

Brief Report

COVID-19 Vaccination Engagement and Protective Health Behaviours: Associations with Decision Regret and Conspiracy Mentality

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Abstract

Background: The COVID-19 pandemic underscored the importance of understanding the psychological factors associated with engagement in recommended health behaviours. This study examines how decision regret and conspiracy mentality relate to vaccination engagement and protective health behaviours during the later stages of the COVID-19 pandemic in Cyprus. **Methods:** A total of 325 Greek-speaking adults completed an online questionnaire that included demographic questions, the Decision Regret Scale (DRS), the Conspiracy Mentality Questionnaire (CMQ), and a COVID-19 Preventive Behaviours Questionnaire developed by the authors. **Results:** The findings showed that: (a) greater vaccination engagement and protective health behaviours were associated with lower levels of decision regret; and (b) conspiracy mentality was associated with vaccination engagement but not with protective health behaviours. **Conclusions:** The findings highlight the potential relevance of emotional processes such as decision regret and belief-related factors, such as conspiracy mentality, in relation to engagement with recommended health behaviours. These findings may help inform public health communication strategies aimed at supporting engagement in recommended health behaviours during future health crises.

Keywords: COVID-19 vaccination; protective health behaviours; decision regret; conspiracy mentality; public health behaviour



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1. Introduction

The COVID-19 pandemic emerged as one of the most significant global crises of the 21st century, profoundly affecting physical and mental health while imposing substantial cognitive and emotional challenges on individuals and societies worldwide [1]. Research indicates that it was linked to heightened mental health issues, such as increased anxiety, depression, and suicidal ideation [2]. Psychological responses during the pandemic were likely influenced by multiple factors, including concerns about infection and the public health measures implemented to reduce transmission [3]. Simultaneously, the pandemic sparked greater interest in exploring psychological and behavioural responses during public health emergencies, particularly regarding engagement in recommended health behaviours [1,3]. The rapid development and rollout of COVID-19 vaccines introduced additional psychological and societal challenges related to vaccination decision-making. Public acceptance of vaccination

depended not only on vaccine availability but also on trust in public institutions, effective communication, and individuals' confidence in the safety and effectiveness of vaccination programmes. Vaccination decisions were therefore made within a rapidly evolving scientific and public health context, as evidence on vaccine benefits, effectiveness, and safety continued to accumulate. While COVID-19 vaccines substantially reduced severe disease, hospitalisation, and mortality, accumulating evidence also identified uncommon but recognised adverse events, including myocarditis, vaccine-induced immune thrombotic thrombocytopenia (VITT), and temporary menstrual changes, contributing to ongoing discussions about the overall benefit–risk profile of vaccination [4–9].

Given the psychological and behavioural challenges emerging from the COVID-19 pandemic, it is important to explore the cognitive mechanisms that influence people's decision-making and their engagement with public health recommendations. One such mechanism is decision regret, defined as the distress or remorse experienced after a decision, particularly when individuals believe that an alternative choice may have led to a more favourable outcome [10]. As with other healthcare decisions, vaccination decisions are ideally made on the basis of adequate information about potential benefits and risks. The extent to which individuals perceive that they have made an informed decision may influence their subsequent evaluation of that decision, including the experience of decision regret. Importantly, COVID-19 vaccination decisions were made amid considerable uncertainty, with evolving scientific knowledge, shifting public health recommendations, and rapidly emerging information regarding vaccine effectiveness and safety. As the pandemic progressed, evidence indicated that vaccine effectiveness against infection and transmission varied across emerging variants and declined over time, although protection against severe disease remained substantial, contributing to changes in public perceptions and vaccination-related decision-making [9,11,12]. Evidence suggests that attitudes toward COVID-19 vaccination were dynamic rather than fixed, shifting over time as individuals' trust, perceived risks, and confidence in vaccination changed. These changing circumstances may have influenced how individuals retrospectively evaluated their vaccination decisions and, consequently, the extent to which they experienced decision regret [5,13]. Previous research has shown that regret-related processes play an important role in health behaviour and vaccination decisions [14]. In vaccination contexts, anticipated regret has been associated with vaccination intentions and vaccine acceptability across different populations and health conditions [15,16]. In studies conducted during the COVID-19 pandemic, anticipated regret was linked to vaccination intentions and related health behaviours [17,18]. Research on the effects of misinformation has shown that stronger belief in misinformation is associated with lower anticipated regret, which, in turn, is linked to decreased willingness to get vaccinated [18]. More recently, attention has also shifted to experienced (post-decisional) regret following COVID-19 vaccination [19]. Emerging evidence suggests that post-vaccination regret is associated with lower willingness to receive future vaccine doses and less favourable attitudes toward subsequent vaccination, underscoring its potential influence on future vaccination-related decisions and behaviours [20–22].

Another psychological factor that has received significant attention during the pandemic is conspiracy mentality. Conspiracy mentality refers to a general tendency to interpret important social and political events as the result of secret actions carried out by powerful groups [23]. During the COVID-19 pandemic, conspiracy-related narratives included claims that the virus was intentionally created in a laboratory, that governments concealed information about the virus, or that vaccination programmes served hidden political or economic interests [24]. Recent reviews indicate that vaccine-related conspiracy narratives were widespread during the COVID-19 pandemic and consistently associated with lower vaccination intentions and uptake across diverse populations [25]. Conspiracy beliefs have

been linked to lower compliance with health policies and recommended safety behaviours during COVID-19. Research shows that individuals with stronger conspiracy beliefs are less likely to get tested for COVID-19 and more likely to disregard public health recommendations and preventive measures aimed at reducing COVID-19 transmission [26,27]. Previous research has also linked conspiracy beliefs to misinformation acceptance, lower trust in science, and greater vaccine hesitancy, factors that may undermine engagement in recommended health behaviours during public health crises [28–30]. Furthermore, research has shown that individual differences in the tendency to endorse vaccination conspiracy theories are associated with broader psychological and social factors, highlighting the complexity of conspiracy beliefs in vaccination contexts [31]. Consequently, conspiracy mentality may represent an important psychological factor associated with engagement in recommended health behaviours during public health crises.

This study examines how decision regret and conspiracy mentality relate to vaccination engagement and protective health behaviours during the later stages of the COVID-19 pandemic. Systematic reviews have shown that COVID-19 vaccine acceptance and hesitancy are influenced by multiple interacting demographic, behavioural, and psychological factors, underscoring the complexity of vaccination-related decision-making [32]. More specifically, evidence suggests that vaccine acceptance and hesitancy were shaped by a complex interplay of factors, including trust in health authorities, perceived vaccine safety and effectiveness, misinformation, and conspiracy beliefs [13,32]. These factors evolved alongside emerging evidence on both the benefits and recognised limitations of COVID-19 vaccination, including shifting estimates of vaccine effectiveness against emerging variants and the identification of uncommon adverse events, highlighting the dynamic context in which vaccination decisions were made [9,11,12]. Moreover, vaccine attitudes evolved throughout the pandemic as new evidence emerged and public perceptions shifted, highlighting the dynamic nature of vaccination-related decision-making [5]. COVID-19 vaccine hesitancy remained an important public health challenge across European countries, with behavioural, attitudinal, and demographic factors contributing to variations in vaccination intentions and uptake [33]. Differences in COVID-19 vaccination rollout and coverage were also observed across European countries, including in Cyprus, throughout the pandemic [34]. Although vaccination coverage increased substantially across Europe, Cyprus achieved relatively high vaccine uptake compared with many other European countries [35,36]. Previous research in Cyprus has shown that behavioural, cognitive, and emotional factors, including institutional trust, conspiracy beliefs, trust in science, and perceived risk, are associated with COVID-19 vaccination decisions [37,38]. However, although previous studies have examined psychological determinants of COVID-19 vaccination decisions, less is known about how individuals retrospectively evaluate these decisions through the experience of decision regret. Furthermore, little is known about how decision regret and conspiracy mentality are associated with vaccination engagement and protective health behaviours during the later stages of the pandemic. The present study extends this line of research by examining the associations between conspiracy mentality and decision regret and vaccination engagement and protective health behaviours during the later stages of the pandemic. In this study, vaccination engagement refers to participation in COVID-19 vaccination-related practices, including vaccine uptake, engagement with vaccination-related recommendations, and efforts to promote vaccination within one's social environment.

2. Materials and Methods

2.1. Procedure

Following approval from the Cyprus National Bioethics Committee (EEBK EIT 2024.01.251), the study measures were compiled into a single questionnaire using Google Forms. Data collection took place from 3 November 2024 to 11 January 2025, using convenience and snowball sampling techniques. The data collection occurred during a period when COVID-19 was no longer considered a pandemic in Cyprus but was still recognised as a communicable disease under public health surveillance. According to the Cyprus Ministry of Health decree, COVID-19 remained on the official list of notifiable infectious diseases, indicating that even though emergency measures were eased, public health monitoring and recommended protective behaviours continued [39]. The regulatory context marked a transition from mandatory to largely voluntary health behaviours, providing an opportunity to examine psychological factors associated with vaccination engagement and protective health behaviours.

Recruitment occurred through social media platforms (e.g., Viber, Instagram), direct messaging apps, and email invitations sent to friends, students, colleagues, and other networks. Potential participants accessed the questionnaire via an online link and were provided with information about the study’s aims before participating. Participants were informed about the study’s purpose and expected duration and were assured of anonymity and voluntary participation. Informed consent was obtained electronically by selecting the “Consent” option, which was necessary to access the rest of the questionnaire. Participants were informed that they could withdraw from the study at any time before submitting their responses. The questionnaire included demographic questions and measures assessing COVID-19-related health behaviours, decision regret, and conspiracy mentality. The survey remained online until at least 300 valid responses were collected.

2.2. Sample

Eligibility for participation was restricted to Greek-speaking adults aged 18 and older. The final sample included 325 adults. Participant demographic characteristics are presented in Table 1. Ages ranged from 18 to 72, with a mean age of 37.06 years (SD = 14.25). Of the participants, 270 (83.1%) reported having received the COVID-19 vaccine, while 55 (16.9%) reported not being vaccinated.

Table 1. Demographic characteristics of the participants (N = 325).

Demographic Characteristic		N (%)
Age	18–29 years	129 (39.7%)
	30–49 years	114 (35.1%)
	50+ years	82 (25.2%)
Gender	Female	236 (72.6%)
	Male	89 (27.4%)
Nationality	Greek	243 (74.8%)
	Cypriot	82 (25.2%)
Residence	City	254 (78.2%)
	Village	71 (21.8%)
Education	Secondary Education	68 (20.9%)
	Bachelor’s Degree	162 (49.8%)
	Master’s Degree	85 (26.2%)
	Doctoral Degree	10 (3.1%)

Table 1. *Cont.*

Demographic Characteristic		N (%)
Employment Status	Student	95 (29.2%)
	Employed	204 (62.8%)
	Unemployed	9 (2.8%)
	Homemaker	5 (1.5%)
	Retired	12 (3.7%)
Healthcare Professional Status	Healthcare Professional	57 (17.5%)
	Non-Healthcare Professional	268 (82.5%)
Vaccination Status	Vaccinated	270 (83.1%)
	Unvaccinated	55 (16.9%)

2.3. Tools and Measures

2.3.1. Demographic Information

Data were collected on participants' age, gender, nationality, place of residence, educational attainment, employment status, and healthcare professional status. Participants were also asked to indicate whether they had received the COVID-19 vaccine (Yes/No).

2.3.2. COVID-19 Preventive Behaviours Questionnaire

COVID-19-related health behaviours were assessed using a 12-item questionnaire created by the authors. As existing measures did not adequately capture both vaccination engagement and ongoing protective health behaviours, a questionnaire was developed for this study. It assessed COVID-19-related behaviours that remained relevant in the later stages of the pandemic, when formal restrictions had largely eased, and health-related actions were voluntary. Participants rated the likelihood of engaging in specific preventive actions on a 5-point Likert-type scale, with higher scores indicating greater engagement in the respective health behaviours. The full questionnaire is presented in Appendix A (Table A1). Exploratory Factor Analysis (EFA) of the twelve items revealed a two-factor structure. The first factor, Vaccination Engagement, reflected both personal vaccination behaviour and efforts to encourage others to get vaccinated. It included five items (e.g., receiving a new vaccine, getting boosters, following vaccination guidelines at the workplace, encouraging vaccination in the community, and promoting vaccination within the family; factor loadings ≥ 0.82). The second factor, Protective Health Behaviours, reflected preventive actions aimed at reducing the risk of COVID-19 transmission. It comprised seven items (e.g., wearing masks in public, avoiding large gatherings, following public health guidelines, getting tested when experiencing symptoms, getting tested during periods of high transmission, self-isolating when positive, and informing close contacts when positive; factor loadings ≥ 0.59). Mean scores were computed by averaging the items loading on each factor and were used in subsequent analyses.

2.3.3. Decision Regret Scale (DRS)

Participants' levels of post-vaccination regret were assessed using the Decision Regret Scale (DRS) [10,40]. This is a 5-item self-report questionnaire designed to evaluate regret following a health-related decision. In the current study, participants reviewed their decision to receive the COVID-19 vaccine and rated their agreement with five statements (e.g., "It was the right decision"). Responses are rated on a 5-point Likert-type scale ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). A total score is calculated, with higher scores indicating greater levels of decision regret. In the present study, internal consistency for the DRS was high ($\alpha = 0.89$).

2.3.4. Conspiracy Mentality Questionnaire (CMQ)

Participants' levels of conspiracy mentality were measured using the Conspiracy Mentality Questionnaire (CMQ) [23,40]. Unlike measures that assess endorsement of specific conspiracy theories, the CMQ captures a general conspiratorial worldview and susceptibility to conspiracy-related explanations across different contexts. The CMQ is a 5-item self-report measure designed to assess individuals' general tendency to believe in conspiracy theories, regardless of specific content (e.g., "I think that many very important things happen in the world, which the public is never informed about"). Responses are rated on a probability scale ranging from 0% (Not at all likely) to 100% (Absolutely certain). A total score is calculated by averaging across items, with higher scores indicating stronger endorsement of conspiratorial beliefs. In the current study, internal consistency for the CMQ was high ($\alpha = 0.84$).

2.4. Data Processing

To examine relationships between psychological factors and COVID-19-related health behaviours, mean scores for vaccination engagement, protective health behaviours, decision regret, and conspiracy mentality were computed by averaging items loading on each factor. Pearson correlation analyses were conducted to examine associations between the main study variables. In addition, linear regression models were used to examine the extent to which decision regret and conspiracy mentality were associated with vaccination engagement and protective health behaviours. Separate regression models were conducted for vaccination engagement and protective health behaviours. Independent-samples *t*-tests and one-way analyses of variance (ANOVAs) were also conducted to examine demographic differences in vaccination engagement and protective health behaviours. For these analyses, the education variable was collapsed into three categories by combining the Master's and PhD groups due to the small number of participants with a PhD. Statistical significance was set at $p < 0.05$.

3. Results

To examine the relationships between psychological factors and COVID-19-related behaviours, Pearson correlation analyses were conducted. As shown in Table 2, vaccination engagement was negatively associated with both decision regret and conspiracy mentality, indicating that higher regret levels and stronger conspiracy beliefs were associated with lower engagement in vaccination-related behaviours. Additionally, protective health behaviours were negatively associated with decision regret, suggesting that higher regret levels were associated with lower engagement in preventive actions. No significant association was observed between protective health behaviours and conspiracy mentality, indicating that conspiracy mentality was not associated with protective health behaviours.

Table 2. Correlations between psychological factors and COVID-19-related behaviours.

	1	2	3	4
Vaccination Engagement	---			
Protective Health Behaviours	0.421 **	---		
Decision Regret	−0.346 **	−0.137 *	---	
Conspiracy Mentality	−0.266 **	−0.025	0.100	---

Note. ** Correlation is significant at the 0.01 level (2-tailed); * correlation is significant at the 0.05 level (2-tailed).

Further to the above analyses, two linear regression analyses were conducted to examine the associations between decision regret, conspiracy mentality, and COVID-19-

related health behaviours. The results are presented in Table 3. The model predicting vaccination engagement was statistically significant, $F(2, 322) = 33.86$, $p < 0.001$, explaining 17.4% of the variance in vaccination engagement ($R^2 = 0.174$). Both decision regret and conspiracy mentality were significantly negatively associated with vaccination engagement. The model predicting protective health behaviours was also statistically significant, $F(2, 322) = 3.10$, $p = 0.046$, explaining a small proportion of the variance in protective health behaviours ($R^2 = 0.019$). Decision regret was significantly and negatively associated with protective health behaviours, whereas conspiracy mentality was not significantly associated with protective health behaviours.

Table 3. Linear regression analyses predicting COVID-19-related health behaviours.

Dependent Variable	Predictor	β	p	Model F	R^2
Vaccination Engagement	Decision Regret	−0.32	<0.001	33.86 ***	0.174
	Conspiracy Mentality	−0.23	<0.001		
Protective Health Behaviours	Decision Regret	−0.14	0.015	3.10 *	0.019
	Conspiracy Mentality	−0.01	0.842		

Note. β = standardised regression coefficient. * $p < 0.05$. *** $p < 0.001$.

To further explore whether COVID-19-related health behaviours differed by demographic characteristics, independent-samples t -tests and one-way ANOVAs were conducted. Women reported significantly higher rates of protective health behaviours than men, $t(323) = 3.01$, $p = 0.003$, $d = 0.37$, whereas no gender differences were observed in vaccination engagement, $t(323) = -0.58$, $p = 0.565$. Vaccinated participants reported significantly higher vaccination engagement, $t(323) = 7.41$, $p < 0.001$, $d = 1.10$, and more protective health behaviours, $t(323) = 5.19$, $p < 0.001$, $d = 0.77$, compared to unvaccinated participants. Healthcare providers reported significantly higher vaccination engagement than non-healthcare providers, $t(323) = 2.08$, $p = 0.038$, $d = 0.30$, whereas no significant difference was observed in protective health behaviours, $t(323) = 1.49$, $p = 0.136$. No significant differences in vaccination engagement or protective health behaviours were observed across age groups, $F(2, 322) = 1.24$, $p = 0.291$, $\eta^2 = 0.008$, and $F(2, 322) = 1.49$, $p = 0.228$, $\eta^2 = 0.009$, respectively. Similarly, education level was not significantly associated with vaccination engagement, $F(2, 322) = 1.83$, $p = 0.162$, $\eta^2 = 0.011$, or with protective health behaviours, $F(2, 322) = 1.12$, $p = 0.329$, $\eta^2 = 0.007$.

4. Discussion

The aim of the current study was to examine the associations among decision regret, conspiracy mentality, and COVID-19-related behaviours in Cyprus during the later stages of the pandemic. The results showed that both decision regret and conspiracy mentality were significantly associated with vaccination engagement, while decision regret was also associated with protective health behaviours. Conversely, conspiracy mentality was not significantly associated with protective health behaviours. These findings highlight the potential role of both emotional decision processes and belief-related factors when studying engagement with public health behaviours.

One key finding of this study is that greater engagement with recommended COVID-19 health behaviours was associated with lower levels of decision regret. Specifically, people who reported higher vaccination engagement and more protective health behaviours generally experienced less regret about their pandemic-related decisions. This pattern may suggest that those who actively followed recommended health measures reported greater confidence in their decisions about COVID-19 management. Conversely, lower engagement in these behaviours might be associated with greater retrospective uncertainty or doubt,

which may be linked to greater regret. These findings are consistent with previous research suggesting that regret-related processes are associated with vaccination intentions, vaccine acceptability, and vaccination decision-making [15,16,18]. They are also broadly consistent with recent studies showing that post-vaccination regret has been associated with less favourable attitudes toward future vaccination and lower intentions to receive subsequent vaccine doses [20–22]. Taken together, these findings highlight the potential relevance of decision regret for individuals' evaluations of past health decisions and suggest that it may also be associated with future vaccination-related behaviours. Because perceptions of COVID-19 vaccination were shaped by evolving scientific evidence and public health guidance throughout the pandemic, the experience of post-decisional regret may also have changed over time as individuals reassessed their earlier decisions [9,11,12]. However, given the cross-sectional nature of the present study, the direction of these associations cannot be determined.

Another important finding was that conspiracy mentality was significantly associated with vaccination engagement but not associated with protective health behaviours. This is consistent with prior research linking conspiratorial beliefs to vaccine hesitancy [27,28,30]. It is also consistent with recent evidence indicating that vaccine-related conspiracy beliefs are consistently associated with lower vaccination intentions and uptake across diverse populations [25]. Individuals with stronger conspiracy beliefs may be more likely to question the safety or necessity of vaccines, which may be related to a lower willingness to follow vaccination-related recommendations. In contrast, conspiracy mentality was not significantly associated with protective health behaviours, suggesting that individuals may differentiate vaccination from other preventive actions. Vaccination may be perceived as a more ideological or controversial decision, whereas actions such as mask wearing, testing, or avoiding gatherings may be viewed as more immediate and personal ways of managing health risks. This may suggest that conspiracy mentality is more strongly related to vaccination-related decisions than to other protective health behaviours. A similar pattern has also been reported in Cyprus, where conspiracy beliefs, along with institutional trust and perceived risk, were associated with decisions about COVID-19 vaccination [38].

The timing of the study may also be relevant for interpreting these findings. Data were collected when COVID-19 was no longer officially classified as a pandemic in Cyprus, and most mandatory health measures had been removed. In this context, health-related behaviours were largely voluntary. This may have been associated with a greater role of individual psychological factors, such as regret and conspiracy-related beliefs, in relation to vaccination engagement. As a result, decisions about vaccination-related behaviours may have reflected personal beliefs and evaluations to a greater extent than in earlier stages of the pandemic. This context should be considered when interpreting the findings, as behavioural decisions during periods of reduced public health restrictions may differ from those made during the acute phases of a public health emergency. This interpretation is consistent with evidence suggesting that vaccination attitudes and decisions evolved throughout the pandemic as scientific evidence, public health recommendations, and public perceptions changed [5,13].

From a practical perspective, the findings of the current study may be relevant for public health communication strategies aimed at increasing vaccination uptake and encouraging protective behaviours. They might also be useful for informing interventions and public health campaigns that target behavioural responses during periods when engagement in recommended health behaviours is largely voluntary. Specifically, the results emphasise the importance of emotional processes in decision-making, such as decision regret, as well as beliefs associated with conspiracy mentality. At the same time, these findings should not be interpreted as implying that decision regret or concerns about COVID-19 vac-

cination are necessarily unfounded. During the pandemic, scientific evidence on COVID-19 vaccines continued to evolve, including evidence on vaccine effectiveness against emerging variants, protection against transmission, and the identification of uncommon but recognised adverse events [6–9,11,12]. Accordingly, the present findings should be interpreted within this broader scientific and public health context. Rather than evaluating the objective validity of individual vaccination decisions, the present study examined how individuals' evaluations and beliefs were associated with vaccination engagement and protective health behaviours. Public health initiatives that encourage transparent communication, recognise uncertainty, and address misinformation can be key parts of effective health messaging [3,25]. These recommendations are consistent with recent evidence suggesting that addressing misinformation may contribute to improving vaccination acceptance and engagement with recommended health behaviours [32].

Finally, the exploratory demographic analyses indicated that women reported greater engagement in protective health behaviours than men, whereas vaccination engagement was higher among vaccinated individuals and healthcare professionals. These findings are broadly consistent with previous research suggesting that engagement in COVID-19 preventive behaviours may vary by demographic and occupational characteristics [32]. However, no significant differences were observed across age groups or educational levels.

Several limitations of this study should be acknowledged. First, relying on self-report measures may introduce response bias and limit the accuracy of reported behaviours. Second, the study's cross-sectional design limits the ability to draw conclusions about the directionality of the observed associations. Third, the amount of variance explained by protective health behaviours was relatively small, suggesting that other factors not included in this study may have a greater influence on these behaviours. Fourth, the study was conducted in a specific cultural and regulatory setting, which may limit the extent to which the results apply to other contexts. Fifth, although the Decision Regret Scale provides a measure of regret associated with health-related decisions, it does not assess the specific reasons underlying participants' regret. Finally, the unequal distribution of participants across educational levels required broader educational categories in the exploratory analyses, potentially limiting the ability to detect more nuanced educational differences. Future research could address these limitations by using longitudinal designs, incorporating additional psychological and social factors, and examining similar relationships in different cultural environments and post-pandemic settings. Future studies may also benefit from exploring the factors contributing to post-vaccination regret in greater detail and examining how decision regret and conspiracy mentality relate to engagement in vaccination and other public health behaviours across different health contexts. Additionally, future research should further investigate the demographic differences observed in the present study and examine how they interact with psychological factors, such as decision regret and conspiracy mentality, to shape vaccination engagement and other protective health behaviours.

5. Conclusions

In conclusion, this study examined the relationships between decision regret, conspiracy mentality, and COVID-19-related health behaviours in Cyprus during the later stages of the pandemic. The findings indicate that decision regret was associated with a broader range of health behaviours, whereas conspiracy mentality was specifically linked to vaccination engagement. These results highlight the potential relevance of considering both emotional and belief-driven factors when developing communication strategies to support public health efforts during future crises. Although further research is needed to clarify these relationships, insights into how decision regret and conspiracy mentality are

associated with health behaviours may help inform communication strategies aimed at supporting engagement in recommended health behaviours, particularly in contexts where such engagement is largely voluntary.

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Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Cyprus National Bioethics Committee (ref no.: EEBK/ΕΠ/2024.01.251, 12 September 2024).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data supporting the findings of this study are openly available in the Open Science Framework repository at <https://osf.io/65epg> (accessed on 14 July 2026).

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

Table A1. Items of the COVID-19 Preventive Behaviours Questionnaire.

Vaccination Engagement	
1.	How likely are you to get vaccinated if a new COVID-19 vaccine is developed?
2.	How likely are you to receive a booster dose if recommended by health authorities?
3.	How likely are you to follow vaccination guidelines from your workplace or government?
4.	How likely are you to encourage others in your community to get vaccinated?
5.	How likely are you to encourage your family members to get vaccinated?
Protective Health Behaviours	
6.	How likely are you to wear a mask in public spaces if recommended by authorities?
7.	How likely are you to avoid large gatherings during a virus outbreak?
8.	How likely are you to follow new public health guidelines if issued?
9.	How likely are you to get tested if you have symptoms or believe you have been exposed?
10.	How likely are you to get tested during periods of high transmission?
11.	How likely are you to self-isolate if you test positive for COVID-19?
12.	How likely are you to inform your close contacts if you test positive?

Note. Participants responded using a 5-point Likert-type scale ranging from 1 (Very Unlikely) to 5 (Very Likely).

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