of conspiracy theories. We demonstrated that higher avoidance and religious coping were positively associated with beliefs in conspiracy theories about the COVID-19 outbreak. Additionally, we showed that individuals with a stronger tendency to rely on avoidance coping were more prone to be affected by external stimuli inducing fear. That is, when faced with content discussing the potential threat of the coronavirus disease that increased feelings of fear, they were more likely to endorse a conspiracy theory about that particular topic. Therefore, our research suggests that lowering conspiracy theory endorsement might be achieved through developing stronger adaptive stress-coping strategies and limiting the use of the maladaptive ones.

## AUTHOR CONTRIBUTIONS

**Zuzanna Molenda:** Conceptualization; investigation; writing – original draft; methodology; formal analysis; data curation; writing – review and editing. **Marta Marchlewska:** Supervision; writing – review and editing; funding acquisition; investigation; methodology. **Adam Karakula:** Formal analysis; investigation; writing – review and editing; methodology. **Dagmara Szczepańska:** Investigation; methodology; writing – review and editing. **Marta Rogoza:** Investigation; validation; writing – review and editing. **Ricky Green:** Writing – review and editing. **Aleksandra Cislak:** Writing – review and editing. **Karen M. Douglas:** Writing – review and editing.

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## CONFLICT OF INTEREST STATEMENT

None.

## DATA AVAILABILITY STATEMENT

The data that support current findings are openly available in Open Science Framework depository at <https://osf.io/ey4cf/>.

## ETHICS STATEMENT

Informed consent was obtained from all participants involved in the studies. Both studies were conducted in accordance with the Declaration of Helsinki and approved by the Research Ethics Committee of the Institute of Psychology, Polish Academy of Sciences (number of approval: 26/X/2020).

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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### **Publication 3**

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## Emotion dysregulation and belief in conspiracy theories

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### ABSTRACT

Conspiracy beliefs typically flourish in threatening situations that evoke negative emotions. In the present research, we hypothesized that conspiracy beliefs may therefore serve as a psychological response to difficulties in the domain of emotion regulation (i.e., dysregulation of emotional experiences, expressions, and responses). This hypothesis was tested among British, American, and Polish participants and conceptually replicated across three studies. Specifically, we examined the associations between difficulties in emotion regulation and belief in general notions of conspiracy (Study 1,  $n = 391$  and Study 2,  $n = 411$ ) and belief in specific conspiracy theories in (Study 3,  $n = 558$ ). Across all three studies, difficulties in emotion regulation positively predicted belief in conspiracy theories. These findings suggest that people having more problems with regulating their emotions may be most prone to believing in conspiracy theories.

### 1. Introduction

In recent years, humanity has been faced with a number of existential threats that can arouse negative emotions. These threats appear to inevitably give rise to conspiracy theories that offer alternative explanations, such that climate change or COVID-19 are hoaxes (e.g., Jolley & Douglas, 2014a; Lowicki et al., 2022). The literature on conspiracy beliefs suggests that some people misguidedly attempt to alleviate their existential concerns by adopting conspiracy theories (Douglas et al., 2017; see also van Prooijen, 2020). For example, those who are intolerant of uncertainty and seek cognitive closure seize on conspiracy explanations for uncertain events (Marchlewska et al., 2018). Similarly, those who are less able to cope effectively with stress (i.e., use avoidance coping) are more likely to believe in conspiracy theories related to stressful situations (Marchlewska et al., 2022; Study 1). It might be the case then, that people who have difficulties in regulating their emotions find conspiracy theories appealing at least in under certain circumstances. At present however, the relationship between emotion regulation and belief in conspiracy theories remains unexplored. In three studies across the U.S., U.K., and Poland, we examined the associations between emotion dysregulation and belief in generic and specific (e.g., climate change) conspiracy theories, while accounting for important socio-demographic covariates (i.e., age, gender, and social and

economic political orientation).

#### 1.1. Belief in conspiracy theories

Conspiracy theories involve secret plots by malevolent groups whose hidden actions allegedly cause significant global events (Douglas et al., 2019). In line with this definition, research has shown that conspiracy beliefs are often adopted in the aftermath of impactful and usually threatening incidents and crises (van Prooijen & Douglas, 2017) such as the 9/11 attacks in the U.S. in 2001 (Bell, 2018), the Smolensk air disaster in 2010 (Cichocka et al., 2016), the U.S. 2020 presidential election (Cohen, 2021), Turkey's recent wildfires (Barkey, 2021), and the COVID-19 global pandemic (Douglas, 2021a; Górska et al., 2022; Kowalski et al., 2020; Sternisko et al., 2021). It therefore seems that threatening events and societal crisis situations have psychological effects on people, involving aversive states (e.g., uncertainty), negative emotions (e.g., anxiety), or stress, which further might lead to adopting conspiracy explanations (van Prooijen & Douglas, 2017), at least among some people (Marchlewska et al., 2022).

Indeed, an increasing body of literature has demonstrated that conspiracy beliefs are associated with different types of psychological threats (for a review, see Douglas et al., 2017; van Prooijen, 2020). For example, Grzesiak-Feldman (2013) found that state and trait anxiety

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positively correlated with conspiracy beliefs (blaming Jews, Arabs, and Germans for their alleged wrongdoings) and that experimentally-induced anxiety (i.e., waiting outside an exam hall vs. a neutral control condition) increased people's tendency to seize on conspiracy explanations. Similarly, previous research has linked attachment anxiety (Green & Douglas, 2018), existential anxiety (Newheiser et al., 2011), generalized anxiety disorder symptoms (Leibovitz et al., 2021), and perceived stress (Swami et al., 2016) to conspiracy beliefs. In other words, it seems clear that conspiracy beliefs are linked to maladaptive psychological states and traits – especially those related to processing negative emotions or negative affect (Douglas et al., 2019).

Moreover, conspiracy beliefs seem to be activated among individuals who do not have psychological resources to deal with meaningful sudden events evoking these types of negative feelings. For example, Marchlewska et al. (2022) examined the relationships between belief in conspiracy theories and different forms of coping strategies. Results revealed that maladaptive strategies for coping with stress (e.g., avoidance coping) positively predicted belief in conspiracy theories as well as generic conspiracist ideation (Brotherton et al., 2013). Results also demonstrated that experimentally-primed avoidance coping increased endorsement of conspiracy theories. These findings suggest that maladaptive coping may lead not only to undesirable mental health consequences (e.g., depression, anxiety; Mahmoud et al., 2012; Thompson et al., 2010; Weiner & Carton, 2012) but also to adopting conspiracist notions and searching for “hidden enemies” to blame for their distressing situation. This is in line with past theorizing (Freckelton, 2020), suggesting that negative emotions can lead to undesirable community phenomena, including scapegoating and ignoring scientifically based information, to seize on conspiracy explanations. We therefore aimed to explore the link between conspiracy beliefs and difficulties in emotion regulation.

## 1.2. Emotion regulation

Emotion regulation can be defined as processes through which an individual influences one's emotions, including arousal, experience, and expression (Gross, 1998). The ability to regulate emotions is conducive to the effective performance of tasks and goals (Aldao et al., 2015) or maintaining mental health and well-being (Aldao et al., 2010). Research suggests that emotion regulation has neural and genetic underpinnings (Johnstone & Walter, 2014). Moreover, emotion regulation processes are present from infancy, and the “development of emotion regulation is one of the central goals of early socialization” (Thompson, 2014, p. 173).

Gratz and Roemer (2004) argued that emotion regulation involves several major components: awareness, acceptance and understanding of emotions, ability to use suitable emotion regulation strategies to “modulate emotional responses as desired in order to meet individual goals and situational demands” (Gratz & Roemer, 2004, pp. 42–43), and the ability to control one's impulses and behave according to individual's goals in the face of negative emotions. Deficiencies in one or all these areas result in difficulties in emotion regulation, or emotion dysregulation<sup>1</sup> (Gratz & Roemer, 2004).

Emotion dysregulation can have serious consequences for mental health and well-being, and as some scholars have suggested that “the core of mood and anxiety disorders is the dysregulation of negative affect” (Hofmann et al., 2012, p. 409). In line with this view, research has demonstrated that emotion regulation difficulties are linked to generalized anxiety disorder (Roemer et al., 2009; Salters-Pedneault et al., 2006), social and generalized anxiety symptoms among adolescents (Mathews et al., 2014), posttraumatic stress symptoms (Tull et al., 2007), and experiencing panic attacks (Tull & Roemer, 2007).

<sup>1</sup> Following Gratz and Roemer's (2004) research, we used the terms *difficulties in emotion regulation* and *emotion dysregulation* interchangeably throughout the paper.

Moreover, emotion dysregulation is associated with threat-related attention bias, which suggests that individuals with more emotion regulation difficulties “exhibit attentional dyscontrol in the presence of perceived threat” (Bardeen et al., 2017, p. 407). Furthermore, Klanecky Earl et al. (2020) found that emotion dysregulation mediates the relationship between this attention bias and the severity of posttraumatic stress symptoms. Therefore, a growing body of research suggests that emotion dysregulation is associated with processing anxiety and threat-related stimuli, both of which have—in part—been linked to conspiracy beliefs.

Moreover, a considerable amount of literature suggests that emotion regulation has an effect not only on individuals' well-being but also on group processes, intergroup relations, and political attitudes. For example, emotion dysregulation has been linked to prejudice and lower out-group acceptance (Steele et al., 2019; Westerlund et al., 2020, 2021), lower support for conflict-resolution policies and greater support for aggressive policies in an intergroup conflict situation (Halperin et al., 2013). It has also been linked to political intolerance and lower support for democratic values (Halperin et al., 2014). Similarly, endorsement of conspiracy theories is also related to negative intergroup relations phenomena (i.e., prejudice and out-group hostility; Golec de Zavala & Cichočka, 2012; Jolley et al., 2020; Marchlewska et al., 2019). In all, there are many reasons why emotion dysregulation may play an important part in the formation of conspiracy beliefs.

## 1.3. Conspiracy beliefs and emotion regulation

Very little research has focused on the role that emotions—particularly the (in)ability to regulate emotions—might play in the formation of conspiracy beliefs. Notwithstanding, ample indirect evidence suggests that conspiracy beliefs may be associated with emotions and particularly difficulties in emotion regulation. Indeed, van Prooijen and Douglas (2018; see also Douglas et al., 2020) proposed that conspiracy beliefs may have emotional underpinnings. This theorizing was based on research examining cognitive processes and conspiracy beliefs. For instance, much research has demonstrated that conspiracy beliefs are predicted by fast, automatic and intuitive thinking (e.g., Hart & Graether, 2018; Pytlik et al., 2020), and such thinking styles tend to be driven by emotions (i.e., *System 1*), rather than slower, more deliberate thinking styles (i.e., *System 2*; see Kahneman, 2011). In other research, reliance on emotions rather than reasoning was found to predict lower truth discernment about fake news (Martel et al., 2020). Further, research has shown that negative emotional states have the potential to bias information processing, leading people to focus their attention on the negative aspects of their environment and interpret ambiguous stimuli as a hostile or threatening (Eysenck et al., 1991; Gotlib & Krasnoperova, 1998; Smith et al., 2016). These studies show the importance that emotions have in determining the processing of threat-related information, particularly regarding conspiracy theories.

Other research has shown that emotion dysregulation is linked to negative emotional outcomes (e.g., Bradley et al., 2011; Donahue et al., 2014; Hofmann et al., 2012; Roemer et al., 2009; Salters-Pedneault et al., 2006). Further, conspiracy beliefs have also been shown to be associated with negative affect (i.e., feeling anxious, uncertain, doubtful; van Harreveld et al., 2014). These negative emotions are generally argued to be in place before the endorsement of conspiracy theories. Indeed, it is argued that these existential feelings are what attracts people to conspiracy theories in the first place, as a (misguided) means to satisfy the need to feel secure and in control (Douglas et al., 2017). But also, global crises such as the COVID-19 pandemic have been shown to greatly increase feelings of anxiety among people (Siddiqui et al., 2021), which incidentally has been shown to increase belief in COVID-19 conspiracy theories (Jutzi et al., 2020). Conversely, other research has shown that belief in COVID-19 conspiracy theories has the potential to increase feelings of anxiety (Dębski et al., 2022). This suggests a cyclical relationship between feelings of existential threat and conspiracy

theories (van Prooijen, 2020). Longitudinal research backs up this account, showing that conspiracy beliefs predicted increased feelings of anxiety, uncertainty (Liekiefett et al., 2021), and defensiveness (Górska et al., 2022) over time. Therefore, negative emotions not only have the potential draw people towards conspiracy explanations in the first place, but they can also be exacerbated by the subsequent endorsement of conspiracy theories too—we argue that emotion dysregulation may have a role to play in this.

In this research, we predict that difficulties in regulating emotions will be associated with increased conspiracy beliefs, over and above important socio-demographic variables.

#### 1.4. The current studies

In the current studies, we took a closer look at the role of emotion dysregulation in conspiracy beliefs. Considering that emotion dysregulation has been found to be consistently related to negative emotionality, which, in turn, leads to biased information processing linked to perceiving the world as hostile, we hypothesized that conspiracy explanations involving secret, malevolent actors might be adopted more willingly by those who have greater (vs. smaller) difficulties with emotion regulation. In this way, we aimed to shed further light on the possible underpinnings of conspiracy beliefs by empirically investigating a novel and potentially important reason why people often turn to conspiracy theories.

We tested this hypothesis in a series of three studies, each conducted in a different socio-political context. In this way, we hoped to increase the generalizability of our findings. We measured difficulties in emotion regulation as the predictor and different types of conspiracy beliefs as dependent variables in all of the studies. In Study 1—conducted among U.S. participants—we examined whether emotion dysregulation would positively predict belief in general notions of conspiracy; in Study 2, we examined this same prediction among U.K. participants. Finally, in Study 3—conducted among Polish participants—we examined whether emotion dysregulation positively predicts belief in a range of different specific conspiracy theories (anti-scientific, political, attractive to liberals vs. conservatives) concerning issues that were present in public debate (e.g., regarding Poland's 2020 Presidential Election or climate change). In all studies, we also measured demographic variables and in Studies 2 and 3 we additionally controlled for political ideology to check whether the association between emotion regulation difficulties and conspiracy beliefs stands over and above established predictors of conspiracy beliefs (e.g., political conservatism or extremism; see Cislak et al., 2021; Imhoff et al., 2022; van Prooijen et al., 2015). Data and code for all studies are posted at [https://osf.io/4wy7p/?view\\_only=dbb298d175624b7997099f26be4d361d](https://osf.io/4wy7p/?view_only=dbb298d175624b7997099f26be4d361d).

## 2. Study 1

In Study 1, we first explored the relationship between emotion dysregulation and belief in general notions of conspiracy among U.S. participants. We predicted that emotion dysregulation would be positively related to belief in conspiracy theories, over and above demographic covariates.

### 2.1. Method

#### 2.1.1. Participants and procedure

Four hundred and twenty-three participants were recruited from the crowdsourcing platform Prolific to complete an online questionnaire. We screened for U.S. participants only. Participants who did not meet this criterion ( $n = 11$ ) or did not complete the main variables of interest ( $n = 21$ ) were excluded from the study. The remaining participants ( $N = 391$ ; 232 men, 157 women, 2 did not report gender;  $M_{\text{age}} = 35.11$  years,  $SD_{\text{age}} = 10.47$ , range = 19–68) were included in the final analyses. Informed consent was obtained from all participants. They were asked to

complete measures of difficulties with emotion regulation and belief in general notions of conspiracy in a random order, and demographic measures (followed by debrief) appeared in the same order at the end of the questionnaire.<sup>2</sup> A sensitivity analysis using G\*Power 3.1 found that our study was sensitive to detect a small effect size of Cohen's  $f^2 = 0.02$  (linear multiple regression: fixed model,  $R^2$  increase, Type I error = 0.05, power = 0.08).

### 2.1.2. Measures

**2.1.2.1. Conspiracy beliefs.** We used the Generic Conspiracist Beliefs scale (GCB; Brotherton et al., 2013). The GCB is a well-established and widely used scale, validated in multiple studies (Brotherton et al., 2013). The scale showed high reliability,  $\alpha = 0.96$ . There were 15 statements that described general notions of conspiracy<sup>3</sup> (e.g., “The power held by heads of state is second to that of small unknown groups who really control world politics”, “The spread of certain viruses and/or disease is the result of deliberate, concealed efforts of some organisation”; 1 = *definitely not true*, 5 = *definitely true*).

**2.1.2.2. Difficulties in emotion regulation.** We used an adapted version of the 18-item Difficulties in Emotion Regulation Scale (DERS-18; Victor & Klonsky, 2016), based on the questionnaire by Gratz and Roemer (2004).<sup>4</sup> The DERS is a widely used scale, validated in both long (Gratz & Roemer, 2004) and short (Victor & Klonsky, 2016) versions. The measure demonstrated very good reliability,  $\alpha = 0.94$ . This scale lists different ways in which people can regulate their emotions (e.g., “When I'm upset, I become irritated with myself for feeling that way”, “When I'm upset, it takes me a long time to feel better”, “When I'm upset, I become embarrassed for feeling that way”, “I care about how I'm feeling”). Items are scored on a five-point scale, where higher scores indicate poorer emotion regulation (1 = *almost never*, 5 = *almost always*).

**2.1.2.3. Covariates.** We included age and gender as demographic covariates.

## 2.2. Results and discussion

We first examined if there were gender differences in conspiracy belief ( $M = 2.81$ ,  $SD = 1.06$ ) or emotion dysregulation ( $M = 41.48$ ,  $SD = 15.22$ ) between females and males but no such gender differences existed ( $t(387) = 0.982$ ,  $p = .327$ ;  $t(387) = 1.202$ ,  $p = .230$ , respectively). Bivariate correlations showed that emotion dysregulation was positively and significantly associated with belief in conspiracy theories ( $r = 0.41$ ,  $p < .001$ ), and that age was negatively and significantly associated with emotion dysregulation ( $r = -0.19$ ,  $p < .001$ ), but was not associated with conspiracy belief ( $r = -0.08$ ,  $p = .126$ ).

To test whether emotion dysregulation predicts conspiracy beliefs while taking into account demographic covariates, we loaded all variables into a multiple regression analysis. Conspiracy belief was entered as the dependent variable.<sup>5</sup> The overall regression model was significant,  $F(3, 385) = 26.683$ ,  $p < .001$ , and accounted for 17 % of variance

<sup>2</sup> The same procedure was followed for all studies.

<sup>3</sup> This scale has five subscales that measure different facets of general conspiracy beliefs. We only report the total score here. However, analyses with subfactors yielded similar results. Analyses with GCB subfactors for Studies 1 and 2 can be found in the Supplements.

<sup>4</sup> This scale consists of six subscales that measures different aspects of emotion dysregulation. We only report the total DERS-18 score, however, as we were only concerned with general levels of emotion dysregulation. Please refer to Supplements for analyses that include the six subfactors of emotion dysregulation.

<sup>5</sup> Unless otherwise stated, there were no multicollinearity problems in our regression models.

in belief in general notions of conspiracy. In line with our hypothesis, emotion dysregulation significantly positively predicted belief in notions of conspiracy ( $B = 0.03$ ,  $\beta = 0.41$ , 95 % CI [0.02, 0.04],  $p < .001$ ), over and above the covariates. Neither age nor gender predicted belief in conspiracy theories ( $B = -0.0002$ ,  $\beta = -0.002$ , 95 % CI [-0.01, 0.01],  $p = .971$ ;  $B = -0.05$ ,  $\beta = -0.02$ , 95 % CI [-0.25, 0.15],  $p = .606$ , respectively).

These results provided initial confirmation of our hypothesis, showing a significant relationship between emotion dysregulation and endorsement of conspiracy theories. In line with previous research (Marchlewska et al., 2022), it seems that adopting conspiracy explanations may serve as a response to psychological problems, not only in the domain of stress but also in emotion regulation.

### 3. Study 2

In Study 2, we aimed to replicate the findings of Study 1 in a different context. Specifically, we conducted the same investigation with a sample of U.K. participants to increase the reliability of our findings. We did so because although the Generic Conspiracist Beliefs scale is argued to be universal (Brotherton et al., 2013), it is not known if the same psychological processes involved in the formation of conspiracy beliefs apply across cultures. Moreover, to further examine the robustness of our findings, we included new covariates: social and economic political orientation. Previous research has shown that right-wing attitudes are associated with higher conspiracy beliefs (e.g., Abalakina-Paap et al., 1999; Bruder et al., 2013; Green & Douglas, 2018; Wood & Gray, 2019). Further, research suggests that it is the political extremes—whether on the ‘left’ or ‘right’—that are associated with conspiracy beliefs (e.g., Imhoff et al., 2022; Krouwel et al., 2017; van Prooijen et al., 2015). This could be explained by a heightened sensitivity towards threats that these people tend to exhibit (Duckitt & Sibley, 2009). By including measures of political orientation, we therefore aimed to investigate whether emotion dysregulation will predict conspiracy beliefs over and above social-demographic covariates.

#### 3.1. Method

##### 3.1.1. Participants

Four hundred and thirty-two participants were recruited from Proflific to complete an online questionnaire. We screened for U.K. participants only. Participants who did not meet this criterion ( $n = 3$ ) or did not complete the main variables of interest ( $n = 18$ ) were excluded from the study. The remaining participants ( $N = 411$ ; 307 women, 104 men;  $M_{\text{age}} = 35.67$  years,  $SD_{\text{age}} = 10.57$ , range = 18–71) were included in the final analyses. A sensitivity analysis using G\*Power 3.1 found that our study was sensitive to detect a small effect size of Cohen's  $f^2 = 0.02$  (linear multiple regression: fixed model,  $R^2$  increase, Type I error = 0.05, power = 0.08).

##### 3.1.2. Measures

**3.1.2.1. Conspiracy beliefs.** As in Study 1, we used the Generic Conspiracist Beliefs scale (Brotherton et al., 2013). The scale demonstrated high reliability,  $\alpha = 0.94$ .

**3.1.2.2. Difficulties with emotion regulation.** We used the DERS-18 scale (Victor & Klonsky, 2016). The measure was internally consistent,  $\alpha = 0.90$ .

**3.1.2.3. Covariates.** In addition to age and gender, participants were asked to report social and economic conservatism on two single item measures (1 = *extremely liberal*, 11 = *extremely conservative*, for social political orientation and 1 = *social market economy (welfare state)*, 11 = *free market economy*, for economic political orientation).

### 3.2. Results and discussion

We first examined if there were gender differences in conspiracy belief or emotion dysregulation between females and males but no such gender differences existed ( $t(409) = -1.19$ ,  $p = .234$ ;  $t(409) = -1.44$ ,  $p = .152$ , respectively). All means, standard deviations and zero-order correlations for the remaining variables can be found in Table 1.

To test whether emotion dysregulation predicts conspiracy belief while accounting for demographic covariates, we loaded all variables into a multiple regression analysis. Conspiracy belief was entered as the dependent variable (Table 2). The overall regression model was significant and accounted for 9 % of variance in belief in conspiracy theories. In line with our hypothesis, emotion dysregulation significantly and positively predicted belief in conspiracy theories, over and above the covariates. Of the covariates, social conservatism significantly positively, and economic conservatism significantly negatively, predicted belief in conspiracy theories.<sup>6</sup>

Overall, Study 2 revealed that the relationship between emotion dysregulation and conspiracy beliefs was present in a different cultural context (i.e., the U.K.), providing additional support for our hypothesis. Still, both Study 1 and Study 2 focused on general notions of conspiracy (Brotherton et al., 2013), without addressing specific conspiracy theories, relevant in a particular cultural context. Indeed, it might be the case that people experience stronger or different emotional reactions if they have actually experienced the specific events associated with some conspiracy theories. That is, it cannot be assumed that emotion dysregulation is associated with belief in specific conspiracy theories in the same way the previous studies have shown it to be associated with belief in general notions of conspiracy. Therefore, in Study 3 we aimed to conceptually replicate the results obtained in Study 1 and Study 2 with a different operationalization of conspiracy beliefs.

### 4. Study 3

In Study 3 we aimed to replicate the relationship between emotion dysregulation and belief in conspiracy theories, over and above demographic covariates. This time however, instead of measuring belief in general notions of conspiracy, we instead measured belief in different specific conspiracy theories and conducted Study 3 in Poland—a post-Communist country where conspiracy beliefs are quite common and, in some cases, even primed by political authorities (as it is the case for Smoleńsk conspiracy beliefs; Cichocka et al., 2016; Soral et al., 2018). Also, it seems that some of the conspiracy theories popular in Poland are related to real-life social consequences. For example, in the project of so-called “LGBT free zones,” the discriminatory charters introduced by some local governments in Poland were said to be a response to “gender ideology” (Janiszewski, 2021). The claims that so-called “gender ideology” is a hidden way to destroy traditional values and family are captured by gender conspiracy beliefs (Marchlewska et al., 2019), also measured in this study. Thus, Poland seems to be a fertile ground for various conspiracy theories; therefore, it is worth scrutinizing our findings in this context.

We included four different specific conspiracy beliefs. We focused on anti-scientific conspiracy theories related to vaccination (Jolley & Douglas, 2014b), climate change (Jolley & Douglas, 2014a), and gender (Marchlewska et al., 2019) as well as political conspiracy theories associated with the 2020 Polish presidential election. Each of these conspiracy theories touch on different social and political issues and thus might show different appeal to people with different political views. For instance, gender conspiracy theories might be more appealing to conservatives (as they assume that a “gender ideology” is aimed at destroying traditional Christian values, according to this

<sup>6</sup> See Supplements for regression analyses with quadratic terms of social and economic conservatism included.

**Table 1**  
Means, standard deviations, and zero-order correlations (Study 2).

Measure	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Conspiracy beliefs	2.77	0.88	–	0.18***	–0.11*	0.08	–0.09
2. DERS	43.05	12.17		–	–0.18***	–0.07	–0.12*
3. Age	35.67	10.57			–	0.14**	0.16**
4. Social conservatism	4.61	2.34				–	0.74***
5. Economic conservatism	4.99	2.31					–

Note. DERS = difficulties in emotion regulation.

\*  $p < .05$ .  
\*\*  $p < .01$ .  
\*\*\*  $p < .001$ .

**Table 2**  
Predictors of belief in notions of conspiracy (Study 2).

Variable	Belief in notions of conspiracy			
	<i>B</i>	95 % CI	$\beta$	<i>p</i>
DERS	0.01	[0.01, 0.02]	0.15	0.003
Age	–0.01	[–0.02, 0.001]	–0.08	0.098
Gender (male = 0, female = 1)	0.04	[–0.15, 0.24]	–0.02	0.648
Social conservatism	0.11	[0.06, 0.17]	0.30	<0.001
Economic conservatism	–0.11	[–0.16, –0.06]	–0.28	<0.001
<i>R</i> <sup>2</sup>		0.09		
<i>F</i>		$F(5, 405) = 7.483$		***

Note. DERS = difficulties in emotion regulation.

\*\*\*  $p < .001$ .

theory; Marchlewska et al., 2019), while Polish presidential election conspiracy theories should be more appealing to liberals, as in this case they accuse the conservative candidate who won the election of fraud (Dettmer, 2020; Easton, 2020). Thus, we would expect that social and economic political orientations would show opposing relationships with our specific anti-science and political conspiracies, while at the same time emotion dysregulation should only show a positive relationship with all types of conspiracy theories.

4.1. Method

4.1.1. Participants

Study 3 was conducted among young Poles via an online research panel.<sup>7</sup> The final sample consisted of 558 participants, 49 % women and 51 % men, aged between 18 and 26 ( $M_{age} = 23.30, SD_{age} = 2.12$ ). A sensitivity analysis using G\*Power 3.1 found that our study was sensitive to detect a small effect size of Cohen's  $f^2 = 0.01$  (linear multiple regression: fixed model,  $R^2$  increase, Type I error = 0.05, power = 0.08).

4.1.2. Measures

4.1.2.1. *Belief in specific conspiracy theories.* We included four different conspiracy beliefs. All specific conspiracy beliefs were measured on a scale from 1 = *definitely disagree* to 5 = *definitely agree*.

4.1.2.2. *Gender conspiracy beliefs.* Measured with three items (Marchlewska et al., 2019) regarding beliefs about “gender [ideology]” (e.g., “Gender [ideology] was created in order to destroy the Christian tradition”, “Gender [ideology] tends to take control over public media”). The scale demonstrated good reliability,  $\alpha = 0.93$ .

4.1.2.3. *Vaccination conspiracy beliefs.* Measured using five items

<sup>7</sup> Beside the variables reported here, this study also involved measures of political participation and a set of individual differences variables included for the purposes of different projects employing the same predictors (please contact the first author for details). This dataset was also used by Lowicki et al. (2022).

adapted from Jolley and Douglas (2014b; see also Cislak et al., 2021, Study 3; e.g., “Tiny devices are placed in vaccines to track people”, “Pharmaceutical companies, scientists and academics work together to cover up the dangers of vaccines”). The measure showed high reliability,  $\alpha = 0.93$ .

4.1.2.4. *Climate change conspiracy beliefs.* Measured using three items adapted from Jolley and Douglas (2014a; e.g., “Climate change is a hoax”, “Scientists are creating panic about climate change because it is in their interests to do so”). The scale demonstrated good reliability,  $\alpha = 0.90$ .

4.1.2.5. *Polish presidential election conspiracy beliefs.* Measured with four items regarding beliefs about electoral fraud and conspiracy regarding the recent Polish presidential election in 2020 (e.g., “The results of the 2020 presidential election were falsified”, “The real results of the 2020 presidential election have not been made public”). The scale showed high reliability,  $\alpha = 0.94$ .

4.1.2.6. *Difficulties in emotion regulation.* As in Study 2, we used the DERS-18 (Victor & Klonsky, 2016). The measure was internally consistent,  $\alpha = 0.90$ .

4.1.2.7. *Covariates.* In addition to age and gender, participants were asked to report their social and economic political orientations on two single item measures (1 = *extremely liberal*, 7 = *extremely conservative*, for social political orientation and 1 = *social market economy (welfare state)*, 7 = *free market economy*, for economic political orientation).

4.2. Results and discussion

We first examined if there were gender differences in conspiracy belief or emotion dysregulation between females and males. No such gender differences were observed for emotion dysregulation ( $t(556) = -0.10, p = .919$ ) or belief in the election conspiracy theory ( $t(556) = -0.68, p = .496$ ). For belief in gender, vaccine, and climate change conspiracy theories ( $t(556) = 3.29, p < .001, t(556) = 2.09, p = .037, t(556) = 2.70, p = .007$ , respectively), males ( $M = 2.71, M = 2.35, M = 2.39$ , respectively) reported significantly higher conspiracy beliefs than females ( $M = 2.39, M = 2.16, M = 2.16$ , respectively). Means, standard deviations and zero-order correlations for belief in conspiracy theories, age, and social and economic political orientation can be found in Table 3.

To test whether emotion dysregulation uniquely predicts belief in four different conspiracy theories (regarding gender, vaccines, climate change, and a recent presential election), we loaded emotion dysregulation and covariates into four separate multiple regression analyses, where each conspiracy theory was entered as a separate dependent variable. Findings of the final models are presented in Table 4. The overall regression models for gender, vaccine, climate change, and election conspiracy beliefs were significant. In line with our hypothesis, emotion dysregulation significantly positively predicted belief in all four

**Table 3**  
Means, standard deviations, and zero-order correlations (Study 3).

Measure	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Gender CB	2.55	1.14	–	0.61***	0.59***	–0.17***	0.14***	0.00	0.64***	–0.03
2. Vaccine CB	2.26	1.04		–	0.65***	0.03	0.24***	–0.03	0.41***	–0.07
3. Climate change CB	2.28	1.04			–	0.01	0.25***	0.08	0.41***	–0.08
4. Election CB	3.04	1.14				–	0.18***	–0.04	–0.28***	0.21***
5. DERS	50.05	11.88					–	–0.05	0.05	–0.02
6. Age	23.30	2.12						–	0.08	0.06
7. Social conservatism	3.69	1.56							–	0.08
8. Economic conservatism	4.35	1.48								–

Note. DERS = difficulties in emotion regulation.

\*\*\*  $p < .001$ .

conspiracy theories. Of the covariates, social political orientation significantly positively predicted belief in gender, vaccine, and climate change conspiracy belief, but significantly negatively predicted election conspiracy belief. Economic political orientation significantly positively predicted election conspiracy belief and negatively predicted climate change, vaccine, and gender conspiracy beliefs.

In Study 3, we replicated and extended the results of the previous studies. Results revealed that emotion dysregulation was positively linked to the endorsement of various specific conspiracy beliefs. Similar to Study 2 and in line with past research (e.g., Imhoff et al., 2022; Krouwel et al., 2017; van Prooijen et al., 2015), political ideologies were important predictors of conspiracy beliefs, but emotion dysregulation remained significant even after controlling for these political covariates. Further, emotion dysregulation was positively associated with belief in all types of conspiracy theories, whereas they appeal to people at different ends (positively and negatively) of social and economic conservatism. That is, while social conservatism was positively associated with belief gender, vaccine, and climate change conspiracy theories, it correlated negatively with the presidential election conspiracy theory. These results suggest that individuals having difficulties with emotion regulation seem to be more prone to endorsing conspiracy explanations regardless of their political beliefs. Overall, Study 3 demonstrated that problems in the domain of emotion regulation are related to not only to general notions of conspiracy but also to a range of specific conspiracy beliefs (i.e., anti-scientific, political, attractive to liberals vs. conservatives).

## 5. General discussion

The current research aimed to examine the link between emotion dysregulation and conspiracy beliefs. Across three cross-sectional studies, we hypothesized and found that emotion dysregulation was significantly positively related to belief in conspiracy theories. Study 1, conducted among U.S. participants, was the first to show the link between emotion dysregulation and general notions of conspiracy, delivering initial support for our hypothesis. In Study 2, conducted among U. K. participants, we additionally controlled for social and economic political orientations and showed that the effect of emotion dysregulation remained significant even after adjusting for these covariates. By introducing various specific conspiracy beliefs (anti-scientific, political, attractive to liberals vs. conservatives) in Study 3, conducted in Poland, we demonstrated that emotion dysregulation was positively linked to diverse conspiracy beliefs, regardless of the specifics of the theory and participants' political orientation.

Importantly, we measured social and economic aspects of conservatism and found opposing relations between them and conspiracy beliefs. Anti-scientific (i.e., gender, vaccine, climate change) conspiracy beliefs were positively related to social conservatism and negatively (although weakly) to economic conservatism. The presidential election conspiracy theory, however, was negatively associated with social conservatism and positively (and more robustly than in the case of anti-scientific conspiracy beliefs) with economic conservatism. It is worth

noting that there are some context- and cultural-specific characteristics of political orientation (Thorisdottir et al., 2007), and Polish conservatism (especially social vs. economic) might be somewhat different than British or American conservatism (Wojcik et al., 2021). Moreover, social and economic aspects of conservatism in Poland are weakly or insignificantly correlated (e.g., Aspelund et al., 2013; Boski, 1993), which can also be observed in Study 3 results. Taken together, the current studies demonstrated a robust link between emotion dysregulation and belief in conspiracy theories in a variety of different political contexts.

### 5.1. Theoretical implications

Our findings support and extend previous theorizing about the role of psychological threat in the endorsement of conspiracy theories. Scholars have argued that conspiracy explanations might be adopted as an attempt to satisfy threatened psychological needs (Biddlestone et al., 2021; Douglas et al., 2017, 2019). In line with this, the results of our studies suggested that individuals who have difficulties in emotion regulation and, therefore, have more problems processing emotional or threat-related stimuli, find conspiracy theories more appealing.

Considering that conspiracy beliefs are often adopted after some significant world events which evoke negative emotions (van Prooijen & Douglas, 2017), our results suggested that individuals with emotion dysregulation issues might be unable to process emotional stimuli efficiently while facing disturbing incidents and existential threats and thus, endorse conspiracy theories more willingly. As previous studies have linked emotion dysregulation with negative emotional outcomes (e.g., Hofmann et al., 2012), that seem to incline people to perceive the world in a gloomy and hostile manner (Eysenck et al., 1991; Gotlib & Krasnoperova, 1998; Smith et al., 2016), we inferred that people who have difficulties with regulating emotions—in part—might also be more prone to focus mainly on malevolent cues and interpretations when explaining unexpected threatening world events. Therefore, searching for hidden enemies to blame for alleged wrongdoings might be more appealing for people with high (vs. low) emotion dysregulation.

Our findings were also in line with some recent empirical research in the domain of stress regulation and conspiracy beliefs. Jutzi et al. (2020) argued that adopting conspiracy explanations about COVID-19 might be seen as a response to a threat which a global pandemic certainly is, and thus, could be used as an attempt to cope with a threat and emotions related to it. Further research by Marchlewska et al. (2022) showed that maladaptive coping with stress (i.e., avoidance coping) positively predicted belief in conspiracy theories. Our research complements these findings, showing that adopting conspiracy theories might serve as a maladaptive response to manage negative emotions among individuals who have difficulties in regulating their emotions. In this way, individuals with emotion dysregulation might focus on searching for hidden enemies responsible for their unfavourable situation and psychological distress instead of properly processing negative emotions in an adaptive manner.

In line with past theorizing, our studies suggested that adopting conspiracy theories may constitute a maladaptive way of managing



(Imhoff & Lamberty, 2017). Thus, future studies could account for this variable while investigating conspiracy beliefs and emotion dysregulation to examine the possible links between all of these variables more thoroughly.

The relationship between emotion dysregulation and conspiracy beliefs could be further explored by examining potential moderators and mediators. For example, future research could check whether inducing negative (vs. positive) emotions could lead to higher scores on conspiracy beliefs especially among those having difficulties in emotion regulation. This research would be helpful to examine a psychological mechanism of the link between emotion dysregulation and conspiracy beliefs empirically. Moreover, previous research has revealed that emotion dysregulation leads to negative individual outcomes (e.g., decreased psychological well-being; Saxena et al., 2011). In this research we demonstrate that it may be also related to maladaptive socio-political concomitants (i.e., conspiracy beliefs). Given that conspiracy beliefs have served as a predictor of intergroup hostility and out-group derogation in past research (e.g., Jolley et al., 2020; Marchlewska et al., 2019), a potential avenue for future research would be to examine if conspiracy beliefs mediate the relationship between maladaptive emotion regulation and out-group derogation. Also, future studies should examine whether emotion dysregulation might play a significant role in specific contexts where conspiracy beliefs have been consequential, such as for the COVID-19 pandemic (Douglas, 2021a; Kowalski et al., 2020; Lowicki et al., 2022; Sternisko et al., 2021). This potential study appears to be even more important in the light of recent research (Wang et al., 2021), indicating that an adaptive emotion regulation strategy (i.e., reappraisal) reduced negative emotions regarding the COVID-19 pandemic.

Finally, although little research has been carried out on the relationship between quality of interpersonal relationships and conspiracy beliefs (Biddlestone et al., 2021), or vice versa, it may be important to examine these variables alongside individuals' emotion dysregulation. Indeed, research has shown that feeling socially excluded is associated with increased conspiracy beliefs (Graeupner & Coman, 2017). Therefore, it might be the case that having supportive interpersonal relationships may mitigate the effect that emotion dysregulation has on the formation of conspiracy beliefs. Conversely, having difficulties with regulating emotions alongside feelings of social exclusion, or poorer interpersonal relationships, may make it even more likely for someone to be drawn to conspiracy theories. That is, quality of interpersonal relationships may moderate the negative effects of emotion dysregulation on conspiracy beliefs.

### 5.3. Practical implications

As we outlined before, conspiracy beliefs have many negative consequences (for a review, see Douglas, 2021b). Thus, it appears important to search for interventions that could diminish the appeal of conspiracy beliefs and restrain their destructive effects. Our studies demonstrated that one of the possible mechanisms underlying conspiracy beliefs is emotion dysregulation. Individuals who score high (vs. low) on difficulties with emotion regulation may exhibit more problems with processing emotional and threat-related stimuli, which in turn may lead to adopting conspiracy explanations to manage psychological threats and distress. Thus, one possible way of attenuating conspiracy beliefs could be to improve emotion regulation skills for using more adaptive ways of dealing with threats. Several possible interventions have been tested in past research. For example, recent findings showed that enhancing emotion regulation skills through Affect Regulation Training decreased the severity of depression symptoms (Berking et al., 2019). Moreover, the Integrative Training of Emotional Competencies improved the emotion regulation skills of police officers (Berking et al., 2010), suggesting that emotion regulation-based interventions can be successful among individuals routinely exposed to situations that elicit negative emotions. Therefore, future studies should consider emotion regulation

training as a potential intervention to decrease the appeal of conspiracy theories.

### 5.4. Conclusion

The current findings demonstrate that individuals having greater emotion dysregulation appear to adopt conspiracy theories more willingly. This is in line with past theorizing suggesting that endorsement of conspiracy theories can be considered as a maladaptive way of coping with psychological distress (Douglas et al., 2017; Marchlewska et al., 2022). Indeed, conspiracy beliefs might be more appealing for those who do not have sufficient abilities to deal with psychological threat and distress: if they are not able to process negative emotions in an adaptive manner while facing disturbing events, then blaming powerful, malevolent others may constitute an attractive alternative of managing emotional experiences, expressions, and responses. A future challenge for researchers will be to examine whether improving emotion regulation skills results in a decrease in conspiracy beliefs.

### Ethical approval

Informed consent was obtained from all participants involved in the studies. Both studies were conducted in accordance with the Declaration of Helsinki and approved by the Research Ethics Committee of the Institute of Psychology, Polish Academy of Sciences (number of approval: 18/XI/2019).

### CRedit authorship contribution statement

**Zuzanna Molenda:** Conceptualization, Methodology, Validation, Formal analysis, Investigation, Data curation, Writing – original draft. **Ricky Green:** Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing – original draft. **Marta Marchlewska:** Conceptualization, Investigation, Writing – review & editing, Supervision, Funding acquisition. **Aleksandra Cichočka:** Writing – review & editing. **Karen M. Douglas:** Writing – review & editing.

### Declaration of competing interest

None.

### Data availability

Data and code for all studies are posted at [https://osf.io/4wy7p/?view\\_only=dbb298d175624b7997099f26be4d361d](https://osf.io/4wy7p/?view_only=dbb298d175624b7997099f26be4d361d)

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## Publication 4

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## ARTICLE

# Shake it off! Adaptive coping with stress reduces national narcissism

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## Abstract

Examining the role of coping with stress strategies in shaping national narcissism, we proposed that this type of defensive national commitment (stemming from psychological shortcomings) should be lowered by adaptive coping strategies. In Study 1 (longitudinal,  $N = 603$ ), we found that higher adaptive (i.e. self-sufficient) coping attenuated national narcissism. In Study 2 (experimental,  $N = 337$ ), the priming of adaptive coping significantly decreased national narcissism. We also demonstrated the indirect effects of the induced adaptive coping strategy on conspiracy beliefs via national narcissism. These findings suggest that using adaptive coping strategies (either dispositional or situationally induced) may attenuate national narcissism. We discuss the role of coping with stress in shaping group-level phenomena.

## KEYWORDS

collective narcissism, conspiracy beliefs, coping with stress, national identification

I like to keep my issues drawn

It's always darkest before the dawn

Shake it out, shake it out (...)

And it's hard to dance with a devil on your back

So shake him off!

(Florence and the Machine, 2011, stanzas 6–7)

Attempting to unravel the interwoven threads of social identity, scholars have turned their attention towards the significance of group attachment for both individual and group-level processes (Cichočka & Cislak, 2020; Golec de Zavalá, 2019; Marchlewska, Górská, et al., 2022). Interestingly, past results

demonstrated that individuals may commit to the group they identify with in ways that differ in terms of this relationship's roots, as well as its social consequences (e.g. Cichocka, 2016). One type of group identity—collective narcissism—involves the conviction that the group's greatness is not sufficiently recognized by others, although it actually requires the external validation of its presumed worth (Golec de Zavala et al., 2009). Extant literature provides ample evidence of collective narcissism's different psychological concomitants and outcomes, most of them unfavourable both for out-groups, as well as the in-group one may narcissistically identify with—the nation, religion, gender or political ideology (e.g. Bocian et al., 2021; Dyduch-Hazar et al., 2019; Golec de Zavala & Bierwaczzonek, 2021; Molenda et al., 2023; Sternisko et al., 2023; Van Bavel et al., 2020).

Nevertheless, little is known about the specific antecedents of this phenomenon. Thus, the present research concentrates on the possible psychological underpinnings of narcissistic national identity, specifically, on the role of coping with stress strategies in this process. Based on previous theorizing and research, which argued that a weak and threatened ego should be linked to a defensive and hostile, rather than a secure and constructive identity (e.g. Cichocka, 2016; Fromm, 1973; Marchlewska, Górska, et al., 2022), we assumed that individual inability to adaptively cope with life stressors should translate into searching for a strong collective to compensate for individual shortcomings. In contrast, higher ability to cope with stressors in an adaptive way should be linked to lower levels of defensive in-group identity. We operationalize defensive national identity as national narcissism (Cichocka, 2016; Cichocka & Cislak, 2020; Marchlewska, Cichocka, et al., 2022) and argue that inadequate coping might constitute a frustration of needs that later could be compensated by identifying with an in-group in a narcissistic way.

## National narcissism: antecedents and outcomes

National narcissism is defined as a grandiose image of one's own national group, an unrealistic belief about its greatness, accompanied by a simultaneous conviction that it is not sufficiently recognized and appreciated by others (Cichocka, 2016; Cichocka & Cislak, 2020; Golec de Zavala et al., 2009; Marchlewska et al., 2020). The idea of collective narcissism derives from Fromm (1973) and Adorno's (1963/1998) classical theorizing on social identity, who posited that collective narcissism had its roots in a threatened ego and that it might, therefore, serve a compensatory function as 'an element giving satisfaction to the members of the group and particularly to those who have few other reasons to feel proud and worthwhile' (Fromm, 1973, p. 275). Indeed, previous research demonstrated several possible antecedents of national narcissism. For example, Cichocka et al. (2018) found that low personal control increased national narcissism, while Golec de Zavala et al. (2020) showed that low self-esteem predicted higher national narcissism. Moreover, Marchlewska, Górska, et al. (2022) demonstrated that attachment anxiety was consistently related to higher national narcissism.

However, results of these studies, all of which incorporated longitudinal study designs, showed that national narcissism did not predict the satisfaction of these needs (i.e. greater personal control, higher self-esteem or lower anxious attachment). These findings suggested that although national narcissism might serve a compensatory function, it seemed unsuccessful in satisfying the individual's frustrated motives (Cichocka, 2016). On the contrary, some evidence suggested that being narcissistically attached to one's nation might, in fact, contribute to an even greater frustration—as national narcissism also strengthened attachment anxiety (Marchlewska, Górska, et al., 2022). Overall, these studies suggested that individual-level shortcomings could easily translate into collective defensiveness in the form of national narcissism, which is focused on entitlement and concern about the external recognition of the in-group in the eyes of others (Golec de Zavala et al., 2013).

Due to its defensive character, national narcissism leads to maladaptive psychological consequences both at the inter- and intra-group levels (Cichocka et al., 2016; Górska et al., 2022; Gronfeldt et al., 2022; Marchlewska et al., 2020; Molenda et al., 2023; Szczepańska et al., 2022; for a review see Cichocka & Cislak, 2020). People scoring higher on collective narcissism are preoccupied

with their in-group's image and are highly sensitive to any signs of threat to it (Cichočka, 2016). Moreover, they are obsessed with defending their group from real or imagined enemies and often perceive even ambiguous intergroup situations as threatening (Golec de Zavala et al., 2009). For these reasons, collective narcissism is also related to conspiracy theories endorsement (i.e. belief in hidden malevolent plots by powerful groups; Douglas et al., 2019; see also Cichočka et al., 2016; Cislak et al., 2021; Górska et al., 2022; Marchlewska et al., 2019; Marchlewska, Hamer, et al., 2022; Sternisko et al., 2023). Holding firm convictions that other groups are conspiring against one's own in-group constitutes an explanation for any in-group's misfortunes and its insufficient recognition or weaker position (Cichočka, 2016). Thus, conspiracy theories endorsement allows to blame powerful enemies, establishing a way to deal with adversities that might threaten the in-group's image (Cichočka, 2016; Cichočka et al., 2016). Similarly, national narcissism is also related to intergroup negativity and out-group derogation (Golec de Zavala et al., 2020; Golec de Zavala & Cichočka, 2012).

Importantly, national narcissism also does not offer beneficial outcomes for the in-group itself: it has been linked to higher conspiracy intentions against the in-group (Biddlestone et al., 2022; Molenda et al., 2023) or in-group disloyalty (Marchlewska et al., 2020), suggesting that national narcissism is related rather to searching for individual than group-level benefits (Marchlewska et al., 2020). This should not be surprising, as it is rooted in unsatisfied psychological needs and individual insecurity (Cichočka, 2016). In line with this, we argue that national narcissism would be also related to coping with stress: lower adaptive and higher maladaptive coping strategies.

## Coping with stress

Stress can be understood as an 'unfavorable person-environment relationship' (Lazarus, 1993, p. 8). Consequently, coping with stress is the process of executing a response to a stressor—a person's efforts to manage specific demands (Lazarus, 1993). Coping with stress seems vital to humans' functioning: it is present from the beginning of human development and evolves or changes during the lifespan (e.g. Aldwin, 2011; Skinner & Zimmer-Gembeck, 2007). For example, (in)adequate coping with stress is consequential for mental health and well-being (e.g. Clarke, 2006; Sagone & Caroli, 2014). In a similar vein, some developmental perspectives described coping as a 'fundamental human adaptive process' (Zimmer-Gembeck & Skinner, 2016, p. 486).

A vast amount of literature is focused on investigating the links between different coping strategies and their possible consequences, to identify adaptive and maladaptive coping responses (Skinner & Zimmer-Gembeck, 2007). Coping is adaptive when it helps to attenuate stress, make progress in attaining one's goals and improve everyday functioning, while maladaptive coping leads to maintaining or increasing levels of distress (Nielsen & Knardahl, 2014; Zeidner & Saklofske, 1996). Clusters of maladaptive and adaptive coping responses can also be distinguished in commonly used coping strategy inventories (Carver et al., 1989).

Past research also proposed which groups of coping strategies might be considered adaptive and maladaptive. Namely, a common categorization of coping strategies distinguished between approach and avoidance responses. Approach coping can be defined as behavioural and/or cognitive efforts directed towards managing the stressor (Litman, 2006; Zimmer-Gembeck & Skinner, 2016). Among approach responses, two coping styles can be identified: (a) problem-focused (or self-sufficient; Litman, 2006; Marchlewska, Green, et al., 2022) coping, including, for example, planning, active coping, suppression of competing activities, and (b) social support coping, including emotional and instrumental social support, as well as venting of emotions (e.g. Stowell et al., 2001). Avoidance coping encompasses those responses that involve withdrawing from the stressor or ignoring it and thus serve as a way to avoid stressful circumstances or stimuli (Litman, 2006; Zimmer-Gembeck & Skinner, 2016). Avoidance coping includes such strategies as, for example, denial, substance use or mental and behavioural disengagement (e.g. Carver et al., 1989; Litman, 2006).

Much of the previous research demonstrated that approach—especially problem-focused (self-sufficient)—coping strategies might be considered adaptive, as they are associated with positive adjustment and greater mental health (Zimmer-Gembeck & Skinner, 2016). On the contrary, avoidance coping strategy is rather maladaptive, since it has been linked to heightened adverse outcomes, related to psychological functioning and mental health (Zimmer-Gembeck & Skinner, 2016). For example, Clarke's (2006) meta-analysis found that active coping (including approach and problem-focused strategies) was positively related to better psychosocial functioning, along with social competence and academic performance. Avoidance coping, however, was previously linked to decreased well-being (Sagone & Caroli, 2014), posttraumatic stress symptoms (Hruska et al., 2011) or depressive symptoms (Seiffge-Krenke & Klessinger, 2000).

Moreover, Carver et al. (1989) distinguished another coping strategy that seems to match neither approach nor avoidance strategies: religious coping—'the tendency to turn to religion in times of stress' (p. 270). This type of coping appears quite unique and might constitute a distinctive dimension of coping responses (Pargament, 2011). In fact, religious coping could be used for various reasons (Carver et al., 1989), causing difficulties in determining if it was used in an approach (e.g. asking God to help us actively deal with our problems) or avoidance (e.g. hoping that God would solve the problem for us) way (Stowell et al., 2001). Thus, some researchers either leave religious coping as a separate factor or exclude it from the analyses (e.g. Marchlewska, Green, et al., 2022; Stowell et al., 2001). Interestingly, the role of religious coping seems quite complex: religion in coping can be both harmful and helpful (Pargament, 2011)—for example, some forms of religious coping were associated with decreased well-being as well as anxiety and depression symptoms (Ano & Vasconcelles, 2005; Winter et al., 2009).

All in all, multiple studies demonstrated that coping with stress is crucial for humans' overall well-being. Notably, approach and avoidance coping responses seem to have, respectively, advantageous and adverse consequences for psychosocial functioning. However, less is known about group-level variables associated with different coping styles.

## National narcissism and coping with stress

In this research, we argue that insufficient coping with stress—relying more on maladaptive (avoidance) and less on adaptive (self-sufficient) strategies—is related to higher national narcissism. In turn, those who rely more on adaptive coping strategies should score lower on national narcissism. While no studies directly investigated this link, there is ample indirect evidence suggesting that the way individuals cope with stress might be related to national narcissism.

Most of all, classical psychological theorizing (Fromm, 1973) and recent research (Cichočka, 2016; Cichočka et al., 2018; Golec de Zavala et al., 2020; Marchlewska, Górska, et al., 2022) demonstrated that national narcissism derived from the individual's deficiencies. In line with this, individual's shortcomings in the important areas of functioning can result in narcissistic identification with one's nation. We argue that one of these individuals' deficiencies leading to national narcissism could be inadequate coping with stress. Coping with stress is considered a basic, fundamental process present from early childhood (Aldwin, 2011; Compas, 1987; Zimmer-Gembeck & Skinner, 2016) and important for psychological adjustment (Compas et al., 2001). While adaptive (self-sufficient) coping was usually related to positive psychological outcomes (e.g. social competence; Compas et al., 2001; Clarke, 2006), maladaptive (avoidance) coping was linked to poorer psychological functioning (e.g. depressive symptoms, lower well-being; Sagone & Caroli, 2014; Seiffge-Krenke & Klessinger, 2000).

Furthermore, recent research showed that maladaptive coping with stress predicted increased conspiracy beliefs (Marchlewska, Green, et al., 2022), whereas national narcissism also positively predicted conspiracy theories endorsement in numerous studies (Cichočka et al., 2016; Cislak et al., 2021; Górska et al., 2022; Marchlewska, Górska, et al., 2022; Marchlewska, Hamer, et al., 2022). Marchlewska, Green, et al. (2022) argued that conspiracy theories endorsement might constitute a maladaptive way of managing psychological distress (see also Douglas et al., 2017), in the way that those tending to use avoidance

strategies might be more prone to believe in conspiracy theories, as they offer a way to avoid the stressor instead of actively face it. Moreover, past research showed that conspiracy beliefs were fueled by defensiveness (Douglas et al., 2017) and that defensive (i.e. narcissistic) identity was a robust predictor of conspiracy theories endorsement, as they offered an easy explanation for the alleged adversities of an in-group, supporting the maintenance of a positive in-group image (e.g. Cislak et al., 2021). In this work, we argue that these fundamental processes of coping with stress could also be linked to national narcissism.

In fact, some research did link coping-related phenomena with group-level processes. For instance, Haslam et al. (2018) claimed that ‘stress should be seen as one aspect of an array of interwoven social and psychological processes that shape the conditions of group life and the sense of identity and community that this provides’ (p. 102). In line with this logic, coping with stress should be also related to the way people identify with their in-groups. In their vital work, Haslam et al. (2005) posited that social identity constitutes a basis for effective social support, which, in turn, protects individuals from the negative effects of stressors. Their research, however, was not focused on a defensive (i.e. narcissistic) type of in-group identification per se.

National narcissism was linked to negative emotionality in research conducted by Golec de Zavala (2019), suggesting that ‘social identifications may not offer psychological resources for well-being when individuals hold a collective narcissist belief about their in-group’ (p. 13). What is essential, Golec de Zavala (2019) also suggested that ‘collective narcissism may be underlined by dispositional deficits in (...) the ability to constructively self-soothe in face of adversity’ (p. 12). This is the exact notion we followed in our research, investigating it empirically in the area of coping with stress and hypothesizing that the use of inadequate coping—lower self-sufficient and higher avoidance strategies—should underlie national narcissism.

## Overview of the current studies

We tested our hypotheses in two studies and assumed that more frequent use of adaptive (i.e. self-sufficient) coping strategies (H1) and less frequent use of maladaptive (i.e. avoidance) coping strategies (H2) would be linked to lower national narcissism. Importantly, in our research, we also measured conventional national identification (Cameron, 2004) to control for the effects of secure national identity—a type of in-group identification manifested as an unpretentious investment in the in-group, independent of the recognition and validation of the group in the eyes of others (Golec de Zavala et al., 2013). We followed a previously used methodological approach (e.g. Cichocka et al., 2018; Marchlewska, Cichocka, et al., 2022; see also Paulhus et al., 2004), where researchers co-varied out the variance shared between national narcissism and conventional national identification to observe the unique effects of narcissistic versus secure national identity. Thus, the distinctive effects of defensive (narcissistic) national identity are observed after co-varying out the overlap with the measure of conventional national identification, while the distinctive effects of secure (i.e. non-narcissistic) national identity can be examined after co-varying out the overlap with collective narcissism (Marchlewska, Cichocka, et al., 2022).

In this research, we also aimed to better understand *how* lowering national narcissism (driven by the inability to effectively cope with stressors) may be further linked to attenuating socially undesirable phenomena (i.e. conspiracy beliefs). Thus, in Study 2 we incorporated conspiracy beliefs, previously linked to both maladaptive coping (Marchlewska, Green, et al., 2022), as well as to national narcissism (e.g. Cichocka et al., 2016; Marchlewska, Górska, et al., 2022). We examined our hypotheses in two studies: one two-wave survey (Study 1), in which we concentrated on the reciprocal paths between coping with stress and national narcissism, and one experimental study (Study 2), in which we manipulated coping strategies to examine their effects on national narcissism and conspiracy beliefs. Our studies were not preregistered. Data for both studies are available at the Open Science Framework: [https://osf.io/a5egj/?view\\_only=cc546485ad05431d9016123a8aaafba9](https://osf.io/a5egj/?view_only=cc546485ad05431d9016123a8aaafba9).

## STUDY 1

In Study 1, we checked for the relationships between coping styles and national narcissism, using a two-wave study design. We assumed that high adaptive (i.e. self-sufficient) and low maladaptive (i.e. avoidance) coping would predict a decrease in national narcissism (when controlling for national identification) over time. Moreover, we primarily assumed that coping styles at Time 1 would be linked to national narcissism at Time 2, however, the reverse direction of the associations between these variables is also plausible. For example, previous research (Marchlewska, Górska, et al., 2022; Study 2) showed that national narcissism might boost feelings of attachment anxiety. Thus, it is possible that national narcissism may also strengthen maladaptive coping (i.e. leading to increase in adopting avoidance strategies). Therefore, we decided to test these possible reciprocal relationships in Study 1 as well.

## Method

### Participants and procedure

Data for Study 1 were obtained in two waves, with a 6-month interval in-between, through an online survey (CAWI) conducted by an external research company—Pollster—a Polish online research platform previously used in other psychological academic studies (e.g. Molenda et al., 2023). In sum, we recruited 603 young Polish adults, aged from 18 to 25 years old (329 women, 274 men,  $M_{\text{age}} = 51.94$ ,  $SD_{\text{age}} = 15.43$ ).<sup>1</sup> For this study, we aimed to include over 400 participants, which gave us the power of 0.80 for detecting even small associations between variables (for  $r = .14$ ; Cohen, 1988; G\*Power; Faul et al., 2007, 2009; yields a target of 395 participants)—we aimed for at least this sample size in the final wave.

### Measures

#### *Coping strategies*

We used the COPE inventory (Carver et al., 1989), which includes 60 items measuring adaptive and maladaptive coping strategies. Respondents were asked to indicate what they usually do when they experience stressful events on a four-point scale, where 1 = *I usually do not do this at all* and 4 = *I usually do this a lot*. Similarly to Marchlewska, Green, et al. (2022), we distinguished four main factors: *self-sufficient coping* (e.g. ‘I try to come up with a strategy about what to do’, ‘I take direct action to get around the problem’;  $\alpha_1 = .89$ ,  $\alpha_2 = .90$ ), *social support* (e.g. ‘I talk to someone to find out more about the situation’, ‘I talk to someone about how I feel’;  $\alpha_1 = .89$ ,  $\alpha_2 = .90$ ), *avoidance coping* (e.g. ‘I act as though it didn't happen’, ‘I try to lose myself for a while by drinking or taking drugs’;  $\alpha_1 = .85$ ,  $\alpha_2 = .87$ ) and *religious coping* (e.g. ‘I put my trust in God’;  $\alpha_1 = .95$ ,  $\alpha_2 = .95$ ). Higher scores obtained by respondents indicated a higher tendency to use a specific coping strategy.

#### *National narcissism*

We used the five-item version of the Collective Narcissism Scale (Golec de Zavala et al., 2013) to measure collective narcissism with respect to the national in-group (i.e. national narcissism, for example, ‘I insist upon Poles getting the respect that is due to them’;  $\alpha_1 = .92$ ,  $\alpha_1 = .93$ ). The participants responded on a scale from 1 (*Strongly disagree*) to 5 (*Strongly agree*).

<sup>1</sup>Measures used in the analyses presented below were part of a larger survey of a range of psychology constructs (e.g. personality traits).

### *National Identification*

We used the shortened, three-item Social Identification Scale adapted from Cameron (2004); see also Górska et al., (2020), with the national in-group as a reference (i.e. ‘I have a lot in common with other Poles’, ‘In general, being a Pole is an important part of my self-image’ and ‘Generally, I feel good when I think about myself as a Pole’;  $\alpha_1 = .92$ ,  $\alpha_2 = .90$ ). The participants responded on a scale from 1 (*Strongly disagree*) to 5 (*Strongly agree*).

### *Covariates*

We took three variables into account: age, gender (0 = *female*, 1 = *male*) and political orientation where participants were asked to report their political views on a single-item measure (1 = *definitely left-wing*, 7 = *definitely right-wing*).

## Results

### Analytic strategy

In Study 1, we conducted the analyses in two steps. First, we examined intercorrelations for the variables of interest—this analysis did not include accounting for the shared variance of the types of national identity. Next, an autoregressive cross-lagged path model (Selig & Little, 2012) was estimated to verify our hypotheses. This analysis allowed us to co-vary out the shared variance between national narcissism and national identification, in line with current literature (e.g. Cislak et al., 2021; Górska et al., 2022; Marchlewska, Cichočka, et al., 2022).

### Preliminary analyses

Descriptive statistics and intercorrelations for the variables assessed in Study 1 are presented in Table 1. Across both measurements, national narcissism was positively correlated with national identification, avoidance coping, religious coping and social support coping. It was also positively related to self-sufficient coping at Time 1, but unrelated to it at Time 2, however, the strength of this relationship at Time 1 was weak. National identification was positively related to self-sufficient, social support and religious coping, but not to avoidance coping, both at Time 1 and Time 2.

### Hypotheses testing

Model was estimated with the use of MPlus 8.0 (Muthén & Muthén, 2017). In this model, we also accounted for the covariates (age, gender, political orientation), which were related to national narcissism in previous studies (see Marchlewska, Górska, et al., 2022). Figure 1 shows the results for the autoregressive cross-lagged path model tested in Study 1.<sup>2</sup> In terms of stability, all variables were positively related to themselves over time (range from  $B = 0.58$ , 95% CI [0.49, 0.65],  $\beta = .57$ ,  $p < .001$  for self-sufficient coping to  $B = 0.87$ , 95% CI [0.83, 0.90],  $\beta = .87$ ,  $p < .001$  for religious-coping). National narcissism assessed at T2 was negatively related to self-sufficient coping measured at T1 ( $B = -0.24$ , 95% CI [-0.37, -0.11],  $\beta = -.08$ ,  $p = .003$ ), but it was positively related to national identification ( $B = 0.10$ , 95% CI [0.06, 0.16],  $\beta = .10$ ,  $p = .001$ ) and religious coping ( $B = 0.09$ , 95% CI [0.03, 0.15],  $\beta = .08$ ,  $p = .009$ ), all measured at T1.

<sup>2</sup>Model was fitted well to the obtained data ( $\chi^2_{(18)} = 51.19$ ;  $p < .001$ , CFI = .991, RMSEA = .056 [.039, .074]). The exclusion covariates from the model did not change our conclusions substantively. However, the relationship between avoidance coping measured at T2 and social support coping measured at T1 became non-significant.

TABLE 1 Descriptive statistics and correlations (Study 1).

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. National Narcissism T1	2.81	1.11	–														
2. National Identification T1	3.87	1.00	.51**	–													
3. Self-Sufficient Coping T1	2.74	0.35	.08*	.26**	–												
4. Social Support Coping T1	2.52	0.51	.14**	.16**	.40**	–											
5. Avoidance Coping T1	1.95	0.38	.12**	–.08	.07	.14**	–										
6. Religious Coping T1	2.17	0.97	.45**	.32**	.18**	.20**	.06*	–									
7. National Narcissism T2	2.75	1.12	.83**	.48**	.02	.10*	.12**	.44**	–								
8. National Identification T2	3.82	1.00	.45**	.77**	.16**	.11**	–.05	.31**	.54**	–							
9. Self-Sufficient Coping T2	2.71	0.36	.06	.24**	.59**	.23**	–.01	.12**	.10	.22**	–						
10. Social Support Coping T2	2.49	0.52	.15**	.16**	.21**	.64**	.13**	.19**	.14**	.18**	.39**	–					
11. Avoidance Coping T2	1.95	0.41	.19**	–.04	–.03	.13**	.68**	.09*	.15**	–.05	.12**	.25**	–				
12. Religious Coping T2	2.17	0.97	.44**	.33**	.14**	.14**	.04	.89**	.45**	.31**	.15**	.21**	.11**	–			
13. Age	51.94	15.43	.00	.23**	.30**	–.01	–.16*	–.01	–.02	.22**	.23**	–.06	–.18**	–.02	–		
14. Gender (0 = female, 1 = male)	0.45	0.50	.07	–.01	.01	–.09**	.04	–.10**	–.07	.02	.09*	–.10*	.08	–.08	.00	–	
15. Political conservatism	3.85	1.58	.39**	.35**	.04	.02	.02	.42**	.41**	.36**	.06	.08*	.06	.41**	–.08	–.10*	

\* $p < .05$ ; \*\* $p < .01$ .

Self-sufficient coping measured at T2 was positively related to national identification at T1 ( $B = 0.04$ , 95% CI [0.01, 0.07],  $\beta = .11$ ,  $p = .013$ ). Avoidance coping measured at T2 was positively related to national narcissism ( $B = 0.04$ , 95% CI [0.02, 0.07],  $\beta = .13$ ,  $p = .008$ ) measured at T1 but negatively related to self-sufficient coping at T1 ( $B = -0.12$ , 95% CI [-0.19, -0.05],  $\beta = -.11$ ,  $p = .004$ ). Moreover, religious coping measured at T2 was positively related to national narcissism also measured at T1 ( $B = 0.05$ , 95% CI [0.01, 0.08],  $\beta = .05$ ,  $p = .032$ ).

## Discussion

Study 1 provided partial support for our hypotheses. Adaptive (i.e. self-sufficient) coping exerted a negative overtime effect on national narcissism (controlled for national identification), thus, confirming H1. We did not observe, however, a significant overtime effect of maladaptive (i.e. avoidance) coping on national narcissism (H2 rejected). Nevertheless, we found a positive overtime effect of national narcissism on maladaptive (i.e. avoidance) coping with stress, suggesting that people high (vs. low) in national narcissism may be more prone to use maladaptive coping with stress strategies. Overall, Study 1 suggested that adaptive (i.e. self-sufficient) coping may have the potential to lower defensive (i.e. narcissistic) national identity.

## STUDY 2

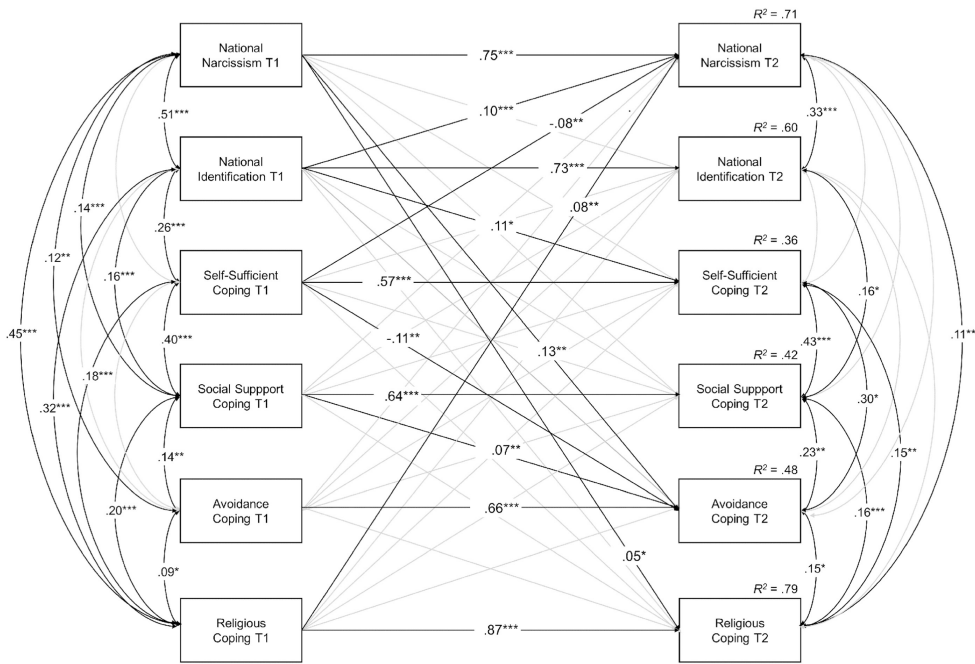
In Study 2, we used an experimental design to test whether inducing a self-sufficient strategy would decrease national narcissism. To do so, we asked all participants to imagine a stressful situation, in which they used a particular coping strategy. This manipulation was based on a procedure by Marchlewska, Green, et al. (2022), but this time—inspired by the work on the mental simulation of a stressful event (Rivkin & Taylor, 1999; Taylor et al., 1998)—instead of asking participants to recall a specific memory, we asked them to imagine any stressful situation that could happen to them. We also measured conspiracy beliefs, a phenomenon considered one of the undesirable outcomes of national narcissism (Cichocka et al., 2016). We examined if higher adaptive (H3) and lower maladaptive (H4) coping would be linked to lower conspiracy theories endorsement. Moreover, given the associations between coping and conspiracy beliefs, as well as national narcissism and conspiracy explanations, we also hypothesized that national narcissism would mediate the link between coping strategies and conspiracy beliefs (H5).

## Method

### Participants and design

A total of 463 participants were recruited via Ariadna a Polish online research panel previously used in other psychological academic studies (e.g. Golec de Zavala et al., 2020; Molenda et al., 2022). We excluded the participants who did not provide an appropriate description (i.e. in line with the condition's instruction) required in the experimental manipulation ( $n = 126$ ). The remaining participants ( $N = 337$ ; 192 women, 145 men,  $M_{\text{age}} = 45.04$  years,  $SD = 14.84$ , range = 19–79 years) were included in the final analyses. The design of the study was experimental. We manipulated the coping strategies—adaptive (i.e. self-sufficient coping strategy) versus maladaptive (avoidance coping strategy)—and included a control condition (without any specific coping strategy). The dependent variables were national narcissism and generic conspiracy beliefs.<sup>3</sup>

<sup>3</sup>The data from Study 2 also involved several different measures included for the purposes of different projects (please contact the first author for details).



**FIGURE 1** Results of autoregressive cross-lagged panel models testing the relationships between national narcissism, national identification and coping strategies (Study 1). Standardized coefficients presented. Greyed-out arrows reflect the non-significant effects ( $p \geq .05$ ). \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

Similarly to Marchlewska, Green, et al.'s (2022) experiment regarding coping strategies, we aimed to power our study to detect average effect sizes for social psychology (i.e.  $d = 0.43$  for each comparison; Vazire, 2015). Since we had two comparisons, we estimated our sample size with G\*Power (Faul et al., 2007, 2009) assuming the power of 0.90 for differences between two independent means (two-tailed). This resulted in a total power of 0.81 ( $0.90 \times 0.90$ ), which yielded at least 115 participants per condition. We over-recruited to allow for exclusions, and thus, initially, there were 164 participants in the self-sufficient condition, 143 in the avoidance condition and 156 in the control group. However, after the exclusion process (due to providing a description inconsistent with the instruction in the experimental manipulation task, for example, off-topic writing), there were 124 individuals in the self-sufficient condition, 82 in the avoidance group and 131 in the control group.

## Procedure

Participants gave informed consent and filled few demographic questions. Then, they were randomly assigned to one of three experimental conditions. In each condition, participants were asked to imagine a stressful situation that might happen in their lives and then describe it.<sup>4</sup> The conditions differed in the coping strategy we asked the participants to imagine they would use to deal with this stressful situation.

Participants in the self-sufficient coping strategy condition were asked to imagine a stressful situation they would deal with using an active coping strategy. They were provided with an explanation of active coping (e.g. that they could focus on successively taking single steps until they coped with this situation; based on COPE inventory items; Carver et al., 1989). Participants in the avoidance coping

<sup>4</sup>The exact wording of the experimental instructions is in the [Supplementary Materials](#).

condition were asked to imagine a stressful situation they would deal with using denial. Similarly, the explanation of what denial is was presented (e.g. that they would pretend that nothing really happened or that the situation had no impact on them). Participants in the control condition were asked to imagine any stressful situation, with no emphasis on how they would cope with it. In all conditions, participants had to spend at least 1 min on imagining the situation. After that, they were asked to describe the imagined situation in a provided textbox, writing in detail about what the stressful situation would involve, how they would feel and (only in self-sufficient coping and avoidance coping conditions) how they would deal with this incident through self-sufficient coping (in the first condition) or avoidance coping (in the second condition). In the next step, based on Marchlewska, Green, et al.'s (2022) study, participants were asked to report how clear and vivid (each on a seven-point scale from 1 = *not at all* to 7 = *very much*) their imagined situations were. Next, they completed the questionnaire with dependent variables and were debriefed and thanked.

## Measures

### *National narcissism*

National narcissism was assessed as in Study 1 (Golec de Zavala et al., 2013)  $\alpha = .94$ ,  $M = 2.75$ ,  $SD = 1.12$ .

### *National identification*

National identification was also assessed as in Study 1 (Cameron, 2004; see also Górska et al., 2020),  $\alpha = .87$ ,  $M = 3.68$ ,  $SD = 0.97$ .

### *Conspiracy beliefs*

General conspiracist ideation was measured using five items from the Generic Conspiracist Beliefs scale (Brotherton et al., 2013), that is, 'The power held by heads of state is second to that of small unknown groups who really control world politics', 'Groups of scientists manipulate, fabricate or suppress evidence in order to deceive the public', 'The government permits or perpetrates acts of terrorism on its own soil, disguising its involvement', 'Evidence of alien contact is being concealed from the public', 'Certain significant events have been the result of the activity of a small group who secretly manipulate world events' ( $\alpha = .85$ ,  $M = 2.96$ ,  $SD = 0.97$ ). The respondents assessed the statements using a scale from 1 (*Definitely not true*) to 5 (*Definitely true*).

### *Covariates*

In addition to age and gender (0 = *female*, 1 = *male*), participants were asked to report their political views on a single-item measure (1 = *definitely left-wing* and 7 = *definitely right-wing*).

## Results

To test whether priming self-sufficient coping would decrease national narcissism, compared with avoidance coping strategy and control condition, we first dummy coded our condition variable. Self-sufficient coping strategy dummy variable was coded as self-sufficient = 1, avoidance = 0, control = 0 and avoidance coping strategy dummy variable was coded as self-sufficient = 0, avoidance = 1, control = 0. We then entered these dummy codes in a multiple regression with national narcissism as the dependent variable. In line with the current literature (e.g. Marchlewska, Cichočka, et al., 2022), we also controlled for the effects of national identification. We included age, gender and political conservatism as covariates. The overall regression model was significant (Table 2). In line with our hypothesis, self-sufficient

coping was a significant negative predictor of national narcissism,<sup>5</sup> suggesting that this strategy might decrease national narcissism. However, the avoidance strategy did not have a significant effect on the dependent variable. Of the covariates, national identification and political conservatism were significant positive predictors of national narcissism, while age and gender were negative predictors of the dependent variable.

Second, we computed a hierarchical regression analysis to investigate the effects of coping strategies and national narcissism on conspiracy beliefs (Table 3). In the first step, we introduced self-sufficient and avoidance coping dummy-coded variables and included political conservatism, gender and age as covariates. This model was significant. Self-sufficient coping was a significant negative predictor of conspiracy beliefs, while avoidance coping strategy did not predict the dependent variable significantly. Of the covariates, political conservatism was a positive predictor of conspiracy beliefs and gender served as a negative predictor of the dependent variable (i.e. females were more likely to endorse conspiracy explanations). In the second step, we introduced national narcissism and national identification as predictors. This overall regression model was also significant. However, after entering both types of in-group identity, the effects of self-sufficient coping and covariates on the dependent variable ceased to be significant. National narcissism was a positive predictor of conspiracy beliefs, but national identification did not predict the dependent variable significantly.

Finally, to fully test our hypotheses, we conducted a mediation analysis using model 4 with one mediator in Process (Hayes, 2018). The analysis (Figure 2) examined whether national narcissism mediated the path between self-sufficient coping strategy and conspiracy beliefs. We used the avoidance coping strategy, national identification, political conservatism, age and gender as covariates. The significance of the mediation analysis was tested with bootstrapped 95% confidence intervals for the standardized indirect effects (5000 resamples). The indirect effect of self-sufficient coping strategy on conspiracy beliefs via national narcissism of  $-0.11$  was significant, with a bootstrapped 95% bias-corrected confidence interval of  $-0.21$  to  $-0.02$ .

## Discussion

In Study 2, we experimentally investigated the effects of adaptive versus maladaptive coping strategies on national narcissism and, after that, conspiracy beliefs. The results partially supported our hypotheses. While there was no significant effect of avoidance coping on either national narcissism or conspiracy theories endorsement (H2 and H4 rejected), we found a significant effect of the induced self-sufficient coping on both of these variables, supporting H1 and H3. Namely, self-sufficient coping was related to lower national narcissism and conspiracy beliefs. In other words, inducing adaptive coping significantly decreased national narcissism. We also found a significant indirect effect (H5): self-sufficient coping was related to lower conspiracy beliefs via lower national narcissism.

## GENERAL DISCUSSION

In two studies, we examined the links between (mal)adaptive coping with stress strategies and national narcissism. Although we did not find evidence supporting the hypothesis that maladaptive (i.e. avoidance) coping predicted national narcissism, we showed that higher use of adaptive (i.e. self-sufficient) strategies was linked to lower national narcissism. We demonstrated this effect in a two-wave longitudinal study, showing that higher self-sufficient coping at T1 was linked to lower national narcissism at T2, and in an experimental study, which indicated that induced self-sufficient coping decreased national

<sup>5</sup>We also performed a similar analysis with national identification as the dependent variable (controlling for the effects of national narcissism). The effects of coping strategies on national identification were non-significant. Please, see the [Supplementary Materials](#) for details.

TABLE 2 Predictors of national narcissism (Study 2).

Variables	$\beta$	<i>B</i>	95% CI
Intercept		0.79	[0.30, 1.28]
Self-sufficient coping	-.12*	-0.28	[-0.49, -0.06]
Avoidance coping	-.06	-0.15	[-0.39, 0.09]
National identification	.44***	0.50	[0.40, 0.61]
Political conservatism	.29***	0.20	[0.14, 0.26]
Gender (0 = female, 1 = male)	-.13**	-0.29	[-0.48, -0.10]
Age	-.12**	-0.01	[-0.02, -0.003]
R <sup>2</sup>	.43		
<i>F</i>	<i>F</i> (6, 330) = 40.96***		

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

TABLE 3 Predictors of conspiracy beliefs (Study 2).

Variables	Model 1			Model 2		
	$\beta$	<i>B</i>	95% CI	$\beta$	<i>B</i>	95% CI
Intercept		2.82	[2.36, 3.27]		2.02	[1.53, 2.51]
Self-sufficient coping	-.12*	-0.24	[-0.47, -0.004]	-.04	-0.09	[-0.30, 0.13]
Avoidance coping	-.08	-0.18	[-0.44, 0.08]	-.06	-0.13	[-0.37, 0.11]
Political conservatism	.23***	0.14	[0.07, 0.20]	.01	0.01	[-0.06, 0.07]
Gender (0 = female, 1 = male)	-.13*	-0.26	[-0.46, -0.05]	-.06	-0.11	[-0.30, 0.08]
Age	-.05	-.003	[-0.01, 0.003]	-.03	-0.002	[-0.01, 0.01]
National narcissism				.47***	0.40	[0.30, 0.51]
National identification				-.002	-0.002	[-0.12, 0.12]
R <sup>2</sup>	.09			.24		
<i>F</i>	<i>F</i> (5, 331) = 6.25***			<i>F</i> (7, 329) = 15.11***		
$\Delta R^2$				.15		
$\Delta F$				<i>F</i> (2, 329) = 34.13***		

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

narcissism. The induced self-sufficient strategy in Study 2 was also related to lower conspiracy beliefs and this relationship was mediated by national narcissism.

## Theoretical implications

The results of our two studies are congruent with previous theorizing (Cichocka, 2016; Fromm, 1973) and research (Cichocka et al., 2018; Golec de Zavala et al., 2020; Marchlewska, Górska, et al., 2022) about the role of individual's shortcomings as the underpinnings of national narcissism. In our research, deficiencies in the use of adaptive coping strategies (i.e. low self-sufficient coping) translated into national narcissism—a grandiose image of one's nation (Cichocka & Cislak, 2020; Golec de Zavala et al., 2009). Thus, it seems that low readiness to actively face a stressor is linked to searching for a strong collective to compensate for these individuals' difficulties in the fundamental human adaptive processes of coping. This is also in line with Golec de Zavala's (2019) suggestion that national narcissism might be rooted in one's deficits in 'the ability to constructively self-soothe in face of adversity' (p. 12). The notion that national narcissism serves a compensatory function for frustrated needs (e.g.

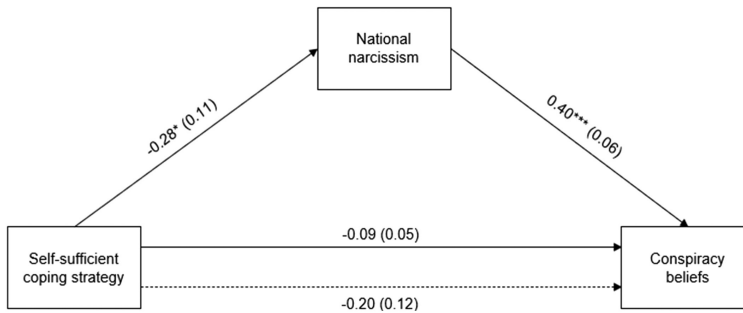


FIGURE 2 Indirect effect of self-sufficient coping strategy on conspiracy beliefs via national narcissism (Study 2). Entries are unstandardized coefficients. The dotted line indicates the total effect (not controlling for the third variable). \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

Cichocka, 2016; Marchlewska, Górska, et al., 2022) was even more underlined by the experimental Study 2, which indicated that reinforcing adaptive coping (and in this way, satisfying individual's motives) led to a decrease in national narcissism.

The two-wave longitudinal Study 1 suggested that the relationships between coping and national narcissism might be somewhat reciprocal. That is, low adaptive (self-sufficient) coping at T1 was related to higher national narcissism at T2, but also higher national narcissism at T1 was related to a higher level of maladaptive (avoidance) coping at T2. Thus, it seems that deficiencies in adaptive coping underlie national narcissism, and in turn, national narcissism is associated with to even worse outcomes—higher use of maladaptive strategies. Moreover, secure national identity (i.e. without a narcissistic component) at T1 was related to higher self-sufficient coping at T2, suggesting that this form of national identity might be beneficial for individuals. These results align with previous research (Cichocka et al., 2018; Marchlewska, Górska, et al., 2022). For example, while secure national identity at T1 predicted lower attachment anxiety and avoidance at T2, national narcissism at T1 predicted greater attachment anxiety at T2 (Marchlewska, Górska, et al., 2022). According to this, our results also showed that even though national narcissism is rooted in frustrated needs and serves a compensatory function, this compensation is unsuccessful and seems only to make things worse, possibly creating a vicious circle that reciprocally fuels unsatisfied individuals' motives and national narcissism.

## Limitations and future directions

Although our research offered new insights regarding the role of coping with stress as a possible antecedent of national narcissism, it is not without limitations. Most of all, both studies were conducted only among Polish participants, thereby limiting the generalizability of our findings. Future research might address this issue twofold: by examining coping with stress and national narcissism among different nationalities and with narcissistic identification with a different in-group, for example, with Catholics (e.g. Marchlewska et al., 2019).

While the results of the two-wave Study 1 were complementary to the experimental Study 2, a severe point of caution should also be raised regarding the methodology we used in the former. The cross-lagged panel model (CLPM) is a popular method for analysing data using two waves (Duncan, 1969). When predicting future scores on the outcome, the CLPM goes beyond more superficial cross-sectional analyses by controlling for contemporaneous associations between the predictor and the outcome. Despite the appealing simple structure of this approach, which led to high popularity within the literature (Orth et al., 2021), it also attracted a significant amount of criticism. For instance, CLPM fails to adequately account for stable-trait-level associations, which potentially could lead to incorrect conclusions

about the cross-lagged effects (Hamaker et al., 2015). While this issue could be partially addressed through the inclusion of random intercept within the model (Hamaker et al., 2015), this approach is not available for studies containing only two waves of assessment. Thus, the results of the current CLPM have to be interpreted with caution, and future studies could also use a three-wave longitudinal design to better examine the causality (Górska et al., 2022) between our variables of interest.

In line with theorizing that adopting conspiracy explanations might be seen as a maladaptive way of managing psychological distress (Douglas et al., 2017), and thus, boosting adaptive coping strategies should lower conspiracy beliefs, we found that self-sufficient coping was linked to lower conspiracy beliefs via national narcissism. However, it was not fully congruent with Marchlewska, Green, et al.'s (2022) findings that avoidance coping strengthened conspiracy theories endorsement—we did not find this effect in our experiment. Thus, these results should be interpreted with caution. Moreover, future research would do well to incorporate different manipulations regarding coping with stress, for example, the exact replication of Marchlewska, Green, et al.'s (2022) procedure or some manipulations in laboratory settings. Furthermore, although we based our experimental design—including the control condition—on previous research (Marchlewska, Green, et al., 2022), it is possible that this control condition—imagining a stressful situation with no specific strategy—could affect the participants' level of stress, and in this way, to affect our results. Therefore, future experimental studies should design or add different control conditions and—particularly—measure and control for the participants' state of stress. Moreover, even though our mediation model in Study 2 was embedded in an experimental design, it is not without limitations (e.g. Fiedler et al., 2011; Kline, 2015)—for instance, both the mediator and the outcome variables were measured on one occasion, one after the other. Future studies should include more nuanced approaches to verify the validity of our proposed model, for example, using more carefully crafted experimental designs (e.g. with at least a slightly larger time interval between measuring *M* and *Y*) or a full-longitudinal design, where the variables of interest are measured on different occasions (Kline, 2015).

The COPE scale used in Study 1 also included religious coping, and our results showed that the relationship between national narcissism and religious coping was reciprocal: religious coping at T1 was related to higher national narcissism at T2 and national narcissism at T1 was related to higher religious coping at T2. While these results are interesting, they require further investigation and should be cautiously treated. Namely, given the role of religion and the Catholic Church in shaping Polish national identity (Porter, 2001), the relationship between religious coping and national narcissism could be specific to the Polish context. However, to test this hypothesis, a study replicating our results in a different national context would be required. Moreover, the COPE inventory measures religious coping in a quite general way, whereas the role of religiosity and religious coping seems more complex (Pargament, 2011). For example, Łowicki et al. (2022) showed that only religious fundamentalism—but not centrality of religiosity—was associated with higher conspiracy beliefs. Similarly, the role of religious coping for national narcissism (and vice versa) might not be as simple as our results indicated. Thus, future studies would do well to use more sophisticated religious coping measures. For instance, the RCOPE scale (Pargament et al., 2011), which distinguished between positive and negative religious coping, could help to examine the relationships with national narcissism more thoroughly.

Although, according to Haslam et al. (2005), social identities are related to social support, which was also distinguished as a separate factor of coping strategies (e.g. Litman, 2006), we did not posit any hypotheses about social support coping and national narcissism. This was due to the fact that, as Stowell et al. (2001) noticed, the social support factor in coping scales 'measured the amount of social support sought, not necessarily received' (p. 328). Thus, social support coping strategies are not unequivocal with perceived or received social support and were not the main focus of our research. We did not find any significant overtime effects of social support coping on national narcissism (or secure national identity) or the other way round. Thus, future research should also include measures of actual (or perceived) social support to comprehensively investigate relationships between social support coping, social support and national narcissism.

## Conclusions

Our research identified another possible antecedent of national narcissism: deficiencies in the fundamental processes of coping with stress. Low self-sufficient coping (i.e. an inability to actively face the stressor) predicted national narcissism overtime and temporarily addressing this issue (i.e. inducing a specific self-sufficient strategy) decreased national narcissism in the experimental study. In such a way, we found that boosting adaptive ways of coping with stress may serve as a cure for defensive national identity (i.e. national narcissism). The present studies suggest that insufficient coping with stress plays an important role not merely for intraindividual phenomena (e.g. well-being) but also for group-level processes.

## AUTHOR CONTRIBUTIONS

**Zuzanna Molenda:** Conceptualization; data curation; formal analysis; investigation; methodology; writing – original draft; writing – review and editing. **Marta Marchlewska:** Funding acquisition; investigation; methodology; supervision; writing – review and editing. **Marta Rogoza:** Formal analysis; investigation; writing – original draft; writing – review and editing. **Dagmara Szczepańska:** Investigation; methodology; writing – review and editing.

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## CONFLICT OF INTEREST STATEMENT

None.

## DATA AVAILABILITY STATEMENT

The data that support the findings are available at the Open Science Framework: [https://osf.io/a5egj/?view\\_only=cc546485ad05431d9016123a8aaafba9](https://osf.io/a5egj/?view_only=cc546485ad05431d9016123a8aaafba9).


## ETHICS STATEMENT

Informed consent was obtained from all participants involved in the studies. Both studies were conducted in accordance with the Declaration of Helsinki and approved by the Research Ethics Committee of the Institute of Psychology, Polish Academy of Sciences (number of approval: 26/X/2020).

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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## Publication 5

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## **Emotion (Dys)Regulation and National Narcissism**

Short title: *Emotion Regulation & National Narcissism*

*Note: This manuscript is currently under review.*

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### **Abstract**

National narcissism (i.e., an unrealistic belief about the national group's greatness that is derived from individual's unsatisfied needs) has been previously predicted by negative emotionality. This research aimed to further investigate the emotional roots of national narcissism by examining its' link with emotion dysregulation. Across three cross-sectional

studies conducted among British (Study 1,  $N = 473$ ), American (Study 2,  $N = 444$ ), and Polish (Study 1,  $N = 633$ ) participants, we found that greater deficiencies in emotion regulation were consistently linked with higher national narcissism. We also replicated past effects of emotion dysregulation and national narcissism on conspiracy beliefs and demonstrated the indirect effect of emotion dysregulation on conspiracy beliefs via national narcissism. These results suggest that the emotional deficiencies of individuals are important in shaping group-level phenomena. We discuss these findings' potential limitations and significance.

*Keywords:* emotion dysregulation, negative emotions, national narcissism, national identification, conspiracy beliefs

**Declarations of interest:** none.

**Data availability statement:** Data, code, and supplementary materials for all studies are available at the Open Science Framework:

[https://osf.io/7fwks/?view\\_only=fffd7403e1ab410d8aaa2c797bdf14fe](https://osf.io/7fwks/?view_only=fffd7403e1ab410d8aaa2c797bdf14fe)

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## Emotion (Dys)Regulation and National Narcissism

### Abstract

National narcissism (i.e., an unrealistic belief about the national group's greatness that is derived from individual's unsatisfied needs) has been previously predicted by negative emotionality. This research aimed to further investigate the emotional roots of national narcissism by examining its' link with emotion dysregulation. Across three cross-sectional studies conducted among British (Study 1,  $N = 473$ ), American (Study 2,  $N = 444$ ), and Polish (Study 1,  $N = 633$ ) participants, we found that greater deficiencies in emotion regulation were consistently linked with higher national narcissism. We also replicated past effects of emotion dysregulation and national narcissism on conspiracy beliefs and demonstrated the indirect effect of emotion dysregulation on conspiracy beliefs via national narcissism. These results suggest that the emotional deficiencies of individuals are important in shaping group-level phenomena. We discuss these findings' potential limitations and significance.

*Keywords:* emotion dysregulation, negative emotions, national narcissism, national identification, conspiracy beliefs

### **Emotion (Dys)Regulation and National Narcissism**

In 1985, in Brussels, 39 people died, and more than 600 individuals were injured in a calamitous incident that transpired during an important football game. Supporters of one club initiated an attack on the fans of the other, which resulted in one of the stadium's walls collapsing because of the fans' aggressive behavior. This is (unfortunately) one of the too many examples of stadium aggression, but this one was particularly tragic, and thus it was followed by the intense debates regarding hooliganism or stadium safety (Realfonzo, 2023). However, one might also ponder the psychological mechanisms contributing to such incidents. One possible answer is that attacking fans could not manage their emotions properly, which led to aggressive acts. Yet, since a group of fans attacked another club's supporters, one factor cannot be omitted: their social identity – they participated in this event considering themselves members of a particular social group, which is associated with one's perception of the self (e.g., Tajfel, 1974). Past work found that particularly narcissistic social identity is associated with prejudice, hostility, and aggressive tendencies toward outgroup members (Cichocka et al., 2017; Golec de Zavala et al., 2013). In this vein, Larkin and Fink (2019) investigated collective narcissism in the context of dysfunctional sports fans' behaviors and demonstrated that team identification was linked to fans' aggression only at higher levels of collective narcissism. Thus, this research suggests that narcissistic identification plays a significant role in explaining socially undesirable intergroup tendencies. The tragic example described above suggests that emotion (dys)regulation and social identity might intertwine in shaping certain behaviors. However, the relationships between emotion (dys)regulation and the forms of social identities are not well understood yet. This research attempts to probe this issue by focusing on a specific form of in-group identity: collective narcissism.

Collective narcissism is characterized by grandiose beliefs about the in-group's greatness with a certitude that this group is not adequately valued by others (Golec de Zavala

et al., 2009). While the early research on collective narcissism was focused rather on its' potential social consequences (e.g., Golec de Zavala et al., 2009; 2013), the issue of its' possible roots remains more obscure. The current research aims to shed new light on this matter by examining the link between emotion dysregulation and collective narcissism. In line with past theories and studies, considering threatened ego or individual deficiencies as the source of adopting a narcissistic identity (e.g., Cichocka, 2016; Fromm, 1973; Golec de Zavala et al., 2020; Marchlewska, Górska, Green, et al., 2022; Molenda, Marchlewska, Rogoza, & Szczepańska, 2023; for a review see Cislak & Cichocka, 2023), we hypothesized that deficiencies in emotion regulation – which is crucial for human functioning – could be linked with higher collective narcissism. Although past research (e.g., Golec de Zavala et al., 2019) suggested the emotional deficits antecedents of collective narcissism, to our knowledge, we are the first to empirically examine the relationship between emotion dysregulation and this narcissistic identity in three different socio-political contexts.

### **Collective Narcissism**

The phenomenon of collective narcissism encapsulates unrealistic beliefs about the in-group's greatness and importance (often captured as a grandiose in-group image), yet alongside a conviction that one's group is not adequately acknowledged and valued by others, and deserves special treatment (e.g., Cichocka, 2016; Cislak & Cichocka, 2023; Golec de Zavala et al., 2009). While the idea of collective narcissism originates from classic theorizing on social identity by Adorno (1963/1998) and Fromm (1973), it got broad attention in the late 00s with Golec de Zavala et al.'s research (2009). However, both classic theories (Adorno, 1963/1998; Fromm, 1973), arguing that collective narcissism has its underpinnings in a threatened ego, and contemporary research (e.g., Cichocka et al., 2018; Marchlewska, Górska, Green, et al., 2022), suggesting that individual's unsatisfied needs and shortcomings are at the roots of collective narcissism, are congruent with looking for causes of adopting collective

narcissism as social identity in individual's frustrated motives, thereby implying that collective narcissism might constitute a compensatory function. Research so far indicated several potential antecedents of collective narcissism, such as lowered personal control (Cichocka et al., 2018; Marchlewska et al., 2020), low self-esteem (Golec de Zavala et al., 2020), anxious attachment style (Marchlewska, Górska, Green, et al., 2022), and deficiencies in coping with stress (Molenda, Marchlewska, Rogoza, & Szczepańska, 2023). Although collective narcissism is usually considered as a compensation mechanism for individual shortcomings by identifying with a group that is perceived as strong and important, the abovementioned research (which included longitudinal and experimental designs) suggests that it is merely an attempt – as it does not seem to satisfy the needs or improve the shortcomings. Indeed, it can even be linked to deterioration of individual's problems, for instance, heightening attachment anxiety (Marchlewska, Górska, Green, et al., 2022) or adopting maladaptive ways of coping with stress (Molenda, Marchlewska, Rogoza, & Szczepańska, 2023).

Since its' grandiose and defensive features, collective narcissism has primarily adverse effects on intra- and inter-group relations (e.g., Maciantowicz et al., 2023; Molenda, Marchlewska, & Rogoza, 2023; Sternisko et al., 2023; Szczepańska et al., 2024; for a review see Cislak & Cichocka, 2023). Starting with the latter, holding grandiose beliefs about one's group affects intergroup perceptions and attitudes, as collective narcissism was linked to prejudice and out-group derogation (e.g., Golec de Zavala & Cichocka, 2012; Golec de Zavala et al., 2013), as well as conspiracy beliefs (e.g., Cichocka et al., 2016; Cislak et al., 2021; Górska et al., 2022; Sternisko et al., 2023) and hostility (Golec de Zavala et al., 2016). This is due to the immense absorption in the in-group's image, which makes those high in collective narcissism very sensitive to any signs of threat to the in-group's good name, and consequently resulting in a fixation with defending the in-group from (real or imagined)

enemies (Cichocka, 2016). Moreover, believing that other groups are plotting against the in-group might serve as an explanation for the in-group's misfortunes. Thus, conspiracy beliefs (and out-group hostility) are more pronounced among those adopting narcissistic in-group identity, serving as tactics to manage any hardships of the in-group's image (Cichocka, 2016; Cichocka et al., 2016). Recent research also showed that collective narcissism is not really advantageous to the in-groups, as it was related to in-group disloyalty (Marchlewska et al., 2020), instrumental treatment of in-group members (Cichocka et al., 2022), and even intentions to conspire against the in-group (Biddlestone et al., 2022; Marchlewska, Górska, Green, et al., 2022; Molenda, Marchlewska, & Rogoza, 2023) or put in-group members' health and well-being at risk (Gronfeldt, Cislak, Sternisko, et al., 2023). This suggests that those higher in collective narcissism are more prone to seek individual rather than group profits. Importantly, collective narcissism can refer to various groups, and its' socially undesirable consequences manifest in miscellaneous contexts, for instance, among sports teams' fans (Larkin & Fink, 2019), business organizations and workplace teams (Biddlestone et al., 2022; Cichocka et al., 2022), political parties (Gronfeldt, Cislak, Wyatt, & Cichocka, 2023), religious (Marchlewska et al., 2019) or gender groups (Marchlewska, Górska, Malinowska, & Kowalski, 2022), and nations (for a review see Cislak & Cichocka, 2023), which is the most commonly examined context and the one we investigated in the current research.

Summing it up, as collective narcissism derives from various individual shortcomings and is supposed to compensate for these unsatisfied needs or difficulties (Cichocka, 2016), we argue that it might also be linked to deficits in the essential, basic processes of an individual's emotion regulation. The importance of emotion regulation in human life seems invaluable (e.g., Gross, 2014; Hofmann et al., 2012); thus, deficiencies in this area could be linked with identifying with a group in a narcissistic way to make up for these shortcomings. It seems

even more plausible since emotion regulation was related to socially adverse phenomena, such as aggression, hostility, prejudice, and conspiracy beliefs (Contardi et al., 2016; Donahue et al., 2014; Molenda, Green, et al., 2023; Steele et al., 2019), which also has been recognized as unfavorable manifestations of collective narcissism. Crucially, emotion (dys)regulation was theorized to predict collective narcissism (Golec de Zavala et al., 2019), and thus, we aimed to empirically verify whether deficiencies in emotion regulation are linked to narcissistic identification with one's group. So, what exactly is emotion regulation, and why is it so important?

### **Emotion Regulation**

Emotions are an inherent part of humans' lives, but to be advantageous, they should be effectively managed via numerous processes affecting how, when, and which emotions we feel (Johnstone & Walter, 2014). Emotion regulation refers to the processes in which individuals shape their emotions, including occurrence (i.e., which emotion and when arouses), experience, and expression of emotions (Gross, 1998, 2014). These processes have a genetic and neural basis (e.g., Caspi et al., 2010; Ochsner & Gross, 2014) and are examined at multiple levels, including neurotransmitters or cortical structures (Johnstone & Walter, 2014). Emotion regulation is present from infancy and improves through childhood and adolescence (e.g., Eisenberg et al., 2010, 2014). This development of emotion regulation skills is considered one of the main aims of socialization, with a particular importance of socialization within a family, which can significantly influence the progression of children's neurobiological and behavioral capacities (Thompson, 2014). Importantly, emotion regulation is crucial for well-being and mental health and substantial for the efficient execution of tasks and goal achievement (e.g., Aldao et al., 2010, 2015).

However, dysfunction of emotion regulation processes might result in emotion dysregulation (or difficulties with emotion regulation)<sup>1</sup> – often related to various mood and anxiety disorders (Johnstone & Walter, 2014). Gratz and Roemer (2004) distinguished several essential components of emotion (dys)regulation, which can affect mental health and well-being in case of deficiencies in any of these areas, and developed a tool measuring these deficiencies (i.e., Difficulties in Emotion Regulation Scale; DERS). These major emotion (dys)regulation components include lack of emotional awareness, lack of emotional clarity, nonacceptance of emotions, difficulties in committing to goal-directed behaviors, difficulties with controlling impulses (or one's behaviors), and limited access to regulation strategies (Gratz & Roemer, 2004).

Emotion dysregulation is considered one of the cores of mood and anxiety disorders (see Hofmann et al., 2012), including depression, posttraumatic stress disorder, as well as alcohol and drug abuse (Bradley et al., 2011). Early research in the field suggested that some difficulties with emotion regulation (e.g., habitual use of more maladaptive strategies) were related to experiencing more negative emotions, worse interpersonal functioning, and lower well-being (Gross & John, 2003). Subsequent studies also indicated that emotion dysregulation is associated with negative affect and aggression (Donahue et al., 2014). Thus, the literature seems congruent that emotion regulation is a crucial personal resource for individual's functioning and well-being (e.g., Buruck et al., 2016). Yet, some research also suggested that it is also important for the social sphere, such as intergroup relations or political attitudes (Gross, 2014). For instance, adaptive emotion regulation reduced prejudice and support for aggressive policies toward out-groups (Halperin et al., 2013; Steele et al., 2019). Interestingly, recent studies also indicated that emotion dysregulation is linked to higher conspiracy beliefs (Molenda, Green, et al., 2023), suggesting that how we manage our

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<sup>1</sup> Based on Gratz and Roemer's (2004) work, we used the terms emotion dysregulation and difficulties in emotion regulation interchangeably across the article.

emotions might be related to how we perceive and interpret the social world. In the current research, we argue that emotion dysregulation might also be linked to how we identify with an in-group, that is, to collective narcissism.

### **Collective Narcissism and Emotion Regulation**

In this research, we argue that deficiencies in emotion regulation processes might be linked to higher collective narcissism. Although this association was not examined before, past theories and empirical studies provide abundant indirect evidence to support our assumption. Mainly, both psychological theorizing and contemporary research are congruent with searching for sources of collective narcissism in an individual's unsatisfied needs or shortcomings (e.g., Cichocka, 2016; Fromm, 1973; Golec de Zavala et al., 2020; Marchlewska, Górka, Green, et al., 2022; Molenda, Marchlewska, Rogoza, & Szczepańska, 2023). This suggests that one's deficiencies in the essential spheres of human functioning might lead to adopting this form of in-group identity. Thus, we propose that difficulties in emotion regulation could be considered one of the individual's deficiencies linked to collective narcissism. Importantly, Molenda, Marchlewska, Rogoza, and Szczepańska (2023) demonstrated that deficiencies in coping with stress predicted higher collective narcissism, arguing that fundamental processes of coping with stress could underline adopting a narcissistic identity. In other words, deficiencies in coping – linked to unfavorable psychological outcomes, such as decreased well-being – might motivate individuals to seek a strong collective and identify with it in a narcissistic way to compensate for individual shortcomings (Aldwin, 2011; Cichocka, 2016; Golec de Zavala, 2019). Although coping with stress and emotion regulation are not the same, they are related and might be seen as parts of the broader construct of affect regulation (Gross, 2014; Hofmann et al., 2012). Therefore, it seems plausible that also deficiencies in emotion regulation could be linked with higher collective narcissism.

Moreover, recent studies indicated a positive relationship between emotion dysregulation and conspiracy beliefs (Molenda, Green, et al., 2023; Scandurra et al., 2022; see also Marchlewska, Green, et al., 2022, for studies on coping), with the latter being also considered one of the adverse consequences of collective narcissism (e.g., Cichocka et al., 2016; Cislak et al., 2021; Marchlewska et al., 2019; Marchlewska, Górska, Green, et al., 2022). Molenda, Green, et al. (2023) argued that since emotion dysregulation leads to adverse emotional outcomes, making people more prone to focusing on negative aspects of the environment, then those with higher emotion dysregulation might be more inclined to perceive mostly hostile cues while interpreting important world events, so adopting conspiracy theories could be more appealing for them. Interestingly, one of the characteristics of collective narcissism is an exaggerated fear about the outgroups' bad intentions (Cichocka, 2016; Golec de Zavala et al., 2019), which is one of the reasons why narcissistic identity is a robust predictor of conspiracy beliefs. While research suggests that defensiveness plays a role in fostering conspiracy beliefs (Douglas et al., 2017), defensive (i.e., narcissistic) in-group identity was indeed consistently linked to such beliefs, as they may constitute a justification for the group's misfortunes in service of positive in-group image maintenance (Cichocka, 2016; Cislak et al., 2021). In light of the abovementioned research, we assume that emotion dysregulation might also be linked with higher national narcissism which, in turn, may result in higher conspiracy beliefs.

Most notably, similar assumptions were previously suggested in the literature. For instance, Golec de Zavala (2019) showed that collective narcissism is linked to negative emotionality and implied that narcissistic identity might be, in fact, underscored by "dispositional deficits in emotional resilience" (p. 12). Here, it is worth reiterating that emotion dysregulation has effects on negative affect and mood disorders (e.g., depression; Donahue et al., 2014; Hofmann et al., 2012). Moreover, Golec de Zavala and colleagues

directly suggested that “deficits in the ability to regulate negative emotions may be associated with likelihood to uphold the collective narcissist belief about the in-group” (2019, p. 60). This idea was recently supported by Molenda, Marchlewska, Rogoza, and Szczepańska’s (2023) findings in the related area of coping with stress. However, according to our knowledge, this assumption was not directly tested in the emotion dysregulation sphere.

In this work, we assumed that collective narcissism can serve a compensatory function for individuals’ deficiencies in the fundamental human emotion regulation processes. As emotion dysregulation results in worsened mood and lower well-being, individuals might be motivated to seek a source of soothing, a reason to feel better about themselves. Hence, they might look for a strong collective to identify with in order to compensate for their emotional shortcomings (Cichocka et al., 2016; Fromm, 1973; Golec ze Zavala et al., 2019; Hofmann et al., 2012). Thus, building on past research regarding the nature of collective narcissism (e.g., Cichocka, 2016) and incorporating Golec de Zavala et al.’s (2019) ideas, supported by empirical reports (Golec de Zavala, 2019; Molenda, Marchlewska, Rogoza, & Szczepańska, 2023), we investigated the role of difficulties in emotion regulation in group-related processes (i.e., adopting narcissistic identity; Studies 1-3; and endorsing conspiracy theories; Study 3).

### **Overview of the Present Research**

We examined our hypotheses in three cross-sectional studies conducted among British (Study 1), American (Study 2), and Polish (Study 3) participants, aiming to increase the generalizability of our findings. Across these three studies, we tested the prediction that greater emotion dysregulation would be linked to higher national narcissism (H1), that is, collective narcissism applied to the national context. Moreover, we aimed to verify whether socially undesirable manifestations of national narcissism, such as conspiracy beliefs, are indeed related to emotion dysregulation (H2). Therefore, in Study 3, we included a measure of conspiracy beliefs – previously found to be related to both emotion dysregulation (Molenda,

Green, et al., 2023; Scandurra et al., 2022) and national narcissism (e.g., Cislak et al., 2021; Marchlewska, Górska, Green, et al., 2022). Finally, we also hypothesized and tested whether national narcissism would account for the link between emotion dysregulation and conspiracy beliefs (H3).

In all studies, we also controlled for conventional national identification (Cameron, 2004). As national narcissism is positively correlated with national identification, it is important to co-vary out the variance shared between them to control for the effects of national identity per se – a different form of positive regard for one’s nation, without defensive (narcissistic) component, captured as constructive attitude and commitment to the national in-group, independent of the acknowledgment of this group in others’ eyes (Cichocka & Cislak, 2020; Golec de Zavala et al., 2013); also called a secure national identity (e.g., Marchlewska, Cichocka, et al., 2022). This is a commonly used methodological approach (e.g., Biddlestone et al., 2022; Marchlewska, Cichocka, et al., 2022; see also Paulhus et al., 2004; for a review, see Cichocka & Cislak, 2020), which allows to observe (after co-varying out) the unique effects of national narcissism *versus* secure national identification.

In each study, we aimed to recruit at least 400 participants, as with the power of 0.80 for detecting small associations between variables, G\*Power (Faul et al., 2009) provides a target of 395 participants for  $r = .14$  (Fritz & MacKinnon, 2007). In all studies we additionally controlled for political orientation and demographics, as these variables have been linked to national narcissism in the previous research (e.g., Biddlestone et al., 2022; Gronfeldt, Cislak, Sternisko, et al., 2023; Szczepańska et al., 2022).

### **Transparency and Openness**

The studies were conducted in accordance with the Declaration of Helsinki, and informed consent was obtained from all participants. We report all data exclusions (if any), all manipulations, all measures included in the studies, as well as how we determined our sample

sizes. Data were analyzed using SPSS v.29 (all studies) and Process 4.1 (Hayes, 2021; Study 3). These studies' designs and analyses were not preregistered. All the data, analysis codes, research materials, as well as supplements are available at

[https://osf.io/7fwks/?view\\_only=fffd7403e1ab410d8aaa2c797bdf14fe](https://osf.io/7fwks/?view_only=fffd7403e1ab410d8aaa2c797bdf14fe).

## Study 1

Study 1 served as an initial test of our first hypothesis (H1) that emotion dysregulation should be positively linked to national narcissism. In this study, we tested this hypothesis among British participants.

### Method

#### *Participants and Procedure*

Data for Study 1 were obtained in 2021 through an online survey conducted among British participants via Prolific Academic. The survey was filled out by 501 participants. They were asked to complete demographic questions, measures<sup>2</sup> of difficulties with emotion regulation, national narcissism, and national identification, with a debrief at the end of the survey. The study was approved by the Research Ethics Committee of the [blinded for the review] (number of approval: 18/XI/2019). Because we were interested in examining British collective narcissism, we excluded from the analyses anyone who reported their national identification as other than UK ( $n = 25$ ). We also excluded participants ( $n = 3$ ) who reported their gender as 'other.'<sup>3</sup> The responses of all of the remaining participants ( $N = 473$ , 339 women, 134 men,  $M_{\text{age}} = 34.20$  years,  $SD_{\text{age}} = 12.32$ , range = 18 – 75) were included in the final analyses.

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<sup>2</sup> Besides the variables reported here, the survey also involved measures of political engagement and a set of individual differences variables included for the purposes of different projects (please see the OSF project site or contact the first author for details). This dataset (albeit using other variables) was used by [blinded for review] et al., 2022 and [blinded for review] et al., 2023.

<sup>3</sup> For the purposes of this study, participants who chose 'other' as their gender were not considered in the final data analysis. We focused on responses from those who identified as 'man' or 'woman'. This decision was taken to maintain data homogeneity for this specific analysis, but we acknowledge and respect the importance of all gender identities.

## *Measures*

**Difficulties in Emotion Regulation.** We used six items from the 36-item Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). These items covered all six subscales of the original measure, that is: clarity (“I have no idea how I am feeling”), goals (“When I’m upset, I have difficulty thinking about anything else”), impulse (“When I’m upset, I have difficulty controlling my behaviors”), nonacceptance (“When I’m upset, I become irritated at myself for feeling that way”), awareness (“I pay attention to how I feel,” reverse-coded item), and strategies (“When I’m upset, I believe that I will remain that way for a long time”). The scale demonstrated acceptable reliability,  $\alpha = .69$ . Items were scored on a five-point scale, from 1 = *almost never* to 5 = *almost always*. Higher scores indicated greater emotion dysregulation.

**National Narcissism.** We measured it using the five-item version of the Collective Narcissism Scale (Golec de Zavala et al., 2013) with reference to the national in-group (e.g., “British people deserve special treatment”). The scale had very good reliability,  $\alpha = .85$ . Participants responded on a six-point scale, from 1 = *I strongly disagree* to 6 = *I strongly agree*. Higher scores indicated higher level of national narcissism.

**National Identification.** It was measured with a short three-item Social Identification Scale (Górska et al., 2020; see also Cislak et al., 2021; Study 3), adapted from Cameron (2004), with respect to the national in-group (e.g., “I have a lot in common with other British people”). The scale’s reliability was very good,  $\alpha = .85$ . Participants answered on a six-point scale, from 1 = *I strongly disagree* to 6 = *I strongly agree*. Higher scores indicated higher level of national identification.

**Covariates.** In addition to age and gender (coded as 0 = woman, 1 = man), we measured participants’ political orientation, asking them to rate their political orientation on a

scale from 1 = *extremely liberal* to 11 = *extremely conservative*. Higher scores indicated higher levels of political conservatism.

## Results and Discussion

We first examined intercorrelations for the variables of interest (Table 1). Correlation analysis showed that emotion dysregulation was not significantly linked to national narcissism, national identification, or conservatism. Emotion dysregulation was, however, negatively related to age, while age itself was positively linked to national narcissism, national identification, and conservatism. National narcissism and national identification were correlated with each other.

**Table 1**

*Means, Standard Deviations, and Zero-Order Correlations (Study 1)*

Measure	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. DERS	2.57	0.71	-	.05	-.09	-.08	-.26***
2. National narcissism	2.19	1.00		-	.59***	.44***	.18***
3. National identification	3.35	1.19			-	.37***	.16***
4. Political conservatism	4.77	2.19				-	.26***
5. Age	34.20	12.32					-

*Note.* DERS = Difficulties in Emotion Regulation Scale.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Secondly, we performed a regression analysis with national narcissism as the outcome variable (Table 2). In line with the current literature (e.g., Marchlewska, Cichocka, et al., 2022), to observe the unique effects of national narcissism, it is necessary to control for the effects of national identification – thus, we added it to the model. We also included age,

gender, and political conservatism as covariates. The overall regression model was significant. In line with our hypothesis, emotion dysregulation significantly and positively predicted national narcissism (controlled for national identification). Additionally, national identification and political conservatism also positively predicted national narcissism, while the effects of age and gender were non-significant.<sup>4</sup>

**Table 2**

*Predictors of National Narcissism (Study 1)*

Variable	<i>B</i>	95% CI	$\beta$	<i>p</i>
DERS	0.20	[0.10, 0.30]	.14	< .001
National identification	0.42	[0.36, 0.48]	.50	< .001
Political conservatism	0.11	[0.08, 0.15]	.25	< .001
Age	0.01	[0.00, 0.01]	.07	.061
Gender (0 = woman, 1 = man)	0.12	[-0.03, 0.28]	.06	.116
<i>R</i> <sup>2</sup>		.43		
<i>F</i>		$F(5, 467) = 70.18^{***}$		

*Note.* DERS = Difficulties in Emotion Regulation Scale

\*\*\* $p < .001$ .

<sup>4</sup> Although the main focus of this paper was national narcissism, we also performed a similar analysis with national identification as the outcome variable (controlling for the effects of national narcissism). The effects of emotion dysregulation on national identification were significant and negative in all three studies. Please see the Supplementary Materials for details.

Overall, Study 1 demonstrated that emotion dysregulation was uniquely linked to higher national narcissism (after controlling for national identification), providing initial support for our hypothesis (H1). However, in this study, we used short (or ultra-short in the case of DERS) measures. Moreover, this sample had a big disproportion between men and women. Thus, in Study 2, we aimed to address these limitations, and we decided to use full scales for all the measured constructs and conduct a study in a different (and more gender-balanced) sample.

## Study 2

In Study 2, we aimed to replicate the relationship between emotion dysregulation and national narcissism (H1). This time, however, we used full measures of our main variables to capture these constructs better. Moreover, we conducted this study in a different sample, this time among American participants, to increase the generalizability of our findings.

### Method

#### *Participants and Procedure*

Data for Study 2 were collected in 2023 through an online survey conducted among American participants via Prolific Academic. We recruited 452 participants. They were asked to complete full measures of difficulties with emotion regulation, national narcissism, and national identification, followed by a few demographic questions and a debrief. The study was approved by the Research Ethics Committee of the [blinded for the review] (number of approval: 27/X/2020). Because we were interested in examining American collective narcissism, we excluded from the analyses anyone who reported their national identification as other than US ( $n = 5$ ). As in Study 1, we excluded participants ( $n = 3$ ) who reported their gender as 'other.' The responses of all of the remaining participants ( $N = 444$ , 219 women, 225 men,  $M_{\text{age}} = 41.33$  years,  $SD_{\text{age}} = 13.94$ , range = 18 – 85) were included in the final analyses.

## *Measures*

**Difficulties in Emotion Regulation.** We measured emotion dysregulation using a full 36-item Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004).<sup>5</sup> The scale demonstrated excellent reliability,  $\alpha = .95$ . As in Study 1, items were scored on a five-point scale, from 1 = *almost never* to 5 = *almost always*. Higher scores indicated greater emotion dysregulation.

**National Narcissism.** It was measured with a full nine-item Collective Narcissism Scale (Golec de Zavala et al., 2009), with respect to the national (American) in-group. The scale had very good reliability,  $\alpha = .90$ . In this study, items were scored on a five-point scale, from 1 = *strongly disagree* to 5 = *strongly agree*. Higher scores indicated higher level of national narcissism.

**National Identification.** We measured it using a full 12-item Social Identification Scale (Cameron, 2004), with reference to the national (American) in-group. The scale showed excellent reliability,  $\alpha = .91$ . In this study, participants responded on a five-point scale, from 1 = *strongly disagree* to 5 = *strongly agree*. Higher scores indicated higher level of national identification.

**Covariates.** As in Study 1, in addition to age and gender (coded as 0 = woman, 1 = man), we asked about participants' political orientation on a scale from 1 = *extremely liberal* to 11 = *extremely conservative*. Higher scores indicated higher levels of political conservatism.

## **Results and Discussion**

Firstly, we examined correlations for the continuous variables (Table 3). The results of correlation analysis indicated that, as in Study 1, emotion dysregulation was not significantly

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<sup>5</sup> This scale consists of six subscales that measure different aspects of emotion dysregulation. We only report the total DERS-36 score here, as we were only concerned with general levels of emotion dysregulation. Please see the Supplements for analyses, including the six subfactors of DERS.

related to national narcissism or political conservatism, albeit it was negatively linked to national identification and age. Again, age was positively related to national narcissism, national identification, and political conservatism, while national narcissism and national identification were positively correlated.

**Table 3**

*Means, Standard Deviations, and Zero-Order Correlations (Study 2)*

Measure	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. DERS	2.17	0.67	-	.06	-.21***	.02	-.30***
2. National narcissism	2.12	0.85		-	.61***	.45***	.11*
3. National identification	3.26	0.84			-	.40***	.30***
4. Political conservatism	4.87	2.96				-	.11*
5. Age	41.33	13.94					-

*Note.* DERS = Difficulties in Emotion Regulation Scale.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

In the second step, we conducted a regression analysis with national narcissism as the outcome variable (Table 4). As in Study 1, we controlled for the national identification and added age, gender, and political conservatism as covariates. The overall regression model was significant. Consistently with our hypothesis and Study 1 results, emotion dysregulation significantly and positively predicted national narcissism (controlled for national identification). Again, national identification and political conservatism also positively predicted national narcissism. The effects of age and gender were non-significant.

**Table 4**

*Predictors of National Narcissism (Study 2)*

Variable	<i>B</i>	95% CI	$\beta$	<i>p</i>
DERS	0.21	[0.12, 0.30]	.17	< .001
National identification	0.57	[0.49, 0.65]	.57	< .001
Political conservatism	0.06	[0.04, 0.08]	.22	< .001
Age	-0.002	[-0.01, 0.003]	-.03	.474
Gender (0 = woman, 1 = man)	0.07	[-0.05, 0.19]	.04	.265
<i>R</i> <sup>2</sup>		.46		
<i>F</i>		$F(5, 438) = 73.16^{***}$		

*Note.* DERS = Difficulties in Emotion Regulation Scale

\*\*\* $p < .001$ .

In Study 2, we replicated the results of Study 1 on a different sample using full scales, showing that emotion dysregulation was related to higher national narcissism (when controlling for national identification), providing further support for our hypothesis. In the next study, we aimed to expand these results.

### Study 3

In Study 3, we also measured conspiracy beliefs besides replicating (H1) our previous results in a different sample. Belief in conspiracy theories (i.e., secret actions performed by malevolent groups; Douglas et al., 2017) has been considered one of the unfavorable outcomes of national narcissism (e.g., Cichocka et al., 2016). Moreover, it has been linked to difficulties in emotion regulation (Molenda, Green, et al., 2023), as greater emotion dysregulation predicted higher conspiracy beliefs. Thus, we aimed to replicate the pattern of

associations between emotion dysregulation and conspiracy beliefs (H2). Finally, we assumed that national narcissism would mediate the link between emotion dysregulation and conspiracy beliefs (H3).

## **Method**

### ***Participants and Procedure***

Study 3 was conducted online in 2023 on a nationwide sample of adult Poles via a Polish online research panel that had been used for academic research before (e.g., Molenda, Marchlewska, & Rogoza, 2023). Participants filled out demographic questions, measures<sup>6</sup> of difficulties with emotion regulation, national narcissism, national identification, and conspiracy beliefs, followed by a debrief at the end of the survey. The study was approved by the Research Ethics Committee of the [blinded for the review] (number of approval: 19/IX/2022). The panel was responsible for recruiting the respondents and screening only those who declared their national identity as Polish. A total of 633 participants (336 women, 297 men,  $M_{\text{age}} = 47.93$  years,  $SD_{\text{age}} = 16.52$ , range = 18 – 81) were included in the final analyses.

### ***Measures***

**Difficulties in Emotion Regulation.** We measured emotion dysregulation using a brief 18-item version of the Difficulties in Emotion Regulation Scale (DERS-18; Victor & Klonsky, 2016) based on the questionnaire by Gratz and Roemer (2004). The scale demonstrated very good reliability,  $\alpha = .90$ . As previously, participants responded on a five-point scale, from 1 = *almost never* to 5 = *almost always*. Higher scores indicated greater emotion dysregulation.

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<sup>6</sup> Besides the variables reported here, the survey also involved various measures (e.g., a set of individual differences variables) included for the purposes of different projects (please see the OSF project site or contact the first author for details). This dataset (albeit using other variables) was used by [blinded for review] et al., 2023 and [blinded for review] et al., 2024.

**National Narcissism.** It was measured as in Study 1, with the five-item Collective Narcissism Scale (Golec de Zavala et al., 2013), but this time referencing the Polish national in-group. The scale showed very good reliability,  $\alpha = .89$ . Participants answered on a five-point scale, from 1 = *strongly disagree* to 5 = *strongly agree*. Higher scores indicated higher national narcissism.

**National Identification.** It was assessed as in Study 2, with the 12-item Social Identification Scale (Cameron, 2004), with reference to the Polish national in-group. The scale had excellent reliability,  $\alpha = .92$ . As in Study 2, items were scored on a five-point scale, from 1 = *strongly disagree* to 5 = *strongly agree*. Higher scores indicated higher national identification.

**Conspiracy Beliefs.** We employed the Generic Conspiracist Beliefs Scale (GCB; Brotherton et al., 2013) – a 15-item, widely used tool for measuring conspiracy beliefs. The scale demonstrated excellent reliability,  $\alpha = .94$ . Statements of this measure described general notions of conspiracy (e.g., “Certain significant events have been the result of the activity of a small group who secretly manipulate world events”), and participants responded to them on a five-point scale, from 1 = *definitely not true* to 5 = *definitely true*. Higher scores indicated higher level of conspiracy beliefs.

**Covariates.** As previously, besides age and gender (coded as 0 = woman, 1 = man), we asked about participants’ political orientation on a scale from 1 = *definitely left-wing* to 7 = *definitely right-wing*. Higher scores indicated higher levels of political conservatism.

## **Results and Discussion**

We started with examining intercorrelations for the continuous variables (Table 5). Again, emotion dysregulation was not significantly related to national narcissism or political conservatism, but it was negatively linked to national identification and age. Moreover, it was positively associated with conspiracy beliefs. Age was positively related to national

identification but not to national narcissism or political conservatism. Conspiracy beliefs were negatively linked to age and positively to national narcissism but not to national identification. As before, national narcissism and national identification were positively correlated.

**Table 5**

*Means, Standard Deviations, and Zero-Order Correlations (Study 3)*

Measure	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. DERS	2.09	0.64	-	.07	-.24***	.17***	.02	-.34***
2. National narcissim	2.82	1.08		-	.48***	.15***	.44***	.06
3. National identification	3.67	0.82			-	-.07	.34***	.33***
4. Conspiracy beliefs	2.93	0.96				-	.04	-.10*
5. Political conservatism	4.01	1.65					-	-.07
6. Age	47.93	16.52						-

*Note.* DERS = Difficulties in Emotion Regulation Scale.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Then, we computed a regression analysis with national narcissism as the outcome variable (Table 6). As previously, we controlled for the national identification, also including age, gender, and political conservatism as covariates. The overall regression model was significant. According to our hypothesis and previous results, emotion dysregulation positively predicted national narcissism (controlled for national identification). National identification and political conservatism also positively predicted national narcissism. The effect of age was non-significant. However, rather unexpectedly, the effect of gender was negative, suggesting that women were more likely to indicate higher national narcissism.

**Table 6***Predictors of National Narcissism (Study 3)*

Variable	<i>B</i>	95% CI	$\beta$	<i>p</i>
DERS	0.28	[0.16, 0.39]	.16	< .001
National identification	0.55	[0.45, 0.65]	.41	< .001
Political conservatism	0.20	[0.15, 0.24]	.30	< .001
Age	0.00	[-0.004, 0.01]	.002	.952
Gender (0 = woman, 1 = man)	-0.25	[-0.39, -0.11]	-.12	< .001
<i>R</i> <sup>2</sup>		.35		
<i>F</i>		$F(5, 627) = 68.07^{***}$		

*Note.* DERS = Difficulties in Emotion Regulation Scale

\*\*\* $p < .001$ .

Next, we conducted a hierarchical regression analysis to examine the effects of emotion dysregulation and national narcissism on conspiracy beliefs (Table 7). In the first step, we included emotion dysregulation and added political conservatism, age, and gender as covariates. This model was significant. Emotion dysregulation was a significant positive predictor of conspiracy beliefs. None of the covariates had significant effects. In the second step, we introduced national narcissism and national identification as predictors. This model was also significant. The effect of emotion dysregulation remained significant and positive, albeit weaker. The covariates did not reach significance again. National narcissism was a

significant positive predictor of conspiracy beliefs, while national identification had a significant negative effect on the outcome variable.

**Table 7**

*Predictors of Conspiracy Beliefs (Study 3)*

Variables	Model 1			Model 2			
	$\beta$	<i>B</i>	95% CI	$\beta$	<i>B</i>	95% CI	
DERS	.15***	0.22	[0.10, 0.35]	.11*	0.17	[0.04, 0.29]	
Political conservatism	.04	0.02	[-0.02, 0.07]	-.01	-0.004	[-0.06, 0.05]	
Age	-.05	-0.003	[-0.01, 0.002]	-.04	-0.002	[-0.01, 0.003]	
Gender (0 = woman, 1 = man)	-.04	-.08	[-0.23, 0.07]	-.02	-0.04	[-0.19, 0.11]	
National narcissism				.21***	0.18	[0.10, 0.27]	
National identification				-.13*	-0.15	[-0.26, -0.04]	
$R^2$		.03			.06		
<i>F</i>		$F(4, 628) = 5.34***$			$F(6, 626) = 6.87***$		
$\Delta R^2$					.03		
$\Delta F$					$F(2, 626) = 9.63***$		

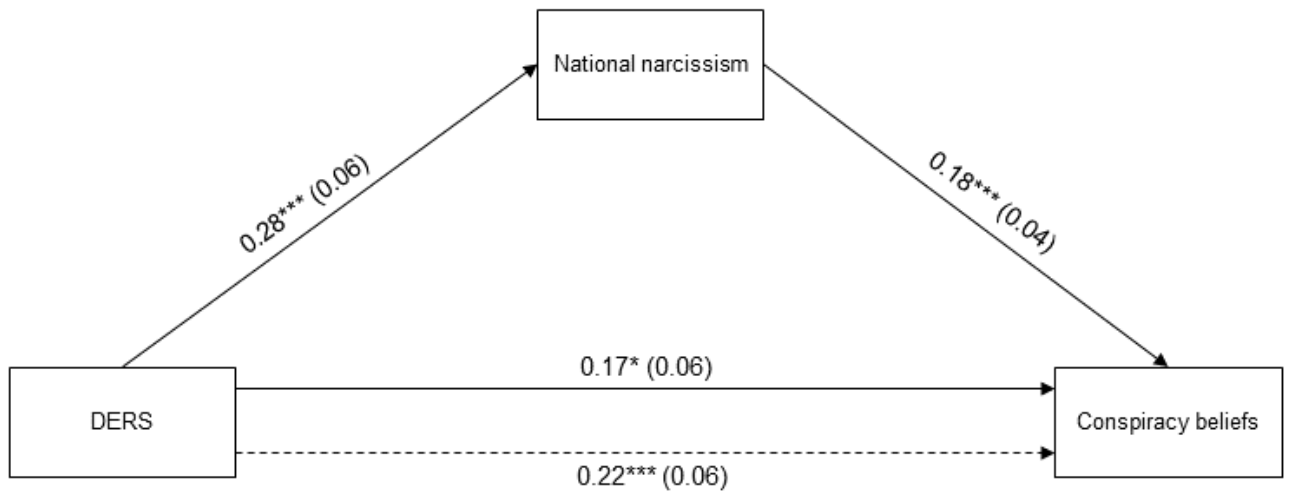
*Note.* DERS = Difficulties in Emotion Regulation Scale

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Finally, to test our last hypothesis, we performed a mediation analysis using model 4 with one mediator in Process 4.1 (Hayes, 2021). This analysis (Figure 1) investigated whether national narcissism mediated the path between emotion dysregulation and conspiracy beliefs. We used national identification, political conservatism, age, and gender as covariates. The significance of the mediation analysis was tested with bootstrapped 95% confidence intervals for the standardized indirect effects (5,000 resamples). The indirect effect of emotion dysregulation on conspiracy beliefs via national narcissism of 0.05 was significant, with a bootstrapped 95% bias-corrected confidence interval of 0.01 to 0.06.

**Figure 1**

*Indirect Effect of Emotion Dysregulation on Conspiracy Beliefs via National Narcissism*



*Note.* Entries are unstandardized coefficients. Dotted line indicates total effect (not controlling for the third variable). DERS = Difficulties in Emotion Regulation Scale.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Overall, Study 3 replicated the results of our previous studies, indicating that emotion dysregulation is related to higher national narcissism. This study, however, also added to the literature on conspiracy beliefs by replicating the positive link between emotion dysregulation and conspiracy beliefs (Molenda, Green, et al., 2023). Importantly, by combining past research lines, our study revealed that the relationship between emotion dysregulation and conspiracy beliefs was (partially) accounted for by national narcissism.

### General Discussion

Across three cross-sectional studies conducted among British, American, and Polish participants, we examined the relationship between emotion dysregulation and national narcissism. We hypothesized and found that emotion dysregulation was linked with higher national narcissism (controlled for national identification), supporting H1. Moreover, in Study 3, we managed to replicate the results of past studies (Molenda, Green, et al., 2023) by

demonstrating that emotion dysregulation (H2) was related to higher conspiracy beliefs. Our findings also indicated an indirect effect of national narcissism between emotion dysregulation and conspiracy beliefs (H3), suggesting that the association between emotion dysregulation and conspiracy beliefs could be partly accounted for by national narcissism. Additionally, it is worth noting that political conservatism, as in past studies (e.g., Biddlestone et al., 2022; Gronfeldt, Cislak, Sternisko, et al., 2023), was consistently linked to higher national narcissism across all the samples we investigated.

### **Theoretical Implications**

Our findings supported and extended past theorizing about the role of individual deficiencies in adopting narcissistic in-group identity. The results consistently showed that greater emotion dysregulation was linked with higher national narcissism. Therefore, deficiencies in the processes of emotion regulation – crucial for human functioning and well-being (e.g., Hofmann et al., 2012) and often result in worse interpersonal functioning, negative affect, or aggression (Donahue et al., 2014; Gross & John, 2003) – were linked to searching for compensation for these shortcomings in the form of narcissistic identity with a strong collective, in this case – the national in-group. It is worth noting that although emotion dysregulation was linked to higher narcissistic national identity, it was also related to lower non-narcissistic national identity. In other words, those with better emotion regulation tend to gravitate toward a more secure, authentic attachment to one's nation, without the grandiose, narcissistic component. This also aligns with past findings demonstrating that non-narcissistic national identity is based on a secure self and satisfied needs (e.g., Marchlewska, Górska, Green, et al., 2022; for a review see Cislak & Cichocka, 2023) – here, we also showed that individuals with fewer difficulties regulating their emotions might be more prone to identify with their nation in a non-narcissistic way.

Notably, the current research empirically supported Golec de Zavala et al.'s (2019) suggestions that “deficits in the ability to regulate negative emotions” (p. 60) might be linked to adopting national narcissist identity. Our findings also enhanced Golec de Zavala's (2019) research about the associations between national narcissism and negative emotionality, underlining that difficulties in the emotional sphere might indeed underpin this form of in-group identity. Moreover, we managed to extend Molenda, Marchlewska, Rogoza, and Szczepańska's (2023) findings regarding the role of deficiencies in coping with stress in acquiring national narcissism. It seems that not only shortcomings in coping strategies but also difficulties in the related field of emotion regulation are linked to higher national narcissism. Likewise, our results align with previous studies indicating the role of emotion (dys)regulation not only for an individual's well-being but also for social phenomena (e.g., prejudice; Halperin et al., 2013; Steele et al., 2019). Here, we suggest that difficulties in emotion regulation also matter for social identity research, specifically collective narcissism.

Furthermore, the present results corroborated and extended previous research on emotion dysregulation (Molenda, Green, et al., 2023; Scandurra et al., 2022), national narcissism (Cichocka et al., 2016; Cislak et al., 2021; Marchlewska, Górska, Green, et al., 2022), and conspiracy beliefs. Specifically, we demonstrated that national narcissism may account for the relation between emotion dysregulation and conspiracy beliefs. Thus, it seems at least plausible that those with greater deficiencies in emotion regulation are more prone to adopt a narcissistic national identity, which further might translate into a higher inclination to believe in conspiracy theories. Our studies suggest that the matters of emotion (dys)regulation, narcissistic national identification, and endorsement of conspiracy theories are possibly intertwined.

### **Limitations and Future Directions**

While our research enhanced past findings regarding potential roots and concomitants of national narcissism, several points of caution in interpreting and generalizing these results must be raised. Most importantly, all our studies were cross-sectional; hence, inferencing about the causal nature of examined relationships is vastly limited. Thus, future research should employ longitudinal and experimental designs to thoroughly investigate whether these associations are indeed causal. Whereas emotion regulation processes are rather basic psychological phenomena present from early childhood (Eisenberg et al., 2010; Johnstone & Walter, 2014), future studies could manipulate some narrow areas of this phenomena, for example, emotion regulation self-efficacy or emotion regulation strategies (e.g., Benfer et al., 2018; Gross & John, 2003) to examine the effects of not just broadly emotion dysregulation (as we did in the current research) but also the effects of some specific processes. Moreover, the mediation model proposed and tested in Study 3, although based on strong theoretical foundations, was examined using a cross-sectional study, thus limiting conclusions about the character of examined relationships. Future research should employ carefully designed experiments or longitudinal studies (e.g., Kline, 2015). In fact, it seems also at least plausible that higher emotion dysregulation can lead to conspiracy beliefs and, in turn, strengthen defensive in-group identity in the form of national narcissism.

### ***Constraints on Generality***

Moreover, some limitations should be noticed regarding the generality of our studies, including samples and methods. Although our research used samples from three different countries (UK, US, Poland), future studies should also examine these associations with samples drawn from different cultures, particularly outside of WEIRD contexts (Western, Educated, Industrialised, Rich, and Democratic; Henrich et al., 2010), which would allow for greater generalizability of the findings. Moreover, while we investigated our hypotheses in a specific context of collective narcissism (i.e., in the national groups), we argue that these

effects also should manifest in other group contexts (e.g., among sports fans; Larkin & Fink, 2019) – it should be, however, examined in future studies. Also, the next investigations could replicate our findings using different tools for emotion dysregulation (e.g., Preece et al., 2018) or examine beyond self-reported measures, for example, focusing on real behaviors or data obtained from social media platforms.

## **Conclusions**

Our findings suggest that individuals with greater emotion dysregulation might be more prone to identify with the nation in a narcissistic way to compensate for their deficiencies. This is in line with past theorizing (Golec de Zavala et al., 2019) and indicates that those who are less effective in regulating their emotions or stress (Molenda, Marchlewska, Rogoza, & Szczepańska, 2023) could search for a strong collective and identify with it with the hope that belongingness to such a group would make themselves seem stronger and more important, thereby increasing their feelings of self-worthiness and making up for their shortcomings. National narcissism could also explain the relationship between emotion dysregulation and conspiracy beliefs, thus emphasizing the role that emotion (dys)regulation might play in shaping some social phenomena. A future challenge would be to investigate whether improving the regulation of affective processes (emotion, mood, stress) could decrease these adverse social outcomes.

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## Statement of Contribution

### *What is already known on this subject?*

- Collective narcissism serves a compensatory function for an individual's deficiencies
- Collective narcissism is linked to negative emotionality and maladaptive coping with stress.
- Emotion dysregulation is related to individuals' well-being and social phenomena (e.g., conspiracy beliefs).

### *What does this study add?*

- Emotion dysregulation is linked to higher collective narcissism across three nationalities.
- Collective narcissism also explains the relationship between emotion dysregulation and conspiracy beliefs.
- This research emphasizes the role that emotion (dys)regulation might play in shaping some social phenomena.