

## Suicide in the Media: A Quantitative Review of Studies Based on Nonfictional Stories

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Research on the effect of suicide stories in the media on suicide in the real world has been marked by much debate and inconsistent findings. Recent narrative reviews have suggested that research based on nonfictional models is more apt to uncover imitative effects than research based on fictional models. There is, however, substantial variation in media effects within the research restricted to nonfictional accounts of suicide. The present analysis provides some explanations of the variation in findings in the work on nonfictional media. Logistic regression techniques applied to 419 findings from 55 studies determined that: (1) studies measuring the presence of either an entertainment or political celebrity were 5.27 times more likely to find a copycat effect, (2) studies focusing on stories that stressed negative definitions of suicide were 99% less likely to report a copycat effect, (3) research based on television stories (which receive less coverage than print stories) were 79% less likely to find a copycat effect, and (4) studies focusing on female suicide were 4.89 times more likely to report a copycat effect than other studies. The full logistic regression model correctly classified 77.3% of the findings from the 55 studies. Methodological differences among studies are associated with discrepancies in their results.

The possible impact of media depictions of suicide on suicide in society has been the subject of considerable debate over the last century (Durkheim, 1897/1966; Motto, 1970; Phelps, 1911; Schmidtke & Schaller, 1998, 2000; Stack, 2000). There is substantial evidence that some people who are exposed to suicidal models in the media do, in fact, copy the behavior. Perhaps the most dramatic illustration of an imitative effect was provided by Marzuk et al. (1994); they found that in

the year of the publication of the book, *Final Exit* (a guide for committing suicide by asphyxiation), suicide by the recommended method increased 313% in New York City. In 27.3% of the cases a copy of the book was found at the scene of the suicide. Other research, following a wide range of methodologies and often based on small samples, has determined that, on average, approximately one third of persons involved in suicidal behavior following the dissemination of a suicidal model in the media have seen the model and may be copycat suicides (Hawton et al., 1999; Ostroff & Boyd, 1987; Simkin, Hawton, Whitehead, Fagg, & Eagle, 1995; Tousignant, Mishara, St. Laurent, Trepanier, & Fortin, 2001).

Modern research investigations on media and suicide have been marked by conflicting results. For example, on the one hand, the first systematic study of copycat effects analyzed 34 publicized newspaper stories

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(1948–1967). It determined that, on average, they were associated with a 2.51% increase in suicide during the month of the publicity. The suicide of actress Marilyn Monroe was associated with a 12% increase in suicide (Phillips, 1974). On the other hand, the most complex study to date of television coverage analyzed the effect of 87 television suicide stories (1973–1984) on the national incidence of teenage suicide. It determined that there was no imitative effect in 65 of 69 regression analyses (Kessler, Downey, Milavsky, & Stipp, 1988). The few findings supporting a copycat effect tended to involve well-known or celebrity models. More generally, an analysis of 42 studies on nonfictional and fictional media impacts on suicide determined that less than half of the findings were significant (Stack, 2000).

Such inconsistencies in the findings may be viewed as troublesome. There are, however, methodological and theoretical conditions that may mediate the strength and direction of media impacts on suicide (Baron & Reiss, 1985; Schmidtke & Schaller, 2000; Stack, 2000, 2002). Recent literature reviews (e.g., Gould, 2001; Pirkis & Blood, 2001a, 2001b; Schmidtke & Schaller, 2000) have argued that one reason for the discrepant findings is related to the type of story that is investigated. Researchers who select fictional suicides (e.g., suicides in movies, weekly soap operas) will be less likely to find a copycat effect than researchers who select nonfictional suicides (e.g., stories about real suicides in the press and television news). Theoretically, from the standpoint of social learning theory, persons will tend to identify more with the suicides of real people than make-believe models in fictional depictions of suicide (e.g., Gould, 2001; Schmidtke & Schaller, 2000; Stack, 1990b).

Nevertheless, there is substantial variation in the odds of finding a copycat effect even in the literature that selects nonfictional media accounts of suicide for its analysis (e.g., Kessler et al., 1988; Phillips, 1974). The present study performs an analysis of 419 findings from 55 studies on nonfictional depictions of suicide. It seeks to uncover some

explanations of the variation in reported copycat effects.

### PREVIOUS REVIEWS

Previous overviews of the literature on media and imitative suicide have been largely narrative reviews (e.g., Gould, 2001; Martin, 1998; Phillips & Lesyna, 1995; Phillips, Lesyna, & Paight, 1992; Pirkis & Blood, 2001a, 2001b; Platt, 1994; Schmidtke & Schaller, 2000; Stack, 1990b; Velting & Gould, 1997). Narrative reviews provide verbal descriptions of perceived patterns in the findings from a set of studies on an  $X$ – $Y$  relationship where  $X$  is an independent variable and  $Y$  a dependent variable. At best, such narrative reviews may provide a “vote count” on how many studies support a hypothesis linking  $X$  and  $Y$  (Rosenthal, 1991). They do not provide, as does a meta analysis, a single statistic that summarizes the strength of the  $X$ – $Y$  relationship across studies (Rosenthal, 1991; Wells & Rankin, 1991).

In contrast to narrative reviews, quantitative research reviews, such as those in meta analysis, are based on the quantification of research findings from a set of research studies. This method involves taking the findings from previous research studies as the basic data for a new analysis. The new analysis can then summarize all previous research. They provide statistics that sum up the strength of the  $X$ – $Y$  relationship. Further, various contexts or conditions, such as methodological differences among studies, can be employed to explain discrepant findings among studies. For example, the differences in research design among studies can be quantified, and these objective differences can be linked to the discrepant findings on the  $X$ – $Y$  relationship. In short, quantitative research reviews minimize possible errors in the subjective interpretation of previous research (Rosenthal, 1991; Stack, 2000).

The present study contributes to the literature by performing the first quantitative review of the research on nonfictional media stories as they affect suicide. It is concerned

with which contexts or features of research design may bias a study toward reporting a significant relationship between media coverage of suicide and imitative suicide. In so doing, it weighs the importance of eleven methodological variables in explaining the variation in significant versus insignificant findings from 55 studies.

### EXPLANATIONS OF MEDIA IMPACTS

Social learning theory has provided the main theoretical framework for research on media impacts on suicide (e.g., see reviews in Pirkis & Blood, 2001a, 2001b; Schmidtke & Schaller, 2000; Stack, 2000, 2002). A fundamental assumption is the presence of a group of vulnerable, suicidal individuals in society. Any copycat effect of the media on suicide is assumed to involve already suicidal individuals. Media impacts may push already vulnerable individuals "over the edge."

Suicide results from an excess of positive definitions over negative definitions of suicide. Positive definitions can include: sensational coverage, the glorification of the deceased, focusing on the positive aspects of the victim, and rationalizations. A key positive definition is a rationalization or motive for suicide (e.g., terminal illness, job loss, marital trouble, depression). This can legitimate suicide, thus disinhibiting vulnerable people on the edge of suicide. Negative definitions of suicide include focusing on the victim's physical disfigurement and pain, stressing that suicide is wrong, and discussing solutions or alternatives to suicide such as counseling. The greater the excess of positive definitions, the greater the media's impact on suicide. Media reports on suicide have typically contained far more positive definitions of suicide than negative (Blood, Puntis, & Pirkis, 2001; Fekete, Schmidtke, Etzersdorfer, & Gailiene, 1998; Michel, Frey, Wyss, & Valach, 2000; for a review see Schmidtke & Schaller, 2000: 686–688). Hence, in the aggregate, media reports should tend to increase suicidal behavior. In addition, there is evidence that the

media impact on suicide is governed by a dose-response mechanism. That is, the greater amount of coverage of a suicide story, the greater the copycat effect (e.g., see reviews in Pirkis & Blood, 2001a, 2001b).

Differential identification theory has provided some additional propositions that explain some of the reasons for the variability in the findings of research on copycat suicide. Herein, the impact of a suicide story on copycat suicide is conditioned by the degree of identification between the model and the observer (e.g., Stack, 1987, 1989b, 1990a, 1996; Wasserman, 1984). A key element of differential identification theory is the principle of vertical identification. Persons will tend to copycat the behavior of superior people (e.g., celebrities) more than that of inferior people (Stack, 1987, 2000; Wasserman, 1984). Hence, stories about celebrities may trigger more copycat suicides than stories about noncelebrities.

A final proposition governing the conditions that may maximize imitative effects is derived from symbolic interactionist theory (Blumer, 1969; Stack, 1987). Audience mood may minimize or maximize media impacts. An audience that is depressed, relatively high in impulsivity, or otherwise receptive to media presentations of suicide would be expected to be more responsive to media coverage of suicide than audiences that are not receptive. As Gould (2001) points out, this is the most understudied area in media impacts research.

#### *Formation of Hypotheses*

The present study employs social learning theory to form its hypotheses. The focus is on testing hypotheses on what contexts or conditions might minimize or maximize the chances that a study will report a significant association between media coverage and suicide. Hypotheses are formulated on story characteristics, amount of coverage, period effects, and audience receptiveness or mood.

*Story Characteristics.* Some research has suggested that the characteristics of the story employed in a study will affect the size,

if any, of an imitative effect (Baron & Reiss, 1985; Martin, 1998; Stack, 1987; Wasserman, 1984). Of particular concern is whether or not a study measures the celebrity status of the suicide victim and reports substantial negative definitions of the suicide.

A key issue in the promotion of differential audience identification concerns whether or not the victim in the story is well-known or if they are an ordinary person. Wasserman (1984) found that only stories concerning celebrities triggered imitation effects; however, correcting coding errors in previous work, Stack (1990c) determined that both celebrity and noncelebrity stories can lead to imitative effects. Other, research has suggested that the impacts of celebrity stories are greater than those of noncelebrity stories (Philips, Lesyna, & Paight, 1992; Stack, 1990c). One detailed study suggested that only two types of celebrity stories affect the monthly national suicide rate: those concerning entertainers and political officials (Stack, 1987). Months with a publicized suicide story concerning an entertainment celebrity were, for example, associated with an increase of 217 suicides. The present study tests the following hypothesis:

**H1:** Research findings based on suicide stories concerning entertainment or political celebrities will be more apt than research findings based on other stories to find an imitative effect.

It is assumed that suicide stories about well-known people (e.g., movie stars, U.S. Senators and Cabinet Members) spark a greater degree of identification than stories about the suicides of other persons. The vulnerable suicidal person may reason, "If a Marilyn Monroe with all her fame and fortune cannot endure life, why should I?"

*Negative Definitions of Suicide.* In addition, the present study focuses on whether or not the research study measured the presence of strong negative definitions of suicide in the stories analyzed. For example, Stack (1989a) explored the influence of 12 days of

three network television reports concerning the mass suicide ( $N = 911$ ) on November 18, 1978, at Jonestown. This coverage was framed in a quite negative way and included: (1) disfigurement—footage of rotting bodies in piles; and a (2) cult label—the media was quick to label the Jonestown suicides as cult-inspired. Controlling for seasonal, holiday, and other variables, there were 58 fewer suicides than expected during the 12 days of television news stories about the event (Stack, 1989a). Further, the strong negative messages in news coverage of rock star Kurt Cobain's suicide in 1994 (including condemnation of the suicide by his spouse) has been linked to the absence of a copycat effect in that case (Jobs, Berman, O'Carroll, Eastgard, & Knickmeyer, 1996; Martin & Koo, 1997; Schmidtke & Schaller, 2000). The present study will test the hypothesis:

**H2:** The presence of strong negative definitions in suicide stories will minimize the odds of finding an imitative effect.

*Amount of Coverage.* The present study also tests the dose-response thesis on imitative effects. It does so by distinguishing between studies that are designed to tap low versus high amounts of media coverage of suicide. Television-based stories on suicide typically last less than 20 seconds; hence, they cannot provide nearly as many positive definitions of suicide as long newspaper stories. Further, unlike televised suicide stories, newspaper suicide stories can be saved, reread, and studied. In contrast, short TV messages can be quickly forgotten or even unnoticed (Stack, 2000, 2002). It is hypothesized that:

**H3:** Research findings based on television suicide stories will be less likely to report an imitative effect than findings based on newspaper suicide stories.

Research has been done on the impact of media blackouts on suicide coverage, including those perpetuated by local newspaper

strikes (e.g., Blumenthal & Bergner, 1973; Motto, 1967, 1970). Given a substantial reduction in exposure to media stories during such blackouts, such investigations would be expected to report reduced suicide rates during the blackout; however, while the reporting of suicide in the print media is necessarily reduced by a newspaper strike, people can still be exposed to suicide stories by other local media (television, radio, magazines, and newspapers that are not on strike). This qualification suggests the following thesis:

**H4:** Studies based on newspaper strikes will tend to be less apt to find a media impact than studies using alternative methodologies.

*Period Effects.* The amount of a population's exposure to media coverage of suicide in society may vary according to historical and/or technological epochs. Research has been based on three principal historical periods: 1910–1920, 1929–1939, and 1948–present. Stack (1990b, 2000) suggested that research based in the epochs before the invention of television may be less likely to find significant results. This may be due to the lack of television to echo the stories covered in the radio and print media.

Research based in the 1930s may be especially less apt to report a copycat effect. There was a substantial drop in newspaper circulation in the 1930s due to economic impoverishment, hence fewer people were directly exposed to the newspaper coverage of stories (Wasserman, 1992). Another possible reason for the lesser copycat effect may be due to the presence of massive social movements for social and economic change (e.g., labor movement) which may have distracted otherwise suicidal people from thoughts about suicide (Stack, 1992). The present study tests the following hypothesis:

**H5:** Research based on either the period of 1910–1920 or the Great Depression will be less likely to uncover an imitative effect than research based on the modern era.

*Audience Mood and the Dependent Variable.* Distinctions are drawn among studies with regard to how they measure the dependent variable, suicide. The suicide rate, for example, of some age/gender groups may be more sensitive to imitative suicides. To the extent that audience mood or receptiveness to suicide varies by age/gender groups, the size of any media impact will be minimized or maximized according to which group (e.g., teenagers, females, young males, the elderly) is singled out for investigation in a study.

That gender may be related to copycat effects is highlighted in research by Motto (1970). During a period of substantial reduction in newspaper stories on suicide, the suicide rate of females in five out of 6 age groups fell significantly, while those for males were unaffected. According to traditional gender role stereotypes, women are more apt than men to spend longer hours doing unpaid work at home. They may be more exposed than men to media accounts of suicide as a consequence. In addition, women may be more reliant than men on an external party to legitimize or support an urge to complete suicide. Press reports on suicide can serve this legitimacy function (Stack, 1990b). The authority of the physician can serve a legitimacy function as well. For example, a disproportionately high number of women apply for and carry out suicides under physician assisted suicide (PAS) programs (Roscoe, Malphurs, Dragogiv, & Cohen, 2001). While women account for only one fifth of the completed suicides nationally, they accounted for 71% of the PAS cases in Michigan and 44% of the PAS cases in Oregon (Roscoe et al., 2001). This suggests the following hypothesis:

**H6:** Research based on females will be more likely to report a copycat effect than research based on males or the general population.

Although it has been often suggested in the literature that young audiences, given such considerations as their allegedly greater impulsivity and impressionability, may be the

most susceptible to imitative effects (e.g., Phillips & Carstensen, 1988; Schmidtke & Hafner, 1988; Stack, 1991); this has not always been borne out empirically (e.g., Kessler et al., 1988). Stack (1991) has suggested that the middle aged may be the least susceptible to copycat effects given their high degree of social integration in society. The middle aged have the highest incomes, the strongest bonds to marriage and family, the lowest unemployment rate, and hold most of the power positions in society. In contrast, the elderly may be high in susceptibility due to their high degree of physical illness, deaths of spouses and friends, low incomes, and loss of significant others through death (Stack, 1990d). The present study tests the following hypotheses:

**H7:** Research based on either young or elderly persons will be more likely than research based on other populations to report a copycat effect.

**H8:** Research based on middle-aged persons will be less apt to report a copycat effect than other research.

The research on media impacts on suicide varies considerably along these various dimensions. For example, many studies fail to measure the presence of celebrity suicide stories. Many studies do not disaggregate suicide rates but, instead, explore only the impact on the total suicide rate, and hence, may miss age/gender specific copycat effects (Gould, 2001; Stack, 2000, 2002). Such differences in research design may help to explain the differences in reported results.

## METHODOLOGY

The population of studies analyzed in the present investigation consists of works relating media coverage of suicide to either completed suicides or attempts. Research on physiological and attitudinal responses to suicide films and other media stimuli is excluded since the dependent variable is not appro-

priate (e.g., Biblarz, Brown, & Biblarz, 1991). Further, works that explore suicidal imitation in the social networks of individuals with no reference to media portrayals are excluded (e.g., Platt, 1993). In some cases, researchers reported the exact same results twice (e.g., in a journal and then also in a chapter in a book). In these cases the results are counted only once. Finally, only studies that deal with nonfictional depictions of suicide in the media are included in the present investigation. Research based on fictional depictions of suicide in the media (e.g., soap operas, movies) is excluded (e.g., Schmidtke & Hafner, 1988).

Studies were located in a two-step process. First, standard online bibliographic sources were searched: Medline, Sociofile, and Psychological Abstracts. Search keywords included "Media and Suicide" and "Imitation and Suicide." Second, the references in each paper were scrutinized to find additional studies missed by the online bibliographic search. A total of 55 relevant empirical works on nonfictional media suicide stories were found. This is more than in any of the narrative reviews which found between 11 and 38 studies on nonfictional suicide stories (see Appendix). Publication dates range from 1967 through 2001. Studies that were included in the present paper are noted by asterisks next to the author in the references section of the present paper.

The dependent variable in the present study is whether or not a research finding represents a significant or an insignificant relationship between a media portrayal of suicide and suicide in the real world. That is, the unit of analysis is the finding. Some studies contain a single finding on a single suicide story (e.g., Hills, 1995; Horton & Stack, 1984). Other studies contain more than 50 findings on more than 50 suicide stories (e.g., Kessler et al., 1988). If a finding represents a positive and significant relationship it is coded as a 1. Otherwise, it is coded as a 0. Since the dependent variable is a dichotomy, logistic regression techniques are appropriate (Pampel, 2000). Of the 419 findings reported in the 55 studies, 35.8% found an imitative effect.

### *Story Characteristics*

The presence or absence of a measure of the entertainment/political celebrity follows standard definitions of celebrity as developed by Wasserman (1984) and Stack (1987). If a finding is based on such a story, it is coded as a 1 and if it is not, it is coded as a 0. Substantial negative definitions of suicide in suicide depictions are defined by the author's of the studies themselves. Studies defining coverage as substantially negative include Stack (1983) and Stack (1989a) on the Jonestown mass suicides, and Jobes et al. (1996) and Martin and Koo (1997) on the suicide of Kurt Cobain.

### *Amount of Coverage*

The present study employs two measures of the amount of coverage in the research reviewed. First, we distinguish between studies that are based on television stories (coded as 1) and representing low coverage, and studies based on newspaper stories (coded as 0) and representing high coverage. Second, we distinguish between studies based on newspaper strikes (1), and all other studies (0).

### *Period Effects*

Period effects are measured in terms of two binary variables: studies based on 1910–1920 (0,1) and studies based on 1929–1939 (0,1). The benchmark period is 1948–2001. No studies were found for any other periods (e.g., 1921–1928, 1940–1947).

### *Dependent Variable/Audience Mood*

Studies use various age groups as the dependent variable. Age specific suicide rates are represented by three binary (0,1) variables: youth (ages 10–34); middle-aged (ages 35–64); and elderly (65 and over). The benchmark category consists of studies based on an aggregated overall suicide rate (suicides of the general population, or all ages).

Finally, a control is introduced for the year the study was published. It is possible

that studies published in more recent times had to meet stricter and/or more standardized methodological demands. As a consequence, such studies may have had more consistent results. Year of publication is coded as 67 through 101, representing the years 1967 through 2001.

## **RESULTS**

Table 1 provides the results of the logistic multiple regression analyses. Controlling for other variables, both of the indicators of story content are predictive of finding an imitative effect. Findings based on the impact of entertainment/political celebrities' suicides on real world suicide were significantly more likely to report an imitative effect than findings that did not. From the odds ratio, studies with the entertainment/political celebrity measure were 5.27 times more likely than research studies lacking such a measure to find a copycat effect. Further, research based on stories with powerful negative definitions of suicide were less apt to uncover imitative effects. Such research was 99% less likely than other research to report a copycat effect.

The amount of media coverage as measured by television versus newspaper stories was also significantly related to finding imitative effects. Controlling for other variables, findings based on television coverage of suicide were 79% less apt to report an imitative effect than their counterparts based on newspaper stories. Research based on newspaper strikes as a measure of the amount of media coverage of suicide were, however, not any more likely than others to report an imitative effect.

Turning to period effects, findings based on the Great Depression era were, as anticipated, less apt to uncover a copycat effect than studies based on the post-World War II period. From the odds ratio, research findings derived from the 1930–1939 period were 92% less likely to report an imitative effect than research based on the 1948–2001 era. Research based on the 1910–1920 pe-

**TABLE 1**

*The Effect of Story Characteristics, the Amount of Coverage, Period of Investigation, Audience Characteristics, and Year of Publication on the Reporting of a Positive Effect of Nonfictional Media Coverage on Suicide, 417 Findings from 53 studies, 1967–2001*

Independent Variable	<i>B</i>	S.E.	Wald Chi Square	Odds Ratio
Story Characteristics				
Entertainment/Political Celebrity	1.66*	0.54	9.50	5.27
Negative Definitions	-4.54*	1.28	12.68	0.01
Amount of Coverage				
Television Study	-1.56	0.33	21.57	0.21
Newspaper Strike	-0.62	0.84	0.53	0.54
Period Effects				
1910–1920	-1.14	0.81	1.95	0.32
1930–1939	-2.51*	1.13	4.90	0.08
Dependent Variable:				
Audience Receptiveness				
Female Suicide	1.59*	0.42	14.51	4.89
Youth Suicide	-0.74*	0.29	6.52	0.48
Middle Age Suicide	-1.88*	0.49	14.45	0.15
Elderly Suicide	0.18	0.51	0.12	1.19
Other				
Year of Publication	0.03	0.03	0.82	1.03
Constant	-1.96	3.09	0.40	—

*Note.* -2 Log Likelihood 429.72, Model Chi Square 116.866\*, Nagelkerke R-squared = 0.334. 77.33% of cases correctly classified by the model.

\* $p < 0.05$ .

riod was no more or less likely to find an imitative effect than research based on the modern era.

The nature of the dependent variable in the studies was also related to the odds of uncovering an imitative effect. Research findings based on female suicide rates as the outcome variable were considerably more likely to find an imitative effect than research findings based on male or the total suicide rates. Research findings based on women were 4.89 times more likely to find copycat effects than other research. Research findings based on the suicidal behavior of young persons as the outcome variable was 54% less apt to uncover an imitative effect than research based on the suicidal behavior of the total popula-

tion. Research findings involving the suicidal behavior of middle-aged persons were 85% less likely than the comparison group to report an imitative effect. Finally, research findings based on the suicidal behavior of the elderly was not significantly more or less likely to report copycat effects than the benchmark group. Finally, year of publication of the study was not predictive of its reporting imitative effects.

The equation as a whole significantly predicted the odds of finding a copycat effect as indicated by the chi square statistic (116.86,  $p < .0000$ ). The Nagelkerke approximation of an *R*-squared statistic for the equation is 0.33, also indicative a good model fit. Finally, the equation correctly classified 77.33% of



the research findings as reporting a significant or insignificant copycat effect.

### CONCLUSION

Research on the role of the media in imitative suicide has been marked by inconsistencies. Narrative research reviews have, nevertheless, generally concluded that there is a strong association between media coverage of suicide and the ensuing enhanced suicidal behavior in society (e.g., Gould, 2001; Pirkis & Blood, 2001a; Schmidtke & Schaller, 2000). As narrative reviews, these summaries of the research have not produced objective, quantified statistical data to support their subjective positions. In contrast to the general conclusions of the narrative reviews, the present study of 419 findings from 55 studies determined that the weight of the evidence is, in fact, against an imitative effect. Indeed, 269/419 findings or 64.2% reported the absence of an imitative effect.

The present study tested a series of hypotheses positing that the discrepancies in the research findings on media impacts on suicide might be due, in part, to substantial methodological differences among them. First, aspects of story content shape the odds of uncovering an imitative effect. Findings based on entertainment and political celebrity suicide stories were more than five times as likely to report imitative impacts than their counterparts. Further, findings based on stories marked by strong negative definitions of suicide were 99% less likely to uncover copycat effects than findings based on other stories. Second, the amount of coverage of the suicide story shapes the chances of reporting a copycat effect. Research findings based on television stories, which contain less information on average than newspaper stories, were 79% less apt to uncover a copycat effect. Third, there was some evidence that research done during certain historical periods reduces the probability of uncovering an imitative effect. Research findings based in the Great Depression were 92% less apt to uncover a copycat effect than work from the

modern era. Finally, audience mood, as measured by the gender and age range covered in the outcome or suicide variable, was predictive of a study's findings. In particular, research findings based on the suicide rates of women were 4.89 times more likely than others to report an imitative effect. Further, research findings based on either young or middle-aged persons were less apt to find copycat impacts than studies based on the total or general suicide rate.

The result that studies based on youth suicide were less (not more) likely to uncover copycat effects deserves some additional discussion. Past work on media impacts has generally assumed that copycat effects would be most apt to be found in research on youth, especially teenagers. This has been often referred to in literature reviews (e.g., Schmidtke & Schaller, 2000); however, the evidence base for this assertion often has been drawn from studies with atypical research designs and/or samples. For example, Schmidtke and Hafner (1988) analyzed the impact of a single story concerning a 19-year-old male who suicided on the railways in Germany. For an outcome variable they use suicide by the same method, not suicide in general. This is a departure from the typical research design that uses suicides by all methods as the dependent variable. Railway suicides for teenage males, closest in age to the model, increased by 147% thereafter compared to lesser amounts for other age groups. That study is in marked contrast to the results in Kessler et al. (1988). Kessler and his colleagues studied the impact of 87 stories on the incidence of teenage suicide over 1973–1984. There was no copycat effect in 65 of the 69 regression analyses in their report. Unlike the Schmidtke and Hafner (1988) study, the Kessler study had very few stories that were actually about teenage suicides. Perhaps for a teenage copycat effect to be maximized, the stories in the media need to be about teenagers. Such an age match between the victim in the model and the audience would be expected to maximize copycat behavior through the process of differential identification.

## APPENDIX

*Summary of Narrative Literature Reviews on Imitative Suicide: Number of Nonduplicate Studies on Nonfictional Media Portrayals of Suicide Reviewed, and Major Conclusions on the Imitative Effect*

Review	N Nonfictional Studies Reviewed*	Conclusion
Gould (2001)	38	The existence of imitative effects is unquestionable.
Martin (1998)	24	Highly publicized celebrity suicides are apt to cause imitative suicide.
Phillips & Lesyna (1995)	18	Work is needed on differential impacts of stories.
Pirkis and Blood (2001a)	34	Relationship is probably causal (meets most criteria of consistency, strength, coherence, specificity, & temporality).
Platt (1994)	13	A mass media effect of nonfictional reporting is possible.
Schmidtke & Schaller (2000)	32	Imitation effects are probably conditional.
Stack (1990b)	18	Imitative effect probably strongest for nonfictional stories, and may depend on differential identification.
Velting & Gould (1997)	11	8/11 studies provide strong support for imitation.

\*Studies reviewed without a dependent variable measuring suicide attempts and/or completions are omitted. Studies of fictional media suicides are not counted. Studies with duplicate findings are not counted.

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