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Information-Management Behavior During Stressful Waiting Periods

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In three longitudinal studies, we examined the relationship between worry about an outcome and information-management behavior—specifically seeking and avoiding information about that outcome—in the context of awaiting uncertain news. Study 1 examined a group of U.S. voters across the 4 weeks preceding the 2020 presidential election. Study 2 examined law graduates who completed the California bar exam during the 17 weeks between when they took the exam and when their results were posted online. Study 3 examined job candidates from a variety of academic fields from October to April as they searched for academic jobs. In all three studies, people who reported greater worry about the relevant outcome across the wait reported greater information seeking. Additionally, people were particularly likely to seek information at the times during the wait when they reported the most acute worry. Evidence for the relationship between worry and information avoidance during the wait was more mixed; we found only that people who worried more were more likely to avoid information generally (between-subjects effect) in Studies 1 and 2 and did not find evidence that people were more likely to avoid at times they were most worried (within-subjects effect). These findings suggest that information avoidance might not be the strategy of choice in response to worry during stressful waiting periods; instead, worry seems to be motivating the pursuit of (sometimes unhelpful) information.

Keywords: information behavior, waiting, worry, uncertainty

A common lay belief states that ostriches stick their heads underground when they fear being physically attacked. Instead of running from danger or facing it, they merely prevent themselves from seeing the threat. Although this assumption about ostriches is false (ostriches put their heads underground to tend to their nests; Cleveland Zoological Society, 2020), the notion spawned a phrase applied to humans who ignore their problems rather than facing them: "burying their heads in the sand" (*Bury/Have Your Head in the Sand, 2024*).

Research on coping suggests that in times of distress, people do sometimes bury their heads in the sand. For example, people often avoid potentially stressful information if they feel they will be unable to cope with it (Howell et al., 2014; Hua & Howell, 2022) or when they worry it will threaten their desired emotions, thoughts, or behaviors (Howell et al., 2020; Sweeny et al., 2010). On the other hand, people sometimes do the opposite—seeking out information in times of distress, often in hopes of learning something that might reduce their negative emotions (Brashers et al., 2002; Miller, 1987; Monzani et al., 2021; Turner et al., 2006). Together, research on these topics suggests that people can use both the pursuit of and avoidance of information as coping techniques (Brashers, 2001; Case et al., 2005; Chasiotis et al., 2021; Soroya et al., 2021). In the present work, we examine people's information-management behavior in the unique context of awaiting uncertain news. Specifically, we examine whether experiences of worry during stressful periods of waiting—during a presidential election, while awaiting bar exam results, and while on the academic job market—relate to information seeking, information avoidance, or both.

Uncertain Waiting Periods and Worry

People are often faced with stressful waiting periods when an important outcome is unknown, and they have very little personal control over that outcome. For instance, in the days after a job interview, important exam, or medical test, when one is simply awaiting results, there is very little to do to alter one's fate: The interview is over, the test is turned in, and the labs have been drawn. At the same time, one might still wonder, "Did the hiring

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Study 1 full measures and materials (Sweeny, Wilson, & Howell, 2024) are available on the Open Science Framework at https://osf.io/7xaq3/ and analysis code and additional online results (Sweeny & Howell, 2024b) at https://osf.io/dvupk/. Study 2 full measures and materials (Sweeny et al., 2021) are available at https://osf.io/mpnqt/ and analysis code and additional online results (Sweeny & Howell, 2024c) at https://osf.io/b8qha/. Study 3 full measures and materials (Sweeny, Howell, et al., 2024) are available at https://osf.io/ek9bu/ and analysis code and additional online results (Sweeny & Howell, 2024a) at https://osf.io/vqtu6/.

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manager think I had enough experience?" "Did I confuse the foot-in-the-door and door-in-the-face techniques on the exam?" "Do my recent headaches mean I have a brain tumor?" It is this unique combination of low personal control and high uncertainty that can make waiting periods particularly and uniquely stressful (Sweeny, 2018; Sweeny et al., 2020).

One of the hallmarks of distress associated with awaiting uncertain news is the experience of worry. Worry is a cognitive-emotional blend comprised of feelings of anxiety toward and negative repetitive thoughts about the future (McCaul et al., 2020). Worry is a natural response to uncertainty about important outcomes (Lee & Hawkins, 2016; Rosen & Knäuper, 2009; Tiedens & Linton, 2001) and, at subclinical levels, motivates people to take preventive action to keep unwanted outcomes from transpiring (Sweeny & Dooley, 2017). For example, data from the COVID-19 pandemic suggested that people who worried more about COVID-19 were more likely to engage in behavior to avoid contracting or spreading the virus (Liu, 2020). Despite this important motivational function, if worry is unresolved, it can lead to negative physical and psychological outcomes (Behar et al., 2005; McLaughlin et al., 2007; Watkins et al., 2005)—and in its extreme, uncontrolled form, is a marker of clinical pathology including generalized anxiety disorder (Andrews et al., 2010; Buhr & Dugas, 2006; Dugas et al., 1997).

In the case of awaiting uncertain news, people often experience worry in response to the uncertainty surrounding their future outcomes. However, because people lack control over the uncertain outcome in these situations, worry cannot serve its motivational function (Howell et al., 2023; Sweeny et al., 2020). As a result, uncertain waiting periods can be detrimental to both physical and mental well-being (Howell et al., 2023) an effect that is particularly strong at peak times of acute worry (Howell & Sweeny, 2016, 2020; Sweeny & Falkenstein, 2015).

Regaining a Sense of Control

Of course, just because waiting periods involve a lack of control over a particular outcome, they do not necessarily involve a total loss of control. People can still take action to mitigate the negative consequences that might result from an undesired outcome (Sweeny & Cavanaugh, 2012). For instance, a student might do extra credit work while awaiting an exam result, or a job seeker might apply to additional positions as they await the result of an interview. In this way, worry can still serve its motivational function, albeit indirectly, which mitigates its negative effects on well-being. Consistent with this reasoning are data suggesting that people who felt a greater sense of control during the uncertainty of the early COVID-19 pandemic were less likely to experience the negative physical and mental well-being consequences of worry (Howell et al., 2023). Importantly, this study used only one's subjective *feeling* of control, suggesting that the mere feeling of control—regardless of its source or validity—might reduce the negative effects of worry on well-being. It follows that, while awaiting uncertain news, people may engage in a variety of strategies to establish a sense of control during times when they are most worried.

In fact, people use a variety of cognitive and emotion management strategies (e.g., hoping for the best, bracing for the worst) at the exact points during waiting periods when they are most worried about their outcomes: at the beginning of the waiting period and as news approaches (Sweeny, 2018). We suspect that people use information-management behaviors the same way. That is, in response to worry, people strategically seek and avoid information about their uncertain and worrisome future in order to reduce that worry. To the extent that information-management behaviors provide people a sense of control over their outcome, they may be more likely to both seek and avoid information when they are most worried about the uncertain outcome they await.

Although research has examined a variety of waiting strategies, to our knowledge, no empirical work has examined information management in the context of waiting. The most prominent model of waiting, the uncertainty navigation model (Sweeny & Cavanaugh, 2012), suggests a variety of strategies for managing stressful waiting periods, including mitigating the consequences of bad news (e.g., making childcare arrangements for later job interviews), managing expectations (e.g., bracing for the worst, hoping for the best), and cognitive reappraisal (e.g., preemptively considering the benefits of bad news)—yet the model entirely neglects information-management behavior and the article proposing the theoretical model specifically mentions the need for future research examining "the role of information seeking in uncertainty navigation" (Sweeny & Cavanaugh, 2012, p. 159).

Relevant Theories of Information-Management Behavior

Despite the lack of attention to the role of information-management behavior while awaiting uncertain news, there has been a great deal of work in the social sciences, particularly in communications, economics, and psychology, on information-management behavior (see Foust & Taber, 2025, for a recent overview of information seeking/avoidance theories). These theories often highlight, at least in part, the role of either uncertainty or worry in information-related behavior. For example, a series of models including the Risk Information Seeking and Processing model (Griffin et al., 1999), the augmented Risk Information Seeking and Processing (Kahlor, 2007), the Planned Risk Information Seeking Model (Kahlor, 2010), and the Planned Risk Information Avoidance model (Deline & Kahlor, 2019), as well as data testing their premises (e.g., Yang & Kahlor, 2012), suggest that feelings of worry provoke a sense of "information insufficiency," thus prompting them to seek more information.

Additionally, the theory of motivated information management highlights the role of unpleasant, undesired uncertainty in prompting feelings of anxiety, thus leading people to want to seek *and* avoid information (Afifi & Weiner, 2004). Both forms of information-management behavior provide people with direct control over their level of uncertainty and thus their anxiety. The theory of motivated information management suggests that people will seek information if they want to reduce uncertainty and avoid information if they want to maintain or increase uncertainty. Similarly, we hypothesize that both seeking and avoiding information can theoretically provide an outlet for worry's prevention-motivation tendencies by providing a sense of control. In other words, the more one worries, the more likely one should be to try to control that worry with seeking and avoiding behavior. That is, both behaviors should be more likely to occur when people feel worried generally, and especially during periods when acute worry is the most intense.

The Present Study

Despite some shared features of waiting with other stressors (e.g., uncertainty), a growing body of work has established that waiting periods are uniquely stressful and important to consider separately from other stressors (see Sweeny, 2018; Sweeny & Cavanaugh, 2012; Sweeny & Falkenstein, 2015). Still, given the psycho-emotional overlap between waiting and the contexts where information-management behavior is studied (e.g., other periods of acute uncertainty, when people are considering various risks), it logically follows that information seeking and information avoidance might be common strategies used at times of peak worry during waiting periods. As such, the present study sought to unite these two literatures to examine information-management behavior in the context of awaiting uncertain news.

We conducted three longitudinal studies to examine the relationship between worry and information seeking/avoidance in three stressful waiting contexts: (a) among voters during a high-stakes national election, (b) among law school graduates during the months after they took the bar exam as they awaited their results, and (c) among job seekers on the academic job market. We chose these three periods because each has distinct features, but they all represent instantiations of the experience of awaiting personally important and uncertain news. In so doing, we aimed to provide a test of our hypotheses that was robust to the idiosyncrasies of any specific waiting period.

In all cases, we hypothesized that people would be most likely to both seek and avoid information at times when they were feeling most worried (a within-subjects effect) and that people who worried more on average would also be more likely to use these information-management behaviors on average (a between-subjects effect). We also expected a small negative correlation between the two behaviors—people are typically not seeking information when they are avoiding it and there are some clear individual differences in the behaviors (see Case et al., 2005; Howell & Shepperd, 2016; Miller, 1987). Still, consistent with our reasoning that people might use either strategy to promote feelings of control in a time when they have none, we expected positive relationships between worry and both behaviors.

Transparency and Openness

We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study, and the study follows Journal Article Reporting Standards (Appelbaum et al., 2018). Links to all data, analysis code, and research materials are available within each study. Data were analyzed using the software package SAS 9.4. This study's design and its analysis were not preregistered.

Study 1

Study 1 examined information seeking and avoidance during the 2020 U.S. presidential election.

Method

Participants and Procedure

Table 1 reports demographic information for participants in all studies. Participants ($N = 443$) were recruited online through https://www.Prolific.com. Three survey opportunities were posted on Prolific on October 12, 2020, just over 3 weeks prior to Election Day for the 2020 U.S. presidential election. The surveys were identical but targeted three groups of people: Democrats, Republicans, and Independents (targeted via internal Prolific data on potential participants' political affiliation); participation was also restricted to those who self-reported on Prolific that they were living in the United States. To recruit approximately half of the sample each who preferred that Donald Trump versus Joe Biden win the election (and given no viable third-party candidates), we sought 190 Republicans, 190 Democrats, and 70 Independents. Just prior to Election Day, our participants indicated who they wanted to win the election: 59% reported a preference for Biden, 37% reported a preference for Trump, and 4% reported a preference for another candidate. Weekly participation rates were as follows: Wave 1, 100%; Wave 2, 87%; Wave 3, 79%; and Wave 4, 75%.

After completing the initial survey, participants were invited to complete weekly surveys each Monday for 3 weeks, ultimately completing four weekly surveys before Election Day. They completed a final survey in the 24 hr before Election Day. We also

Table 1
Demographic Information

Demographic	Study 1	Study 2	Study 3
Total *N*	443	150	147
Gender identity			
Woman	51.7%	61.1%	59.9%
Man	47.6%	38.9%	41.1%
Nonbinary or other	0.5%	0%	0%
Age, *M* (*SD*)	35.4 (13.6)	27.71 (4.9)	30.14 (4.6)
Racial/ethnic identity			
White	74.7%	61.1%	74.5%
Latino/a/x	8.6%	6.7%	5.7%
Asian or Pacific Islander	7.2%	18.8%	10.6%
Black or African American	4.8%	2.0%	2.1%
Native American/Alaskan	4.8%	0%	1.4%
Multiple or other	0%	11.4%	5.7%
Subjective socioeconomic status (1 = *worst off*, 10 = *best off*), *M* (*SD*)	5.50 (1.8)	6.52 (1.6)	

included a survey after the election was called for Biden, but that survey is not relevant to the current investigation. Participants were paid up to $10 for their participation, depending on how many surveys they completed.

Measures

Full measures (https://osf.io/7xaq3/) and all analysis code (https://osf.io/dvupk/) as well as any additional online results are available on the Open Science Framework (OSF). Data from the broader study have been part of two other research reports (Howell et al., 2023; Wilson & Sweeny, 2024), though no study has examined information-management behavior in this data set. We focus here exclusively on those items pertinent to our investigation.

Predictor Variable: Worry. We assessed worry with three items that have been used extensively in research on waiting and worry (e.g., Rankin & Sweeny, 2019; Sweeny et al., 2019, 2023), with two items assessing anxious feelings ("I feel anxious every time I think about the outcome of the presidential election," "I am worried about the outcome of the presidential election") and one item assessing perseverative thoughts about the election ("I can't seem to stop thinking about the outcome of the presidential election"; all 1 = *strongly disagree*, 7 = *strongly agree*; average across all time points, $M = 4.17$, $SD = 1.56$, Cronbach's αs = .85–.88).

Outcome Variables: Information Seeking and Information Avoidance. We assessed information seeking and avoidance separately with one item each ("To what extent have you [sought out/avoided] information about the presidential election in the past week?"; 1 = *not at all*, 7 = *completely*; for seeking, $M = 4.37$, $SD = 1.73$, $ICC_{intercept\text{-}only\ model} = .67$; for avoidance, $M = 2.85$, $SD = 1.62$, $ICC_{intercept\text{-}only\ model} = .55$). We also inquired as to what kind of information participants sought or avoided in an open-ended prompt.

Primary Analyses

To test our primary hypotheses in all studies, we conducted multilevel models using the software package SAS 9.4 and the MIXED procedure predicting information seeking and avoidance (in separate models) from fixed effects of person mean-centered (within-person effects) and grand mean-centered (between-person effects) worry. We also included fixed and random intercepts and used maximum likelihood estimation.[1] We also included fixed and random intercepts.

Results

Descriptive Summary

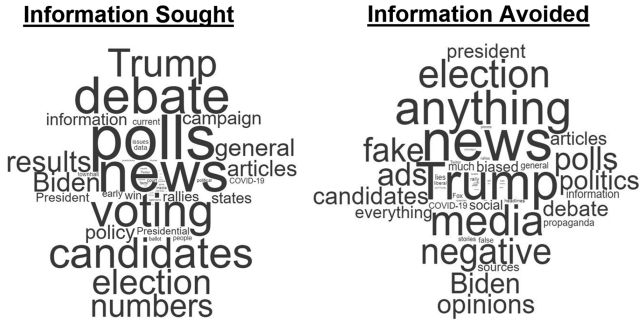
Table 2 presents bivariate correlations among study variables. As expected, there was a small negative correlation between information seeking and avoidance and positive correlations between worry and both information-management behaviors. Figure 1 depicts word clouds based on participants' open-ended responses to the question about what information they sought and avoided. We include the word clouds to demonstrate that participants were able to identify specific targets of their information-management behavior, thus providing reassurance of the validity of the single-item, self-report measures of seeking and avoidance.

Table 2
Study 1: Bivariate Correlations Among Key Study Variables

Variable	Information seeking	Information avoidance
Worry	.33**	.13**
Information seeking		−.19**

** $p < .01$.

Figure 1
Word Clouds Depicting Participants' Open-Ended Responses in Study 1



Note. Larger words within each cloud indicate greater frequency. Due to the large number of responses in this study, only words that were substantively related to information-management behavior and appeared at least 10 times were included.

An examination of linear and quadratic time predicting the two outcomes suggested that there was no change in seeking over time (linear: $b = -.15$, 95% CI [−.38, .09], $SE = .12$, $p = .22$; quadratic: $b = .07$, 95% CI [−.20, .33], $SE = .14$, $p = .62$). Avoidance decreased over time, $b = -.24$, 95% CI [−.46, −.01], $SE = .11$, $p = .04$, but this linear decrease was not qualified by a quadratic trend, $b = .08$, 95% CI [−.17, .34], $SE = .13$, $p = .51$.

Primary Hypothesis Test

Table 3 presents the model parameters from our multilevel model. Worry predicted information seeking at both the within- and between-person levels, such that people who worried more on average reported more information seeking on average, and at times when people were particularly worried, they also reported particularly high levels of information seeking. Worry only predicted the between-person effect for information avoidance, such that people who worried more on average reported more information avoidance on average.

Study 2

The findings from Study 1 suggest that people do engage in information-management behavior as they are awaiting uncertain

[1] The data sets include measures of intolerance of uncertainty (Studies 1–3), trait worry (Study 1), and trait anxiety (Studies 2 and 3), potentially relevant to our between-subjects effects. Including any of these variables in the models does not change the pattern of results except in Study 2, where the p value for between-person effect of worry on avoidance becomes .060. These results are posted on each study's OSF page for interested readers (Study 1, https://osf.io/dvupk/; Study 2, https://osf.io/b8qha/; Study 3, https://osf.io/ek9bu).

Table 3
Study 1: Key Model Parameters for Multilevel Models

Predictor	Information seeking *b* (*SE*) [95% CI]	Information avoidance *b* (*SE*) [95% CI]
Within-person worry	.18** (.05) [.09, .28]	.01 (.05) [−.09, .12]
Between-person worry	.38** (.05) [.28, .48]	.14** (.05) [.05, .24]

Note. *SE* = standard error; CI = confidence interval.
** $p < .01$.

news and that such behavior is related to worry. Consistent with our hypothesis, people sought *and* avoided information more to the extent that they reported worry in general. Further, at moments when people were most worried, they also reported greater information seeking but, contrary to hypotheses, not greater information avoidance.

The context of Study 1 entailed some important generalizability limitations that we aimed to address in Study 2. First, the outcome was collective—affecting the whole country—rather than personal and individual. As such, seeking information (e.g., looking for polling data online) would provide people with additional information that could directly reduce their uncertainty by allowing them to glean the opinions of others. Second, one could argue that people had not yet lost control over the election outcome. Indeed, even the day before the election, people might still be making efforts to push people on their own "side" to vote, and seeking information might have directly helped that goal. To address these concerns, in Study 2, we used a personal context in which we were certain people did not have any control over their specific outcome during the wait. Specifically, we focused on law school graduates in the months after they took the California bar exam as they awaited their results.

Method

Participants and Procedure

Participants were 150 law school graduates who took the July 2016 California bar exam. We recruited as many participants as we could in June of 2016 through law school alumni offices, student bar associations, and bar exam listservs and paid them up to $80 depending on how many surveys they completed.

Participants completed the five surveys relevant to the present inquiry during the 17-week waiting period between the bar exam and when their results were posted online. To best capture temporal fluctuations throughout the wait, we randomly assigned participants to one of five response groups. All groups completed the first questionnaire in the 3 days after they finished the bar exam. Then, over the next 5 weeks, one group of participants completed a second survey each week (e.g., Group A completed their second survey in Week 2 after the exam, Group B completed their second survey in Week 3 after the exam, Group C completed their second survey in Week 4, and so on). Each group then completed their next two surveys 5 and 10 weeks after their second survey. As such, there was a group of participants completing the questionnaire each week throughout the wait, but each person only completed a survey every 5 weeks. Finally, 24 hr before the exam results would be posted online, all participants completed a final questionnaire. Participants also completed a baseline survey prior to the exam and two surveys after the exam, but they are not relevant to the current investigation. Participation rates were as follows: Baseline, 100%; Wave 1, 85%; Wave 2, 76%; Wave 3, 77%; Wave 4, 74%; and Wave 5, 71%.

Measures

Full study measures and deidentified data (https://osf.io/mpnqt/) as well as analysis code and additional online results (https://osf.io/b8qha/) are publicly available on the OSF. We focus here exclusively on those items pertinent to our investigation. Data from the broader study have been part of several other research reports (Howell et al., 2023; Howell & Sweeny, 2020; Rankin & Sweeny, 2022; Rankin, Sweeny, & Xu, 2019; Rankin, Walsh, & Sweeny, 2019; Sweeny et al., 2019), though no study has examined information-management behavior in these data.

Items relevant to our investigation were nearly identical to those described in Study 1: three items for worry ("I feel anxious every time I think about the bar exam," "I am worried about my result on the bar exam," "I can't seem to stop thinking about the bar exam"; all 1 = *strongly disagree*, 7 = *strongly agree*; average across all time points, $M = 4.17$, $SD = 1.56$, Cronbach's αs = .78–.88) and one item each for information seeking and avoidance ("To what extent have you [sought out/avoided] information about the bar exam in the past week?"; 1 = *never sought/avoided information*, 4 = *constantly sought/avoided information*; for seeking, $M = 1.47$, $SD = 0.49$, $ICC_{intercept\text{-}only\ model} = .19$; for avoidance, $M = 1.63$, $SD = 0.73$, $ICC_{intercept\text{-}only\ model} = .40$).

Results

Descriptive Results

Analyses were identical to Study 1. Table 4 presents bivariate correlations among study variables, and Figure 2 depicts word clouds based on participants' open-ended responses. Unlike Study 1, there was no significant correlation between information seeking and avoidance. As in Study 1, worry correlated positively with both information seeking and avoidance.

An examination of linear and quadratic time predicting seeking suggested that although there was no linear change over time, $b = .0007$, 95% CI [−.008, .009], $SE = .004$, $p = .87$, there was a positive quadratic pattern (more seeking at the start and end of the wait compared to the middle), $b = .01$, 95% CI [.009, .012], $SE = .001$, $p < .0001$. Avoidance decreased over time, $b = -.01$, 95% CI [−.03, −.003], $SE = .006$, $p = .01$, and this linear decrease was qualified by a positive quadratic trend (more avoidance at the start and end of the wait, particularly at the start, compared to the middle), $b = .004$, 95% CI [.001, .006], $SE = .001$, $p = .007$.

Table 4
Study 2: Bivariate Correlations Among Key Study Variables

Variable	Information seeking	Information avoidance
Worry	.39**	.30**
Information seeking		−.08

** $p < .01$.

Figure 2
Word Clouds Depicting Participants' Open-Ended Responses in Study 2

Note. Larger words within each cloud indicate greater frequency. Only words that were substantively related to information-management behavior and appeared at least five times were included.

Primary Hypothesis Test

Table 5 presents key model parameters. As in Study 1, worry predicted information seeking at both the within- and between-person levels, such that people who worried more on average reported more information seeking, and at times when people were particularly worried, they also reported particularly high rates of information seeking. As in Study 1, worry only predicted the between-person effect for information avoidance, such that people who worried more on average reported more information avoidance on average.

Study 3

Study 2 directly replicated the findings from Study 1 in a context that involved a personal rather than collective outcome, no control over that outcome during the waiting period, and a longer waiting period. Consistent with our hypothesis, people both sought and avoided information more to the extent that they reported more worry in general during the waiting period. Further, at moments when people were most worried, they also reported greater information seeking but, contrary to hypotheses, not information avoidance behavior.

In both Studies 1 and 2, there was a definitive end date to the waiting—Election Day and the day bar exam results were posted online. Thus, in Study 3, we aimed to examine whether the effects replicated in a context where the end of the wait is not particularly certain: the academic job market.

Table 5
Study 2: Model Parameters for Multilevel Models

Predictor	Information seeking *b* (*SE*) [95% CI]	Information avoidance *b* (*SE*) [95% CI]
Within-person worry	.22** (.03) [.16, .27]	.04 (.04) [−.03, .12]
Between-person worry	.14** (.03) [.08, .20]	.19** (.05) [.09, .29]

Note. *SE* = standard error; CI = confidence interval.
** $p < .01$.

Method

Participants and Procedure

Participants were 147 academic job market applicants—that is, people seeking employment in academia—most of whom were PhD students and who came from diverse academic fields. Participants completed monthly surveys throughout the 2016–2017 academic year starting in October and ending in April. At the beginning of each survey, participants indicated whether they had secured an academic position. Here, we focus only on participants who had not yet secured a position and were, thus, still waiting. The number of participants at each wave that could be included in these analyses was as follows: October, $N = 147$; November, $N = 112$; December, $N = 90$; January, $N = 76$; February, $N = 74$; March, $N = 57$; and April, $N = 45$.

Participants also completed three 5-day bursts of ecological momentary assessments (i.e., brief measures multiple times a day), but those measures are not relevant to the present study. We paid participants up to $80 depending on how many surveys they completed.

Measures

All study measures (https://osf.io/ek9bu/) as well as analysis code and additional online results (https://osf.io/vqtu6/) are publicly available on the OSF. Data from the broader study have been part of two other research reports (Howell & Sweeny, 2020; Rankin, Walsh, & Sweeny, 2019), though no study has examined information-management behavior in this data set. We focus here on those items pertinent to the present investigation.

Measures were nearly identical to those described in Studies 1 and 2: three items for worry ("I feel anxious every time I think about the job market," "I am worried about my prospects on the job market," "I can't seem to stop thinking about the job market"; all 1 = *strongly disagree*, 7 = *strongly agree*; average across time-points, $M = 4.19$, $SD = 1.24$, Cronbach's αs = .69–.83) and one item each for information seeking and one for avoidance ("To what extent have you [sought out/avoided] information about the job market in the past week?"; 1 = *never sought/avoided information*, 4 = *constantly sought/avoided information*; for seeking, $M = 2.52$, $SD = 0.78$, $ICC_{\text{intercept-only model}} = .46$; for avoidance, $M = 1.63$, $SD = 0.73$, $ICC_{\text{intercept-only model}} = .45$).

Results

Descriptive Results

Table 6 presents bivariate correlations among study variables, and Figure 3 depicts word clouds based on participants' open-ended responses. There was a negative correlation between information seeking and avoidance that was notably larger than those observed in Studies 1 and 2. As in Studies 1 and 2, there was a positive correlation between worry and seeking. The correlation between worry and avoidance was in the same (positive) direction as in Studies 1 and 2, but was only marginally significant.

An examination of linear and quadratic time predicting the two outcomes suggested that there was a decrease in seeking over time, $b = -.05$, 95% CI [−.08, −.02], $SE = .02$, $p = .004$, but this linear decrease was not qualified by a quadratic trend, $b = .01$,

Table 6
Study 3: Bivariate Correlations Among Key Study Variables

Variable	Information seeking	Information avoidance
Worry	.28**	.16+
Information seeking		−.41**

+ $p < .10$. ** $p < .01$.

95% CI [−.007, .03], $SE = .009$, $p = .22$. Avoidance did not change over time (linear: $b = .002$, 95% CI [−.03, .03], $SE = .02$, $p = .87$; quadratic: $b = -.002$, 95% CI [−.02, .01], $SE = .008$, $p = .81$).

Primary Hypothesis Test

Table 7 presents key model parameters. As in Studies 1 and 2, worry predicted information seeking at both the within- and between-person levels, such that people who worried more on average reported more information seeking on average, and at times when people were particularly worried, they also reported more information seeking than was typical for them. In contrast to Studies 1 and 2, worry did not predict the between- nor within-person effect for information avoidance, although the between-person effect was near significance and in the same direction as in Studies 1 and 2.

Discussion

The present study used a longitudinal approach to examine information-management behaviors while awaiting uncertain news. Specifically, we examined whether people sought or avoided information relevant to the news for which they were waiting during the 4 weeks preceding the 2020 U.S. presidential election (Study 1), throughout 17 weeks between taking the California Bar exam and learning whether they passed (Study 2), and over the course of 6 months while on the academic job market (Study 3). In all studies, we found that people both sought and avoided pertinent information. Additionally, we found that information-management behavior covaried with worry. Specifically, we found that people were particularly likely to both seek (in all studies) and avoid information (in Studies 1 and 2) to the extent that they were worried about the cause of their waiting. Additionally, we found that in moments when people were particularly worried, they were particularly likely to seek, but not avoid, information.[2]

Figure 3
Word Clouds Depicting Participants' Open-Ended Responses in Study 3

Note. Larger words within each cloud indicate greater frequency. Only words that were substantively related to information-management behavior and appeared at least five times were included.

Implications

For some scholars, it will be unsurprising that the effects we observed were both more consistent and stronger for seeking than for avoidance. Indeed, most models of uncertainty and information seeking highlight the links between increased uncertainty, worry, and increased information seeking (e.g., Griffin et al., 1999; Kahlor, 2007, 2010). In all of these models, a dominant response to (unpleasant) uncertainty is to seek out information.

Of course, in many of these information-seeking models, as well as their counterpart avoidance models (e.g., Deline & Kahlor, 2019), avoidance is characterized as a behavior diametrically opposed to seeking. That is, an increased desire to seek information relates to a decreased desire to avoid information, and factors motivating seeking demotivate avoidance (Deline & Kahlor, 2019). Contrary to this assumption, the present data never showed a negative relationship between worry and avoidance. If anything, these studies suggest a *positive*, albeit weaker, relationship between worry and avoidance. Such a finding is consistent with work treating information seeking and avoiding as independent forms of information management that can occur simultaneously and in response to the same motivation (Afifi & Weiner, 2004; Barbour et al., 2012; Foust & Taber, 2025; Howell et al., 2020; Sweeny et al., 2010).

In addition to implying that seeking and avoidance are not necessarily opposing ends of a spectrum, the small and nonsignificant relationships between worry and avoidance here, particularly at the within-person level, suggest that avoidance may not be a strategy people naturally draw upon to reduce worry. We can think of three reasons for this finding, both of which suggest avenues for future research. First, information avoidance is a less frequent behavior generally (see Howell et al., 2020). In the present studies, the average level of information avoidance was at the lower end of the scale, suggesting that people engaged in avoidance somewhat infrequently. If avoidance is an infrequent but consistent behavior during waiting periods, it makes sense that any observed effect size would be relatively small. As such, future work can examine contexts in which avoidance is more likely (e.g., when people want to preserve a surprise), types of information that might be particularly avoided (e.g., social media posts), and larger samples to get a better representation of avoidance behavior.

Second, it is possible that individual differences in information avoidance tendencies suppressed the relationship between worry and avoidance. That is, consistent with work suggesting measurable individual differences in information avoidance tendencies (Howell & Shepperd, 2016; Miller, 1987), some people might habitually avoid information (or not), regardless of their situation. Thus, future work can examine and account for the variance associated with individual differences in avoidance to establish

[2] Some readers might be interested in quadratic relationships between worry and seeking/avoidance. As the additional online results of such models on our OSF pages suggest, there is not a consistent quadratic relationship between worry and seeking or avoidance (Study 1, https://osf.io/dvupk/; Study 2, https://osf.io/b8qha/; Study 3, https://osf.io/ek9bu).

Table 7
Study 3: Model Parameters for Multilevel Models

Predictor	Information seeking *b* (*SE*) [95% CI]	Information avoidance *b* (*SE*) [95% CI]
Within-person worry	.11* (.05) [.004, .21]	.03 (.04) [−.06, .11]
Between-person worry	.20** (.06) [.09, .31]	.10+ (.05) [−.0007, .20]

Note. *SE* = standard error; CI = confidence interval.
+ $p < .10$. * $p < .05$. ** $p < .01$.

whether trait avoidance tendencies serve as a suppressor of an avoidance–worry link.

Finally, worry is, by nature, a process that involves repetitive thought about the object of worry (Appelbaum et al., 2018; McCaul & Mullens, 2003). For intense worriers, information is likely both salient and front-of-mind. As such, it might prove difficult for them to avoid information in times of intense worry, even if they are motivated to do so. Future research can more directly test this salience hypothesis by directly examining the perseverative thought associated with worry rather than the combination of perseverative thought and feelings of anxiety, as we did in our studies. Regardless of the veracity of these explanations, the present findings suggest that, compared to information avoidance, information seeking is a much clearer covariate of worry while awaiting uncertain news.

Limitations and Future Directions

The present study used a robust set of high-stakes, stressful waiting periods and extensive longitudinal designs to examine the relationship between worry and information-management behavior while awaiting uncertain news. Nevertheless, there are some aspects of this work that limit its implications and generalizability. First, these studies were correlational in nature, observing whether worry and information-maintenance behaviors covaried across time. We chose such a design because it provided important strengths, including a highly ecologically valid examination of the hypotheses at both within- and between-person levels. Nevertheless, the present data cannot test causal directionality and the studies were not designed to do so. As such, future research can examine whether increases in worry cause people to adopt information-management behaviors.

Further, we suspect a bidirectional relationship between worry and information-management behavior over time, with worry engendering information-management behavior, which, in turn, downregulates worry. Indeed, as the results of analyses presented in the online supplements suggest, positioning information behavior as the predictor of worry generally produces a similar pattern of results, with negative within- and between-person effects for seeking and negative between-person effects for avoidance in all studies. We chose to focus on worry as the predictor due to our theoretical assumption that, in the absence of true control over one's outcomes, information-management behavior would not produce a strong enough sense of control to notably reduce worry. Model-fit comparisons suggest that our models were, indeed, a better fit to the data for law graduates awaiting their bar exam results and PhDs on the academic job market, but not for U.S.-dwelling adults awaiting the results of a presidential election. Still, a study with greater temporal resolution surrounding the onset of worry and information-management behavior responses is warranted.

Finally, and related to the last point, our theoretical model proposes that worry during the wait creates a prevention motivation, which in turn prompts people to try to control the possibility of negative outcomes through information-management behavior. These proposed links are based on a robust body of existing literature supporting the ideas theoretically (e.g., Deline & Kahlor, 2019; Howell et al., 2023; Liu, 2020; McCaul et al., 2020; McLaughlin et al., 2007; Sweeny, 2018; Sweeny & Dooley, 2017; Yang & Kahlor, 2012), but we did not measure or test these mediating processes. Thus, future research is needed to directly examine the role of information-management behavior on feelings of control and worry-driven prevention motivation. Such work could also use experimental designs to see the causal effects of both worry and information-management behavior on these mediating outcomes.

Conclusion

Although limited by its correlational nature, the present study provided a robust initial test of the relationship between worry and information-management behaviors in the novel context of three unique, stressful waiting periods. The studies suggest a clear relationship between worry and information seeking: People who worried more were more likely to seek information during the wait, and people were most likely to seek information at times during the wait when they were personally most worried. Evidence for the relationship between worry and information avoidance during the wait was weaker and mixed. Additionally, we found no evidence that people were more likely to avoid at times they were most worried. This latter finding suggests that information avoidance might not be a particular strategy of choice in response to worry. Future experimental work with a high degree of temporal resolution can build on the foundational work here to examine the dynamic interplay between worry and information-management behavior while awaiting uncertain news.

References

Afifi, W. A., & Weiner, J. L. (2004). Toward a theory of motivated information management. *Communication Theory*, *14*(2), 167–190. https://doi.org/10.1111/j.1468-2885.2004.tb00310.x

Andrews, G., Hobbs, M. J., Borkovec, T. D., Beesdo, K., Craske, M. G., Heimberg, R. G., Rapee, R. M., Ruscio, A. M., & Stanley, M. A. (2010). Generalized worry disorder: A review of DSM-IV generalized anxiety disorder and options for DSM-V. *Depression and Anxiety*, *27*(2), 134–147. https://doi.org/10.1002/da.20658

Appelbaum, M., Cooper, H., Kline, R. B., Mayo-Wilson, E., Nezu, A. M., & Rao, S. M. (2018). Journal article reporting standards for quantitative research in psychology: The APA Publications and Communications Board task force report. *American Psychologist*, *73*(1), 3–25. https://doi.org/10.1037/amp0000191

Barbour, J. B., Rintamaki, L. S., Ramsey, J. A., & Brashers, D. E. (2012). Avoiding health information. *Journal of Health Communication*, *17*(2), 212–229. https://doi.org/10.1080/10810730.2011.585691

Behar, E., Zuellig, A. R., & Borkovec, T. (2005). Thought and imaginal activity during worry and trauma recall. *Behavior Therapy*, *36*(2), 157–168. https://doi.org/10.1016/S0005-7894(05)80064-4

Brashers, D. E. (2001). Communication and uncertainty management. *Journal of Communication*, *51*(3), 477–497. https://doi.org/10.1111/j.1460-2466.2001.tb02892.x

Brashers, D. E., Goldsmith, D. J., & Hsieh, E. (2002). Information seeking and avoiding in health contexts. *Human Communication Research*, *28*(2), 258–271. https://doi.org/10.1111/j.1468-2958.2002.tb00807.x

Buhr, K., & Dugas, M. J. (2006). Investigating the construct validity of intolerance of uncertainty and its unique relationship with worry. *Journal of Anxiety Disorders*, *20*(2), 222–236. https://doi.org/10.1016/j.janxdis.2004.12.004

Bury/have your head in the sand. (2024, May 29). https://dictionary.cambridge.org/us/dictionary/english/bury-have-head-in-the-sand

Case, D. O., Andrews, J. E., Johnson, J. D., & Allard, S. L. (2005). Avoiding versus seeking: The relationship of information seeking to avoidance, blunting, coping, dissonance, and related concepts. *Journal of the Medical Library Association*, *93*(3), 353–362. https://pmc.ncbi.nlm.nih.gov/articles/PMC1175801/

Chasiotis, A., Wedderhoff, O., Rosman, T., & Mayer, A.-K. (2021). The role of approach and avoidance motivation and emotion regulation in coping via health information seeking. *Current Psychology*, *40*(10), 5235–5244. https://doi.org/10.1007/s12144-019-00488-3

Cleveland Zoological Society. (2020). *Truth or tail: Do ostriches really bury their head in the sand when scared or frightened?* https://www.clevelandzoosociety.org/z/2020/03/11/truth-or-tail-do-ostriches-really-bury-their-head-in-the-sand-when-scared-or-frightened

Deline, M. B., & Kahlor, L. (2019). Planned risk information avoidance: A proposed theoretical model. *Communication Theory*, *29*(3), 360–382. https://doi.org/10.1093/ct/qty035

Dugas, M. J., Freeston, M. H., & Ladouceur, R. (1997). Intolerance of uncertainty and problem orientation in worry. *Cognitive Therapy and Research*, *21*(6), 593–606. https://doi.org/10.1023/A:1021890322153

Foust, J. L., & Taber, J. M. (2025). Information avoidance: Past perspectives and future directions. *Perspectives on Psychological Science*, *20*(2), 241–263. https://doi.org/10.1177/17456916231197668

Griffin, R. J., Dunwoody, S., & Neuwirth, K. (1999). Proposed model of the relationship of risk information seeking and processing to the development of preventive behaviors. *Environmental Research*, *80*(2), S230–S245. https://doi.org/10.1006/enrs.1998.3940

Howell, J. L., Crosier, B. S., & Shepperd, J. A. (2014). Does lacking threat-management resources increase information avoidance? A multi-sample, multi-method investigation. *Journal of Research in Personality*, *50*, 102–109. https://doi.org/10.1016/j.jrp.2014.03.003

Howell, J. L., Lipsey, N. P., & Shepperd, J. A. (2020). Health information avoidance. In K. Sweeny, M. L. Robbins, & L. M. Cohen (Eds.), *The Wiley encyclopedia of health psychology* (pp. 279–286). Wiley.

Howell, J. L., & Shepperd, J. A. (2016). Establishing an Information Avoidance Scale. *Psychological Assessment*, *28*(12), 1695–1708. https://doi.org/10.1037/pas0000315

Howell, J. L., & Sweeny, K. (2016). Is waiting bad for subjective health? *Journal of Behavioral Medicine*, *39*(4), 652–664. https://doi.org/10.1007/s10865-016-9729-7

Howell, J. L., & Sweeny, K. (2020). Health behavior during periods of stressful uncertainty: Associations with emotions, cognitions, and expectation management. *Psychology & Health*, *35*(10), 1163–1183. https://doi.org/10.1080/08870446.2020.1713323

Howell, J. L., Sweeny, K., Hua, J., Werntz, A., Hussain, M., Hinojosa, B. M., Johnson, A. E., Lindgren, K. P., Meese, W., O'Shea, B. A., & Teachman, B. A. (2023). The role of uncertainty, worry, and control in well-being: Evidence from the COVID-19 outbreak and pandemic in U.S. and China. *Emotion*, *23*(5), 1458–1471. https://doi.org/10.1037/emo0001163

Hua, J., & Howell, J. L. (2022). Coping self-efficacy influences health information avoidance. *Journal of Health Psychology*, *27*(3), 713–725. https://doi.org/10.1177/1359105320965664

Kahlor, L. (2007). An augmented risk information seeking model: The case of global warming. *Media Psychology*, *10*(3), 414–435. https://doi.org/10.1080/15213260701532971

Kahlor, L. (2010). PRISM: A planned risk information seeking model. *Health Communication*, *25*(4), 345–356. https://doi.org/10.1080/10410231003775172

Lee, S. Y., & Hawkins, R. P. (2016). Worry as an uncertainty-associated emotion: Exploring the role of worry in health information seeking. *Health Communication*, *31*(8), 926–933. https://doi.org/10.1080/10410236.2015.1018701

Liu, P. L. (2020). COVID-19 information seeking on digital media and preventive behaviors: The mediation role of worry. *Cyberpsychology, Behavior, and Social Networking*, *23*(10), 677–682. https://doi.org/10.1089/cyber.2020.0250

McCaul, K. D., Magnan, R. E., & Mead, M. P. (2020). Disease-specific worry. In K. Sweeny & M. L. Robbins (Eds.), *The Wiley encyclopedia of health psychology: The social bases of health behavior* (Vol. 2, pp. 255–260). Wiley. https://doi.org/10.1002/9781119057840.ch55

McCaul, K. D., & Mullens, A. B. (2003). Affect, thought and self-protective health behavior: The case of worry and cancer screening. In J. Suls & K. A. Wallston (Eds.), *Social psychological foundations of health and illness* (pp. 137–168). Blackwell Publishing. https://doi.org/10.1002/9780470753552.ch6

McLaughlin, K. A., Borkovec, T. D., & Sibrava, N. J. (2007). The effects of worry and rumination on affect states and cognitive activity. *Behavior Therapy*, *38*(1), 23–38. https://doi.org/10.1016/j.beth.2006.03.003

Miller, S. M. (1987). Monitoring and blunting: Validation of a questionnaire to assess styles of information seeking under threat. *Journal of Personality and Social Psychology*, *52*(2), 345–353. https://doi.org/10.1037/0022-3514.52.2.345

Monzani, D., Vergani, L., Marton, G., Pizzoli, S. F. M., & Pravettoni, G. (2021). When in doubt, Google it: Distress-related information seeking in Italy during the COVID-19 pandemic. *BMC Public Health*, *21*(1), Article 1902. https://doi.org/10.1186/s12889-021-11887-2

Rankin, K., & Sweeny, K. (2019). Divided we stand, united we worry: Predictors of worry in anticipation of a political election. *Motivation and Emotion*, *43*(6), 956–970. https://doi.org/10.1007/s11031-019-09787-5

Rankin, K., & Sweeny, K. (2022). Preparing silver linings for a cloudy day: The consequences of preemptive benefit finding. *Personality and Social Psychology Bulletin*, *48*(8), 1255–1268. https://doi.org/10.1177/01461672211037863

Rankin, K., Sweeny, K., & Xu, S. (2019). Associations between subjective time perception and well-being during stressful waiting periods. *Stress and Health*, *35*(4), 549–559. https://doi.org/10.1002/smi.2888

Rankin, K., Walsh, L. C., & Sweeny, K. (2019). A better distraction: Exploring the benefits of flow during uncertain waiting periods. *Emotion*, *19*(5), 818–828. https://doi.org/10.1037/emo0000479

Rosen, N. O., & Knäuper, B. (2009). A little uncertainty goes a long way: State and trait differences in uncertainty interact to increase information seeking but also increase worry. *Health Communication*, *24*(3), 228–238. https://doi.org/10.1080/10410230902804125

Soroya, S. H., Farooq, A., Mahmood, K., Isoaho, J., & Zara, S. E. (2021). From information seeking to information avoidance: Understanding the health information behavior during a global health crisis. *Information Processing & Management*, *58*(2), Article 102440. https://doi.org/10.1016/j.ipm.2020.102440

Sweeny, K. (2018). On the experience of awaiting uncertain news. *Current Directions in Psychological Science*, *27*(4), 281–285. https://doi.org/10.1177/0963721417754197

Sweeny, K., & Cavanaugh, A. G. (2012). Waiting is the hardest part: A model of uncertainty navigation in the context of health news. *Health Psychology Review*, *6*(2), 147–164. https://doi.org/10.1080/17437199.2010.520112

Sweeny, K., & Dooley, M. D. (2017). The surprising upsides of worry. *Social and Personality Psychology Compass*, *11*(4), Article e12311. https://doi.org/10.1111/spc3.12311

Sweeny, K., & Falkenstein, A. (2015). Is waiting the hardest part? Comparing the emotional experiences of awaiting and receiving bad news. *Personality and Social Psychology Bulletin*, *41*(11), 1551–1559. https://doi.org/10.1177/0146167215601407

Sweeny, K., & Howell, J. L. (2024a, December 27). *Study 3: Supplemental materials for Howell & Sweeny (information management)*. https://osf.io/b8qha/

Sweeny, K., & Howell, J. L. (2024b, December 28). *Study 1: Supplemental materials for Howell & Sweeny (information management)*. https://osf.io/dvupk

Sweeny, K., & Howell, J. L. (2024c, December 28). *Study 2: Supplemental materials for Howell & Sweeny (information management)*. https://osf.io/b8qha/

Sweeny, K., Howell, J. L., & Knapp, S. E. (2021, June 22). *The experience of awaiting bar exam results (2016)*. https://osf.io/mpnqt

Sweeny, K., Howell, J. L., & Kwan, V. W. (2020). Losing control: Comparing the role of personality during two types of stressful life experiences. *Personality and Individual Differences*, *156*, Article 109771. https://doi.org/10.1016/j.paid.2019.109771

Sweeny, K., Howell, M., Robbins, M., German, K., Li, H., & Dooley, M. (2024, December 27). *A longitudinal investigation of uncertainty on the academic job market*. https://osf.io/ek9bu

Sweeny, K., Kwan, V., & Falkenstein, A. (2019). The role of gender in worry and efforts to cope during stressful waiting periods. *Sex Roles*, *81*(11), 765–778. https://doi.org/10.1007/s11199-019-01023-1

Sweeny, K., Melnyk, D., Miller, W. A., & Shepperd, J. A. (2010). Information avoidance: Who, what, when, and why. *Review of General Psychology*, *14*(4), 340–353. https://doi.org/10.1037/a0021288

Sweeny, K., Tran, B. Q., & Ramirez Loyola, M. D. (2023). Religiosity as a predictor of worry during stressful periods of uncertainty. *Psychology of Religion and Spirituality*, *15*(1), 18–24. https://doi.org/10.1037/rel0000413

Sweeny, K., Wilson, M., & Howell, J. L. (2024, December 27). *Uncertainty in the 2020 U.S. presidential election*. https://osf.io/7xaq3

Tiedens, L. Z., & Linton, S. (2001). Judgment under emotional certainty and uncertainty: The effects of specific emotions on information processing. *Journal of Personality and Social Psychology*, *81*(6), 973–988. https://doi.org/10.1037/0022-3514.81.6.973

Turner, M. M., Rimal, R. N., Morrison, D., & Kim, H. (2006). The role of anxiety in seeking and retaining risk information: Testing the risk perception attitude framework in two studies. *Human Communication Research*, *32*(2), 130–156. https://doi.org/10.1111/j.1468-2958.2006.00006.x

Watkins, E., Moulds, M., & Mackintosh, B. (2005). Comparisons between rumination and worry in a non-clinical population. *Behaviour Research and Therapy*, *43*(12), 1577–1585. https://doi.org/10.1016/j.brat.2004.11.008

Wilson, M., & Sweeny, K. (2024). Volatility in expectations while awaiting important news. *Personality and Social Psychology Bulletin*, *50*(7), 1040–1050. https://doi.org/10.1177/01461672231158883

Yang, Z. J., & Kahlor, L. (2012). What, me worry? The role of affect in information seeking and avoidance. *Science Communication*, *35*(2), 189–212. https://doi.org/10.1177/1075547012441873

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