

**Media, Forecasted Posttraumatic Stress Symptoms, and Psychological
Responses before and after an Approaching Hurricane**

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Key Points

Question: Does forecasted posttraumatic stress symptomatology (PTS) play a role in the relationship between media exposure to an approaching hurricane and post-storm psychological outcomes?

Findings: Using a longitudinal design and online surveys, we found that disaster-related media exposure partially accounted for the relationship between forecasted posttraumatic stress and psychological outcomes in the aftermath of Hurricane Irma among a representative sample of Florida residents.

Meaning: Forecasted PTS responses experienced before community trauma presage both media consumption and subsequent mental health outcomes, with important implications for the media and the public's mental health.

Abstract

Importance: Exposure to disaster-related media coverage is associated with negative mental health outcomes. However, risk factors that render individuals vulnerable to this exposure are unknown.

Objective: To examine one risk factor – forecasted posttraumatic stress (PTS) responses – in the context of an approaching disaster, Hurricane Irma. Hurricane-related media exposure was expected to mediate the relationships between forecasted PTS and post-storm adjustment following the hurricane.

Design: Respondents completed two online surveys: one during the 60 hours prior to Hurricane Irma's landfall (Wave 1; 9/8/2017-9/11/2017), the second approximately one month later (Wave 2; 10/12/17-10/29/17).

Setting: Community sample of adults from Florida.

Participants: A representative probability sample of Florida residents completed surveys of their responses to Hurricane Irma. Poststratification weights were applied to facilitate population-based inferences.

Main Outcomes and Measures: Posttraumatic stress responses, psychological distress, functional impairment, worry about future events.

Results: The Wave 1 survey included 1,637 participants (57.0% response rate); 1,478 participants were retained at the Wave 2 follow-up (90.3% retention). The final weighted sample closely approximated U.S. Census benchmarks for the state of Florida. Data analyses using Structural Equation Modeling (SEM) revealed that media exposure to the hurricane ($\beta=0.21$; $p<.001$) and forecasted PTS ($\beta=0.44$; $p<.001$) were significantly associated with post-hurricane adjustment. Additionally, there was a significant indirect

path from forecasted PTS to post-storm adjustment through exposure to hurricane-related media coverage ($\beta=0.07$; $p<.001$). Covariates included demographics, prior mental health diagnoses, and perceived evacuation zone status.

Conclusions and Relevance: Results provide a more thorough understanding of how pre-hurricane psychological factors are associated with post-storm adjustment via media consumption. The findings also demonstrate the importance of considering pre-storm psychological factors when assessing post-storm outcomes. We draw implications for both the media and public health efforts.

Media, Forecasted Posttraumatic Stress Symptoms, and Psychological Responses before and after an Approaching Hurricane

For coastal communities, hurricanes are increasingly common weather hazards that can cause major destruction and death. Days before a major hurricane, life is disrupted as individuals prepare their homes and evacuate if necessary. The psychological impact of these events may also be severe; exposure is often associated with posttraumatic stress (PTS) symptoms and other mental health conditions.^{1,2} One study of affected populations following Hurricane Katrina found PTS prevalence as high as 30% and almost 50% prevalence for anxiety disorders.³ However, conducting research urgently with disaster-threatened populations is difficult,⁴ so we know little about how the psychological experience of individuals anticipating a disaster may influence their subsequent responses. Given that the science surrounding global climate change predicts increasing hurricane activity, it is important to understand how populations at risk for hurricane exposure respond to the threat of disaster.

The news media is an important information source for many in the path of these storms. In the past, individuals relied heavily on local television news reports for storm-related information,⁵ but online media sources now often supplement disaster reports from official sources.⁶ Though information-seeking behavior may be a rational response among community members facing an evolving hazard, decades of research on media exposure to trauma suggests that extensive media consumption during a disaster event is often associated with negative consequences. A recent literature review on this topic found evidence for a link between disaster-related media consumption and negative psychological outcomes, including PTS.⁷ Specifically, use of both television⁸ and social

media⁹ in the aftermath of hurricanes has been linked to increased PTS and depression. However, natural disasters account for a much smaller proportion of the literature on this topic relative to studies conducted after man-made or technological disasters.⁷ Also, to date, there has been no research on consumption of media during and shortly after an impending disaster, like a hurricane.

Individuals' anticipated response to a disaster is an important factor that may influence both their media consumption surrounding the threat and their subsequent responses. People often make predictions about how they might feel in the future, through a process called affective forecasting.¹⁰ A tendency towards negative emotional forecasts, or negative future orientation, has been associated with increased PTS¹¹ and psychological distress¹² in the aftermath of a community trauma. People also tend to make more negative attributions about future negative events than they do past negative events.¹³ Furthermore, *pre-traumatic stress*, or intrusive thoughts or images related to negative future events, was a strong predictor of subsequent PTS symptoms in a sample of Danish soldiers from pre-to post-deployment.¹⁴ Taken together, these findings suggest that individuals' forecasted PTS responses in the days leading up to a hurricane may predict more negative mental health outcomes in its aftermath.

In addition, some individuals are more likely than are others to forecast greater PTS responses in anticipation of an impending disaster. Most people are not particularly accurate when predicting their future emotional responses, especially when it comes to predicting the durability of their responses to negative events.¹⁵ However, individuals who are higher in depression and anxiety reliably forecast more negative emotional responses to future events.^{16,17} At the same time, forecasted PTS is also likely to predict

increased hurricane-related media use. Prior research suggests that anxious¹⁸ and healthy^{19,20} individuals tend to orient towards stimuli that they find threatening. Similarly, through a process known as uncertainty management, individuals who are worried about a particular event may seek to assuage their anxiety by seeking out information related to that event.²¹ However, if individuals choose to mitigate their hurricane-related anxiety by seeking storm-related information in the media, this may lead to *increased* anxiety instead.⁷ As a result, they may be vulnerable to a cycle of increased media consumption and psychological distress in the aftermath of a disaster. Thus, forecasted PTS may also predict post-disaster outcomes indirectly through disaster-related media consumption.

The Present Study

The 2017 Atlantic Hurricane season was the most active in over a decade, producing 17 named storms, 10 of which became hurricanes.²² These included the first major hurricanes to hit the mainland United States in over a decade – including Hurricane Irma, one of the strongest Atlantic Ocean hurricanes ever recorded. Hurricane Irma was a Category 5 storm at its strongest, but weakened to a Category 3 storm before making landfall on the U.S. mainland around 3:30pm on September 10, 2017. The storm killed 92 Americans (with 42 additional fatalities in Caribbean nations), and caused ~50 billion dollars of damage.²³ Media provided 24-hour, sensationalized coverage, which described the possibility of “a catastrophic hit” and “worse than feared” destruction.²⁴ News reports featured reporters standing in high winds and rain to illustrate the dire conditions outside.²⁵ The media broadcasted this coverage nationally,

not just locally, thus expanding the disaster's reach beyond directly affected communities.

This storm also had an uncertain path, which shifted across the state of Florida, in the days preceding landfall. Indeed, at one point in time, the entire state was threatened. This presented a unique research opportunity: we studied the association between anticipated responses to an impending disaster and actual responses in its aftermath by collecting data from a representative sample of Florida residents both immediately before and soon after the hurricane made landfall. This allowed us to examine how responses to the storm evolved from pre- to post-hurricane across the state. We hypothesized that forecasted PTS responses to Hurricane Irma would be associated with increased hurricane-related media consumption, which in turn would be associated with poorer post-storm adjustment, controlling for demographics, prior mental health status, and objective indicators of storm exposure. In particular, we were interested in post-storm PTS, which captures event-specific stress responses; psychological distress, which captures generalized stress responses; functional impairment, which captures mental and physical health impacts on daily functioning; and worry about the future, which captures future-oriented concerns. Each of these indicators assessed a unique component of post-disaster adjustment.

Methods

Participants, Design, and Procedures

Participants came from the GfK KnowledgePanel, a national panel of adult U.S. residents recruited via address-based sampling to answer Web-based surveys in exchange for Internet access and other compensation. All KnowledgePanelists from

Florida were recruited to participate in a study about their responses to the impending Hurricane Irma, which was approaching Florida as a Category 4 storm after making landfall in Cuba with Category 5 windspeeds. Beginning at 6pm on the evening of September 8, 2017, GfK sent 2,873 KnowledgePanelists a link to an online survey they could complete on a computer, tablet, or smartphone; 1,637 participants completed it (57.0% participation rate). The survey included individuals' perceived evacuation status and forecasted psychological responses to the storm. Surveys were available for completion until 3pm on September 11, 2017; 95% of participants completed the Wave 1 (W1) survey within the first 48 hours.

Approximately one month later (10/12/17-10/29/17), GfK fielded a second survey to all W1 participants, and those KnowledgePanelists from Florida who had previously participated in a national study of Americans' responses to the Boston Marathon bombing²⁶ (total $N=1,723$). 1,518 participants (87.9% participation) completed the Wave 2 survey (W2), which included questions about participants' psychological and social functioning since the storm, their media consumption about it, and the degree to which they were impacted by the storm's landfall. The final sample of individuals who completed both surveys was $N=1,478$ individuals (90.3% retention from W1). GfK provided poststratification weights for all participants to account for discrepancies between the sample and U.S. Census benchmarks for Florida. At both waves, respondents provided consent by completing the surveys after reading a brief introduction describing the study. This study followed the American Association for Public Opinion Research ([AAPOR](#)) reporting guideline. The Institutional Review Board of the University of California, Irvine approved all procedures.

Measures

Demographics and mental health diagnoses. Prior to W1, all KnowledgePanelists reported demographic characteristics (age, gender, education, ethnicity) and mental health history. Participants indicated whether a physician had ever diagnosed them with an anxiety or depressive disorder; responses were coded as 0 (no, neither), 1 (either anxiety or depression), or 2 (both anxiety and depression).

Perceived evacuation zone status. At W1, perceived evacuation zone status was calculated based on participants' responses to two questions. Participants who reported evacuating and those who believed they were in an evacuation zone were coded as 1; participants who reported not evacuating because they did not believe they were in an evacuation zone were coded as 0.

Hurricane Irma direct exposure. At W2, participants reported on a 9-item scale the degree to which they were directly exposed to Hurricane Irma. Participants could report staying in their home while under evacuation order, experiencing damage to their home or property, personal injury, or knowing someone who was injured or killed in the storm. Responses to this scale were dichotomized for analyses.

Hurricane Irma media exposure. At W2, participants reported the average number of hours/day they spent engaging with three media sources "in the days during and following the recent hurricanes": traditional media (i.e., TV, radio, and print news), online news sources (CNN, Yahoo, NYTimes.com, etc.), and social media (Facebook, Twitter, Reddit, etc.). Participants could report up to a maximum of 11 hours per day for each source; due to the possibility of simultaneous exposure across multiple media platforms, respondents could report a maximum of 33 hours/day across all sources.

Posttraumatic Stress (PTS) symptoms. At both waves, PTS symptoms were measured using the Primary Care PTSD Screen for DSM-5 (PC-PTSD-5).²⁷ The 5-item scale assessed the severity of symptoms corresponding to the DSM-5 PTSD symptom clusters on a modified 1-5 Likert-type scale. At W1, participants were asked: “with respect to Hurricane Irma and its aftermath, how often do you think you *will* experience [these symptoms] a *week or two from now?*” At W2, they were asked to report how often they had experienced these symptoms with respect to Hurricane Irma over the previous week. At both time points, this scale maintained good internal reliability (Wave 1 $\alpha=0.86$; Wave 2 $\alpha=0.87$).

Psychological distress. General psychological distress (anxiety, depression, somatization) was measured at W2 using 13 items identified through factor analysis in previous studies: 9 items drawn from the Brief Symptom Inventory-18 (BSI-18),²⁸ and four anger items from the original 53-item BSI,²⁹ each assessed on a 0-4 Likert-type scale. The measure maintained excellent internal reliability in this sample ($\alpha=0.92$); the mean was calculated to create an index of psychological distress.

Functional impairment. Functional impairment was assessed at W2 using four items modified from the SF-36 Health Survey.³⁰ These items assessed the extent to which participants’ mental and physical health interfered with work and social functioning on a 1-5 Likert-type scale, and maintained good internal reliability in this sample ($\alpha=0.86$).

Worry about future events. Worry was assessed at W2 using eight items adapted from those used in prior research after 9/11^{31,32} that assessed worries in the previous week about the likelihood of being exposed to natural disasters, environmental

hazards, violence, and economic hardship in the future. These items maintained excellent internal consistency in this sample ($\alpha=0.90$). The mean was calculated to create a composite worry score for each participant.

Statistical Analysis

Analyses were conducted using Stata 14.2 (StataCorp, College Station, TX) in October 2018. For all tests, significance was measured at the $p<.05$ level. To assess the impact of forecasted PTS responses and media exposure on outcomes, a series of structural equation models (SEM) were constructed using Stata's SEM Builder. This analysis incorporates several regression analyses simultaneously, enabling testing of possible causal pathways over time. First, a measurement model was constructed for the latent variable W2 adjustment, which was comprised of the post-hurricane PTS, psychological distress, functional impairment, and worry about future events variables. Next, a theoretical model was developed to test the relationships among media exposure to Hurricane Irma, forecasted PTS responses, and post-hurricane adjustment, controlling for covariates. The initial model included the basic mediation model, with covariates included at the most exogenous level. Covariates for W1 forecasted PTS included age, gender, education (Bachelor's degree or greater vs. other), ethnicity (White, Non-Hispanic vs. Other), perceived evacuation zone status, and prior mental health diagnoses. Further ethnic breakdowns were tested, but did not reveal any significant differences on outcomes. Based on theoretical considerations, additional paths were drawn from prior mental health diagnoses to W2 PTS, and from perceived evacuation zone status to Hurricane-related media exposure; the latter path was not significant and was not included in the final model. Finally, an additional path from W2

direct hurricane exposure to W2 PTS was added. Stata 14.2's SEM builder also allows for the inclusion of sampling weights, which were used in all models in order to facilitate population inferences. Analyses were conducted both with and without the poststratification weights; the pattern of results remained the same. In order to retain sample representativeness, all statistics, including percentages reported here, were conducted using poststratification weights.

Goodness of fit was assessed using the coefficient of determination (CD) and the standardized root mean square residual (SRMR), which are most appropriate for weighted survey data.³³ The CD is a representation of the percentage of variance in the dependent variable that the model explains and may be interpreted similarly to an R^2 value in linear regression. For the SRMR, a value of less than .08 indicates good model fit.

Results

Table 1 presents the final weighted and unweighted descriptive statistics for study-related variables. The final weighted sample ($N=1,478$) closely approximated U.S. Census benchmarks for Florida. Media exposure in the sample was high, with participants reporting an average of 7.45 (weighted 8.12) hours of media per day across sources. Specifically, participants reported an average of 4.04 (weighted 4.08) daily hours of TV, radio, and print news, an average of 1.95 (weighted 2.19) daily hours of online news, and 1.53 (weighted 1.93) daily hours of social media in the days during and following Hurricane Irma.

Table 2 presents the correlations among the variables included in the model. The four dependent variables of interest were correlated with one another (variables 10-13

in the correlation matrix; correlations ranged from $r=.53$ to $r=.72$), which was expected given their relatedness as negative psychological outcomes. For this reason, despite the conceptual distinctness of these constructs, the four were combined into one latent construct of post-hurricane adjustment in subsequent SEM analyses. All variables were also tested individually in separate path models; the patterns of responses remained identical and significant for each outcome.

Figure 1 presents the final measurement model for the latent construct of W2 adjustment. In the initial model, which included only the four observed outcome variables loading onto one latent variable, all factor loadings were high (0.77 or greater); and model fit was good (SRMR=.034; CD=.891). Model fit was improved by adding an additional covariance path between the error terms for psychological distress and functional impairment, the two most correlated outcomes (SRMR=.003; CD=.880). This measurement model was then expanded to create the final theoretical model, which is presented in Figure 2.

In the final model, W1 forecasted PTS responses were significantly associated with hurricane-related media exposure ($\beta=0.38$; $p<.001$; 95% CI [0.29, 0.46]) and W2 adjustment ($\beta=0.44$; $p<.001$; 95% CI [0.35, 0.52]), controlling for all covariates. Perceived evacuation zone status was significantly associated with W1 forecasted PTS responses ($\beta=0.12$; $p<.001$; 95% CI [0.05, 0.20]), but not hurricane-related media exposure. Prior mental health diagnoses were associated with W1 forecasted PTS responses ($\beta=0.16$; $p<.001$; 95% CI [0.08, 0.24]) and W2 adjustment ($\beta=0.19$; $p<.001$; 95% CI [0.11, 0.28]). In alternative models, a path between prior mental health diagnoses and hurricane-related media exposure was included; this path was not

significant and so the more parsimonious model was chosen. Hurricane-related media exposure was significantly associated with W2 adjustment ($\beta=0.21$; $p<.001$; 95% CI [0.11, 0.31]), controlling for direct exposure to the hurricane ($\beta=0.13$; $p<.001$; 95% CI [0.05, 0.21]). Additionally, the indirect path from W1 forecasted PTS responses to W2 adjustment through hurricane-related media exposure was significant, though small in magnitude ($\beta=0.07$; $p<.001$; 95% CI [0.05, 0.08]). This model was a strong fit for the data (SRMR=.044; CD=.164; See Figure 2). All associations were significant in the expected directions.

Discussion

Findings indicate that forecasted PTS responses and storm-related media consumption before an approaching hurricane are important correlates of post-storm psychological adjustment. Forecasted PTS is also indirectly linked to post-storm outcomes via consumption of disaster-related media coverage, even when controlling for direct storm exposure. In fact, forecasted PTS responses were associated with increased media consumption, but perceived evacuation zone status was not, meaning that pre-storm psychological factors appear to play a more important role in media engagement surrounding a disaster than is typically acknowledged. Given that this media engagement during a disaster has been associated with negative psychological consequences with downstream implications for physical health,³⁴ it is particularly important to understand the predictors of this behavior. Furthermore, it appears that individuals' pre-storm vulnerability to distress, as measured by forecasted PTS, plays an important role in this relationship.

These results are also important because they represent the first attempt by researchers to analyze how pre-storm psychological factors are associated with subsequent adjustment through prospective analyses with surveys fielded in the days leading up to a hurricane. Because we are not relying on retrospective reports of participants' psychological functioning or storm perceptions, which can be influenced by situational factors³⁵ or degrade over time,³⁶ we can be more confident in the ecological validity of our findings. Furthermore, the study design, which involved sampling from within a state-wide panel and the use of sampling weights to adjust for probability of inclusion into the study, enables us to extrapolate from these findings to make population inferences.

Limitations

Despite use of a state-wide panel and population weights, we acknowledge that the present sample is not necessarily representative of Florida residents. GfK sent invitations to participate in the W1 survey to all Florida KnowledgePanelists to capture as much data on Floridians' responses as possible. However, this sampling design precluded our ability to oversample in harder-to-recruit populations. Furthermore, the KnowledgePanel is designed to recruit samples that are demographically representative of the populations from which they are drawn, but this does not include geographic representation within smaller communities. As a result, the geographic distribution of participants in our sample does not necessarily mirror that of the State of Florida. This is important for studies of natural hazards because the geographic distribution of the sample may not be representative in terms of population hurricane exposure, both objectively via strong winds and storm surge, as well as subjectively via local media

reports. Sampling weights can correct for discrepancies between the sample and census benchmarks, but it would be helpful for future research to improve geographic representation as well.

We also acknowledge that there is a possibility of a Hawthorne effect in our sample, such that asking individuals at W1 to attend to their expectations for future distress may have amplified reports of distress at W2. This can be a concern in longitudinal survey research, as participants' continued participation in surveys introduces the possibility that their previous responses may impact subsequent behavior. However, in this case, we see no indication that this might be occurring. When comparing participants who did not participate in W1 with those who did using bootstrapped t-tests, there appeared to be no differences in W2 adjustment (all p 's $>.05$). As such, we can assume that the deficits in psychological adjustment over time are unlikely to be attributable to altered attention to anticipated distress responses.

Conclusions

Several questions remain unanswered. For example, because the use of online social media for updates during a developing crisis is associated with greater distress responses relative to other media sources,³⁷ perhaps greater social media use during an approaching hurricane has a stronger relationship with post-storm outcomes when compared with traditional media. Post-storm responses to media may also be differentially associated with pre-storm psychological projections. Preliminary analyses of our data suggest this is not the case, however, this should be examined using stronger measures of media use, ideally in real time.

Overall, our results have important implications for both the news media and emergency management and public health officials. That pre-storm psychological factors have a stronger association than perceived evacuation zone status or direct hurricane exposure with both storm-related media consumption and subsequent adjustment suggests a need to improve hurricane-related risk communications for the public. Communicating a hazard-specific appropriate level of risk could mitigate this concern by ensuring that sensationalized reports are not creating undue levels of pre-storm stress in the population, which can contribute to increased forecasted PTS and more negative psychological responses later on. Furthermore, forecasted PTS responses may be malleable in the pre-storm period, presenting an important inflection point for potential intervention. Emergency management personnel could leverage public service announcements or other education efforts to inform the public about the potential risks of exposure to sensationalized media coverage. As climate scientists predict more active Atlantic hurricane seasons, it is more important than ever that we consider ways in which we can mitigate the psychological risks that accompany the increasing frequency and intensity of hurricanes in coastal communities.

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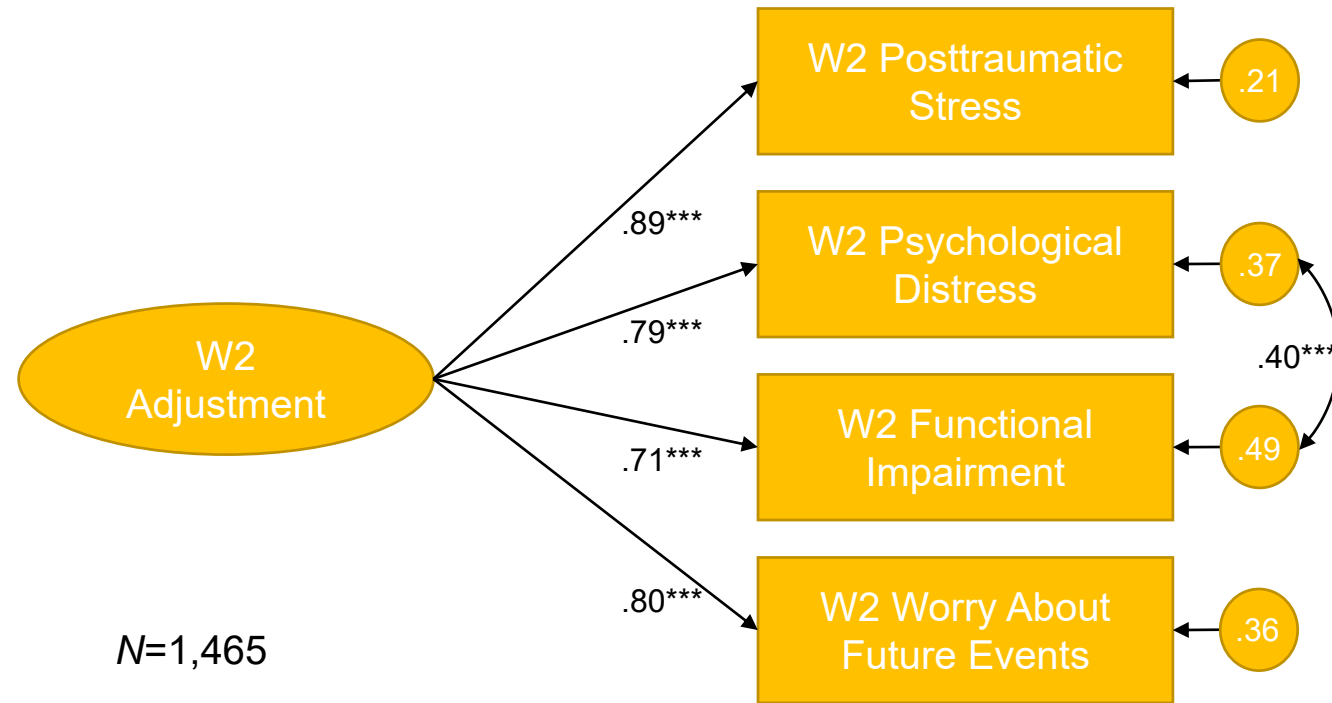
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Figure 1

Final Measurement Model for Wave 2 (W2) Adjustment

[INSERT FIGURE 1 HERE]

Note: SRMR=Standardized Root Mean Square Residual; CD=Coefficient of Determination. Posttraumatic stress, psychological distress, functional impairment, and worry about future events were all measured at Wave 2 (10/12/17-10/29/17) approximately one month after Hurricane Irma. See the Measures section for descriptions of these variables and how they were measured.



$N=1,465$
 $SRMR=.005$
 $CD=.882$

Figure 2

SEM model predicting Wave 2 (W2) Adjustment

[INSERT FIGURE 2 HERE]

Note: SRMR=Standardized Root Mean Square Residual; CD=Coefficient of Determination. See the Measures section for descriptions of variables and how they were measured.

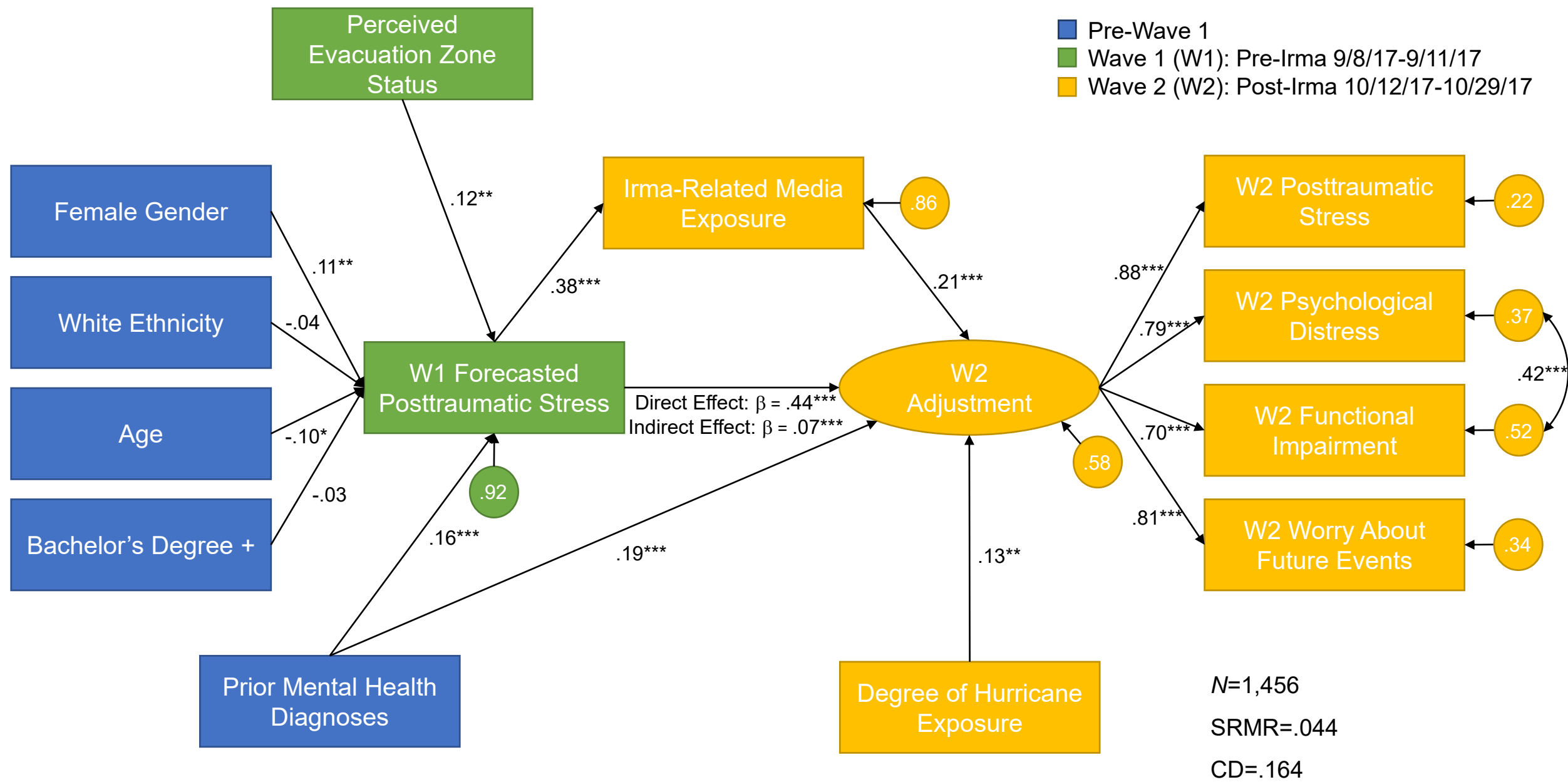


Table 1Descriptive statistics for variables of interest ($N=1,467$)

Variable	<i>N</i> (Unweighted %)	Weighted %*
Gender		
Male	558 (37.75)	44.61
Female	920 (62.25)	55.36
Ethnicity		
White, Non-Hispanic	1,163 (78.69)	62.06
Black, African American	103 (6.97)	11.50
Other, Non-Hispanic	56 (3.79)	4.80
Hispanic	156 (10.55)	21.64
Education		
Less than high school	23 (1.56)	4.90
High school diploma or equivalent	230 (15.56)	33.36
Some college/Associate degree	534 (36.13)	32.42
Bachelor degree or beyond	691 (46.75)	29.32
Household Income (\$)		
< 25,000	230 (15.56)	17.40
25,000–49,999	371 (25.10)	25.26
50,000–74,999	311 (21.04)	20.66
75,000–99,999	263 (17.79)	15.56
≥ 100,000	303 (20.50)	21.12
Mental Health Diagnoses		
None	1,223 (82.75)	83.31
1 (Anxiety or Depression)	176 (11.91)	11.37
2 (Anxiety and Depression)	79 (5.35)	5.31
Age		
Mean (<i>SD</i>)	59.11 (15.18)	
Weighted Mean* (<i>SE</i>)	51.70 (0.69)	
Range	18 - 91	
Perceived Evacuation Zone Status		
Yes	791 (53.63)	53.71
No	684 (46.37)	46.29
Anticipated PTS Response (W1)		
Mean (<i>SD</i>)	1.81 (0.78)	
Weighted Mean* (<i>SE</i>)	1.84 (0.03)	
Range	1 - 5	
Direct Hurricane Exposure		
Yes	998 (67.52)	67.45
No	480 (32.48)	32.55
Hurricane-Related Media Exposure (W2)		
Mean (<i>SD</i>)	7.45 (6.93)	
Weighted Mean* (<i>SE</i>)	8.12 (0.31)	

Range	0 - 33
Posttraumatic Stress Response	
Mean (<i>SD</i>)	1.46 (0.67)
Weighted Mean* (<i>SE</i>)	1.49 (0.03)
Range	1 - 5
Psychological Distress	
Mean (<i>SD</i>)	0.44 (0.58)
Weighted Mean* (<i>SE</i>)	0.51 (0.03)
Range	0 - 4
Functional Impairment	
Mean (<i>SD</i>)	1.55 (0.82)
Weighted Mean* (<i>SE</i>)	1.58 (0.03)
Range	1 - 5
Worry About Future Events	
Mean (<i>SD</i>)	2.03 (0.80)
Weighted Mean* (<i>SE</i>)	2.10 (0.04)
Range	1 -5
*Weights adjust estimates for sampling design and post-stratification to US census benchmarks.	

Table 2

Correlations among the variables included in the model

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Age	1.00												
2. Female Gender	-0.09***	1.00											
3. College Degree	-0.10***	-0.09***	1.00										
4. White Ethnicity	0.33***	-0.04	-0.01	1.00									
5. Mental Health Dx.	-0.07**	0.11***	-0.05*	0.00	1.00								
6. Perceived Evac Zone (y/n)	0.03	-0.03	-0.03	0.03	0.07**	1.00							
7. Forecasted PTS	-0.12***	0.13***	-0.01	-0.08***	0.17***	0.15***	1.00						
8. Media Exposure	-0.11***	0.08**	-0.11***	-0.13***	0.10***	0.07*	0.32***	1.00					
9. Direct Exposure	-0.10***	0.00	-0.02	-0.04	0.06*	0.37***	0.16***	0.11***	1.00				
10. W2 PTS	-0.08**	0.10***	-0.06*	-0.12***	0.24***	0.15***	0.50***	0.32***	0.25***	1.00			
11. W2 Psychological Distress	-0.16***	0.10***	-0.06*	-0.14***	0.34***	0.14***	0.36***	0.26***	0.17***	0.68***	1.00		
12. W2 Functional Impairment	-0.04	0.11***	-0.08**	-0.08**	0.34***	0.13***	0.29***	0.23***	0.16***	0.58***	0.72***	1.00	
13. W2 Worry	-0.15***	0.14***	-0.05*	-0.13***	0.23***	0.14***	0.47***	0.33***	0.22***	0.71***	0.63***	0.53***	1.00

Note: Dx.= Diagnoses; PTS= Posttraumatic stress symptoms; W2=Wave 2. Vars. 1-5 were collected prior to Wave 1, vars. 5 & 6 were collected during Wave 1 (W1; Pre-Hurricane 9/8/17-9/11/17), vars. 8-13 were collected during Wave 2 (W2; Post-Hurricane 10/12/17-10/29/17). See the Measures section of the manuscript for descriptions of these variables and how they were measured.

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

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