

**Media reporting on suicide: Evaluating the effects of including preventative resources and psychoeducational information on suicide risk, attitudes, knowledge, and help-seeking behaviors**

By

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## Abstract

Imitative suicidal behaviors after a published suicide news story have been well documented; thus, guidelines for reporting practices have been developed and disseminated. The effectiveness of the guidelines on reducing population-level suicide rates has been demonstrated in two studies; however, no research has evaluated the impact of individual guidelines on variables known to be associated with suicide. We evaluated the effects of one guideline (i.e., including preventative resources and psychoeducational information) on attitudes toward suicide, knowledge about suicide, stigma of help-seeking behaviors, and other suicide risk factors. Two-hundred ninety-six participants were randomly assigned to read one of three articles: suicide-related articles with and without psychoeducational information and preventative resources and a neutral, a non-suicide-related article. We found no expected group differences on any of the relevant outcome variables. Results suggest that this guideline may not be effective at influencing attitudes toward suicide, knowledge about suicide, and stigma of help-seeking behavior.

## Table of Contents

Abstract .....	ii
List of Tables .....	iii
Table of Contents .....	iv
Introduction.....	1
Establishing the need for media guidelines .....	1
Media guidelines: development, effectiveness, and adherence .....	4
Attitudes and knowledge about suicide .....	9
Effects of including psychoeducational information .....	10
A more complete understanding of the relationship between media reports on suicide and increases in suicide rates.....	13
Present study .....	13
Hypotheses .....	13
Method .....	14
Participants.....	14
Procedure .....	16
Measures .....	18
Data Analysis .....	23
Results.....	23
Discussion .....	26
Limitations .....	30
Future Directions .....	32
Conclusion .....	32
References.....	34
Tables.....	42
Appendix A.....	46
Appendix B.....	50

## List of Tables

Table 1: Demographics .....	42
Table 2: Outcome Variables Descriptive Statistics .....	43
Table 3: Warning signs for suicide percent identification and group difference statistics .....	44
Table 3 Continued: .....	45

Media reporting on suicide: Evaluating the effects of including preventative resources and psychoeducational information on suicide risk, attitudes, knowledge, and help-seeking behaviors

Research has repeatedly demonstrated a significant increase in suicides following a publicized news story about suicide (e.g., Blood & Pirkis, 2001; Gould, 2001; Pirkis & Blood, 2001; Stack, 2000; 2005). In light of the evidence suggesting media portrayal plays a substantial role in the imitative effect, media guidelines have been developed and disseminated in an effort to reduce the likelihood of imitative suicides (Etzersdorfer & Sonneck, 1998; Gould, 2003; Neiderkrotenthaler & Sonneck, 2006). However, only two studies have examined evidence of their effectiveness in diminishing suicide imitation (i.e., Etzersdorfer and Sonneck, 1998; Neiderkrotenthaler and Sonneck, 2006). Although there is some evidence suggesting the media guidelines are effective in the aggregate at reducing suicide risk, no one has examined individual guidelines in order to determine which particular guidelines are responsible for reducing the imitative effect. Additionally, media reports on suicide may not only influence individuals in terms of suicide risk, but may also affect knowledge about suicide and risk factors as well as attitudes toward suicide and help-seeking behavior. The purpose of this study was to evaluate the effects of a specific media guideline that encourages journalists to include preventative resources and psychoeducational information about suicide. Our goal was to better understand whether this guideline in particular might be helpful in reducing imitative effects, influencing knowledge about suicide and suicide risk, and reducing stigma toward suicide and help-seeking behavior.

### **Establishing the need for media guidelines**

Research on imitative suicides suggests two types of clustering effects: mass clusters and point/space-time clusters (Joiner, 1999). Mass clusters have been defined as those suicides that

can be linked to a media report of a suicide, whereas point clusters have been identified as a large number of suicides occurring in a geographical area, school, or institution in a short period of time (Haw, Hawton, Niedzweiedz, & Platt, 2013; Joiner, 1999). Our review will focus on mass clusters with particular emphasis on links between suicide media reports and subsequent increases in suicide.

Phillips (1974) was the first to conclusively identify an increase in suicides after a publicized suicide news story. Phillips (1974) examined the effect of suicide news stories publicized in the *New York Times* on suicide statistics from 1946 to 1968 and identified an average increase of 58.1 suicides in months with a publicized news story. Additionally, Phillips (1974) was the first to hypothesize and subsequently demonstrate that the duration of coverage increases the number of excess suicides per month following a suicide news story. Later, Phillips (1992) compared imitative suicides to the effects of advertising, suggesting that widespread exposure and the presence of a receptive audience are key to contagion.

Gould (2001) reviewed 15 studies published between 1991 and 2001 and concluded that the research consistently points to a strong, positive relationship between publicized news stories and suicide rates. As Phillips (1974) suggested, Gould (2001) likewise demonstrated that this relationship is moderated by the amount and length of coverage, as well as the prominence of the news story. In a review of 42 studies on the effect of nonfictional news stories on suicides, Pirkis and Blood (2001) also demonstrated a consistent association between suicide news stories and an increase in suicide rates. Stack (2000), however, pointed out that the existing literature on imitative suicides is inconsistent; although most studies illustrate an increase in suicides following a publicized news story, some studies have determined either no increase or a decrease in suicides (e.g., Blumenthal & Bergner, 1973; Kessler, Downey, Milavsky, & Stripp, 1988).

Additionally, Stack (2005) examined 419 imitative effects as described by 55 studies, which led to multiple key findings. First, news articles involving a celebrity were more likely to be associated with an increase in subsequent suicides. Second, news articles that contained negative definitions of suicide (which can be defined as “focusing on victim’s physical disfigurement and pain, stressing that suicide is wrong, and discussing solutions or alternatives to suicide such as counseling,” Stack, 2005, p. 123) as opposed to articles that contained positive definitions of suicide (i.e., sensationalized coverage, glorification and rationalization of suicide) were substantially less likely to determine an increase in suicides (Stack, 2000; 2005). Third, news articles involving female suicide were more likely to find an imitative effect than any other stories. These findings suggest that the likelihood of an imitative effect depends upon how the suicide is described and attributes of the suicide decedent (Stack, 2003; 2005).

More recently, Gould, Kleinman, Lake, Forman, and Midle (2014) compared media reports depicting index suicides that were followed closely by another suicide (i.e., cluster suicides) to media reports depicting suicides that were not followed closely by another suicide (i.e., non-cluster suicides). Compared to non-cluster suicides, cluster suicides were associated with a larger number of newspaper reports, and these reports were more prominently featured with front page placement, headlines including the word suicide, detailed descriptions of the method, and inclusion of a picture (Gould et al., 2014). Only a minority of the cluster and non-cluster newspaper reports examined by Gould and colleagues included any preventative resources or psychoeducational information.

Overall, most of the existing research on mass clusters identifies an increase in suicides in the days following a publicized suicide (Joiner 1999; Gould, 2001; Kessler et al., 1988; Phillips, 1974; Phillips & Carstensen, 1986; Pirkis & Blood, 2001; Stack, 2000; 2003). However,

one of the main limitations in existing suicide cluster research is the inability to establish a causal relationship. Indeed, in Gould and colleagues' analysis (2014), there was no way to demonstrate that those individuals who died by suicide following the news reports were actually exposed to the news coverage. Another limitation in the existing suicide cluster research is that in an attempt to identify risk factors for an individual being a part of a cluster, the existing research has identified risk factors that are mostly the same as risk for suicide in general (Haw et al., 2013; Joiner, 2003). For example, most studies report that suicide clusters are more common in males, and individuals within a cluster are considered vulnerable and socially isolated with a high prevalence of other suicide risk factors (Gould et al., 1990; Haw et al., 2013; Hazell, 1993). The risk factors identified for suicide cluster decedents are nearly indistinguishable from suicide decedents in general, thus making it difficult to pinpoint a mechanism that might be responsible for suicide clustering. In these important ways, the existing literature on suicide clusters and media reporting is incomplete.

### **Media guidelines: development, effectiveness, and adherence**

Given the evidence that imitative suicides occur following media reports on suicide, efforts have been made by various countries and organizations to develop media guidelines to curb this imitative effect. Austria appears to have been the first country to develop media guidelines for reporting suicides (Tatum, 2010). In 1978, a subway system was introduced in Vienna and quickly developed traction as a popular means for suicide. The Viennese media provided graphic reports of virtually all subway suicides, and a sharp increase in subway suicides was observed (Etzersdorfer & Sonneck, 1998). The graphic reporting coupled with a sharp increase in suicides led researchers to consider developing guidelines for reporting suicides (Etzersdorfer & Sonneck, 1998). Austrian journalists were given specific recommendations

about how to report suicide in order to limit the imitative effect, including providing prevention information, keeping stories off the front page, avoiding details of the method used, and avoiding romanticizing the suicide story (Etzersdorfer & Sonneck, 1998; Sonneck, Etzersdorfer, & Nagel-Kuess, 1994). Switzerland followed shortly after, publishing media guidelines in 1992. The United States (US) followed both Austria and Switzerland, publishing media guidelines in 1994, which were updated in 2001 (Tatum et al., 2010).

In 2008, collaboration between the World Health Organization (WHO) and the International Association for Suicide Prevention led to publication of international recommendations for media reporting on suicide, which included, 1) take the opportunity to educate the public about suicide (i.e., provide psychoeducational and preventative information), 2) avoid sensationalizing or romanticizing the suicide, 3) avoid prominent placement of suicide stories, 4) avoid details of the method, 5) word headlines carefully, 6) take particular care in reporting celebrity suicides, and 7) exercise caution in using photographs of either the deceased or of the scene of death (World Health Organization, 2001).

To our knowledge, there have only been two studies evaluating the effect of media guidelines on imitative suicidal behavior (Etzersdorfer and Sonneck, 1998; Neiderkrotenthaler and Sonneck, 2006), both of which were conducted by Austrian researchers. The first of these (Etzersdorfer & Sonneck, 1998) found a drop in subway suicides and suicide attempts following publication of the media guidelines. The second (Neiderkrotenthaler & Sonneck, 2006) found a significant reduction in overall suicides annually since the guidelines were implemented, indicating a positive impact of media guidelines on imitative suicides.

Though the only studies evaluating the effect of guidelines on suicide rate were conducted in Austria, adherence to the guidelines has been evaluated in Austria, Switzerland, and

the US. In both Austria and Switzerland, evidence suggests that journalists are largely adhering to published media guidelines (Michel, Frey, Wyss, & Valach, 2000; Neiderkrontenthaler & Sonneck, 2006). In contrast, two studies suggest that the US media have not adequately changed their reporting styles to reflect these guidelines (Jamieson, Jaimeson, & Romer, 2003; Tatum et al., 2010). It thus appears that there may be more resistance to media guidelines in the US compared to Europe. Of particular relevance in the US is the strong cultural emphasis on freedom of speech and the press, which might discourage journalists from following any published guidelines and further enforce the use of internal ethical standards (Michel et al., 2000). It is possible that due to the freedoms expected by the media in the US, there might be more hesitancy to implement any guidelines that would involve censoring content as opposed to the guideline suggesting an addition of psychoeducational and preventative information.

Perhaps another reason for lack of adherence to the guidelines is the limited research supporting them. Only Austrian guidelines have been evaluated in terms of adherence to guidelines and national suicide rates (Etzersdorfer & Sonneck, 1994; 1998; Niederkrotenthaler & Sonneck, 2006). In these studies, the whole package of guidelines has been evaluated without examining which specific guidelines might be more or less effective in reducing imitative suicide, nor have they evaluated their effect on attitudes or knowledge about suicide. Thus, one goal of the current study is to use an experimental design to investigate whether adhering to one specific media guideline has a positive impact.

To date, only one study has experimentally evaluated the effects of exposure to a suicide-related news article on relevant outcome variables, including suicidality (Anestis et al., 2015). The authors evaluated the effects of reading an article that described a particular suicide in detail, which violated some of the media guidelines, compared to reading the same article with the

violations removed, and an article that described a cancer death. The authors found that reading the cancer article resulted in more distress (i.e., negative affect as measured by the Positive and Negative Affect Schedule; Watson, Clark & Tellegen, 1988) compared to reading both versions of the suicide article. There were additionally no differences between groups on a measure assessing for likelihood of future suicidal behaviors either immediately afterwards or at a one-month follow-up. Further, individuals with a history of suicidal ideation reported a lower likelihood of future attempt when exposed to the original suicide article compared with the revised and cancer article. Although this study provides preliminary evidence that violation of the guidelines may not have as big of an impact as originally believed, there are a number of limitations and remaining questions that need to be investigated in subsequent work. First, the suicide article was designed as an in-depth, feature news piece that described a suicide death in addition to describing epidemiological features of suicidal behavior. This type of article may impact its audience differently than briefer, suicide news articles that have been the primary focus of previous imitative suicidal behavior research, which typically only discuss the suicide death itself. Second, the original suicide article contained violations of multiple guidelines, making it impossible to highlight the specific impact of any individual guideline. Additionally, the authors did not specifically investigate the utility of including psychoeducational information and preventative resources. Finally, it is plausible that media portrayal of suicide may have effects on outcomes not assessed in the Anestis et al. (2015) study, such as attitudes and knowledge about suicide.

### **Attitudes and knowledge about suicide**

As mentioned previously, in addition to impacting suicide rates, media reports have the potential to impact attitudes about suicide. A more permissive attitude toward suicide may

include the belief that suicide is an appropriate solution in certain situations, there is a right to die by suicide, and that suicide is one's own business (Renberg & Jacobsson, 2003). Media reports may normalize suicidal behavior, thus making suicide seem like a more acceptable act (Gould & Shaffer, 1986; Gould, Shaffer, & Kleinman, 1988). This is troubling because research by Beautrais and colleagues (2004) suggests that young adults derive most of their knowledge about suicide from newspapers and magazines. This same sample of young adults additionally expressed liberal attitudes toward suicide (i.e., 71% were able to understand why individuals die by suicide, and 51% believed that suicide was an option when life becomes too difficult; Beautrais, Horwood, & Fergusson, 2004). Public attitudes toward suicide may influence help seeking behaviors, inhibiting individuals from accessing important mental health resources (Link & Phelan, 2006). Aside from influencing help-seeking behaviors, there is also some evidence to suggest that a more permissive or normalized attitude toward suicide might be associated with risk for engaging in suicidal behavior, although directionality of this relationship remains inconclusive (Limbacher & Domino, 1986; Renberg & Jacobsson, 2003).

To our knowledge, only one study has examined the direct effect of media exposure to suicide on attitudes toward suicide. Biblarz and colleagues (1991) examined the effect of three types of movie content (suicide, violent, and neutral) on self-reported emotional arousal and attitudes toward suicide. The authors found that individuals exposed to the suicide and violent movies expressed greater self-reported emotional arousal levels compared to the neutral condition; however, there was no change in positive attitudes toward suicide or violence following the films (Biblarz et al., 1991). One limitation of this study is that the authors used a measure of attitudes toward suicide that was created specifically for the purpose of this study and had not been subjected to psychometric evaluation to establish its validity, although the authors

provided evidence of its test-retest reliability. Further, it is possible that a fictional movie about suicide may have a different impact than a news article about a real suicide. Therefore, additional research is needed to determine the impact of news articles about suicide on attitudes toward suicide.

In addition to attitudes toward suicide, media reports about suicide have the potential to disseminate educational materials that could increase the public's knowledge about suicide. Knowledge about suicide has also been shown to influence help-seeking behaviors such that those who are more knowledgeable are more willing to seek psychological treatment (Barney, Griffiths, Jorm, Christensen, 2004; Link & Phelan, 2009; Wright, Jorm, Harris, & McGorry, 2007). Griffiths and colleagues (2004) have demonstrated that providing psychoeducational information can lead to an increase in appropriate help-seeking behaviors. They have also demonstrated that providing such information can also lead to decreases in negative attitudes toward mental illness (Griffiths, Christensen, Jorm, Evans, & Groves, 2004). More specifically, increased knowledge about suicide and suicide warning signs has been shown to be associated with help-seeking behaviors (Batterham, Calear, & Christensen, 2013). According to Batterham and colleagues (2013), limited knowledge about suicide may be one of the most important factors influencing help-seeking behaviors. As mentioned previously, few suicide-related articles include any psychoeducational information or preventative resources for recognizing and treating suicide risk (Gould et al., 2014).

### **Effects of including psychoeducational information**

Suicide warning signs are distinguishable from risk factors, in that they are signs that indicate heightened immediate risk for suicide, whereas risk factors tend to be more static and long-standing (e.g., gender, mental illness; Rudd et al., 2006). A workgroup of the American

Association of Suicidology (AAS) developed a list of warning signs based on consensus recommendations (see Rudd et al., 2006). Some of the key warning signs include threatening self-harm, seeking suicide methods, and talking about suicide (Rudd et al., 2006; Van Orden et al., 2006). Disseminating information about suicide warning signs may prevent suicide by improving early detection and intervention by others and by encouraging individuals to seek help when needed (Gould, Greenberg, Velting, & Shaffer, 2003; Rudd et al., 2006). Van Orden and colleagues (2006) demonstrated that exposure to a list of suicide warning signs increased an individual's self-reported ability to recognize suicide warning signs. Importantly, they also found that exposure to these suicide warning signs was not associated with an increase in blaming a suicidal individual, nor would individuals exposed to warning signs be any less likely to befriend a suicidal individual (Van Orden et al., 2006). Van Orden and colleagues (2006) concluded that a list of warning signs for suicide may increase the public's knowledge about suicide, but is unlikely to lead to the development of negative attitudes toward suicidal individuals.

In summary, it appears that attitudes toward suicide as well as knowledge about suicide warning signs may influence an individual's level of suicidality as well as likelihood to seek appropriate preventative resources. Individuals who read or hear about suicide from a media report (including a suicide news article) may form attitudes toward suicide based on the way the information is presented; however, to our knowledge this has not yet been evaluated.

Additionally, media reports may influence an individual's knowledge about suicide warning signs and preventative resources by providing psychoeducational information and preventative resources. This could imply that the way media depict suicide news stories could ultimately have a positive impact on help-seeking and intervention if done correctly (Niederkrötenhaler, Reidenberg, Till, & Gould, 2015).

## **A more complete understanding of the relationship between media reports on suicide and increases in suicide rates**

Research consistently points to the relationship between suicide news articles and an increase in suicide rates (Gould, 2001; Pirkis & Blood, 2001; Stack, 2005), and two studies have demonstrated a decrease in imitative suicidal behavior when media guidelines are in place (Etzersdorfer & Sonneck, 1998; Niederkrotenthaler & Sonneck, 2006). However, to date, there is little research investigating why suicide news articles are associated with increased suicide rates and why certain guidelines may reduce imitative suicidal behavior. In addition to the lack of research examining the directionality of the relationship between media reports, suicide risk, knowledge about suicide, and attitudes toward suicide, no one has examined the impact of media reporting on suicide on other constructs known to be risk factors for suicide that may serve to mediate the relationship between media reporting and imitative suicidal behavior.

Attempts to identify mechanisms for imitative suicide have been diverse and numerous. Although many mechanisms have been suggested (see Haw et al., 2013 for a complete review), contagion by way of direct contact with a suicide, word of mouth, or by media exposure seems to be the most predominant (Haw et al., 2013). Modeling, suggestion, imitation, and priming are possible mechanisms for contagion; however, empirical evidence in support of these mechanisms is limited (Haw et al., 2013).

Social cognitive theory has been suggested as a foundation for understanding modeling behaviors depicted by the media, asserting that most of human behaviors are learned through observation (Bandura, 1977; 2001; Blood & Pirkis, 2001; Gould, 2001; Haw et al., 2013; Pirkis & Blood, 2001; Stack, 2005). Stack (2005) highlights that the observed imitation of suicidal behaviors is assumed to involve individuals already indicating suicidal desire. He therefore

hypothesized that an observer's affective state may influence the impact of the modeled behavior. It is suggested, therefore, that media may encourage vulnerable individuals with preexisting suicidal dispositions to model the act described in the news article (Blood & Pirkis, 2001; Haw et al., 2013; Romer, 2006; Stack, 2005). Imitation and suggestion theories also purport that if the initial suicide cluster victim is praised, glorified, of similar social class to the observer, or otherwise highly relatable, it would be expected that others would be more likely to identify with the victim and believe that suicide is an appropriate solution (Haw et al., 2013; Sonneck, Etzersdorfer, Nagel-Kuess, 1994). However, imitation, much like the other potential cornerstones of contagion, is neither easily tested nor empirically identified, contributing to the elusive nature of suicide clusters and clustering behavior (Haw et al., 2013).

The Interpersonal-Psychological Theory of Suicide (IPTS; Joiner, 2005; Van Orden et al., 2010) is a comprehensive theory of suicide that proposes three proximal causes of suicide. According to the IPTS, both perceived burdensomeness and thwarted belongingness are proximal causes of suicidal desire. However, the IPTS states that an individual will not die by suicide unless he/she has both the desire to die and the capability to enact lethal suicidal behavior (Joiner, 2005; Van Orden et al., 2010). Individuals acquire the capability to enact lethal suicidal behavior by exposure and habituation to fear-inducing and/or painful stimuli (Joiner, 2005; Van Orden et al., 2010). As discussed by Van Orden and colleagues (2010), exposure to a suicide of another individual may habituate a person to the fear of suicide, which is one component of the acquired capability for suicide. Although this fear habituation due to exposure to a suicide has been proposed to be at the root of suicide contagion, this hypothesis has yet to be tested. It is unclear whether exposure to a suicide would be associated with the other component of acquired capability for suicide (i.e., pain tolerance).

## **Present study**

There are differences across existing media guidelines, but most of them include the recommendation to include preventative resources and psychoeducation about suicide risk factors. Research conducted by Stack (2000) indicates that news articles that provide preventative resources and psychoeducational information are less likely to lead to an imitative effect. Additionally, including preventative resources and psychoeducational information might make an individual believe that suicides are preventable, thereby influencing his/her attitudes about suicide and increasing his/her knowledge about suicide warning signs. It is also possible that US reporters might be more open to including this information than they are to altering their styles of writing to accommodate the suggestions of other media guidelines (e.g., not placing the story on the front page; not using a photograph of the suicide decedent).

In the present study, we examined the impact of a suicide news report on a variety of relevant outcome variables, and whether including preventative resources and psychoeducational information buffers any of the negative effects of a suicide news report. Participants were randomly assigned to one of three conditions: a neutral, non-suicide article (Control), a suicide news report including preventative resources and psychoeducational information, or a suicide news report absent of preventative resources and psychoeducational information.

### **Hypotheses:**

1. Participants presented with any suicide news report will experience a greater increase in negative affect and decrease in positive affect compared to the control condition.
2. Individuals presented with a suicide news report that includes preventative resources and psychoeducational information will have different ratings of specific attitudes toward

suicide compared to those not presented with preventative resources and psychoeducational information and the control condition. Specifically, they will have higher mean scores on subscales assessing the right to die (i.e., the belief that suicide is acceptable in certain situations), lower mean scores on a subscale assessing the inevitability of suicide (i.e., suicidal ideation cannot be intervened upon and cannot be stopped), and lower mean scores on a subscale assessing the comprehensibility of suicide (i.e., there are reasons it would be understandable why someone would want to die).

3. Those presented with preventative resources and psychoeducational information will have higher rates of knowledge about suicide and suicide warning signs compared to those not presented with preventative resources and psychoeducational information and compared to those in the control group.
4. Those presented with a suicide news article with preventative resources and psychoeducational information will have less negative attitudes toward help-seeking as compared to individuals not presented with preventative resources and psychoeducational information and the control condition.
5. Those presented with any suicide news article will have greater fearlessness about death than those in the control condition. In contrast, we do not anticipate group differences on other psychological constructs (i.e., thwarted belongingness, perceived burdensomeness, and self-reported pain tolerance, depression and suicidal ideation).

## **Method**

### **Participants**

We conducted an a priori power analysis for a one-way ANOVA using G\*Power version 3.1.2 (Erdfelder, Faul, & Buchner, 2006, 2009) to determine how many participants to enroll. Assuming a medium effect size of 0.25, 252 participants (i.e., 84 per condition) were needed to achieve a power of .95. Therefore, we set out to recruit at least 252 participants for our study.

We ultimately recruited 425 undergraduate students enrolled in any Psychology course who were 19 years of age and older. The study was posted on SONA systems and broadly described as investigating media and behavior. Individuals with past suicide attempts ( $n=11$ ) were eligible to participate; however, they were automatically assigned to the neutral control condition due to ethical considerations on the basis of existing literature indicating that suicide news articles are associated with imitative suicidal behavior among vulnerable individuals (Gould, 2001; Pirkis & Blood, 2001a, 2001b; Stack, 2000). Their data were discarded following study completion in order to prevent any impact on our analyses.

Before data were analyzed, 107 participants were excluded from the data analysis due to incorrectly responding to two or more bogus items (described in more detail in the *Measures* section). An additional 10 participants were eliminated on the basis of the manipulation check (the procedures for the manipulation check are described in the *Procedure* section). Most participants took between 21 (25<sup>th</sup> percentile) and 35 (75<sup>th</sup> percentile) minutes to complete the survey; however, the amount of time ranged from three minutes to five days. One individual who completed the survey in five minutes or less was screened out, as this completion time was dramatically lower than the average and was an additional indicator that the participant was not paying attention to the content of the measures. Thus, the final sample consisted of 296 participants. Based on our a priori power analysis, we were more than adequately powered to detect a medium effect.

The mean age of the sample was 20.6 ( $SD = 2.1$ ;  $range = 19-40$ ). Most participants were non-Hispanic/Latino (97.9%;  $n = 290$ ) and female (63.3%;  $n = 187$ ), and the racial breakdown of the sample was as follows: 91.2% ( $n = 271$ ) White/European origin; 5.1% ( $n = 15$ ) African-American/Black, 2.4% ( $n = 7$ ) Asian, 0.3% ( $n = 1$ ) Native Hawaiian/Pacific Islander, and 0.3% ( $n = 1$ ) American Indian/Alaskan Native, with one participant declining to answer.

## **Procedure**

Upon signing up through SONA Systems to participate in the study, participants were directed to a web link to the survey, administered through Qualtrics. Participants were first presented with an electronic information letter. If they agreed to participate, participants were then prompted to check a box and click to continue. The participants were first asked to complete the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) as a pre-manipulation mood check. They were then asked a series of questions to assess basic demographic information as well as a few questions about suicidality, mental illness, and other life experiences. The main purpose of these questions was to assess whether they had previously attempted suicide so that they could be assigned to the control condition; the other questions were designed as filler to disguise the purpose of the study. Participants without a history of suicide attempts were then randomly assigned to one of three possible conditions: a suicide news article with psychoeducation resources and preventative information ( $n = 95$ ; hereafter referred to as *Suicide With Resources and Information*), a suicide news article without psychoeducation resources and preventative information ( $n = 90$ ; hereafter referred to as *Suicide Without Resources and Information*), or a neutral, non-suicide related article ( $n = 111$ ; hereafter referred to as *Control*). There was no significant difference in the number of participants included in each group ( $\chi^2(589) = 600.00, p = .47$ ). All participants were shown two news articles of similar length,

reproduced from a real news source. One article differed depending upon which condition participants were in, and the other was an additional, non-suicide-related article included to disguise the focus of the study (see appendix A for a complete description of the stimuli). In order to encourage participants to attend to the articles, they were informed that they would be asked questions about the content of the articles.

After reading each article, participants were asked to confirm they had read the article and to complete a brief quiz about it. The quizzes consisted of an open-ended description box in which the participants were asked to summarize what they had read, followed by more specific multiple choice questions about the story (i.e., *Of what race was the individual in the article? What was the gender of the individual in the story? About how old is the individual described in the story? What happened to the individual in the study? What sort of information was presented at the bottom of the article if any?*). The first author examined the results to the open-ended description (i.e., “Please write a brief description about the article” and one multiple choice question (i.e., “What happened to the individual in the story?)). Individuals in the Control condition were required to indicate that the individual in the article cheated on a test, whereas those presented with either suicide article were required to indicate that someone had died by suicide. Participants who responded incorrectly to the multiple choice question and provided a description that did not contain anything related to the content of the article were excluded from the sample (n=10). An additional three participants wrote responses indicating that they were never presented with the article due to a technical error; thus, they were excluded as well.

Participants were then asked to complete a post-manipulation mood check (PANAS; Watson et al., 1988), followed by a battery of questionnaires. Questionnaires in this battery were randomly presented and included two additional measures in order to disguise the purpose of the

study: Exercise Addiction Inventory-Short Report (Terry, Szabo, & Griffiths, 2004) and Academic Dishonesty Scale (McCabe & Trevino, 1997).

Participants received 0.5 hours of research credit toward a psychology course in which they were currently enrolled. Upon completion of the questionnaires, all participants were presented with an electronic debriefing, contact information for local mental health resources, and the National Suicide Prevention Lifeline (1-800-273-TALK) for 24 hour access to telephone and online crisis counseling services. These procedures were approved by a university IRB.

## **Measures**

**Demographics.** We collected basic demographic information for participants, including age, gender, race, ethnicity, relationship status, religious affiliation, and year in school.

**Positive and Negative Affect Schedule (PANAS; Watson et al., 1988).** The PANAS consists of 20 words describing affect, which are rated on a scale of 1-5, 1 being *very slightly or not at all*, and 5 being *extremely*. Participants were asked to mark how much they felt this way right now. The PANAS has been demonstrated to be internally consistent and have good convergent and discriminant correlations with longer mood measures (Watson et al., 1988). The PANAS has also demonstrated appropriate reliability. The PANAS is sensitive enough to detect changes over a relatively short period of time (Watson, et al., 1988) and was administered both pre- and post-manipulation. The PANAS demonstrated good internal consistency in our current sample (Positive affect:  $\alpha = .92$ ; Negative affect:  $\alpha = .87$ ).

**Attitudes Toward Suicide (ATTS; Renberg & Jacobsson, 2003).** The ATTS is a 34-item, self-report instrument that measures attitudes toward suicide and was developed using two earlier suicide attitude instruments: the Suicide Opinion Questionnaire (SOQ; Domino, Moore,

Westlake, & Gibson, 1982) and the Suicide Attitude Measure (Diekstra & Karkhof, 1989). The ATTS has been used in a variety of lay populations and has demonstrated significant associations between attitudes and the respondent's suicidal behaviors (Kodaka et al., 2010). A 10-factor model has been previously suggested (Renberg et al., 2003). We had planned to utilize these 10 subscales in the current study; however, most subscales demonstrated poor internal consistency in our sample (i.e., Unpredictability  $\alpha = .42$ , Incomprehensibility  $\alpha = .24$ , Noncommunication  $\alpha = .51$ , Right to Prevent  $\alpha = .43$ , Preventability  $\alpha = .28$ , Relation-caused  $\alpha = .56$ , Suicidal Process  $\alpha = .36$ , and Permissiveness  $\alpha = .77$ ). Indeed, previous researchers have identified poor internal consistency of the recommended factors (Renberg et al., 2003; Hjelmeland et al., 2008).

Because the 10 subscales did not display adequate internal consistency, we conducted an exploratory factor analysis of the ATTS in an independent sample of undergraduates ( $N = 457$ ) in order to identify an interpretable factor structure. A five-factor model was determined to have the best fit based on recommended fit statistics including  $\chi^2(42) = 62.75, p = .02$ , RMSEA (.04; 90% CI: .04-.05), CFI/TLI (.88/.84), and SRMR (.04; Brown, 2006). However, of these five factors, only three factors represented interpretable content. Those factors were named Right to die (i.e., belief in the right to die by suicide), Inevitability (i.e., the belief that suicide is inevitable and that it is not possible to intervene), and Comprehensibility (i.e., reasons why an individual might want to die by suicide). Twenty items that did not significantly load on any of these three factors and items with significant cross loadings were eliminated. We then reran the EFA with the remaining 14 items. The three-factor structure had adequate fit ( $\chi^2(52) = 87.12, p < .01$ ; RMSEA: .03 (90% CI: .01-.05); CFI/TLI: .99/.98; SRMR: .02). Additionally, the same items primarily loaded onto each of the three factors. The three created subscales demonstrated improved internal consistency compared to the original 10 factors that we investigated: Right to

die ( $\alpha = .72$ ), Inevitability ( $\alpha = .64$ ), and Comprehensibility ( $\alpha = .62$ ). We then cross-validated this EFA for the identified 14 items in the current sample and determined the three-factor model had adequate fit ( $RMSEA: .05$  (90% CI: .02-.06);  $CFI/TLI: .98/.96$ ;  $SRMR: .02$ ), and the same items primarily loaded onto the same factors as the independent sample. In this sample as well, the subscales demonstrated improved internal consistency compared to the original subscales: Right to die ( $\alpha = .77$ ), Inevitability ( $\alpha = .68$ ), and Comprehensibility ( $\alpha = .62$ ). Nevertheless, internal consistency fell below what is typically considered adequate for Inevitability and Comprehensibility.

**Knowledge about suicide psychoeducational information and resources.** Participants were presented with a list of warning signs developed for the current study. The list consisted of seven suicide warning signs, adapted from published research (Rudd et al., 2006) and filler items (e.g., *suspiciousness*) in order to disguise the purpose of the questionnaire (see Appendix B for the complete list). Participants were asked to indicate which items on the list are suicide warning signs. \

**Self-Stigma of Seeking Help (SSOSH: Vogel, Wade, & Haake, 2006).** The SSOSH is a 10-item, self-report scale that is used to assess the self-stigma associated with seeking psychiatric help. The SSOSH has been demonstrated to have a unidimensional factor structure, good reliability, and evidence of construct, criterion, and predictive validity (Vogel, Wade, & Haake, 2006). The SSOSH has been demonstrated to differentiate between individuals who have and have not sought psychiatric treatment in a 2-month period (Vogel, Wade, & Haake, 2006). The SSOSH demonstrated good internal consistency in our sample ( $\alpha = .88$ ).

**The Interpersonal Needs Questionnaire (INQ-R; Van Orden et al., 2008; Van Orden, Cukrowicz, Witte, & Joiner, 2012).** The INQ-R is a 15-item, self-report scale that is used to

measure constructs of the IPTS: nine items measure beliefs about feeling connected to others (thwarted belongingness) and six items measure feeling like a burden (perceived burdensomeness). Items are rated on a 7-point Likert scale. Acceptable psychometric properties for both subscales has been demonstrated with past research (Van Orden et al., 2012). The INQ-R demonstrated good internal consistency for both burdensomeness ( $\alpha = .94$ ) and belongingness ( $\alpha = .90$ ) in our sample.

**Acquired Capability for Suicide: Fearlessness about Death Subscale (ACSS-FAD;** Ribeiro et al., 2014). The ACSS-FAD is a seven-item subscale of the ACSS that assesses an individual's fearlessness about death (e.g., *I am not at all afraid to die*). Items are rated on a five-point Likert scale, and higher scores indicate greater fearlessness about death. A recent factor analytic study found that seven items related to fearlessness about death demonstrate convergent and discriminant validity (Ribeiro et al., 2014). The ACSS-FAD demonstrated good internal consistency in the current sample ( $\alpha = .81$ ).

**Discomfort Intolerance Scale (DIS; Schmidt, Richey, Fitzpatrick, 2006).** The DIS is a seven-item self-report instrument designed to measure an individual's tolerance of physical discomfort. Items are rated on a 0 to 6 scale, with higher scores indicating higher discomfort intolerance. In a preliminary investigation of the psychometric properties of the DIS, it was found to have good convergent and discriminant validity (Schmidt, Richey, & Fitzpatrick, 2006). In order to specifically assess for pain tolerance, we chose not to analyze outcomes on the Discomfort Avoidance subscale (i.e., avoidance of objectively unpleasant stimuli) and to focus solely on physical pain tolerance. Therefore, we limited our analyses the two-item Discomfort Intolerance subscale (i.e., intolerance of physically uncomfortable sensations). Previous research has used one item from this subscale to assess pain tolerance in an undergraduate sample

(Zuromski, Davis, Witte, Weathers, & Blevins, 2014). In our sample, this subscale demonstrated good internal consistency ( $\alpha=.95$ ).

**Center for Epidemiologic Studies Depression (CES-D; Radloff, 1977).** The CES-D is a 20-item, self-report measure designed to measure depressive symptoms for research. Responses are rated on a four-point scale, indicating how often participants have experienced each symptom during the past week: 0 indicating *never or not at all*, 3 indicating *most or all of the time*. The CES-D has been used in a variety of samples and demonstrates good psychometric properties with both good reliability (Radloff, 1977) and validity (Devins, Orne, Costello, & Binik, 1988). In our sample, the CES-D demonstrated good internal consistency ( $\alpha= .80$ ).

**Depressive Symptom Inventory Suicidality Subscale (DSI-SS; Joiner, Pfaff, & Acres, 2002).** The DSI-SS is a four-item, self-report instrument designed to measure suicidal ideation. Items are rated on a scale of 0 to 3, with 3 indicating the most severe. The scale has been demonstrated to have good psychometric properties (Joiner et al., 2002). The DSI-SS demonstrated good internal consistency ( $\alpha= .81$ ) in the current sample.

**Bogus items (Meade & Craig, 2012).** When data is collected via computerized surveys, random responding is of particular concern. Including items with clearly correct answers may help to determine if an individual is responding randomly. If an individual responds incorrectly, it can be assumed that he/she was not paying attention to the item. We included three bogus items (e.g. *All of my friends think I would make a great poodle*) to screen data for careless responding. Individuals who responded incorrectly to two or more of the bogus items were excluded from data analysis.

**Exercise Addiction Inventory-Short Report** (EAI-Short Report: Terry, Szabo, & Griffiths, 2004). The EAI-Short Report is a six-item self-report instrument designed to measure patterns of addictive eating behavior. Responses are rated on a 5-point scale from 1 to 5, with 5 indicating *Strongly agree*. We used this measure to disguise the true purpose of our study. Thus, it was not included in the analyses.

**Academic Dishonesty Scale** (McCabe & Trevino, 1997). The Academic Dishonesty Scale is a 9-item self-report instrument designed to measure frequency of academically dishonest behaviors. Items are rated on a 5-point scale ranging from 1 *not even one time* to 5 *many times*. We used this measure to disguise the true purpose of the study. Thus, it was not included in the analyses.

## **Data Analysis**

All analyses were performed using IBM SPSS version 21. Missing data were minimal; most variables had less than 5% missing data. All data were analyzed in an ANOVA framework. In all ANOVAs, the condition (i.e. type of article) was the independent variable. Descriptive statistics are displayed in Table 1.

## **Results**

*Hypothesis 1: Participants presented with any suicide news report will experience a greater increase in negative affect and decrease in positive affect compared to the control condition.*

To test Hypothesis 1, a one-way ANOVA was conducted to determine differences in changes in affect between groups. First, we determined that there were no group differences in affect prior to the manipulation (Positive Affect:  $F[2, 289]=0.87, p=.42$ ; Negative Affect:  $F[2, 290]= 1.84, p=.16$ ). To calculate the changes in affect, we computed a difference score between

pre- and post-manipulation scores for both positive and negative affect. Contrary to hypotheses, no differences were seen between groups in either change in positive,  $F(2, 288) = 0.13, p = .88$ , or negative affect,  $F(2, 287) = 0.32, p = .73$ ; mean scores are displayed in Table 2. Effect sizes were all small according to guidelines set forth by Cohen (1992). Thus, there appears to be no differences in change in affect pre- to post-manipulation depending on the type of article viewed.

### *Hypothesis 2: Group Differences in Attitudes toward Suicide.*

As outlined previously, we evaluated group differences on three subscales of the ATTS: Right to die, Inevitability, and Comprehensibility. To test Hypothesis 2, we utilized one-way ANOVAs with Least Squared Difference (LSD) post-hoc tests when significant omnibus tests were obtained (see Table 2 for detailed results). Contrary to our hypotheses, we found no significant differences on the Right to Die,  $F(2, 285) = 0.002, p = .99$ , or Comprehensibility subscales,  $F(2, 290) = 0.45, p = .64$ . There was a significant difference between groups on the Inevitability subscale,  $F(2, 290) = 7.98, p < .001$ ; however, these differences were contrary to our hypotheses. Individuals in the Suicide With Resources and Information condition had *higher* mean scores on this subscale assessing the belief that suicide is inevitable, or that it cannot be stopped,  $p < .001$ , compared to either of the other groups. Effect sizes for the Inevitability subscale ranged from medium to small, whereas Comprehensibility and Right to Die effect sizes were all small according to Cohen's (1992) guidelines.

### *Hypothesis 3: Knowledge about suicide and suicide warning signs*

Knowledge about suicide warning signs was assessed by administering a list of warning signs for suicide intermixed with distractor items (see Appendix B) and asking participants to indicate which of the listed warning signs were warning signs for suicide (see Table 3 for

detailed results). A total correct score was calculated for each individual (e.g., recognizing six warning signs out of seven would result in a total score of six). Overall, our participants were able to identify a mean of 5.57 out of 7 ( $SD = 1.59$ ) warning signs for suicide. We then conducted a one-way ANOVA to determine if there was any difference in recognition of warning signs between groups and found no differences in mean number of warning signs identified,  $F(2, 293) = 0.47, p = .63$ . Effect sizes for differences in the mean number of warning signs identified were small, according to Cohen's (1992) guidelines (see Table 2). There were also no differences between groups on average number of filler warning signs identified. Participants in our sample on average incorrectly identified 6.31 out of 12 ( $SD = 3.06$ ) filler items as warning signs for suicide.

We further evaluated identification of warning signs at the item level using  $\chi^2$  difference testing and follow-up z-tests to determine whether the conditions significantly differed from one another. We found differences on identifying *acting recklessly seemingly without thinking* as a suicide warning sign,  $\chi^2(2) = 6.41, p = .04$ ; however, these differences were again contrary to our hypotheses. Specifically, participants in the Control condition were more likely to identify *acting recklessly seemingly without thinking* as a warning sign for suicide than either of the experimental conditions. We also found group differences on two of the distractor warning signs: excessive weight loss and insatiable need for reassurance. In these instances, the Suicide With Resources and Information condition was less likely than the other conditions to identify these as warning signs for suicide. This suggests some degree of learning for those in the Suicide with Resources and Information condition who were subsequently less likely to identify distractor warning signs as suicide warning signs.

*Hypothesis 4: Attitudes toward help-seeking*

In order to assess stigmatizing attitudes toward help-seeking and whether viewing a suicide news article with preventative resources and psychoeducational information would result in less negative or stigmatizing attitudes toward help-seeking than the other groups, a one-way ANOVA was conducted using the SSOSH. Contrary to the hypothesis, there were no group differences in stigma toward help-seeking  $F(2,286)=0.71, p=.50, M= 25.6$ , see Table 2. Effect sizes between groups were small, according to Cohen's (1992) guidelines.

*Hypothesis 5: Fearlessness about Death and other psychological constructs.*

In order to assess the impact of the type of article on fearlessness about death, a one-way ANOVA was conducted. Contrary to hypotheses, no significant differences emerged between the groups in fearlessness about death,  $F(2, 287)=0.86, p=.43$ . Consistent with hypotheses, we found no group differences on other psychological constructs (i.e., thwarted belongingness, perceived burdensomeness, and self-reported pain tolerance, depression, and suicidal ideation). Effect sizes for these variables ranged from small to medium according to Cohen's (1992) guidelines (detailed statistics, including effect sizes are displayed in Table 2).

## **Discussion**

In the present study, we evaluated the effects of reading a suicide news report on a variety of outcome variables and assessed whether adhering to one specific media guideline buffered any of the negative effects of reading a suicide news report. The majority of research on imitative suicides identifies an increase in suicides in the days following a publicized suicide news report (e.g., Blood & Pirkis, 2001; Gould, 2001), which led to the implementation of media guidelines for best reporting practices. Two studies (Etzersdorfer and Sonneck, 1998;

Neiderkrotenthaler and Sonneck, 2006) have demonstrated the effectiveness of the guidelines as a whole (i.e., a reduced number of imitative suicides), but were unable to establish a causal relationship. Only one other study has employed an experimental design to evaluate the effects of exposure to a suicide news report (Anestis et al., 2015). However, this study was limited in that the authors did not isolate a specific media guideline and did not specifically evaluate the effects of exposure to an article on attitudes and knowledge about suicide. Our study expanded upon existing research by employing an experimental design, focusing on the specific media guideline recommending the inclusion of preventative resources and psychoeducational information, and examining the effects on a variety of outcome variables, including attitudes and knowledge about suicide. Overall, we found no effect of exposure to a suicide news article, regardless of the inclusion of preventative resources and psychoeducational information, on a range of outcome variables, with a few minor exceptions.

Affect was assessed pre- and post-manipulation. Similar to Anestis and colleagues (2015), we found no immediate changes on either positive or negative affect from pre- to post-manipulation and found small effect sizes. It is important to highlight that we are not the first study to demonstrate a null relationship between suicide-related articles and changes in mood (i.e., Anestis et al., 2015). Therefore, it seems unlikely that suicide news reports have any influence on immediate changes in mood, at least among non-vulnerable populations.

Consistent with previous research suggesting that media reports may affect attitudes toward suicide (Gould & Shaffer, 1986; Gould, Shaffer, & Kleinman, 1988), we anticipated that we would see differences in specific attitudes toward suicide between those exposed to any suicide-related content and the control condition. However, we failed to find group differences on the subscales assessing Right to Die and Comprehensibility. We did find a difference on the

Inevitability subscale; however, these differences were contrary to hypotheses. Specifically, individuals exposed to psychoeducational information and preventative resources were *more* likely to report that suicide is inevitable, or cannot be stopped compared to both of the other conditions. Based on our study findings, it seems unlikely that exposure to a suicide media report has any appreciable effect on attitudes toward suicide, and that exposure to psychoeducational information and preventative resources may even have a harmful impact on the perceived inevitability of suicide.

We also hypothesized that individuals exposed to the suicide article with psychoeducational information and preventative resources would be better able to identify suicide warning signs compared to both the Control and Suicide article without psychoeducational information and preventative resources conditions. Contrary to hypotheses, we found no group differences in the mean number of warning signs identified. Our results appear to be contrary to previous research that has demonstrated that exposure to suicide warning signs leads to increases in knowledge about suicide (e.g., Van Orden et al., 2006). We did find that at the item level, participants presented with psychoeducational information were less likely to indicate two of the distractor warning signs for suicide, implying that those presented with this information may be better at discriminating actual from distractor warning signs. It is important to note, however, that the participants in our sample were overall good at identifying warning signs for suicide. Our study embedded the warning signs within an article; thus, it is also possible that they were not as easy to detect. It is also possible that since the publication of the Van Orden et al. (2006) article, which was published soon after the warning signs for suicide were disseminated to the general public, the average undergraduate has a more comprehensive knowledge about warning signs for suicide. Consistent with this notion, participants in all three

groups correctly identified the vast majority of warning signs for suicide. Thus, our null results may be due to a ceiling effect.

We also hypothesized that exposure to a suicide news report would impact attitudes toward help-seeking based on the type of information included. We anticipated that those presented with the suicide article with psychoeducational information and preventative resources would indicate less stigma toward help-seeking compared to the Control and Suicide without information and resources conditions. Contrary to our expectations, we saw no differences between groups on attitudes toward help-seeking. It is worth mentioning that our participants overall demonstrated neither stigmatizing attitudes nor completely accepting attitudes toward help-seeking. It is possible that a sample of individuals not enrolled in psychology courses might yield different results; however, in our sample, media reports on suicide appear to have no bearing on attitudes toward help seeking.

Researchers have suggested that exposure to suicide may habituate a person to the fear of death (Van Orden et al., 2010). It is possible that exposure to suicide via a media report may have the same effect; therefore, we hypothesized that individuals exposed to any suicide article would have a lowered fear of death. Our results yielded no differences in fearlessness about death. Consistent with our hypotheses, we found no differences on other psychological constructs (i.e., thwarted belongingness, perceived burdensomeness, and self-reported pain tolerance, depression, and suicidal ideation).

In summary, the present study failed to identify a relationship between exposure to a suicide news report on a variety of outcome variables and additionally did not identify any effect of adhering to the media guideline to include psychoeducational information and preventative resources. Importantly, our study was more than adequately powered. Additionally, because we

screened for inattentive responding, our participants were likely paying more attention than what we might expect in the real world, and we still failed to see meaningful effects on the vast majority of our outcome variables.

## **Limitations**

Although our study is an important addition to existing research on media reporting of suicide, it is not without its limitations. A significant limitation of our study was the measurement of attitudes toward suicide. As discussed previously, the Attitudes toward Suicide Scale (ATTS; Renberg et al., 2008) demonstrated poor internal consistency. Although we were able to improve the internal consistency among the three newly created subscales, two subscales still fell below what is normally considered adequate internal consistency. It is possible that a different measure of attitudes toward suicide may demonstrate significant differences between groups when presented with a suicide news article and this specific media guideline. To date, researchers have failed to establish a measure of attitudes toward suicide with a stable factor structure (Kodaka et al., 2010). Future research should aim to develop and include more reliable measures of attitudes toward suicide in order to gain a better understanding of the impact of suicide news articles.

An additional limitation of our study was that we chose to exclude individuals with a history of past suicide attempts, based on ethical considerations. We hypothesized, however, that we would see effects of reading a suicide news report even among non-vulnerable individuals on variables known to be associated with suicide. In particular, we hypothesized that adherence to this specific guideline would have an effect on knowledge about suicide as well as attitudes toward suicide and stigma toward help-seeking. As discussed previously, we found no expected differences between groups, which suggests that adherence to this guideline may not have any

impact on the selected outcome variables. It remains plausible that individuals with a history of suicidal behavior may demonstrate differences on the assessed outcome variables.

A further limitation of our study was that we chose to focus on only one guideline; thus, it is possible that there was something uniquely associated with the chosen guideline and how it was presented. Researchers have highlighted that few suicide articles include any psychoeducational information and preventative resources, and when the information is included, it is usually only included at the bottom of the article (Gould et al., 2014). Thus, in order to be consistent with typical behavior of journalists, we embedded the resources and information at the bottom of the article. Although we assessed whether participants were able to identify the content of the article, importantly, we did not assess whether participants noticed any information included at the bottom of the article. Therefore, it is possible that participants may have scrolled past this information. However, if this is the case, this is important to examine in future research. Perhaps integrating such information in a more interactive or visually attractive way might more strongly influence readers.

Additionally, we only used one news article about suicide. It is possible that there was something idiosyncratic about this article that led to our results. The article talked about a high school student who failed a test and subsequently died by suicide. It is possible that a sample of undergraduate students did not identify strongly with the high school student described in the article. Identification with the victim was not assessed in the current study. Also, we chose to not include a photograph or use any measures to visually enhance the article. Potentially, the content and focus of the article coupled with the design and presentation were not sufficiently engaging for the current sample. Future research should consider presenting material that is highly relevant

and visually engaging in order to possibly increase identification with the victim and attention to the article.

### **Future directions**

Future research is needed to explore other possible mechanisms responsible for the relationship between suicide news reports and increases in suicide rates and to develop a more concrete understanding of the effectiveness of the media guidelines. It is essential to pursue other theoretical approaches for understanding this relationship, including focusing on hypotheses of social cognitive theory. Previous research has suggested that suicide news articles are much more likely to lead to an imitative effect if the victim in the article is highly relatable in some way (Haw et al., 2013; Sonneck, Etzersdorfer, Nagel-Kuess, 1994). Therefore, future research should evaluate the effects of exposure to a suicide news article where the individual in the news article has demographic characteristics that are highly similar to the reader (e.g., age, race, ethnicity). Researchers have also suggested that imitation of suicidal behaviors is exclusively applicable to vulnerable individuals with a preexisting suicidal disposition (Stack, 2005). Thus, it would be appropriate to evaluate the effects of exposure to a suicide news article and adherence to the guidelines in a more vulnerable population than the one examined in this study.

### **Conclusion**

Overall, this study represents important progress for research on media reporting of suicide. Our study is the first to employ an experimental design to evaluate the mechanisms responsible for the relationship between suicide media reports and imitative suicidal behavior (e.g., attitudes, knowledge, other risk factors for suicide). Additionally, our study expanded upon existing research by evaluating the effects of adhering to one specific guideline. Although

researchers have demonstrated that in the aggregate, the guidelines are effective at reducing imitative behaviors (Etzersdorfer and Sonneck, 1998; Neiderkrotenthaler and Sonneck, 2006), it is not clear which guidelines are responsible for this. It is possible that not all of the guidelines need to be adhered to, and perhaps some are significantly more important than others. Thus, continued evaluation of specific guidelines is important for increasing our understanding. If researchers want to encourage journalists to adhere to published guidelines, we need to be confident and have empirical evidence that doing so is beneficial. Although our study represents important progress, further research is needed in order to account for this relationship and the mechanisms responsible for the effectiveness of the guidelines.

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## Tables

**Table 1. Demographics**

	Control <sub>1</sub> ( <i>n</i> =111)	Suicide With <sub>2</sub> ( <i>n</i> =90)	Suicide Without <sub>3</sub> ( <i>n</i> =95)	Total ( <i>N</i> =296)
<i>Gender</i>				
Male	37.5% ( <i>n</i> =42)	38.9% ( <i>n</i> =35)	32.6% ( <i>n</i> =31)	36.4% ( <i>n</i> =108)
Female	62.5% ( <i>n</i> =69)	60.0% ( <i>n</i> =54)	67.4% ( <i>n</i> =64)	63.3% ( <i>n</i> =188)
Transgender	0.0 % ( <i>n</i> =0)	1.1 % ( <i>n</i> =1)	0.0 % ( <i>n</i> =0)	0.3% ( <i>n</i> =1)
<i>Race</i>				
American Indian/Alaska Native	0.9% ( <i>n</i> =1)	0.0 % ( <i>n</i> =0)	1.1% ( <i>n</i> =1)	0.7% ( <i>n</i> =2)
Asian	.9% ( <i>n</i> =1)	0.0 % ( <i>n</i> =0)	6.3% ( <i>n</i> =6)	2.4% ( <i>n</i> =7)
Native Hawaiian/Pacific Islander	0.0 % ( <i>n</i> =0)	0.0 % ( <i>n</i> =0)	1.1% ( <i>n</i> =1)	0.3% ( <i>n</i> =1)
Black/African American	7.1% ( <i>n</i> =8)	4.4% ( <i>n</i> =4)	3.2% ( <i>n</i> =3)	5.1% ( <i>n</i> =15)
White	91.1% ( <i>n</i> =102)	95.6% ( <i>n</i> =86)	87.4% ( <i>n</i> =83)	91.2% ( <i>n</i> =271)
<i>Ethnicity</i>				
Hispanic/Latino	1.8 % ( <i>n</i> =2)	0.0 % ( <i>n</i> =0)	1.1% ( <i>n</i> =1)	1.0% ( <i>n</i> =3)
Non-Hispanic/Latino	96.4% ( <i>n</i> =108)	98.9% ( <i>n</i> =89)	98.9% ( <i>n</i> =94)	98.0% ( <i>n</i> =294)

Note. Group titles are abbreviated. Full group titles are as follows: <sub>1</sub>Neutral, non-suicide related control condition, <sub>2</sub>Suicide Article with psychoeducational information and preventative resources, <sub>3</sub>Suicide article without psychoeducational information and preventative resources.

**Table 2. Outcome variable descriptive statistics**

	Control <sub>1</sub> (n=111)		Suicide With <sub>2</sub> (n=90)		Suicide Without <sub>3</sub> (n=95)		<i>d</i> <sub>2-1</sub>	<i>d</i> <sub>3-1</sub>	<i>d</i> <sub>3-2</sub>
	M	SD	M	SD	M	SD			
<i>Affect</i>									
Changes in Positive Affect <sup>+</sup>	-2.49	5.21	-2.83	4.59	-2.72	4.55	0.09	0.07	-0.02
Changes in Negative Affect <sup>+</sup>	-1.38	2.91	-1.72	2.89	-1.46	3.51	-0.12	-0.03	0.08
<i>Attitudes</i>									
Inevitability*	15.92	2.56	15.82	2.33	17.03*	1.95	0.01	0.51	0.56
Comprehensibility	5.17	1.91	5.09	1.86	5.35	1.99	0.05	0.08	0.13
Right to die	27.79	6.39	27.75	6.25	27.81	6.95	-0.02	-0.02	-0.01
Self-Stigma of Help-Seeking	26.18	7.24	25.16	8.27	24.98	7.83	-0.17	-0.19	-0.03
Mean number of Suicide Warning Signs Recognized (i.e., knowledge)	5.53	1.70	5.46	1.76	5.68	1.40	-0.06	0.08	0.14
Depression Symptom Inventory-Suicide Subscale	0.29	0.99	0.08	0.31	0.21	0.77	-0.26	-0.08	0.22
Center for Epidemiological Studies-Depression	7.79	5.44	6.85	4.41	7.01	4.76	-0.19	-0.16	0.03
Burdensomeness	1.85	4.89	0.89	2.71	1.47	3.98	-0.22	-0.07	0.17
Belongingness	7.56	7.91	7.33	9.06	7.15	7.93	-0.04	0.02	0.03

Note. Group titles are abbreviated. Full group titles are as follows: <sub>1</sub>Neutral, non-suicide related control condition, <sub>2</sub>Suicide Article with psychoeducational information and preventative resources, <sub>3</sub>Suicide article without psychoeducational information and preventative resources; <sup>+</sup> Changes in affect were calculated by subtracting affect at pre- from affect at post-manipulation. Negative scores indicate decreases; \* Denotes significant difference between Suicide Without and both Control and Suicide With; Effect sizes for differences between groups are represented by Cohen's *d*

**Table 3. Warning signs for suicide percent identification and group difference statistics**

	$\chi^2$ (df)	p	Percent identified as a warning sign			
			Control <sub>1</sub> (n=111)	Suicide With <sub>2</sub> (n=90)	Suicide Without <sub>3</sub> (n= 95)	Total (n=296)
<i>Suicide Warning Signs</i>						
Having diminished reasons for living	1.04 (2)	.59	90.2% (n=101)	90.0% (n=81)	93.7% (n=89)	91.2% (n=274)
Withdrawing from friends and family	0.44 (2)	.80	89.3% (n=100)	88.9% (n=80)	91.6% (n=87)	89.9% (n=267)
Impulsivity	0.17 (2)	.92	54.5% (n=61)	53.3% (n=48)	51.6% (n=49)	53.2% (n=158)
Feeling trapped	0.03 (2)	.98	83.0% (n=93)	82.2% (n=74)	83.2% (n=79)	82.8% (n=246)
Talking about suicide	0.74 (2)	.69	74.1% (n=83)	90.0% (n=81)	77.9% (n=74)	76.8% (n=228)
Acting reckless/engaging in risky activities	6.24 (2)	.04	69.6% (n=78) <sub>a,b</sub>	58.9% (n=53) <sub>b</sub>	75.8% (n=72) <sub>a</sub>	68.4% (n=203)
Hopelessness	0.63 (2)	.73	92.0% (n=103)	93.3% (n=84)	94.7% (n=90)	93.3% (n=277)
<i>Distractors</i>						
Decline in personal hygiene	3.09 (2)	.21	75.0% (n=84)	64.4% (n=58)	73.7% (n=70)	71.4% (n=212)
Suspiciousness/uneasiness with others	1.31 (2)	.52	64.3% (n=72)	56.7% (n=51)	58.9% (n=56)	60.3% (n=179)
Significant change in appetite	4.51 (2)	.11	62.5% (n=70)	53.3% (n=48)	68.4% (n=65)	61.67% (n=183)
Dramatic changes in mood	2.39 (2)	.30	76.8% (n=86)	81.1% (n=73)	85.3% (n=81)	80.8% (n=240)
Intense fear of weight gain	2.51 (2)	.29	33.0% (n=37)	23.3% (n=21)	31.6% (n=30)	29.6% (n=88)
Exercises excessively and compulsively	0.05 (2)	.98	24.1% (n=27)	24.4% (n=22)	23.2% (n=22)	23.9% (n=71)

Note. Group titles are abbreviated. Full group titles are as follows: <sub>1</sub>Neutral, non-suicide related control condition, <sub>2</sub>Suicide Article with psychoeducational information and preventative resources, <sub>3</sub>Suicide article without psychoeducational information and preventative resources. Different subscript letters denote a significantly significant difference at the .05 level.

**Table 3 continued.**

	$\chi^2$ (df)	p	Percent identified as a warning sign			
			Control <sub>1</sub>	Suicide With <sub>2</sub>	Suicide Without <sub>3</sub>	Total
<i>Distractors</i>						
Strong avoidance and reluctance in situations that weren't formally an issue	0.05 (2)	.98	71.4% (n=80)	70.0% (n=63)	70.5% (n=67)	70.7% (n=210)
Increased sensitivity to sights or sounds	5.46 (2)	.06	26.8% (n=30)	23.3% (n=21)	13.7% (n=13)	21.5% (n=64)
Mistaking noises for voices	1.29 (2)	.53	27.7% (n=31)	23.3% (n=21)	21.1% (n=20)	24.2% (n=72)
Strange new feelings or no feelings at all	4.63 (2)	.09	68.8% (n=55)	61.1% (n=55)	75.8% (n=72)	68.7% (n=204)
Excessive weight loss	11.89 (2)	<.01	64.3% (n=72) <sub>a</sub>	46.7% (n=42) <sub>b</sub>	70.5% (n=67) <sub>a</sub>	61.33% (n=181)
Incessant and insatiable need for reassurance	8.37 (2)	.02	60.7% (n=68) <sub>a</sub>	42.2% (n=38) <sub>b</sub>	60.0% (n=57) <sub>a</sub>	54.9% (n=163)
<p>Note. Group titles are abbreviated. Full group titles are as follows: <sub>1</sub>Neutral, non-suicide related control condition, <sub>2</sub>Suicide Article with psychoeducational information and preventative resources, <sub>3</sub>Suicide article without psychoeducational information and preventative resources; Different subscript letters denote a significantly significant difference at the .05 level.</p>						

## Appendix A

7/27/2014

Qualtrics Survey Software

### Control: Neutral news article

#### Teen Allegedly Caught Cheating On Test

A Bronx teen, Rose Piper, 17, is believed to have been caught cheating on a standardized test.

The Post reports that Piper was caught looking at her cellphone on Thursday during the test by her teacher, Donna Pond, at the Harlem High School for Math, Science and Engineering. A male classmate gave them a rundown of what happened in the classroom, which the Post says was confirmed by school officials:

“She snatched it away from her and started screaming at her, ‘Oh, you shouldn’t be cheating! You guys shouldn’t be cheating! You guys are lying to yourselves!’ ”

Piper burst into tears, sobbing, “I’m sorry! I’m sorry!”

“Oh, you are not really sorry,” Pond allegedly snapped back. “That’s not a sincere apology!”

A Department of Education spokeswoman said, “We are conducting an investigation into this incident, and we are taking immediate action.”

The school’s superintendent said further consequences will depend on the student’s history of misconduct, and suspension in the fall is a possibility.

Cheating on standardized tests in America has become rampant, with 40 states reporting it over two years, according to a 2013 Government Accountability Office report. The consequences students face when they don’t meet standards are so severe that cheating is regarded as a necessary evil.

7/27/2014

**Suicide news article with  
psychoeducation information and  
preventative resources**

Qualtrics Survey Software

## **Teen Allegedly Committed Suicide After Being Caught Cheating On Test**

A Bronx teen is believed to have committed suicide this week after she was caught cheating on a high school exam. Rose Piper, 17, gave her belongings to a stranger about 3:50 p.m. Thursday, then jumped into Hudson River Greenway near W. 163rd Street. Sources tell the Post that she wrote a suicide note on her German-language exam after she was caught cheating by her teacher: "I just want to go away forever on the bottom of the river."

The Post reports that Piper was caught looking at her cellphone on Thursday during the exam by her teacher, Donna Pond, at the Harlem High School for Math, Science and Engineering. A male classmate gave them a rundown of what happened in the classroom, which the Post says was confirmed by law-enforcement officials:

"She snatched it away from her and started screaming at her, 'Oh, you shouldn't be cheating! You guys shouldn't be cheating! You guys are lying to yourselves!'"

Piper burst into tears, sobbing, "I'm sorry! I'm sorry!"

"Oh, you are not really sorry," Pond allegedly snapped back. "That's not a sincere apology!"

A Department of Education spokeswoman said, "We are conducting an investigation into this tragic incident, and we are taking immediate action." Witnesses told the Post and News that Piper appeared to be "forcing herself down;" her father later told cops that she can't swim. No body has been recovered yet, and police are still investigating.

***Warning signs of suicide include hopelessness, talking about suicide, impulsivity, feeling trapped, dramatic changes in mood, withdrawing from friends and family, and having diminished reasons for living.***

***If someone you know exhibits any warning signs for suicide: do not leave the person alone; remove any firearms, alcohol, drugs or sharp objects that could be used in a suicide attempt; and call the U.S. National Suicide Prevention Lifeline at 1-800-273-TALK (8255), or take the person to an emergency room, or seek help from a medical or mental health professional.***

## Teen Allegedly Committed Suicide After Being Caught Cheating On Test

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## Are fitness trackers really helpful?

Fitness tracking monitors promise to lead to all sorts of results: You'll melt off fat just by monitoring your steps; eat better by tracking your food intake; get better sleep.

But the fitness devices can cost as much as hundreds of dollars, and often aren't as helpful as users hope they will be. Consumers should consider carefully whether a fitness monitor is worth the purchase, researchers advise in a Harvard Health Publications report. Cost of the fitness devices typically increases with the number of features available, but those amenities are usually unnecessary, researchers said.

Although some monitors offer measurements you typically get in a doctor's office, such as blood pressure or heart rate, experts said the most important feature of such a device is monitoring physical activity: steps taken daily or calories burned from a workout.

"People end up falling for a lot of bells and whistles, when it is often the simple feedback that is most helpful," said Dr. Jennifer M. Satchek, associate professor at Tuft's Friedman School of Nutrition Science and Policy. "Be realistic in terms of budget, time needed to engage, and ease of wear and use."

Researchers recommend first deciding what you want out of a monitor. Instead of relying solely on a tracker to change your fitness lifestyle, consumers should set their fitness goals first and then use the monitors to help them achieve those goals.

For example, if you'd like to walk more, and your doctor recommends taking 10,000 steps a day, you can use a simple step monitor to track how many steps you're currently taking. You can then set intermediate goals to increase your number of steps per day, and use the monitor to help you determine how close you are to achieving that goal.

Despite the caveats of purchasing a high-end monitor, researchers don't discourage the use of fitness trackers in general.

"If you're already motivated to exercise or eat differently, the monitor is a great tool to track your progress and help you understand where you need to make changes," said Dr. Anne Thorndike, a preventive medicine researcher and assistant professor of medicine at Harvard Medical School.

## Appendix B

Which of the following are warning signs for SUICIDE? Please click in the bubble and select all answers that apply.

	Click if item is a suicide warning sign
A significant change in apparent appetite	<input type="radio"/>
Excessive weight loss	<input type="radio"/>
Hopelessness	<input type="radio"/>
An intense fear of weight gain	<input type="radio"/>
Talking about suicide	<input type="radio"/>
Exercises excessively and compulsively	<input type="radio"/>
Incessant and insatiable need for reassurance	<input type="radio"/>
Strong avoidance and reluctance in situations that were formerly not an issue	<input type="radio"/>
Impulsivity	<input type="radio"/>
Acting reckless or engaging in risky activities, seemingly without thinking	<input type="radio"/>
Feeling trapped	<input type="radio"/>
Suspiciousness/uneasiness with others	<input type="radio"/>
Decline in self-care or personal hygiene	<input type="radio"/>
Increased sensitivity to sights or sounds	<input type="radio"/>
Dramatic changes in mood	<input type="radio"/>
Withdrawing from friends and family	<input type="radio"/>
Mistaking noises for voices	<input type="radio"/>
Strange new feelings or having no feelings at all	<input type="radio"/>
Having diminished reasons for living	<input type="radio"/>