

A CRITICAL REVIEW

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Executive summary

Background

The question of whether media portrayals of suicide can lead to imitation has been debated for over two centuries, but it is only in the last 50 years or so that scientific studies have been conducted on this subject. This review considers studies of news and information media, both traditional (newspapers, television, books) and newer media (the Internet). It also considers mixed media. The current review constitutes an update of an earlier review of the news and information media (Pirkis & Blood, 2001a, 2001b). It is accompanied by a review of studies of the entertainment media (Pirkis & Blood, 2009).

Method

Article selection

Searches of MEDLINE, PSYCHLIT, COMMUNICATION ABSTRACTS, ERIC, DISSERTATION ABSTRACTS and APAIS were conducted from these databases' respective years of inception to January 2010. The search aimed to retrieve English-language articles containing the following elements (truncated search terms are listed in brackets):

- Suicide (suicid*);
- Imitation (Werther, copycat, imitat* or contagio*);
- Media (media or (newspaper* or print or press) or radio* or televis* or book* or (Internet or cyber* or web*)).

Potentially relevant references were retrieved by this means, and their reference lists scanned for further possible articles. Efforts were also made to discover unpublished articles of relevance.

Study classification

Studies considering the association between news and information media presentation of suicide and actual suicidal behaviour were excluded if the media type was not explicit. As noted above, five media types were included: newspapers, television, books, the Internet and mixed media.

Studies classified by study type as follows:

- Descriptive studies: These were defined as detailed studies of individual cases or group of individuals with no comparator;
- Analytical studies: These were defined as studies of groups of individuals where a comparison
 was made with another group. The analytical studies were divided into two subtypes:
 - o Ecological studies: These were studies in which the outcome variable (usually suicide rates) for one group was compared with that for another group. The groups were usually differentiated by location (for example, suicide rates in one United States city in which a media stimulus was presented versus suicide rates in another in which no stimulus was presented), or by time (for example, suicide rates during the month in which a media stimulus was presented versus suicide rates during a month in which no

- such stimulus was presented). A key characteristic of ecological studies is that the data are analysed at the aggregate level, rather than the individual level.
- o Individual-level studies: These were studies in which the outcome variable for individuals in one group was compared with that for individuals in another group. Typically, the outcome variable was a self-reported attitude towards suicide or likelihood of suicidal behaviour. Groups were differentiated by type of media stimulus (for example, one group might be exposed to a newspaper report about a 10-year-old child taking his own life, and the other might be exposed to an identical report in which the subject was a 17-year-old). A key characteristic of individual-level studies is that the data are analysed at an individual level. This is made possible because the exposure status and the outcome status of each individual is known.

Critically reviewing the studies

This review gave consideration to methodological issues associated with each body of studies, and critically examined the effect of these issues on the interpretation of findings. Particular attention was given to the extent to which any methodological issues limited inferences that could be made about the relationship between portrayal of suicide in the given media and actual suicidal behaviour. Any relationship was considered in terms of: (a) the strength of the association; and (b) the extent to which it could be considered causal. Hill (1971), among others, has suggested that the following criteria should be used to judge whether a given association is causal:

- Consistency: The association between media coverage of suicide and an increase in actual suicides (or removal of media coverage and a decrease in actual suicides) is consistently observed, regardless of study design and population sampled;
- Strength: The association is statistically significant, and there may be evidence of a doseresponse effect such that the greater the exposure to the media coverage of suicide, the greater the increase in suicide rates;
- *Temporality*: The association should make sense in chronological terms, in that the exposure variable (media coverage of suicide) should have occurred before the outcome variable (actual suicides);
- Specificity: The association is clear, such that most people who experience the outcome of suicide have been exposed to media coverage of suicide. It is acknowledged that the multifactorial risk factors for suicide means that some of those who suicide will have been exposed to or exhibit other risk factors;
- Coherence: The association should be in line with known facts concerning the outcome of interest; actual suicides, attempted suicides or suicidal ideation. There should be a reasonable explanation for the association in this light. This criterion could be extended as a requirement to rule out rival explanations, especially in the context of known theory.

Key findings

In total, 97 studies on the association between presentation of suicide in news and information media and actual suicidal behaviour were identified. Table 1 provides a breakdown of these studies by media type and study type.

Table 1: Studies concerning the association between presentation of suicide in news and information media and actual suicidal behaviour

	Descriptive studies	Analytical studies: Ecological	Analytical studies: Individual-level	Total
Newspapers	1	31	9	41
Television	0	11	0	11
Books	3	2	0	5
The Internet	18	1	1	20
Mixed media	7	8	5	20
Total	29	53	15	97

Newspapers

Forty one studies (one descriptive study, 31 ecological studies and nine individual-level studies) have examined the relationship between newspaper reports of suicide and actual suicidal behaviour. The vast majority of these studies suggest that an association exists between the two. The association would appear to be *consistent*, with the effect being reliably observed under almost all study methodologies, *strong* (with a dose-response effect being evident such that the greater the newspaper coverage of a particular suicide, the more substantial the increase in subsequent suicides) and *coherent* (with the findings making sense in the light of what is already known about the influence of the media and suicide).

Although the evidence from ecological studies is less reliable with regard to *temporality* (with only a limited number of studies permitting a determination of whether the media stimuli preceded an increase in suicide rates) and *specificity* (with few studies being able to demonstrate that a reasonable proportion of those who subsequently died by suicide were exposed to the media stimulus), some individual-level studies suggest that these conditions may also be satisfied.

Under these circumstances, it is reasonable to regard the association as causal.

Television

Eleven studies, all of which have employed ecological designs, have examined the relationship between television news reports of suicide and actual suicidal behaviour. It is fair to say that the majority provide support for the existence of an association. Despite a few exceptional studies with null findings, the association would appear to be *consistent*. The association also demonstrates *strength*, in that it is most evident immediately after the media stimulus and then dissipates. The association is *coherent*, considering what is known about the influence of the media and suicide.

The condition of *temporality* and *specificity* are less readily satisfied because the ecological studies fail to demonstrate that the publicised suicide occurred before the actual suicides (because their data are based on monthly, rather than daily, figures) or that those who subsequently died by suicide saw the televised stimulus. The ecological studies concerned with television are not complemented by descriptive studies or individual-level analytical studies which might shed more light on these criteria.

Although the evidence for the influence of television on actual suicidal behaviour is not as strong as that for newspapers, there is cautious support for a causal relationship.

Books

Five studies (three descriptive studies and two ecological studies) have examined the impact of *Final Exit*, a best-selling book advocating suicide for those who are terminally ill. They found a *consistent* association that suggested that the book has been influential in the choice of method of suicide in a number of cases. The *temporality* of the association was demonstrated on several occasions, with the acquisition and scrutiny of *Final Exit* routinely preceding the suicide attempt. The *specificity* of the effect was also demonstrated, as evidenced by the significant number of individuals showing evidence of having been influenced by the book. The association has also shown *coherence*, in that it makes theoretical sense that a nonfiction book providing advice about suicide could influence suicidal individuals.

The studies were not designed in a way that enabled an examination of the *strength* of the association. All were based on exposure to a single stimulus, thus precluding any examination of a dose-response effect.

To the extent that the association satisfies the conditions of *consistency, temporality, specificity* and *coherence*, it would appear to be reasonable to deem it to be causal. Having said this, some caution should be exercised in generalising this finding to other non-fiction books, since all studies refer to *Final Exit* alone.

The Internet

There is mounting evidence from 20 studies (18 descriptive studies, one ecological study and one individual-level study) with respect to the association between web-based suicide-related material on actual suicidal behaviour. The association would appear to be *consistent*, with all study findings telling a similar story. The findings of the single ecological study and the two individual-levels concur with the conclusions of the case studies. The association would also appear to have *coherence*, in that it makes theoretical sense that a web site providing advice about suicide could influence suicidal individuals.

The *temporality* of the association has been demonstrated in the case studies, with strong evidence that the individuals described in these studies were exposed to suicide-related material on the Internet before making their suicide attempt. There is also some evidence for the *specificity* of the effect, in the sense that the case studies represent significant number of individuals showing evidence of having been influenced by web-based suicide-related material.

These studies have not been designed in such a way as to enable an examination of the *strength* of the association.

The Internet studies reviewed here provide cautious support for a causal association between exposure to suicide-related material on the Internet and actual suicidal behaviour, although further analytical studies are required to confirm this relationship.

Mixed media

Twenty studies (seven descriptive studies, eight ecological studies and five individual-level studies) of the effect of mixed media have been conducted. With only one or two exceptions, these studies suggest an association between media reporting of suicide in mixed media and actual suicidal behaviour, suggesting that the relationship is *consistent*. The *temporality* of the association has been well demonstrated in most of these studies, because, unlike studies of specific media, the starting point in these studies is usually a specific media event. There are also suggestions that the effect may have *specificity*, with some studies demonstrating that new methods of suicide exponentially gained popularity following publicity of an index suicide. The association would also appear to have *coherence*, in that it makes theoretical sense that a web site providing advice about suicide could influence suicidal individuals.

It is difficult to draw conclusions about the *strength* of the association, because the magnitude of the exposure is generally not assessed. Having said this, one of the ecological studies found that media reports were more influential if they occurred alongside multiple other reports of suicide, which is suggestive of a dose-response effect.

To summarise, these studies offer some support for a causal association between exposure to suicide-related stories in mixed media and actual suicidal behaviour. Having said this, some caution should be exercised in interpreting the findings in this way, because of the heterogeneous nature of the media that have been studied. It is perhaps more useful to think of these studies as collectively providing support for the general contention that presentation of suicide in news and information media can influence actual suicidal behaviour, rather than viewing them as providing support for the notion that undifferentiated 'mixed media' have this sort of impact.

Conclusions

Presentations of suicide in news and information media can influence copycat acts in particular circumstances. The findings of the current review should not be interpreted as a call for censorship of the media; it is acknowledged that the media has a role to play in raising awareness of suicide as a public health issue. Rather, the findings should be interpreted as an indication that media presentation of suicide should be done responsibly, and balanced against the public's 'right to know' in order to reduce the potential harm confirmed by the evidence.

Chapter 1: Introduction and method

Background

The question of whether media portrayals of suicide can lead to imitation was raised at least 235 years ago, and has been hotly debated since that time. In 1774, Goethe published *The Sorrows of Young Werther*, in which the hero killed himself because his love was unattainable. The book was widely read in Europe and reportedly had a great impact. Men dressed like Werther, and affected his manner. An increase in suicides in several European countries led to the assertion that the book was directly influencing some of its readers to take their own lives in the fashion of Werther (Thorson & Oberg, 2003). Consequently, the book was banned in a number of European countries. Other historical examples of spates of suicide following publicity about an index suicide have been described (Andriessen, 2007; Krysinska & Lester, 2006; Motto, 1967), but the case of Werther remains the most well-known. Phillips (1974) coined the term 'Werther effect', and this is now commonly used to describe the posited relationship between media portrayals of suicide and imitation acts, including completed suicides, attempted suicides and suicidal thoughts.

Until the 1960s, the debate was based on anecdotal reports and impressions, with little in the way of social scientific inquiry. Since then, however, there have been a plethora of studies examining the relationships between media portrayals of suicide and subsequent suicidal behaviours. This review considers studies of news and information media, both traditional (newspapers, television, books) and newer media (the Internet). It also considers mixed media. The current review constitutes an update of an earlier review of studies of the news and information media (Pirkis & Blood, 2001a, 2001b). It is accompanied by a review of studies of the entertainment media (Pirkis & Blood, 2009).

Purpose and scope of the literature review

This report provides a systematic review of relevant studies in the area. It considers studies that have looked at the relationship between news media reporting and actual suicidal behaviours or thoughts. Consistent with guidelines produced by the National Health and Medical Research Council (1999), the purpose of the review is 'to evaluate and interpret all available research evidence relevant to the question (is there a causal link between news media reporting of suicide and actual suicidal thoughts and acts?)'. The findings of individual studies are drawn together in a consistent manner, in order to determine whether the media does exert a causal influence on suicidal behaviour.

It is acknowledged that the review considers only those studies that have sought to establish a direct link between news and information media presentation of suicide and actual suicidal behaviour. These studies have been termed 'media influence studies', and they sit within a 'media effects' tradition which has been dominated by the disciplines of medicine, sociology and psychology. They have been conducted relatively independently of studies of health communication and risk which take more of a 'cultural theory' perspective, and examine the full spectrum of news and information media processes and content, from how suicide stories are produced ('news production studies'), to what information they contain and how this is framed ('content analysis studies'), to how this information is received and perceived ('audience reception studies').

The review is 'systematic' in the sense that it: (a) makes a concerted attempt to identify all relevant primary research; (b) makes judgements about the overall quality of the literature; (c) systematically synthesises the findings of studies of acceptable quality; and (d) makes judgements about the extent to

which the studies suggest there is a causal association between media presentations and actual suicidal behaviours/thoughts. These features are consistent with the definition of a 'systematic' review as provided in the National Health and Medical Research Council (1999) guidelines.

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an individual level. This is made possible because the exposure status and the outcome status of each individual is known.

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- Coherence: The association should be in line with known facts concerning the outcome of interest; actual suicides, attempted suicides or suicidal ideation. There should be a reasonable explanation for the association in this light. This criterion could be extended as a requirement to rule out rival explanations, especially in the context of known theory.

Daly, Bourke and McGilvray (1991) acknowledge that these criteria are fairly stringent, but suggested that they should provide guidance in determining whether an association was causal. This review therefore makes qualitative judgements about the extent to which a given body of studies meets these criteria.

Other reviews and commentaries exist, but none has used these criteria to assess causality (Crane, Hawton, Simkin, & Coulter, 2005; Goldney, 1989; Gould, 2001; Gould, Jamieson, & Romer, 2003; Gunnell, 1994; Hafner & Schmidtke, 1986; Hawton, 1995; Hawton & Williams, 2002; Insel & Gould, 2008; Jamieson, Jamieson, & Romer, 2003; Krysinska, 2003; Martin, 1998; Phillips, Lesyna, & Paight, 1992; Pirkis, 2009; Schmidtke & Hafner, 1989; Schmidtke & Schaller, 1998; Schmidtke & Schaller, 2000; Stack, 1987b, 2000, 2003; Sudak & Sudak, 2005; Tor, Ng, & Ang, 2008).

Chapter 2: Newspapers

Descriptive studies

Over the years, there have been several anecdotal case studies that suggest that there is a link between newspaper reporting of suicides and actual suicides. In Australia, Hills (1995) cited an example of a patient of a mental health unit threatening to take her own life in Hobart the day after the *Mercury* published a front-page picture of a person engaging in the same behaviour.

Analytical studies: Ecological

The earliest scientific study of the impact of newspaper reports of suicide on imitative suicides tested a negative hypothesis: that the suppression of newspaper reports on suicide would lead to a reduction in suicides. Motto (1967) determined suicide rates in seven United States cities during periods of newspaper blackouts, ranging from 25 to 135 days, between 1945 and 1965. Each figure was then compared with the mean rate for the previous five years. Using the same methodology, he conducted a subsequent study that was restricted to a single city (Detroit), but considered a blackout of much longer duration (268 days) (Motto, 1970). In the first study, the newspaper blackouts appeared to have no effect on suicide rates, but in the second the blackout was associated with a significant lowering of the suicide rate for females (particularly those aged under 35). A subsequent replication of Motto's studies by Blumenthal and Bergner (1973), which considered suicide rates in the context of a 140-day newspaper strike in New York in 1966, also found that, although the overall suicide rate was not significantly lower during the strike period, the rate for women aged under 35 was.

After Motto and Blumenthal and Bergner's work came a series of large-scale ecological studies assessing the relationship between newspaper reports of suicide and actual suicides. The first of these was conducted by Phillips (1974). Using a quasi-experimental design, Phillips examined the frequency of suicide in months in which a front-page suicide article appeared in the United States press between 1947 and 1968, and compared this with the frequency in corresponding months (in which no such article appeared) in the preceding and subsequent years. So, for example, if a suicide story occurred in November 1965, he compared the number of suicides for that month with the expected number based on the average of November 1964 and November 1966 (assuming no suicide story appeared in the comparison months). Adjusting for seasonal effects and changing trends in this way, he found a significant increase in the number of suicides after 26 front-page articles, and a decrease after seven of them. The effect increased as a function of the amount of publicity given to the story, was particularly evident for young people, and was strongest in the geographical areas where the suicide story was published.

Hypothesising that some motor vehicle accidents are actually covert suicide attempts, Phillips extended his methodology to an examination of the impact of front-page suicide stories on automobile fatalities in California between 1966 and 1973 (Phillips, 1977, 1979). He found that, on average, the number of motor vehicle fatalities (particularly single-vehicle accidents) was significantly higher in the week following a suicide story than would have been expected on the basis of the number in comparison periods. The increase was highest three days after a publicised suicide, and peaked again at eight days. The ages of drivers correlated significantly with the ages of those featured in the suicide stories. Bollen and Phillips (1981) replicated these findings in a study in Detroit.

Phillips went on to propose that some aeroplane fatalities may be disguised murder-suicides, and examined the relationship between United States national aeroplane fatalities and murder-suicide stories presented on the front page of the national press, or on national television network evening programs

between 1968 and 1973 (Phillips, 1978, 1980). He found that the number of fatal aeroplane crashes significantly increased after a publicised murder-suicide story. Consistent with his other findings, the magnitude of the effect was influenced by geographical location and amount of publicity. Again, the increased death rate peaked on day three, returning to normal by about day nine.

Several studies have re-examined Phillips (1974) original findings, using more sophisticated statistical techniques. Wasserman (1984) used a multivariate time-series technique that corrected for seasonal effects, national unemployment rates and war, and examining rates rather than raw numbers (thus controlling for changes in population size and structure). He extended the period studied by an additional nine years (1947–77). Wasserman hypothesised that not all stories about suicide would be expected to trigger further suicides, only those about prominent celebrities. He found that there was no significant overall effect of front-page suicide stories on the national suicide rate, but that significant increases in the national suicide rate occurred in the months when the suicide of a celebrity was publicised in the press. Once again, the magnitude of the effect was proportional to the amount of publicity given to the story.

A replication of Wasserman's work by Stack, which extended the period studied by an additional three years (1948–80), found that Wasserman had missed approximately three-quarters of the celebrity stories, and included several that did not meet appropriate criteria. Controlling for potential confounders, Stack (1987a) considered subcategories of publicised celebrity suicides, and found that only reports of the suicides of entertainers and politicians were associated with increased suicide rates. He also found that reports of non-celebrity suicides were associated with increased monthly suicide rates, although the effect was less than for celebrity suicides (Stack, 1990c). Again, the amount of publicity given to a reported suicide affected the size of the increase in the suicide rate.

Using data from the same period (1948–80), and adopting the same methodology, Stack (1990b) also examined the effect of suicide stories featuring divorced or maritally distressed individuals. He found an increase in the suicide rate for those aged over 16 in the months in which such stories were published.

Hittner (Hittner, 2005) also re-analysed Phillips' (1974) original data, arguing that the initial analysis did not control for the positive correlation between the expected and observed suicide rates before examining the impact of media publicity on the observed number of suicides. Using a five-step statistical procedure which took this into account (but excluded some observations that did not meet certain statistical assumptions), he found no association between heightened levels of media exposure and increases in the observed numbers of suicides.

Stack (1988) examined United States suicide rates from an earlier period (1910–20), chosen because the confounding effects of radio and television news were controlled by their absence and because the interaction between war and the print media could be considered. Stack identified months in which suicide stories were published on page one of the *New York Times*, the *Washington Post* and the *Charleston News-Courier*, and considered monthly suicide rates (extrapolated from yearly figures). Using regression techniques, he found that suicide stories printed during wartime had no impact on the suicide rate, whereas those published in peacetime were associated with an increased rate. These findings were replicated by Wasserman (1992).

On the assumption that societal suicidogenic mood is low during war time, Stack (1992) designed a similar study to assess whether the effect of the media might be heightened in a time where community receptivity to suicidal modelling is high, such as during the Great Depression. Using data from 1933–39, Stack found little supporting evidence for this hypothesis. Only stories concerning political leaders were associated with suicide.

Romer, Jamieson and Jamieson (Romer, Jamieson, & Jamieson, 2006) examined suicide news reporting for four months in 1993 in six United States cities, arguing that a study of the local impact of local news was more precise than the previous studies in the United States of national news. They employed a

sophisticated design, where they identified stories in newspaper sources in each of the cities and examined their association with suicide rates in these cities, while controlling for the effect of a number of confounders (including other news and information media and entertainment media sources of suicide stories). They found that local newspaper reports of suicide were associated with increases in local suicide rates.

Taking the issue beyond the United States, Jonas (1992) accessed daily suicide statistics (1968–80) in Baden-Württemberg, a German federal state, and considered them in the context of articles on the suicides of prominent people in newspapers and magazines during the same period. His use of daily suicide statistics improved on the approach of most of the United States studies, which relied on aggregated data that precluded an examination of whether the suicide occurred before or after the news item. He conducted two separate sets of analyses, one using the quasi-experimental approach of Phillips (1974), and the other using a more powerful time-series regression analysis. Both revealed a significant increase in the suicide rate in the weeks following a suicide story, but the effect was amplified in the former.

Ishii (1991) calculated the amount of suicide news in two national Japanese newspapers for each month from 1954 to 1986. To do this, he multiplied the number of headlines in each paper by the circulation of each, and added the two newspaper totals together. He then correlated each monthly figure with the national monthly suicide rate for males and females, and with the combined rate for the Tokyo area (where the greatest readership was concentrated). Applying a concept known as Grainger's causality to the data to estimate multivariate autoregressive models, he was able to demonstrate that suicide news had a causal effect on actual suicides (and not vice versa) for both males and females at the national level. At the local level, the picture was more complex, as a two-way relationship between suicide news and suicides was demonstrated.

Stack (1996) also undertook a study in Japan. Using the same methodology as in his United States work, he examined monthly national suicide rates for 1955–85 in the context of stories of Japanese celebrity and non-celebrity suicides published in the front three pages of the Japan Times. He found that the publicised suicide of a Japanese person was associated with an increase in suicides during the month of the story.

In Australia, Hassan (1995) developed a scoring system based on story size, position and content, and identified 'high impact' suicide stories published in the *Age* and the *Sydney Morning Herald* between 1981 and 1990. He found that the national daily average suicide rate for males increased significantly after such stories, but not for females. Hassan argued that this gender difference may reflect the newspapers' emphasis on reporting male suicides, which then increased the number of possible imitations. Males also read newspapers more than females. The gender difference may also be related to the suicide method used by males: in Australia, males tend to use more violent, and so more lethal, suicide methods than females.

Studies in the United Kingdom and Hong Kong provide support for suicide clusters occurring after reports of suicide by a particular method being publicised in the press. Ashton and Donnan (1979; 1981) reported an epidemic of suicides by burning in England and Wales in the year after a widely publicised political suicide using this method. Likewise, Veysey, Kamanyire and Volans (1999) noted an increase in the number of intentional poisonings by a particular substance reported to the British National Poisons Information Service after the report of an inquest into a suicide by this method was reported in the Independent. In Hong Kong, Chung and Leung (2001) collected reports of suicide by charcoal burning during 1998 and 1999 from six major national newspapers, and examined their relationship to actual suicides by this method occurring in the same two-year period. Prior to November 1998, there were no suicides by this method and no reports relating to it. In November 1998, a 35-year old woman used this method to end her life, and her death was widely and graphically reported. Fifty six reported suicides by the same method followed, 22 (39%) of which occurred in the nine weeks after the first reported incident.

Barraclough, Shepherd and Jennings (1977) and Littmann (1985) approached the problem from the opposite direction in studies in the United Kingdom and Canada, respectively. Both sets of investigators used individual suicides as their starting point, rather than stories on suicide. Barraclough, Shepherd and Jennings (1977) identified all suicides in Portsmouth between 1970 and 1972, and then considered all newspaper reports identified in the only local newspaper for approximately the same period. Combining this information, they were able to calculate the likelihood of a day on which a suicide occurred being preceded by a newspaper report of suicide and compare this with the likelihood of a day on which no suicide occurred being preceded by the same stimulus. They found a significant effect for males under 45, but no effects for any other age or sex groups.

In Canada, Littmann (1985) took subway suicide figures from 1966–77, and noted that there was an epidemic of subway suicides in 1971. He calculated the frequency of suicide news items in Toronto's major newspaper for varying intervals before and after each suicide, and then calculated annual 'before' and 'after' averages. He found that suicide news items were just as likely to be found before and after a suicide in both epidemic and non-epidemic years.

Twenty years later, Tousignant, Mishara and Cailaud et al (2005) conducted a further study in Canada in which examined the impact of the media coverage of the suicide of Gaetan Girouard, a popular male television reporter who died on 15 January 1999 in Quebec. They analysed stories published in 10 daily newspapers for the subsequent year, and identified 98 articles, one third of which were published in the two days after his death, and another third of which were published within three days to a week. Significant numbers of these articles had strong emotional overtones, included pictures of the deceased and his family, described the method, presented simplistic explanations that made no reference to underlying psychological problems, and/or glorified the death. Overall suicide rates and suicide rates for men aged 20-49 (the age group of the reporter) in Quebec were significantly higher in most months of 1999 than the corresponding months of 1988. An analysis of 79 coroners' records between January 15 and February 6 1999 found that 10 showed some direct evidence of influence by the reporter's death. There was an increase of 46% in calls to five Quebec suicide prevention centres in January 1999 compared with January 1998, with the rise being 200% in the four days following the reporter's suicide. The increase was 15% in February and March 1999.

Back in Hong Kong, Yip, Fu and Yang et al {, 2006 #29} conducted a similar study to Tousignant, Mishara and Cailaud et al's (2005) Canadian study. They examined the press coverage of the suicide of Leslie Cheung, a local singer and actor, who took his life on 1 April 2003. They identified 1243 newspaper articles about his death published in the following eight days, and on six of these eight days there was at least one front-page newspaper report. They considered the monthly suicide rates for January-June 2003, and compared these with the average rates for the equivalent months from 1998-2002. They found that there was a significant increase in suicides in the 2003 months, and that this was particularly marked for males and for suicides by the same method. Like Tousignant et al, they found evidence from coroner's records that Cheung's death had played a role in subsequent suicides; there were 13 cases in 2003 which his death was mentioned in a suicide note or in the records of the police investigation.

In Austria, Etzersdorfer and his colleagues have conducted several ecological studies in this area. In one, they showed that, where guidelines were introduced to improve the quality of media reporting of suicide, there was a corresponding drop in the number of subway suicides and attempts (Etzersdorfer & Sonneck, 1998; Etzersdorfer, Sonneck, & Nagel-Kuess, 1992; Etzersdorfer, Voracek, & Sonneck, 2001, 2004; Niederkrotenthaler & Sonneck, 2007; Sonneck, Etzersdorfer, & Nagel-Kuess, 1994). In another, they demonstrated that newspaper coverage of the firearm suicide of the owner of a famous Viennese hotel was associated with an increase in suicides by the same method. Specifically, they found that there was an increase in suicides by this method in the three weeks after Austria's leading tabloid newspaper, *Neue Kronezeitung (NKZ)*, ran the story (compared with the previous three weeks). There was evidence of a dose-response effect, whereby the increase was greatest in the regions of the highest distribution of *NKZ* (Etzersdorfer et al., 2001, 2004).

Niederkrontenthaler, Till and Kapusta et al (2009) investigated whether the impact of suicide stories varies as a function of the social characteristics of the individual who is the focus of the media report, and their similarity to particular population groups. They identified newspaper stories on all 179 individual suicides named in the 13 largest Austrian newspapers between 1996 and 2006, and conducted logistic regression analyses to determine whether there was a relationship between the reported suicides and (a) actual suicides by similar individuals (same sex, same age group, same suicide method); (b) actual suicides by different individuals (different sex, different age group, different suicide method); and (c) actual suicides by the total population, in the 28 days after the report. They found that if the report concerned an individual who had celebrity status, who was aged 30-64, and whose death was definitively determined as a suicide, then this was heightened the risk of an increase in suicide rates among similar individuals; if the report concerned an individual suspected of criminal activity, then this was associated with a lower risk of post-report suicides among similar individuals. They found that the social characteristics of the individual described in the report had no association with an increase in dissimilar suicides, and that celebrity status of the individual was the only factor that was predictive of an increase in total suicides.

Frei, Schenker and Finzen et al (2003) examined suicides assisted by the Swiss right-to-die society, EXIT, in the two years before and the two years after wide local and national press coverage of the double suicide of a well-known and respected couple in the Basle region. They found a significant increase in the number of EXIT-assisted suicides in that region after the newspaper reports, particularly among women aged over 65. They also examined the quality of reporting, as assessed against Centers for Disease Control and Prevention (CDC) guidelines, and found that much of it sensationalised suicide, glorifying the couple and describing their deaths in detail.

Analytical studies: Individual-level

In the mid-late 1980s and early 1990s, Range and her colleagues conducted a number of individual-level studies investigating the impact of the print media on suicidality among members of the general public, building on the original work of Calhoun, Selby and Faulstich, and Rudestam and Imbroll (Calhoun, Selby, & Faulstich, 1980, 1982; Rudestam & Imbroll, 1983). All of these studies used essentially the same methodology. Participants (usually tertiary students or people in shopping centres) were presented with a hypothetical newspaper article describing the death of an individual. After they were given the opportunity to read the article, they were asked questions about their attitudes towards suicide and the likelihood of their committing such an act. Using appropriate designs, these studies varied the conditions described in the newspaper item (for example, death by suicide versus death by other causes, and death of a child versus death of an adolescent) and presented the stimulus to different groups of individuals (for example, varying age and sex groups). These studies therefore investigated the impact of the print media on suicidal tendencies in a manner that complements the ecological studies described above.

The majority of these studies found that participants were unlikely to report that they would be influenced to engage in suicidal behaviour by a newspaper report of suicide, regardless of the circumstances of the suicide. For example, the participants in McDonald and Range's (1990) study saw themselves as unlikely to imitate the behaviour of the subject of a written report. In this study, the individual described was a high school student called John, who had many problems, including knowing someone who had died, either by suicide or through a viral illness. Similarly, Higgins and Range (1996) found that participants were generally unlikely to report that they would imitate the behaviour of Pat, a 16-year-old high school student whose suicide was described in a newspaper article. There was no difference between participants, regardless of how Pat's circumstances were presented.

Despite tending to deny that they themselves would imitate suicidal behaviour reported in a newspaper, participants in some studies suggested that others may be susceptible to the imitation phenomenon. In McDonald and Range's (1990) study, for example, participants were likely to predict that John would

attempt suicide if his friend had died by suicide, and he had observed the response to this death to be sympathetic. The findings were similar in a study by Gibson and Range (1991), in which participants were exposed to a written report about a teenager with problems. Half were told that the teenager had a friend with similar problems who had taken his or her own life, and half were told that the teenager had a friend with similar problems who had sought professional help. Asked to predict the response of the teenager, members of the former group were more likely to indicate suicide (particularly male respondents), and members of the latter were more likely to indicate help-seeking behaviour (particularly female respondents).

Several of these individual-level studies also suggested that newspaper reports may influence the attitude of readers towards people who suicide and their families. Calhoun, Selby and Faulstich (1980; 1982) found that participants were more likely to react negatively towards the family of a child whose death was described in a newspaper report if the child had died by suicide rather than as the result of an illness. Ginn, Range and Hailey (1988) and Range and Kastner (1988) found that participants were equally as likely to respond negatively towards the family when the child had attempted suicide as when he or she had completed suicide.

Other work has suggested that the way in which the reader views the person who dies by suicide and his or her family may be mediated by certain factors. Range, Bright and Ginn (1985) showed that varying the method used had no effect on the response of participants to the family. However, varying the age of the child (10, 13 and 17 years) did affect the response of participants to the family, with more negative responses being associated with the suicides of younger children. Participants were also more likely to think it appropriate for a newspaper item to report the cause of death in the case of older children. Range and Martin (1990) found that participants were more likely to respond favourably to the report of a 35-year-old man taking his own life if he had done so in response to terminal illness rather than psychological pain.

Methodological issues

Various criticisms have been levelled at the above studies. Some have been specific, such as criticisms of Phillips' (1978; 1980) definitions of both murder-suicides and aeroplane fatalities (Altheide, 1981). Others have been more general, and have been concerned with overall methodology (Baron & Reiss, 1985a, 1985b; Hittner, 2005; Jonas, 1992; Wasserman, 1984). As a general rule, the later studies have used much more sophisticated designs than the earlier studies, and have overcome many of the methodological issues identified.

It is generally recognised that descriptive studies have weaker designs than analytical studies (both ecological and individual-level) since the former are descriptive only and involve few or no comparisons. It is positive, therefore, that there is only a single descriptive study (the Australian case study by Hills (1995)), and a multitude of analytical studies have been conducted.

The early ecological studies were criticised for their use of the quasi-experimental design approach, in which the frequency of suicides in an 'experimental' period in which a suicide article was published was compared with the frequency of suicides in comparable periods from previous (and often subsequent) years, and no attempt was made to control for statistical artefacts (Baron & Reiss, 1985a, 1985b; Hittner, 2005; Jonas, 1992; Wasserman, 1984). In the main, the later ecological studies have overcome this problem by adopting more sophisticated regression analyses, and taking into account statistical artefacts such as autocorrelation (lack of independence between observations) and heteroscedasticity (lack of homogeneity of variance).

In 1992, Jonas warned that caution should be exercised in concluding from the existing body of ecological studies that there was an association between newspaper reports of suicide and actual suicides. At that time, with the exception of the studies by Motto (1967) and Blumenthal and Bergner (1973), all of the

existing studies essentially adopted the same methodology to examine the same United States data (albeit that the later studies made certain methodological improvements over the earlier ones, and extended the observation period by some years). Today, however, there are numerous additional studies that have explored the phenomenon over different time periods in the United States, and in numerous other countries in Asia (Japan, Hong Kong) and Europe (Germany, Austria, the United Kingdom and Switzerland). Studies in Australia and Canada have also been conducted.

Another criticism levelled at the earlier ecological studies was their lack of consideration of characteristics of the model in the newspaper story, characteristics of the alleged imitators who subsequently suicide, and the interaction between the two (Baron & Reiss, 1985a, 1985b). Some early studies considered global features of the model (for example, celebrity status) (Stack, 1987a, 1990c; Wasserman, 1984), characteristics of those who suicide (for example, age and sex) (Barraclough et al., 1977), or the interaction between the two (for instance, the age and sex of the model relative to the age and sex of the imitator) (Barraclough et al., 1977; Phillips, 1977, 1979), but only in a very general manner. More recent studies, like that of Niederkrontenthaler, Till and Kapusta et al., 2009), have done this in a more sophisticated way.

A key criticism that remains of the ecological studies is that they fall prey to the 'ecological fallacy', failing to demonstrate that those who subsequently died by suicide had actually seen the media report of interest. Again, this criticism particularly applies to the earlier studies which often were unable to demonstrate that newspaper coverage of a suicide story occurred prior to the observed increase in suicide rates, because they used aggregated (as opposed to daily) data has created difficulties in determining the chronology of events. Later studies have tended to use more precise data periods, but even many of these have not been able to present evidence to demonstrate that those who took their lives after the story was presented actually saw the stimulus. The exceptions are the studies by Yip, Fu and Yang et al (Yip et al., 2006) and Tousignant, Mishara and Cailaud et al (2005), both of which found direct evidence in coroners' records that the reported suicide of a celebrity had influenced subsequent suicidal acts.

The latter criticism of the ecological studies is overcome by the individual-level studies, because the investigators have power over the conditions under which participants are exposed to newspaper items on suicide and over the nature of the items themselves. So, for example, in the individual-level studies the investigators can ensure that participants are exposed to the stimulus, and make certain that this exposure occurs before they are asked about their attitudes towards suicide. However, the individual-level studies have problems of their own. The most significant of these is that the dependent variable is always about attitudes (for example, towards those who suicide and their families) and perceptions (for example, of the likelihood of suicidal behaviour being imitated by self or others). These attitudes may have little bearing on actual behaviour. In addition, the participants in the individual-level studies are always drawn from the general population. It has been suggested that suicide stories in the press are most likely to influence those who are already vulnerable, and these people may be under-represented in the samples chosen to participate in the individual-level studies. It must also be acknowledged that the individual-level studies are now quite old, and work in this area does not seem to have continued in the same way that progress has been made with the ecological studies.

Summary and conclusions

In total, 41 studies (one descriptive study, 31 ecological studies and nine individual-level studies) studies have examined the relationship between newspaper reports of suicide and actual suicides.

The vast majority of these have provided at least some evidence to suggest that an association exists and that newspaper reports of suicide may exert a negative influence (see Table 2). To the extent that the effect has been reliably observed under almost all study methodologies suggests that the association is consistent.

Table 2: Summary of evidence from studies of newspapers

	Descriptive studies (n=1)	Analytical studies: Ecological (n=31)	Analytical studies: Individual-level (n=9)	Total (n=41)
Some evidence to suggest negative influence of media	1	27	8	36
No evidence to suggest negative influence of media	0	3	1	4

The *strength* of the relationship has also been demonstrated. Specifically, a number of studies have demonstrated a dose-response relationship, such that the greater the newspaper coverage of a particular suicide, the more substantial the increase in subsequent suicides.

Another key criterion for establishing a causal relationship between two events is that of *temporality*. In other words, a necessary condition for saying that event A caused event B is that event A occurs before event B. As noted above, only a few of the ecological studies have permitted the chronology of events to be determined. The individual-level studies are stronger in this regard, because the stimuli could be manipulated by the investigators.

Related to the temporality is *specificity*. The causes of suicide are known to be multi-factorial, so specificity is not as crucial a criterion in this area as it might be in some others. In other words, to be satisfied that a causal relationship existed between newspaper coverage and actual suicides, one would need to be sure that a reasonable proportion of those who subsequently died by suicide were exposed to the stimulus. Again, the ecological studies fail in this regard. The relationship may be highly specific, but the primary study methodology adopted in this area militates against determining this.

Coherence refers to the extent to which the findings make sense in the light of what is known about the influence of the media and suicide. The media is known to influence attitudes and behaviour in other areas. Suicide is a behaviour that has been shown to be imitated under circumstances where the original suicide model is actually known to the imitator, and this has been demonstrated in numerous studies of suicide clusters. To this extent, the findings from the studies on newspaper reports of suicide demonstrate coherence.

To summarise, then, the association between newspaper coverage of suicides and actual suicides would appear to be *consistent*, *strong* and *coherent*. Although the evidence is less reliable with regard to *temporality* and *specificity*, it is probably reasonable to regard the association as causal.

Chapter 3: Television

Descriptive studies

No descriptive studies were identified that examined the relationship between presentation of suicide on television news and current affairs shows and actual suicidal behaviour.

Analytical studies: Ecological

A number of ecological studies have been conducted in the United States examining the impact of televised news stories about suicide on actual suicide rates. Many of these studies suggest that an association exists, but there are some exceptions.

In the first of these studies, Bollen and Phillips (1982) searched the Vanderbilt Television News Archive for suicide stories concerning individuals carried on two or more United States evening news programs on ABC, CBS or NBC between 1972 and 1976. Once they had identified these stories by date, they examined their association with trends in the national suicide rate, using daily mortality statistics provided by the National Center for Health Statistics. They used both of the statistical approaches developed in the studies on newspaper reports of suicide: the quasi-experimental design approach originally used by Phillips (1974), and the more rigorous and conventional regression analysis used in later studies, which provides better control for extraneous variables such as seasonal and trend factors. Bollen and Phillips found that there was an increase in the national suicide rate in the period after a televised news story about suicide. They went on to systematically investigate the duration of the effect, finding that it did not extend beyond 10 days.

Phillips and Carstensen (1986) conducted a similar study, restricting the analysis to actual suicides by teenagers between 1973 and 1979. They considered fluctuations in national numbers of suicides by teenagers in the context of suicide stories appearing on network television evening news programs (again using the Vanderbilt Television News Archive). In a regression analysis that controlled for day of the week, the month, holidays and yearly trends, they found that the number of teenage suicides increased in the seven days following a broadcast. This effect occurred regardless of whether the suicide story was about the suicide of an individual or whether it was a general information or feature item. Hittner (Hittner, 2005) re-analysed Phillips and Carstensen (1986) data 20 years later, at the same time as he re-analysed Phillips' (1974) (see Chapter 2). Using statistical techniques that controlled for the dependency between the expected and observed suicide rates before examining the impact of media publicity on the observed number of suicides, he found partial support for an imitation effect in some but not all of the pairwise comparisons.

Phillips and Carstensen (1988) followed their 1986 study with one that was more limited geographically (being restricted to California), but covered a longer period (1968–85), and considered the impact of televised news stories about suicide on a broader range of demographic groups. The study was also novel in that it considered suicides in terms of the date of injury as well as the date of death. A time-series regression analysis indicated that there was a strong association between suicide stories and actual suicides, even when other variables were statistically controlled. This effect was evident for all demographic groups, but was particularly strong for teenagers.

Stack (1989) considered a specific subgroup of stories, namely those about mass murder-suicides or mass murders. He hypothesised that such stories might not only trigger suicides, but could affect homicides. He identified murder-suicide and mass-murder stories presented on at least two network news

broadcasts between 1968 and 1980. Using monthly national data and controlling for a range of seasonal and economic predictors of aggression, he found that publicised mass murder-suicides and gangland mass murders were associated with an increase in suicides (but not homicides).

As noted above, Phillips and Carstensen (1986; 1988) considered a particular audience subgroup, and Stack (1989) considered a certain subgroup of stories. Stack (1990a) took this work one step further and considered the interplay between the nature of the audience and the nature of the televised stimulus. Hypothesising that the elderly might be particularly receptive to publicised suicide stories, given their life circumstances, he considered the national number of suicides by those aged over 64 in the context of televised news reports on suicide. Using data from the Vanderbilt Television News Archive between 1968 and 1980, he identified all suicide stories and a subgroup of suicide stories in which the subject was elderly. In a regression analysis that controlled for seasonal and economic factors, he showed that months in which there was a publicised suicide story had an average of 10 additional elderly suicides. In months in which the suicide of an elderly individual was publicised, there was an average of 19 additional elderly suicides.

Using data from the same period (1968–80), Stack (1993) went on to consider whether the impact of media stories was dependent on the existing societal mood. Using unemployment levels as a proxy for suicidogenic conditions, he found that there was an interaction between media stories and the rate of unemployment, but together they were no more powerful a predictor of suicide rates than media coverage alone.

Romer, Jamieson and Jamieson (2006) examined suicide news reporting for four months in 1993 in six United States cities, arguing that a study of the local impact of local news was more precise than the previous studies in the United States of national news. They employed a sophisticated design, where they identified stories on television news in each of the cities and examined their association with suicide rates in these cities, while controlling for the effect of a number of confounders (including other news and information media and entertainment media sources of suicide stories). They found that local television reports of suicide were associated with increases in local suicide rates.

As noted above, while the majority of studies suggest that there is an association between televised suicide stories and actual suicide rates, several studies have produced null findings. Kessler and his colleagues replicated the study of Phillips and Carstensen (1986), extending the analysis period to 1973–84, supplementing the Vanderbilt Television News Archive with the CBS News Index and the unpublished archive of NBC news stories, and adjusting for the fact that some stories are updated over a period of days (Kessler, Downey, Milavsky, & Stipp, 1988; Kessler, Downey, Stipp, & Milavsky, 1989). They also refined Phillips and Carstensen's analysis method, including a variable derived from industry statistics that defined the level of exposure to broadcasts about suicide on the given day. They found that, although the number of teenage suicides increased as a function of news stories about suicide in 1973–80, this was not the case in 1981–84. Horton and Stack (1984) also used the Vanderbilt Television News Archive to explore the relationship between the number of seconds of coverage of suicide stories on the 6.00 pm national news and the monthly suicide rates in 1972–80. Controlling for levels of unemployment and divorce, as well as for seasonality, they found that there was no relationship between television reporting of suicide and actual suicide rates.

The only identified study that was not conducted in the United States was by undertaken by Shoval, Zalsman and Polakevitch et al (2005) in Israel. It differed in content from the other studies as well, in that rather than examining the impact of television news, it was concerned with the influence of a television documentary screened in Israel in 2001, in which an adolescent girl was interviewed about her suicide plan and ultimately died. It involved a comparison of the numbers of completed and attempted suicides in Israel in the eight weeks prior to the screening of the documentary and in the four weeks subsequent to it. Data for the equivalent periods in the preceding year were examined, in order to control for seasonal effects. The investigators found no significant increase in the rates of completed or attempted

suicide following the program, although there was some evidence of shifts in age and method which corresponded to the subject of the documentary.

Analytical studies: Individual-level

No individual-level analytical studies were identified that examined the relationship between presentation of suicide on television news and current affairs shows and actual suicidal behaviour.

Methodological issues

Many of the methodological criticisms that have been levelled at studies of the impact of newspaper reports of suicide can and have been made of the studies considering news reporting of suicide on television.

Although these studies have tended to adopt more appropriate analysis strategies than the early newspaper studies (that is, analysing time-series data by multiple regression, rather than quasi-experimental methods), the earlier studies have still been criticised for failing to control for statistical artefacts such as autocorrelation and heteroscedasticity (Baron & Reiss, 1985a, 1985b).

Like their newspaper counterparts, the majority of television news studies fall prey to the 'ecological fallacy', failing to demonstrate that the publicised suicide occurred before the actual suicides, let alone to demonstrate that those who suicided saw the televised stimulus (Marks, 1987; Mastroianni, 1987).

In addition, the majority of these studies fail to consider the nature of the suicide story, the nature of the audience and the interaction between the two. Clark (1989), for example, was critical of Kessler's work because he and his colleagues failed to distinguish between stories of celebrity and non-celebrity suicides (Kessler et al., 1988; Kessler et al., 1989). The only study which considered model and audience characteristics in tandem was that of Stack (1990a).

How well these studies can be extrapolated to apply to other situations should also be questioned. Almost all were conducted in the United States, and, apart from the recent study by Romer, Jamieson and Jamieson (Romer et al., 2006), most used essentially the same data. The only study conducted outside the United States was that of Shoval, Zalsman and Polakevitch et al (2005), and that dealt with the influence of a documentary rather than television news.

Summary and conclusions

Eleven ecological studies have been conducted which, in the main, suggest that there is an association between reporting of suicide on television news and actual suicides (Bollen & Phillips, 1982; Phillips & Carstensen, 1986, 1988; Romer et al., 2006; Stack, 1989, 1990a). Although there are a few exceptional studies with null findings (Horton & Stack, 1984; Kessler et al., 1988; Kessler et al., 1989; Shoval et al., 2005), it is reasonable to say that this association demonstrate *consistency* (see Table 3).

Table 3: Summary of evidence from studies of television

	Descriptive studies (n=0)	Analytical studies: Ecological (n=11)	Analytical studies: Individual-level (n=0)	Total (n=11)
Some evidence to suggest negative influence of media	0	7	0	7
No evidence to suggest negative influence of media	0	4	0	4

The association also demonstrates *strength*, in that it is most evident up to 10 days after the media stimulus and then dissipates (Bollen & Phillips, 1982).

The condition of *temporality* and *specificity* are less readily satisfied because the ecological studies fail to demonstrate that the publicised suicide occurred before the actual suicides (because their data are based on monthly, rather than daily, figures) or that those who subsequently died by suicide saw the televised stimulus. The ecological studies concerned with television are not complemented by descriptive studies or individual-level analytical studies which might shed more light on these criteria.

The association is *coherent*, considering what is known about the influence of the media and suicide. As noted earlier, the media is known to influence attitudes and behaviour in other areas, and suicide is a behaviour that has been shown to be susceptible to imitation, as evidenced by suicide clusters.

In summary, the association demonstrates consistency, *strength* and *coherence*. Despite the fact that *temporality* and *specificity* are less clearly demonstrated, it is probably reasonable to assert that there is cautious support for there being a causal association between reporting of suicide on television news and subsequent actual suicides.

Chapter 4: Books

Descriptive studies

Three descriptive studies conducted in the 1990s considered the impact of *Final Exit*, a bestselling book advocating euthanasia for people who are terminally ill (Humphry, 1991). The book explicitly describes methods of suicide that might be used to guarantee a relatively painless death, and one that might be less traumatic for relatives to deal with than one caused by more violent means (Humphry, 1994). *Final Exit* is aimed at those with a terminal illness, but it has been criticised for failing to address the fact that it may prompt other individuals to attempt suicide, particularly those with mental illness (Land & Gutheil, 1995; Lavin, Martin, & Roy, 1992; Marzuk et al., 1993; Marzuk, Tardiff, & Leon, 1994, 1995; Sacks & Kemperman, 1992).

The first of the descriptive studies was conducted by Lavin, Martin and Roy (1992). They reported a case of a depressed 30-year-old single black woman who was admitted to an emergency department after self harming. She had multiple stresses (for example, she was pregnant and unable to trace the child's father, had lost her job, and was about to be evicted from her flat), but reported that she had only felt really 'down' in the last few days. She had gone to some lengths to obtain a copy of *Final Exit*, after hearing about it on television. She said that she had attempted to follow the advice provided in the book, but was thwarted by being unable to obtain drugs from a pharmacy, and thus had selected the alternative method. Soon after admission, her suicidal mood improved. At follow-up after discharge, her circumstances had improved and she reported feeling much better and hopeful about the future. Lavin, Martin and Roy concluded that it is possible that such 'how to' literature could lead to a clustering of suicide attempts.

A second study of two cases was reported by Sacks and Kemperman (1992). One was of a 47-year-old man and the other concerned a 31-year-old woman, who attempted suicide after reading *Final Exit*. The man had bought the book in order to learn the fatal dose of diazepam and the woman had bought it 'just in case'. Both followed instructions provided in the book, and felt comforted by it. Although neither of their attempts resulted in death, both had expected to die. Sacks and Kemperman concluded that clinicians should consider the availability of the book when conducting suicide risk assessments.

Land and Gutheil (1995) conducted the third descriptive study. They reported a case of a depressed 54-year-old black man in a forensic psychiatric facility who attempted to order *Final Exit* from the facility's library. He had heard about the book while watching a television program about suicide. The librarian alerted clinical staff, who found the man to be depressed and suicidal. They intervened pharmacologically, and he responded well. Like Sacks and Kemperman, the investigators concluded that the clinical assessment of suicide risk should include consideration of patients' access to 'how to' literature, a recommendation supported by Marzuk, Tardiff and Leon (1994; 1995).

Analytical studies: Ecological

The above descriptive studies were complemented by two ecological studies of the impact of *Final Exit*, both conducted by Marzuk and colleagues. Marzuk, Tardiff and Hirsch et al (1993) considered suicides occurring in New York between 1 March 1990 and 28 February 1992. This time frame made it possible to consider suicides occurring before the publication of *Final Exit* (on 1 March 1991) and after its publication. Classifying deaths by method, they found a significant increase in the number of suicides by asphyxiation, and no increase in suicides by any other method (including the use of medications, recommended in *Final Exit*), and no increase in the total number of suicides.

Marzuk et al took their study a step further than many ecological studies do, and attempted to disaggregate the effect down to the individual level. They took all suicides by asphyxiation and/or poisoning in the year after the publication of *Final Exit*, and examined exposure to the book. Fifteen of the 144 who died by these means in that year had been exposed to the book, evidenced by the book being present at the site of the suicide, or suicide notes modelled on an example given in the book. Six of the 15 showed no evidence of serious medical illness, based on clinical notes and autopsy results.

Marzuk, Tardiff and Leon (1994) extended their earlier work in a broader study. Taking suicide statistics for the whole of the United States, and again classifying them by method, they examined trends in the years before and after the publication of *Final Exit*. Once again, they found that there was a significant increase in suicides by asphyxiation. There was also a significant increase in suicides by poisoning. There was no increase in suicides by any other method, and no increase in the total number of suicides.

Analytical studies: Individual-level

No individual-level analytical studies were identified that examined the relationship between presentation of suicide on television news and current affairs shows and actual suicidal behaviour.

Methodological issues

The main methodological difficulty with the studies examining the effect of instructional books about suicide on suicidal behaviour is the extent to which the findings can be generalised. This is traditionally a problem with case studies, in that critical readers should always be concerned with the extent to which findings for particular individuals would be likely to be replicated among a larger sample. In this instance, the findings of the case studies are generally supported by the ecological studies. To this extent, the evidence indicates that the findings of the case studies can be generalised. However, it should still be noted that both the case studies and the ecological studies all refer to a single example of the presentation of information about suicide in books. It remains to be tested whether the findings would hold true with different stimuli.

The above studies also suffer from the methodological difficulty experienced in studies of other types of media presentation, namely the problem of making inferences about individuals from aggregated data. Having said this, it should be noted that the study by Marzuk, Tardiff and Hirsch et al (1993) was exceptional in its efforts to move from the aggregate level to the individual level to determine the extent to which individuals who died by suicide were exposed to *Final Exit*.

An additional methodological criticism has been noted by the author of *Final Exit*. Humphry (1994) makes the point that the number of suicides by people with mental illness who adopt the methods suggested in *Final Exit* may be artificially magnified. He notes that those with terminal illness who choose to die by the euthanasia methods recommended in the book would often be supported by a family member or friend. Under these circumstances, the evidence of method would usually be removed after death, with the result that the coroner would record the underlying illness as the cause of death. By contrast, people with depression or other mental illnesses who suicide using such methods would typically do so alone, with the result that the cause and means of death would be obvious.

Summary and conclusions

The association between the presentation of suicide in instructional books and actual suicides would appear to be *consistent*. Taken together, the findings of three case studies (Land & Gutheil, 1995; Lavin et al., 1992; Sacks & Kemperman, 1992) and two ecological studies (Marzuk et al., 1993; Marzuk et al., 1994) suggest that *Final Exit* has been influential in the choice of method of suicide in a number of cases

(see Table 4). What is less clear is whether the book has influenced any individuals to consider, attempt or complete suicide who otherwise would not have done so. The fact that Marzuk and his colleagues found an increase in rates of suicide by asphyxiation, but no increase in total suicide rates, after the publication of the book, suggests that its influence may have been limited to choice of method.

Table 4: Summary of evidence from studies of books

	Descriptive studies (n=3)	Analytical studies: Ecological (n=2)	Analytical studies: Individual-level (n=0)	Total (n=5)
Some evidence to suggest negative influence of media	3	2	0	5
No evidence to suggest negative influence of media	0	0	0	0

These studies have not been designed in such a way as to enable an examination of the *strength* of the association. All have been based on exposure to a single stimulus, thus precluding any examination of a dose-response effect.

The *temporality* of the association has been demonstrated on several occasions, with the acquisition and scrutiny of *Final Exit* routinely preceding the suicide attempt. The *specificity* of the effect has also been demonstrated by the significant number of individuals showing evidence of having been influenced by the book, at least in the study by Marzuk, Tardiff and Hirsch et al (1993).

The association would also appear to have *coherence*, in that it makes theoretical sense that a nonfiction book providing advice about suicide could influence suicidal individuals.

To the extent that the association satisfies the conditions of *consistency, temporality, specificity* and *coherence*, it would appear to be reasonable to deem it to be causal. Having said this, some caution should be exercised in generalising this finding to other non-fiction books, since all studies refer to *Final Exit* alone.

Chapter 5: The Internet

Descriptive studies

A number of descriptive case studies have been cited as evidence in support of the claim that pro-suicide websites can lead to loss of lives. These case studies link an individual's suicidal act to their contact with a specific website or websites. These case studies usually describe individuals (most often young people) who sought web-based information about a particular suicide method)(Alao, Sodenberg, Pohl, & Alao, 2006; Athanaselis, Stefanidou, Karakoukis, & Koutselinis, 2002; Baume, Cantor, & Rolfe, 1997; Beatson, Hosty, & Smith, 2000; Becker, Mayer, Nagenborg, El-Faddagh, & Schmidt, 2004; Becker & Schmidt, 2004; Chodorowski & Sein, 2002; D'Hulster & Van Heeringen, 2006; Forsthoff, Hummel, Moller, & Grunze, 2006; Gallagher, Smith, & Mellen, 2003; Janson et al., 2001; Mehlum, 2000; Mishara & Weisstub, 2007; Naito, 2007; Nordt, Kelly, Williams, & Clark, 1998; Prior, 2004; Rajagopal, 2004; Wehner & Gawatz, 2003). Some of these individuals were found dead with, for example, the given website listed among their 'favourites'. Others - some of whom subsequently died and some of whom survived - presented to the emergency department and told staff of their information source. A number of these case studies involved suicide pacts in which individuals attempted or completed suicide with chat room companions, either online or at a designated meeting spot (Mehlum, 2000; Mishara & Weisstub, 2007). Several of these pacts involved a dominant, older person and a more vulnerable younger person (or sometimes more than one).

In addition to these case studies, Sisask, Varnik and Wasserman (2005) conducted a larger-scale descriptive study in which they identified seven Internet portrayals of a suicide pact involving a 14-year-old girl and a 15-year-old boy who attempted suicide in their car (and survived). The Internet portrayals came from the sites of three of the most widely-read daily newspapers in Estonia, *Eesti Paevaleht* (*Estonian Daily Paper*), *Potimees (Postman)* and *SL Ohtuleht (Evening Paper)*, and varied in terms of the extent to which they met media guidelines produced by the World Health Organization and the American Foundation for Suicide Prevention. The authors conducted a content analysis of the 188 spontaneous comments on these portrayals posted on the newspapers' websites by readers. Articles with photographs attracted the greatest number of comments. More than half of the comments expressed negative attitudes towards suicide.

Analytical studies: Ecological

The only identified ecological study in this area was conducted locally by Byard, Simpson and Gilbert (2006). These investigators used South Australian data to explore the relationship between suicide and internet availability, and found that suicides by asphyxiation (a method commonly recommended on prosuicide websites) increased over time as a function of increased community access to the Internet.

Analytical studies: Individual-level

Ryu and colleagues posited that high levels of suicidality and high levels of Internet use might be related, and conducted an individual-level study to explore the hypothesis (Kim et al., 2006; Ryu, Choi, Seo, & Nam, 2004). They found that Korean high school students who qualified as being addicted to the Internet according to a standardised scale were significantly more likely to be suicidal and/or depressed than their non-addicted peers.

Methodological issues

The methodological issues faced in studies of other media are compounded in studies of the Internet because of the volatile nature of the medium, and by its scope. Whereas it is relatively simple to identify a set of stimuli that an individual might have been exposed to in the traditional media (e.g., suicide stories appearing during a particular period in the *New York Times*), it is much more difficult to identify which suicide-related sites on the Internet an individual may have accessed. These sites are multitudinous: in the late 1990s, Baume and his colleagues found that a search for the word 'suicide' using a single search engine on the Internet yielded over 130 000 matches (Baume et al., 1997; Baume, Rolfe, & Clinton, 1998); in 2000, Mehlum (2000) conducted a similar search and found more than one million web pages; repeating the search in 2010 yields about 55,000,000 hits. A significant proportion of these sites actively promote suicide, and they are very easy to access (Alao et al., 2006; Biddle, Donovan, Hawton, Kapur, & Gunnell, 2008). It is difficult to determine the reach of these sites, making it virtually to mount studies large-scale where exposure to suicidal material on the Internet is the independent variable.

With this methodological limitation in mind, it is not surprising that the current studies in the area largely comprise descriptive case studies where a retrospective assessment of exposure for an individual is made. These case studies suffer from the problem of being descriptive only, reporting on very small numbers of individuals, and having no comparator.

The single ecological study by Byard, Simpson and Gilbert (2006) uses a broader measure of exposure (i.e., to the Internet in general, rather than to suicide-related websites). It suffers from the 'ecological fallacy', because it does not permit a determination of whether those who died by asphyxiation were among those making use of the Internet.

The single individual-level studies also face methodological limitations. The chronology of events cannot be determined in the study by Ryu and colleagues, so it is not possible to ascertain whether high levels of Internet use preceded suicidality or followed it, and high levels of Internet use is only a proxy for exposure to suicide-related Internet sites (Kim et al., 2006; Ryu et al., 2004).

Summary and conclusions

Despite the above methodological difficulties, it is fair to say that the evidence is mounting with respect to the association between web-based suicide-related material on actual suicidal behaviour. The association would appear to be *consistent* (see Table 5). Although the majority of the evidence comes from case studies rather than analytical studies, these case studies are large in number and come from a range of countries, and their findings appear to tell the same story. The findings of the single ecological study and the two individual-levels concur with the conclusions of the case studies.

Table 5: Summary of evidence from studies of the Internet

	Descriptive studies (n=18)	Analytical studies: Ecological (n=1)	Analytical studies: Individual-level (n=2)	Total (n=20)
Some evidence to suggest negative influence of media	18	1	1	20
No evidence to suggest negative influence of media	0	0	0	0

These studies have not been designed in such a way as to enable an examination of the *strength* of the association.

The *temporality* of the association has been demonstrated in the case studies, with strong evidence that the individuals described in these studies were exposed to suicide-related material on the Internet before making their suicide attempt. Having said this, the *temporality* of the association has been less well demonstrated in the single ecological study by Byard, Simpson and Gilbert (2006) and the individual-level study by Ryu and colleagues (Kim et al., 2006; Ryu et al., 2004).

There is some evidence for the *specificity* of the effect, in the sense that the case studies represent significant number of individuals showing evidence of having been influenced by web-based suicide-related material. However, further evidence from analytical studies is required to supplement this evidence from descriptive studies before the criterion of *specificity* can be checked off.

The association would also appear to have *coherence*, in that it makes theoretical sense that a website providing advice about suicide could influence suicidal individuals.

To summarise, the studies reviewed here provide cautious support for a causal association between exposure to suicide-related material on the Internet and actual suicidal behaviour. There is evidence of an association which demonstrates *consistency* and *coherence*, and shows signs of *temporality* and *specificity*. Further analytical studies are required to confirm this relationship.

Chapter 6: Mixed media

Descriptive studies

In India, Bhugra (1991) reported the self-immolation of a 20-year-old male Indian student on 19 September 1990. The student was protesting against a policy that would reserve a greater proportion of jobs for the lower castes, potentially jeopardised his own job prospects and those of his peers. Bhugra noted that this death was widely reported in newspapers and on television, and that there was an epidemic of completed and attempted suicides in response to this media coverage. He also reported that psychiatrists appealed to the media to attenuate their coverage, but that they failed to do so.

Also in India, but a quarter of a century later, Chowdhury, Brahma, Banerjee and Biswas (Chowdhury, Brahma, Banerjee, & Biswas, 2007) examined the media coverage of a judicial hanging and its sequelae. The authors identified 18 cases of copycat suicide using the same method among children following media reports of the initial event, one suicide and 17 other imitation acts (five of which ended in death).

In Hong Kong, Lee and colleagues described a similar phenomenon (Chan, Lee, & Yip, 2003; Lee, Chan, Lee, Tin, & Yip, 2002). They observed that in 1998 a 35-year-old woman took her own life by burning charcoal. Prior to this time, no suicides by this method had been recorded. The media showed considerable interest in her death, with both newspapers and television stations providing graphic images. In the subsequent month, there were nine more deaths by this method, and within a year charcoal burning had become the most common method of suicide in Hong Kong. In a subsequent study by Chan, Yip, Au and Lee (2005), 25 individuals who had attempted suicide by this method were interviewed, and the majority indicated that they had learnt of the method from the media.

Huh, Jo and Kim et al (Huh, Jo, Kim, Ahn, & Lee, 2009) also conducted a descriptive study of the impact of media reporting of two deaths involving charcoal burning, this time in Korea in 2007. The individuals who died were a 32-year-old male and a 45-year-old female, and considerable news time was devoted to the deaths, again because of their novelty. Following the media reporting, there were three further cases in the same region of Korea in 2007, and an additional four in the same season in 2008.

In the United Kingdom, Zahl and Hawton (2004) interviewed 12 young people (aged 17-25) who had recently engaged in an episode of self-harm about the influence of media stories (both news reports and fictional depictions) on their actions. The majority reported some effect of at least one story presented in the media, and four reported that the story had been a catalyst in their own self-harm.

Bras, Loncar and Boban et al (2007) described a series of suicide attempts among patients with chronic combat-related post-traumatic stress disorder in Croatia. All of these cases employed the same method (self-immolation), and there was significant media coverage of several of them. The implication was that media reporting of the earlier attempts influenced the later attempts, but the investigators did not explicitly test this.

Analytical studies: Ecological

Stack (1983) examined the monthly suicide rate in the United States between January 1977 and June 1980, the period around the Jonestown mass suicide in Guyana in November-December 1978. After statistically controlling for unemployment and divorce, Stack found no effect of the reporting of the Jonestown event on the national suicide rate. He made the observation that this may have been because

of the nature of the media reporting, which tended to portray it as the involuntary action of cult members.

In Kingston-upon-Hull in the United Kingdom, Church and Phillips (1984) identified suicides by asphyxiation between 1 February 1971 and 31 January 1981. Dividing the 10-year period into two-month segments, they considered segments in which there was a suicide by asphyxiation and segments in which there was no such suicide. They found that a suicide by asphyxiation in one segment increased the probability of another in the next segment. They suggested that, since the city was served by local newspaper and radio, the media played a role in influencing suicides by this method.

Cheng and colleagues conducted two ecological studies exploring the influence of widespread media coverage of the suicide of a celebrated Taiwanese actor, MJ Nee. Nee died by suicide some time in late April 2005, and the media coverage began on 2 May and lasted for about 17 days. The first study found that after controlling for seasonal variation, calendar year, temperature, humidity and unemployment, there was as a marked increase in completed suicides in Taiwan in the four weeks after the media coverage began (with the increase being most apparent in men and among individuals who chose the same method as Nee) (Cheng, Hawton, Lee, & Chen, 2007). The second study found that after controlling for the same potential confounders there was a significant increase in the number of suicide attempts in the three weeks after the media reporting began, particularly for males and those who had made a previous attempt. Interviews with 124 suicide attempters from two Taiwanese counties who indicated that they had seen the media reports revealed that about one quarter were influenced by the reports (A. T. Cheng et al., 2007).

Fu and Yip (KW. Fu & Yip, 2009) examined the impact of media reports of the suicides of three celebrities on subsequent suicides: one from Hong Kong (Leslie Cheung, male singer and artist, aged 46); one from Taiwan (MJ Nee, male television actor, aged 59); and one from South Korea (female actor, Eun-ju Lee, aged 25). Aggregating the suicide data from the three countries from before and after the reports, and controlling for a range of potential confounders (secular trends, seasonality, economic situation, temporal autocorrelation) they found that the combined risk for suicide was 1.43 in the first week after the reports, 1.29 in the second week, and 1.25 in the third week. They continued to observe a moderate increase in suicides up to the 24th week. The impacts were greater for same-gender suicides and samemethod suicides, and greater still for same-gender-and-same-method suicides.

In Australia, Cantor, Tucker and Burnett (1991) considered annual suicide rates in two regions of north Queensland during the 1980s. They observed a significant peak in one region in 1988, the year in which there was considerable negative publicity in the media about patients' suicides in the psychiatric ward of the local general hospital. In the other, there was a non-significant peak in 1987, the year in which there was a widely reported cluster of Aboriginal deaths in custody. Neither the suicides by psychiatric patients nor those by Aboriginal people in custody were sufficient to account for the increased rate.

Also in Australia, Martin and Koo (1997) investigated the impact of the death of Kurt Cobain, the singer, guitarist and songwriter who fronted the Seattle 'grunge' band Nirvana, and took his own life on 5 April 1994. According to the authors, his death was first reported in Australia on 8 April, 'subsequently reaching every television channel in both news and music programs, and every newspaper, with extensive detail given'. Martin and Koo examined the number of suicides in Australia by people aged 15–24 in the following month, and compared these figures with those from the corresponding period in the previous five years. They found that the rates in 1994 were lower than for the preceding years. This finding is consistent with that of Jobes, Berman and O'Carroll et al (Jobes, Berman, O'Carroll, Eastgard, & Knickmeyer, 1996), who examined youth suicide rates in Seattle, Washington, in the period around Cobain's death, doing so with only general reference to the extent of media reporting surrounding the event.

More recently, Pirkis, Burgess and Francis et al (2006) constructed a dataset of 4635 suicide-related items appearing in Australian newspapers and on radio and television news and current affairs shows between

March 2000 and February 2001. They linked this to national data on completed suicides occurring during the same 12 months, by a process that involved identifying the date and geographical reach of the media items and determining the number of suicides occurring in the same location in selected weeks pre- and post- each item. They found that 39% of media items were followed by an increase in male suicides, and that 31% were followed by an increase in female suicides (but that similar proportions were followed by no change or decreases in male and female suicides). Media items were more likely to be associated with increases in both male and female suicides if they occurred alongside multiple other reports on suicide (rather than occurring in isolation), if they appeared on television (instead of than on radio or in newspapers), and if they were about completed suicide (as opposed to attempted suicide or suicidal ideation).

Analytical studies: Individual-level

Individual-level analytical studies have begun to emerge in the literature to complement the descriptive studies and ecological studies. Mercy, Kresnow and O'Carroll et al (2001) conducted a case-control study in which they interviewed 153 individuals (aged 13-34) who had made nearly-lethal suicide attempts and a random sample of 513 controls. Contrary to other many of the other studies of mixed media, they found that cases were significantly less likely than controls to have been exposed to accounts of suicidal behaviour in the media.

Fu and Yip (2007) conducted a population-based study in Hong Kong, interviewing 2016 respondents (aged 20-59) 8-15 months after the much-publicised suicide of a famous local male singer, Leslie Cheung. After controlling for a range of other variables known to be associated with suicidality, they found that those who indicated that they had been affected by the celebrity's suicide were significantly more likely to have severe levels of current suicidal ideation than those who had not been, suggesting that the impact was relatively long-lasting.

Cheng, Hawton and Chen et al (2007) used a similar methodology to that of Fu and Yip (2007) to complement their ecological studies (see above) of the impact of the extensive media coverage of the suicide of Taiwanese actor, MJ Nee. Specifically, they looked at the influence of this media coverage on the suicidal behaviour of 461 depressed patients. The treating psychiatrists of these patients recorded clinical data (including data on suicidal thoughts and suicide attempts) occurring after the first media report of the celebrity's death. They also interviewed the patients about their exposure to the media reports, their history of suicidal thoughts and behaviours, and their perceptions of the influence of the media reports on these behaviours. Four hundred and thirty eight patients had been exposed to the media coverage, and 38% of these claimed it had influenced subsequent suicidal behaviours. Those with severe depression and/or a recent history of suicide attempts were most susceptible to influence.

Also in Taiwan, Chiu, Ko and Wu (Chiu, Ko, & Wu, 2007) examined the relationship between exposure to suicide news in general over the past year and levels of suicidality in the past week in 2602 college students. Using a self-report survey to assess these and other demographic and clinical variables, they found that exposure to suicide news only predicted levels of suicidality for individuals with severe levels of depression.

Brener, Simon and Anderson et al (2002) used data from the 1999 wave of the United States' longitudinal Youth Risk Behavior Survey to examine the relationship between adolescents' suicidal thoughts and the widely-covered incident at Columbine High School in Colorado, where two teenagers killed themselves after murdering 12 students and a teacher. The incident occurred part-way through the data collection period, and students who were surveyed after it were significantly less likely to report considering or planning suicide than those who were surveyed before it.

Methodological issues

The mixed media studies face the same methodological difficulties as their counterparts which examine specific types of media, but they have an additional problem. Most use general media presentation of a particular suicide or suicides as their starting point, examine media reporting around it, and then consider the impact of this media reporting on subsequent suicides. Because they consider media reporting from a range of sources, they typically provide little description of the extent or nature of the media coverage. With a few exceptions like the studies by Cheng, Hawton and Chen et al (2007) and Chan, Yip, Au and Lee (2005), they generally fail to gauge whether those who died by suicide or attempted suicide were exposed to the given media reports and, if they were, whether they were influenced by them. Universally, they fail to disaggregate the media sources, rendering it difficult to determine whether presentations in given types of media were particularly salient.

Summary and conclusions

With only one or two exceptions, the above studies suggest an association between media reporting of suicide in mixed media and actual suicidal behaviour. Based on the sheer number of studies and their different designs, the association would appear to be *consistent* (see Table 6)

Table 6: Summary of evidence from studies of mixed media

	Descriptive studies (n=7)	Analytical studies: Ecological (n=8)	Analytical studies: Individual-level (n=5)	Total (n=20)
Some evidence to suggest negative influence of media	7	6	4	17
No evidence to suggest negative influence of media	0	2	1	3

It is difficult to draw conclusions about the *strength* of the association, because the magnitude of the exposure is generally not assessed. Having said this, the study by Pirkis, Burgess and Francis et al (2006) found that media reports were more influential if they occurred alongside multiple other reports of suicide, which is suggestive of a dose-response effect.

The *temporality* of the association has been well demonstrated in most of these studies, because the starting point was a specific media event.

There are also suggestions that the effect may have *specificity*. The studies of new methods of suicide exponentially gaining popularity lend some support to this assertion.

The association would also appear to have *coherence*, in that it makes theoretical sense that a web site providing advice about suicide could influence suicidal individuals.

To summarise, the studies reviewed here offer some support for a causal association between exposure to suicide-related stories in mixed media and actual suicidal behaviour. There is evidence of an association which demonstrates *consistency*, *temporality*, *specificity* and *coherence*, and shows signs of *strength*. Further analytical studies are required to confirm this relationship. Having said this, some caution should be exercised in interpreting the findings in this way, because of the heterogeneous nature of the media that have been studies. It is perhaps more useful to think of these studies as collectively providing support for the general contention that presentation of suicide in news and information media can influence actual suicidal behaviour, rather than viewing them as providing support for the notion that undifferentiated 'mixed media' have this sort of impact.

Chapter 7: Discussion and conclusions

Summary of key findings

This review examined the literature on the association between presentation of suicide in news and information media and actual suicide or suicidal behaviour. It demonstrated that there is an association between non-fictional media portrayal of suicide and actual suicide. Using strict criteria to establish causality, it demonstrated that, at least in some cases, this association is likely to be causal. Specifically, the association satisfies sufficient of the criteria of *consistency*, *strength*, *temporality*, *specificity* and *coherence* for the association to be deemed causal in the case of non-fictional presentations of suicide in newspapers, on television and in books.

Implications of the findings for policy and practice

It is clear that presentation of suicide in news and information media should be done in a responsible manner. Several strategies have been put forward to encourage responsible reporting of suicide in newspapers and on television news, and to regulate the information on suicide that is presented on websites. These strategies are discussed below.

Newspaper and television reporting of suicide

There is little argument that suicides should be reported in a responsible manner in newspapers and on television news. The most common way in which responsible media practice is encourages is through resources and guidelines. In Australia, *Reporting Suicide and Mental Illness* (Commonwealth of Australia, 2002) provides direction in this regard. This resource was developed as one of the cornerstones of the Department of Health and Ageing's *Mindframe* National media initiative, and represents a collaborative effort between the media and mental health sectors. It continues to be actively disseminated by the Hunter Institute of Mental Health (Skehan, Greenhalgh, Hazell, & Pirkis, 2006).

Equivalent guidelines have been developed overseas (Pirkis, Blood, Beautrais, Burgess, & Skehan, 2006). The content of these guidelines is shaped by the evidence cited in the current review. They typically recommend that suicide should be reported in a manner that does not sensationalise or glamorise it, or give it undue prominence. They reinforce the message that modelled behaviour is particularly likely to occur in circumstances where the method or location of a given suicide is explicitly described, and/or when the suicide of a revered celebrity is reported. They suggest that the media can play a positive role by educating the public about suicide and by providing contact details for agencies which can provide help or support to vulnerable readers or viewers. Most also urge media professionals to take particular care when interviewing people bereaved by suicide, who may be at particular risk themselves. Some also note that journalists who report on suicide should be given de-briefing opportunities (Pirkis, Blood et al., 2006).

Process evaluations which have considered the reach of such guidelines have produced mixed results. An evaluation of the Australian resource yielded positive findings in terms of journalists' awareness and use of the resource (Skehan et al., 2006), but similar studies in the United States (Jamieson, 2001; Jamieson et al., 2003) and New Zealand (Tully & Elsaka, 2004) were less sanguine and concluded that journalists' were at best unfamiliar with relevant resources and at worst ignored them.

Impact and outcome evaluations have produced more consistent and generally positive findings with respect to the effectiveness of media guidelines. Pirkis et al (2009) demonstrated that the introduction

of *Reporting Suicide and Mental Illness* in Australia led to improvements in the quality of reporting. Michel, Frey, Wyss and Valach (2000) reported similar findings when they evaluated the implementation of media guidelines in Switzerland. Etzersdorfer and colleagues went one step further in an Austrian study (Etzersdorfer & Sonneck, 1998; Etzersdorfer et al., 1992; Etzersdorfer et al., 2001, 2004; Niederkrotenthaler & Sonneck, 2007; Sonneck et al., 1994). They demonstrated that the introduction of media guidelines regarding reporting suicides on the Viennese subway not only resulted in a reduction in the reporting of these suicides but also led to a 75% decrease in the rate of subway suicides and a 20% decrease in the overall suicide rate. The impact of the Swiss guidelines dropped off as a function of time (Michel, Maillart, & Reisch, 2007), whereas the impact of the Austrian guidelines was largely maintained (Niederkrotenthaler & Sonneck, 2007). The longevity of the impact of the Australia's *Reporting Suicide and Mental Illness* has not yet been put to the test.

Given that the content of most media guidelines is strikingly similar, it is likely that the differences in the above evaluation findings may relate to the processes by which different guidelines are developed and implemented. In particular, close involvement of media professionals at all stages seems to be important. The Australian resources were developed by the Department of Health and Ageing, which purposefully sought input from a reference group that included representatives from a range of media organisations. They have been actively disseminated by the Hunter Institute of Mental Health which has conducted information sessions, offered advice, distributed hard and soft copies of the guidelines and supporting materials, worked with peak media organisations to incorporate aspects of the guidelines into codes of practice and editorial policies, and provided ongoing follow-up and promotion (Pirkis, Blood et al., 2006; Skehan et al., 2006). By contrast, the New Zealand guidelines were developed by the Ministry of Health with only minimal input from journalists, so journalists did not feel wedded to the process or the product. The dissemination process has also been more ad hoc than its Australian equivalent (Pirkis, Blood et al., 2006). It is perhaps not surprising, therefore, that the Australian evaluation results are positive, whereas the New Zealand ones are less encouraging.

More direct evidence for the contention that media 'buy-in' underpins the success of guidelines comes from the above-mentioned work on the Austrian guidelines. Niederkrontenthaler and Sonneck (2007) found that the positive impacts associated with the guidelines were most pronounced in regions with strong media collaboration.

Information about suicide on Internet sites

The evidence for the Werther effect operating through newer media like the Internet is strengthening, but is not yet conclusive. Again, there is an argument for cautious exploration of initiatives that might avert any potential harm caused by the Internet.

Various solutions to the Internet issue have been proposed, including the use of voluntary guidelines and the self-regulation of sites (Becker et al., 2004; Hitosugi, Nagai, & Tokudome, 2007; Mishara & Weisstub, 2007), the use of filtering software (Mishara & Weisstub, 2007), collaboration between the mental health sector and the mass media (Mehlum, 2000), and the development of alternative websites that promote help-seeking behaviour (Becker et al., 2004; Mehlum, 2000; Mishara & Weisstub, 2007). There is a dearth of descriptive evidence in the scientific literature regarding instances in which these interventions have been put in place, and no evaluative information about how successful they might be.

Legal control of pro-suicide websites has generally been regarded as too difficult (Mehlum, 2000; Mishara & Weisstub, 2007), with the result that Australia is the only country to have introduced legislation that uses criminal sanctions to restrict the operation of such sites (Pirkis, Neal, Dare, Blood, & Studdert, 2009). The law makes it an offence to use the Internet or any other carriage service to disseminate material intended to counsel or incite suicide, and violators face substantial fines. The introduction of the legislation sparked much debate, with concerns expressed that the law is over-inclusive, interferes with the individual's right to die, and has no jurisdiction over off-shore websites. Its impact has not yet been rigorously evaluated, but it appears to have deterred Australian individuals and organisations who might

otherwise have posted pro-suicide material on local websites, since none now appear to exist (Pirkis, Neal et al., 2009).

Limitations of the current review

As noted in Chapter 1, the current review was deliberately restricted to 'media influence studies' that are grounded in the 'effects tradition'. It did not include 'news production studies', 'content analysis studies' or 'audience reception studies'. Consequently, the review is not in a position to comment on how suicide stories are produced, what information they contain and how this is framed, or how this information is perceived and received by the community in general and by people who might be vulnerable in particular.

These other types of studies are important for interpreting the findings from the 'media influence studies', and can assist in informing media practice and communication strategies. The body of work in these other areas is not as substantial as that reviewed here, but is emerging. For example, there are a number of examples of quantitative and qualitative 'content analysis studies' which are beginning to inform the question of how the media frames suicide. In Australia, Blood, Pirkis, Hickie and Martin (2003) conducted a qualitative study of how the press framed a story of a 75-year-old man who was taking a commonly-prescribed anti-depressant and murdered his wife and then attempted suicide. Some newspapers were alarmist and raised fears about the safety of the anti-depressant, whereas others stressed the exceptionality of the case. Pirkis, Burgess, Blood and Francis (Pirkis, Burgess, Blood, & Francis, 2007) complemented this qualitative study with a quantitative content analysis which suggested that the Australian media over-reports suicides by older people and females, and those involving dramatic methods. They found that reported suicides fell into three groups: suicides reported in a broader context; suicides by celebrities; and suicides involving unusual circumstances or methods. Similar studies in Austria (Niederkrontenthaler, Till, Herberth et al., 2009), Hong Kong (Au, Yip, Chan, & Law, 2004), Israel (Weimann & Fishman, 1995) and the United States (Jamieson et al., 2003) have also suggested that the suicides reported in the media present a somewhat skewed picture of suicides in the population.

Further work is required to better align the media influence studies reviewed here with other emerging work on media reporting of suicide. Researchers from disciplines such as medicine, sociology and psychology should collaborate with researchers with backgrounds in media studies and communication theory, in order to strengthen our understanding of the imperatives that operate on media professionals when they are preparing stories on suicide, the contested frames which shape these stories, and the way in which these stories are interpreted by different readers and viewers.

Conclusions

Irresponsible presentations of suicide in news and information media can influence copycat acts. The findings of the current review should not be interpreted as a call for censorship of the media; it is acknowledged that the media has a role to play in raising awareness of suicide as a public health issue. Rather, the findings should be interpreted as an indication that media presentation of suicide should be done responsibly, and balanced against the public's 'right to know'.

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Appendix 1: Summary of newspaper studies

Investigators	Ashton and Donnan (1979, 1981)
Study type	Analytical study: Ecological
Country	United Kingdom
Dependent variable	Completed suicide
Method	Surveillance of suicide statistics from October 1978 until October 1979, after newspaper
Wethou	report of suicide by burning at beginning of period.
Key findings	Unusually high incidence of suicides by burning.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Barraclough, Shepherd and Jennings (1977)
Study type	Analytical study: Ecological
Country	United Kingdom
Dependent variable	Completed suicide
Method	Identified all suicides in Portsmouth, and considered all newspaper reports on suicide in the
	local newspaper (1970-72). Calculated the likelihood of a day on which a suicide occurred
	being preceded by a newspaper report of suicide and compared this with the likelihood of
	the day on which no suicide occurred being preceded by same.
Key findings	Day on which suicide of male <45 occurred significantly more likely to have been preceded
	by newspaper report on suicide. No effect for other age and sex groups.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Blumenthal and Bergner (1973)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Replication of Motto (1967, 1970). Determined suicide rates in New York during newspaper
	strike of 140 days (1966) and compared with mean rates for previous three years and two
	subsequent years.
Key findings	Newspaper strike associated with a decrease in suicide rates for females aged under 35
	only.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Bollen and Phillips (1981)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Replication of Phillips (1977, 1979). Determined the number of metropolitan Detroit motor
	vehicle fatalities in weeks in which a front-page suicide article appeared in the Detroit press
	(1973–76) and compared this with the number in corresponding week in preceding and
	subsequent years. Complemented quasi-experimental analysis with time-series regression
	analysis.
Key findings	Overall increase in number of motor vehicle fatalities in weeks of front-page suicide
	articles, with peak on day three.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Calhoun, Selby and Faulstich (1980)
Study type	Analytical study: Individual-level
Country	United States
Dependent variable	Attitudes to suicide
Method	Presented 148 members of the public with a newspaper account of a child's death. Varied
	cause of death: (a) suicide; or (b) illness. Asked about attitudes towards parents.
Key findings	Participants were more likely to view the parents negatively when the child's death was by
	suicide than when it was by illness.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Calhoun, Selby and Faulstich (1982)
Study type	Analytical study: Individual-level
Country	United States

Dependent variable	Attitudes to suicide
•	
Method	Presented 119 city residents with a newspaper account of a child's death. Varied cause of death: (a) suicide; or (b) illness. Asked about attitudes towards parents.
Var. findings	
Key findings	Participants were more likely to view the parents negatively when the child's death was by suicide than when it was by illness.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Chung and Leung (2001)
Study type	Analytical study: Ecological
Country	Hong Kong
Dependent variable	Completed suicide
Method	Collected reports of suicide by charcoal burning during 1998 and 1999 from six major
Wethou	national newspapers, and examined their relationship to actual suicides by this method
	occurring in the same two-year period. Prior to November 1998, there were no suicides by
	this method and no reports relating to it. In November 1998, a 35-year old woman used
	this method to end her life, and her death was widely and graphically reported.
Key findings	Fifty six reported suicides by charcoal burning followed, 22 (39%) of which occurred in the
,	nine weeks after the first reported incident.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Etzersdorfer (2001); Etzersdorfer, Voracek and Sonneck (2004)
Study type	Analytical study: Ecological
Country	Austria
Dependent variable	Completed suicide
Method	Examined rates of suicide in the three weeks before and the three weeks after Austria's
	leading tabloid newspaper, <i>Neue Kronezeitung (NKZ)</i> , ran a story about suicide of the owner
	of a famous Viennese hotel.
Key findings	Increase in firearm suicides in the three weeks after NKZ ran the story. Evidence of a dose-
	response effect, whereby the increase was greatest in the regions of the highest
	distribution of NKZ.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Etzersdorfer, Sonneck and Nagel Kuess (1992); Sonneck, Etzersdorfer and Nagel Kuess
	(1994); Etzersdorfer and Sonneck (1998); Niederkrontenthaler and Sonneck (2007)
Study type	Analytical study: Ecological
Country	Austria
Dependent variable	Attempted suicide and completed suicide
Method	Determined six-month frequencies of subway suicides and suicide attempts in Vienna.
	Examined effect of introduction of media guidelines in June 1987.
Key findings	Drop in number of subway and overall suicides and suicide attempts after the introduction
	of media guidelines. Effect most prominent in regions with high coverage of collaborating
	newspapers.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Frei, Schenker and Finzen et al (2003)
Study type	Analytical study: Ecological
Country	Switzerland Completed suicide
Dependent variable	Completed suicide Examined suicides assisted by the Swiss right to die society EVIT in the two years before
Method	Examined suicides assisted by the Swiss right-to-die society, EXIT, in the two years before and the two years after wide local and national press coverage of the double suicide of a
	well-known and respected couple in the Basle region. Also examined the quality of
	reporting, as assessed against Centers for Disease Control and Prevention (CDC) guidelines
Key findings	Significant increase in the number of EXIT-assisted suicides in that region after the
ncy munigs	newspaper reports, particularly among women aged over 65. Much of the reportage
	sensationalised suicide, glorifying the couple and describing their deaths in detail.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Gibson and Range (1991)
Study type	Analytical study: Individual-level
Country	United States
Dependent variable	Suicidal thoughts
Method	Presented 128 high school students with a written report of a teenager with problems. Half
	were told (a) the teenager had a friend with similar problems who had taken his or her own
	life; the other half were told (b) the teenager had a friend with similar problems who had
	sought professional help. Asked to predict response of the teenager.
Key findings	Those who had been told that the teenager had a friend with similar problems who had

	died by suicide were more likely to indicate that his recenance would be suicide (norticularly
	died by suicide were more likely to indicate that his response would be suicide (particularly males). Those who had been told that the teenager had a friend with similar problems who
	had sought professional help were more likely to indicate that his response would be help-
	seeking (particularly females).
Interpretation	Some evidence to suggest negative influence of media
Investigators	Ginn, Range and Hailey (1988)
Study type	Analytical study: Individual-level
Country	United States
Dependent variable	Attitudes to suicide
Method	Presented 120 shoppers with a newspaper article about a 10-yearold child who: (a)
	attempted suicide; (b) completed suicide; (c) completed suicide after having made a
	previous attempt; (d) died of a viral illness; or (e) died in an accident. Asked about attitudes
	towards the family of the child.
Key findings	Participants were equally likely to respond negatively towards the family when the child
	had attempted suicide or died by suicide, but tended to be sympathetic towards the family
	when the child had died by illness or accident.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Hassan (1995)
Study type	Analytical study: Ecological
Country	Australia
Dependent variable	Completed suicide
Method	Calculated national daily suicide rates for 'high impact' periods (days on which suicide
	stories published in the Age and the Sydney Morning Herald and subsequent two days) and
	'low impact' periods (periods of three months, 14 days before and 14 days after suicide
	stories) (1981–90).
Key findings	Significant increase in suicide rate during 'high impact' periods for males but not for
Internatetica	females.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Higgins and Range (1996)
Study type	Analytical study: Individual-level United States
Country Dependent variable	Suicidal thoughts
Method	Presented 306 university students with a newspaper report of the suicide of a 16-year-old
Wethou	called Pat. Varied circumstances surrounding Pat's death: (a) parents' plan for divorce; (b)
	recently ended relationship; (c) history of alcohol abuse; (d) history of psychiatric
	disturbance; (e) honours student; (f) university athlete; or (g) no conditions described.
	Asked to predict likelihood of own imitative behaviour.
Key findings	Participants unlikely to report that they would imitate the suicide of Pat, regardless of how
, ,	his circumstances were presented.
Interpretation	No evidence to suggest negative influence of media
Investigators	Hills (1995)
Study type	Descriptive study
Country	Australia
Dependent variable	Attempted suicide
Method	Case report
Key findings	Local newspaper published a front-page picture of a suicide incident. Following day
	psychiatric patient threatened same action.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Hittner (2005)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Re-analysed Phillips' (1974) original data, arguing that the initial analysis did not control for
	the positive correlation between the expected and observed suicide rates before examining
	the impact of media publicity on the observed number of suicides. Used a five-step
	statistical procedure which took this into account (but excluded some observations that did
Mary Broadles	not meet certain statistical assumptions).
Key findings	Found no association between heightened levels of media exposure and increases in the
Interpretation	observed numbers of suicides.
Interpretation	No evidence to suggest negative influence of media Ishii (1991)
Investigators	

Study type	Analytical study: Ecological
Country	Japan
Dependent variable	Completed suicide
Method	Calculated monthly amount of suicide news in two national Japanese newspapers (1954–
Wiethou	86) by multiplying number of suicide headlines in each by circulation of each, and adding
	totals. Correlated each monthly figure with national monthly suicide rate for males and
	females, and with combined rate for Tokyo area. Applied Grainger's causality to data to
	estimate multivariate autoregressive models.
Key findings	Suicide news had a causal effect on actual suicides (and not vice versa) for both males and
Key illianigs	females at the national level. More complex two-way relationship at local level.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Jonas (1992)
Study type	Analytical study: Ecological
Country	Germany
Dependent variable	Completed suicide
•	Determined daily suicide frequencies of Baden-Württemberg (1968–80) and identified days
	on which suicide stories appeared in major German newspapers and magazines. Two
	separate analyses: quasi-experimental analysis based on Phillips (1974), in which the
	number of suicides in weeks in which a suicide article was published was compared with
	the number in the corresponding week in preceding and subsequent years; and time-series
	regression analysis was used in which the dependent variable was daily suicide frequency,
	and the main independent variable was story period.
Key findings	Significant increase in suicide rate in weeks following a suicide story according to both
, ,	analysis methods, but the effect was greater in quasi-experimental analysis.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Littman (1985)
Study type	Analytical study: Ecological
Country	Canada
Dependent variable	Completed suicide
Method	Examined subway suicides in Toronto (1966-77) and observed 'epidemic' in 1971.
	Calculated the frequency of suicide news items in Toronto's major newspaper for varying
	intervals before and after each suicide, and then calculated the annual 'before' and 'after'
	averages.
Key findings	Suicide news items were just as likely to be found before and after a suicide in both
	'epidemic' and 'non-epidemic' years.
Interpretation	No evidence to suggest negative influence of media
Investigators	McDonald and Range (1990)
Study type	Analytical study: Individual-level
Country	United States
Dependent variable	Suicidal thoughts
Method	Presented 66 high school students with a newspaper report of a high school student called
	John who had many problems. Varied conditions such that John knew someone who had
	died: (a) by suicide that had received a sympathetic response; (b) by suicide that had
	received an unsympathetic response; (c) by viral illness that had received a sympathetic response; or (d) by viral illness that had received an unsympathetic response. Asked to
	predict likelihood of own imitative behaviour, and likelihood of imitative behaviour by John.
Key findings	Majority of participants saw themselves as unlikely to be influenced to engage in suicidal
key illiulings	behaviour, regardless of circumstances of death. Participants likely to predict that John
	would attempt suicide if:
	his friend had died by suicide and he observed the response to this death to be
	sympathetic, and
	 his friend had died by viral illness and he observed the response to this death to
	be unsympathetic.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Motto (1967)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Determined suicide rates in seven cities during periods of newspaper blackouts ranging
	from 25 to 135 days (1945–65) and compared with mean rates for previous five years.
Key findings	No impact of newspaper blackout on suicide rates.

Interpretation	No evidence to suggest negative influence of media
Investigators	Motto (1970)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Determined suicide rates in Detroit during newspaper blackout of 268 days (1967–68) and
	compared with mean rates for previous five years.
Key findings	Newspaper blackout associated with a decrease in suicide rates for females only
	(particularly those aged under 35).
Interpretation	Some evidence to suggest negative influence of media
Investigators	Niederkrontenthaler, Till and Kapusta et al (2009)
Study type	Analytical study: Ecological
Country	Austria
Dependent variable	Completed suicide
Method	Investigated whether the impact of suicide stories varies as a function of the social
	characteristics of the individual who is the focus of the media report, and their similarity to particular population groups. Identified newspaper stories on all 179 individual suicides named in the 13 largest Austrian newspapers between 1996 and 2006, and conducted logistic regression analyses to determine whether there was a relationship between the reported suicides and (a) actual suicides by similar individuals (same sex, same age group, same suicide method); (b) actual suicides by different individuals (different sex, different age group, different suicide method); and (c) actual suicides by the total population, in the 28 days after the report.
Key findings	Found that if the report concerned an individual who had celebrity status, who was aged 30-64, and whose death was definitively determined as a suicide, then this was heightened the risk of an increase in suicide rates among similar individuals; if the report concerned an individual suspected of criminal activity, then this was associated with a lower risk of post-report suicides among similar individuals. Social characteristics of the individual described in the report had no association with an increase in dissimilar suicides, and that celebrity status of the individual was the only factor that was predictive of an increase in total suicides.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Phillips (1974)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Determined the national number of suicides in months in which a front-page suicide article appeared in the national press (1947–68) and compared this with the number in the corresponding month in preceding and subsequent years.
Key findings	Overall increase in number of suicides in months of front-page suicide articles.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Phillips (1977, 1979)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Determined the number of Californian motor vehicle fatalities in the weeks in which a front-page suicide article appeared in the Californian press (1966-73) and compared this with the number in the corresponding week in preceding and subsequent years
Key findings	Overall increase in number of motor vehicle fatalities in weeks of front-page suicide articles, with peak on day three.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Phillips (1978, 1980)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Determined the national number of aeroplane fatalities in the weeks in which a front-page murder-suicide article appeared in the national press or on national television network evening programs (1968–73) and compared this with the number in the corresponding week in preceding and subsequent years.
Key findings	Overall increase in number of fatal aeroplane crashes in weeks of front-page murder-suicide articles.

Interpretation	Some evidence to suggest negative influence of media
Investigators	Range, Bright and Ginn (1985)
Study type	Analytical study: Individual-level
Country	United States
Dependent variable	Attitudes to suicide
Method	Presented 180 shoppers with a newspaper article about a male child's suicide. First varied
Method	age of child: (a) 10; (b) 13; or (c) 17. Then varied method of suicide. Asked about attitudes
	towards the family of the child.
Key findings	The younger the child, the more likely participants were to respond negatively towards the
Key illialings	family. The method of suicide had no impact on the response of participants to the family.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Range and Kastner (1988)
Study type	Analytical study: Individual-level
Country	United States
Dependent variable	Attitudes to suicide
Method	Presented 180 shoppers with a newspaper article about a 10-yearold child who: (a)
	attempted suicide; (b) completed suicide; (c) completed suicide after having made a
	previous attempt; (d) was admitted to a psychiatric hospital (e) died of a viral illness; or (f)
Voy findings	died in an accident. Asked about attitudes towards the family of the child.
Key findings	Participants were equally likely to respond negatively towards the family when the child
	had attempted suicide or died by suicide, but tended to be sympathetic towards the family
	when the child had died by illness or accident, or had been admitted to a psychiatric
Internation	hospital.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Range and Martin (1990)
Study type	Analytical study: Individual-level
Country	United States
Dependent variable	Attitudes to suicide
Method	Presented 180 university students with newspaper article about a 35 year-old man who
	suicided in response to: (a) psychological pain; (b) physical pain; or (c) terminal illness. A
	control group received no information on the circumstances surrounding the man's death.
	Asked about attitudes towards the man and his family.
Key findings	Victims of terminal illness and their families were viewed in the most favourable light.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Romer, Jamieson and Jamieson (2006)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Identified stories in newspaper sources in each of six United States cities in four months of
	1993 and examined their association with suicide rates in these cities, while controlling for
	the effect of a number of confounders (including other news and information media and
	entertainment media sources of suicide stories).
Key findings	Local newspaper reports of suicide were independently associated with increases in local
	suicide rates.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Stack (1987a)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Replication of Wasserman (1984). Determined national suicide rates for all months (1948–
	80) and compared those in which a front-page celebrity suicide story (broken down by
	subgroup) appeared in the national press with those in which no such story appeared, using
	time-series regression techniques.
Key findings	Significant increase in suicide rate in months in which front-page articles were published on
	suicides by subgroups of celebrities only (entertainers and politicians).
Interpretation	Some evidence to suggest negative influence of media
Investigators	Stack (1988)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Determined national suicide rates for all months (1910–20) by extrapolating from yearly

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	figures. Compared suicide rates in months in which a front-page suicide story appeared in
	the New York Times, the Washington Post, or the Charleston News-Courier with those in
	which no such story appeared, using time-series regression techniques.
Key findings	Significant increase in suicide rate in months in which front-page suicide articles were
Intornuctation	published in peacetime only (not in wartime).
Interpretation	Some evidence to suggest negative influence of media Stack (1990b)
Investigators Study type	
Study type Country	Analytical study: Ecological United States
Dependent variable	Completed suicide
Method	Determined national suicide rates for those aged over 16 for all months (1948–80) and
Wicthou	compared those in which front-page suicide stories involving divorced or maritally
	distressed individuals appeared in the <i>New York Times</i> with those in which no such story
	appeared, using time-series regression techniques.
Key findings	Significant increase in suicide rate in months in which front-page articles were published on
, ,	suicides by divorced or maritally distressed individuals.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Stack (1990c)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Replication of Wasserman (1984). Determined national suicide rates for all months (1948–
	80) and compared those in which a front-page celebrity suicide story (broken down by
	subgroup) appeared in the national press with those in which no such story appeared, using
	time-series regression techniques.
Key findings	Significant increase in suicide rate in months in which front-page articles were published on
	suicides by non-celebrities, but the effect was less than for celebrity suicides.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Stack (1996)
Study type	Analytical study: Ecological
Country	Japan Completed quicide
Dependent variable Method	Completed suicide Determined national suicide rates for all months (10EE, 8E) and compared those in which a
ivietnoa	Determined national suicide rates for all months (1955–85) and compared those in which a suicide story appeared in the front three pages of the Japan Times with those in which no
	such story appeared using time-series regression techniques.
Key findings	Significant increase in suicide rate in months in which articles about the suicide of a
Key Illianigo	Japanese person were published.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Stack (1992)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Determined national suicide rates for all months (1933–39). Compared suicide rates in
	months in which a front-page suicide story appeared in at least five of seven national
	newspapers.
Key findings	Only stories concerning political leaders were significantly associated with suicide.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Tousignant, Mishara and Cailaud et al (2005)
Study type	Analytical study: Ecological
Country	Canada
Dependent variable	Completed suicide and calls to suicide prevention centres
Method	Examined the impact of the media coverage of the suicide of a popular male television
	reporter in Quebec, Canada, on 15 January 1999. Analysed stories published in 10 daily
	newspapers for the subsequent year. Examined overall suicide rates and suicide rates for
	men aged 20-49 (the age group of the reporter) for the months of 1999 compared with the
	corresponding months in 1998. Analysed coroners' records of a sub-set of deaths for
	evidence of influence. Analysed calls to five suicide prevention centres in Quebec for the
Voy findings	first three months of 1998 and 1999.
Key findings	Identified 98 articles, one third of which were published in the two days after the reporter's death, and another third of which were published within three days to a week. Significant
	numbers of these articles had strong emotional overtones, included pictures of the
	numbers of these articles had strong emotional overtones, included pictures of the

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	deceased and his family, described the method, presented simplistic explanations that
	made no reference to underlying psychological problems, and/or glorified the death.
	Overall suicide rates and suicide rates for men aged 20-49 (the age group of the reporter) in
	Quebec were significantly higher in most months of 1999 than the corresponding months of
	1988. Ten out of 79 coroners' records from January 15 and February 6 1999 showed some
	direct evidence of influence by the reporter's death. There was an increase of 46% in calls
	to five Quebec suicide prevention centres in January 1999 compared with January 1998,
	with the rise being 200% in the four days following the reporter's suicide. The increase was
	15% in February and March 1999.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Veysey, Kamanyire and Volans (1999)
Study type	Analytical study: Ecological
Country	United Kingdom
Dependent variable Method	Attempted suicide Surveillance of suicide attempts reported to National Reisens Information Service in April
Method	Surveillance of suicide attempts reported to National Poisons Information Service in April
Vov. findings	1995, the month of the newspaper report of the inquest into an antifreeze poisoning.
Key findings	Unusually high incidence of suicides by poisoning.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Wasserman (1984)
Study type	Analytical study: Ecological
Country	United States
Dependent	Completed suicide
Method	Replication of Phillips (1974). Determined the national suicide rates for all months (1947–
	77) and compared those in which a front-page suicide story (celebrity and non-celebrity)
	appeared in the national press with those in which no such story appeared using time-
Va. findings	series regression techniques.
Key findings	Significant increase in suicide rate in months in which front-page articles were published on
Interpretation	celebrity suicides only.
Interpretation	Some evidence to suggest negative influence of media Wasserman (1992)
Investigators Study type	, ,
Study type	Analytical study: Ecological United States
Country Dependent variable	Completed suicide
Method	'
Method	Replication of Stack (1988). Determined national suicide rates for all months (1910–20) by extrapolating from yearly figures. Used Stack's definition of months in which front-page
	suicide stories appeared. Compared suicide rates in front-page suicide story months with
	those in non-front page suicide story months, using time-series regression techniques.
Key findings	Significant increase in suicide rate in months in which front-page suicide articles were
Key illiangs	published in peacetime only (not in wartime)
Interpretation	Some evidence to suggest negative influence of media
Investigators	Yip, Fu and Yang et al (2006)
Study type	Analytical study: Ecological
Country	Hong Kong
Dependent variable	Completed suicide
Method	Examined the press coverage of the suicide of Leslie Cheung, a local singer and actor, who
ca	jumped from a height on 1 April 2003. Considered the monthly suicide rates for January-
	June 2003, and compared these with the average rates for the equivalent months from
	1998-2002. Examined coroner's for evidence records that Cheung's death had played a role
	in subsequent suicides.
Key findings	Identified 1243 newspaper articles about Cheung's death published in the following eight
' "	days, and on six of these eight days there was at least one front-page newspaper report.
	Found that there was a significant increase in suicides in the 2003 months, and that this
	was particularly marked for males and for suicides by similar method. Found evidence from
	coroners' records that Cheung's death had played a role in subsequent suicides; there were
	13 cases in 2003 which his death was mentioned in a suicide note or in the records of the
	police investigation.
Interpretation	Some evidence to suggest negative influence of media

Appendix 2: Summary of television studies

Investigators	Bollen and Phillips (1982)
Content	Non-fiction Non-fiction
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Identified suicide stories about individuals carried on national network news programs
	(1972–76) and examined their association with national suicide trends, using quasi-
	experimental approach and regression analysis.
Key findings	Significant increase in national suicide rate in period after televised news story about
, ,	suicide. Effect did not extend beyond 10 days.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Hittner (2005)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Re-analysed Phillips and Carstensen's (1986) original data, arguing that the initial analysis
	did not control for the positive correlation between the expected and observed suicide
	rates before examining the impact of media publicity on the observed number of suicides.
	Used a five-step statistical procedure which took this into account (but excluded some
	observations that did not meet certain statistical assumptions).
Key findings	Found partial support for an association between media reporting of suicide and actual
	suicides in some, but not all, of the pairwise comparisons.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Horton and Stack (1984)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Identified suicide stories carried on national network 6.00 pm news programs, calculated
	the number of seconds of coverage, and examined the association with national suicide
	trends.
Key findings	No relationship between amount of television reporting of suicide and actual suicide.
Interpretation	No evidence to suggest negative influence of media
Investigators	Kessler, Downey and Milavsky et al (1988); Kessler, Downey and Stipp et al (1989)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Replication of Phillips and Carstensen (1986). Extended analysis period to 1973–84,
	searched additional indexes for stories, adjusted for the fact that some stories are updated
	over a period of days, and refined the analysis to include a variable that defined the level of
	exposure to broadcasts about suicide on a given day.
Key findings	Number of suicides increased as a function of news stories about suicide in 1973–80, but
	not in 1981–84.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Phillips and Carstensen (1986)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Identified suicide stories carried on national network news programs (1973–79) and
	examined their association with national youth suicide trends, using regression analysis.
Key findings	Significant increase in number of teenage suicides in seven days following broadcast.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Phillips and Carstensen (1988)
Study type	Analytical study: Ecological

Country	United States
Dependent variable	Completed suicide
Method	Identified suicide stories shown on television in California (1968–85) and examined their
	association with national suicide trends for various demographic subgroups, using
	regression analysis.
Key findings	Significant association between suicide stories and actual suicides for all demographic
	groups, but particularly strong for teenagers.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Romer, Jamieson and Jamieson (2006)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Identified stories on television news in each of six United States cities in four months of 1993 and examined their association with suicide rates in these cities, while controlling for the effect of a number of confounders (including other news and information media and entertainment media sources of suicide stories).
Key findings	Local television news reports of suicide were independently associated with increases in local suicide rates.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Stack (1989)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Identified mass murder-suicide and mass-murder stories carried on national network news
	programs (1968–80) and examined their association with national suicide and homicide trends, using regression analysis.
Key findings	Significant association between publicised mass murder-suicides and actual suicides, and between publicised gangland mass-murder stories and actual suicides. No effect for homicides.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Stack (1990a)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Identified suicide stories carried on national network news programs, and a subgroup of stories about elderly suicides (1968–80). Examined their association with national elderly suicide trends, using regression analysis.
Key findings	Significant increase in elderly suicides in months in which a publicised suicide story occurred. Effect was even more sizeable when the analysis was restricted to stories about elderly suicides.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Stack (1993)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Identified suicide stories carried on national network news programs (1968–80) and examined their interaction with unemployment levels and the combined influence of these factors on suicide trends, using regression analysis.
Key findings	Interaction between media stories and the rate of unemployment, but together they were no more powerful a predictor of suicide rates than media coverage alone.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Shoval, Zalsman and Pokkevitch et al (2005)
Study type	Analytical study: Ecological
Country	Israel
Dependent variable	Completed suicide and attempted suicide
Method	Examined the impact of a television documentary screened in Israel in 2001, in which an adolescent girl was interviewed about her suicide plan and ultimately died. Compared the numbers of completed and attempted suicides in Israel in the eight weeks prior to the screening of the documentary and in the four weeks subsequent to it. Examined data for the equivalent periods in the preceding year, in order to control for seasonal effects.
Va. finalinas	No significant increase in the rates of completed or attempted suicide following the
Key findings	The significant mercase in the rates of completed of attempted saleide following the

	program, although there was some evidence of shifts in age and method which corresponded to the subject of the documentary.
Interpretation	Some evidence to suggest negative influence of media

Appendix 3: Summary of studies of books

Investigators	Land and Gutheil (1995)
Study type	Descriptive study
Country	United States
Dependent variable	Suicidal thoughts
Method	Anecdotal report concerning influence of <i>Final Exit</i> .
Key findings	A 54-year-old black man in forensic psychiatric facility who attempted to order <i>Final Exit</i>
incy initiality	from the facility's library. The librarian alerted clinical staff, who found the man to be
	depressed and suicidal.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Lavin, Martin and Roy (1992)
Study type	Descriptive study
Country	United States
Dependent variable	Attempted suicide
Method	Case report concerning influence of <i>Final Exit</i> , a bestselling book advocating euthanasia by
ca	poisoning and suffocation for those who are terminally ill.
Key findings	Thirty-year-old single black woman who was admitted to an emergency department after
- /	self harming. She had tried to follow the instructions in <i>Final Exit</i> , but had been thwarted
	by being unable to obtain the materials described.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Marzuk, Tardiff and Hirsch et al (1993)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Considered suicides occurring in New York in the year prior to publication of <i>Final Exit</i> (on 1
	March 1991) and the year subsequent to it. Suicides classified by method. Examined the
	exposure to Final Exit of all suicides by asphyxiation and/or poisoning.
Key findings	Significant increase in the number of suicides by asphyxiation after the publication of <i>Final</i>
, ,	Exit. No increase in suicide by any other method, and no increase in the total number of
	suicides. Fifteen of 144 who suicided by asphyxiation and/or poisoning had been exposed
	to the book, as evidenced by it being present at the site of the suicide, or suicide notes
	modelled on an example given in the book. Six of the 15 showed no evidence of serious
	medical illness, based on clinical notes and autopsy results.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Marzuk, Tardiff and Leon (1994)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Considered national US suicide rates in years prior and subsequent to publication of Final
	Exit. Suicides classified by method.
Key findings	Significant increase in number of suicides by asphyxiation and poisoning after publication of
	Final Exit. No increase in suicides by any other method, and no increase in total number of
	suicides.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Sacks and Kemperman (1992)
Study type	Descriptive study
Country	United States
Dependent variable	Attempted suicide
Method	Case report concerning influence of Final Exit.
Key findings	Two cases: 47-year-old man and 31-year-old woman. Both attempted suicide after reading Final Exit.
Interpretation	
Interpretation	Some evidence to suggest negative influence of media

Appendix 4: Summary of studies of the Internet

Investigators	Alao and Yolles (1999)
Study type	Descriptive study
Country	United States
Dependent variable	Attempted suicide
Method	Case study concerning influence of pro-suicide websites.
Key findings	
Key illiuligs	Two cases: 16-year-old African American adolescent and 34-year-old woman with borderline personality disorder. Both had sought information from websites. Both
	survived.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Athanaselis, Stefanidou, Karakoukis and Koutselinis (2002)
Study type	Descriptive study
	Greece
Country	
Dependent variable Method	Completed suicide
	Case study concerning influence of pro-suicide websites.
Key findings	42-year-old male who died by suffocation. His wife indicated that during the previous 10
	days he searched the Internet for hours for ways to take his own life, and had saved a site
Interpretation	giving such advice to his 'favourites' list.
Interpretation	Some evidence to suggest negative influence of media Baume, Cantor and Rolfe (1997)
Study type	Descriptive
Country	Australia
Dependent variable	Attempted and completed suicide
Method	Observational study of interactions on <i>alt.suicide.holiday</i>
Key findings	A number of examples of people posting messages on the site indicating their intention to
	take their own lives. Most cases involved online discussion about the perceived benefits of
Interreportation	particular methods, and encouragement from other online users to complete the act.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Beatson, Hosty and Smith (2000)
Study type	Descriptive study
Country	United Kingdom
Dependent variable	Attempted suicide
Method	Case study concerning influence of pro-suicide websites.
Key findings	34-year-old male who took medications after seeking information from an overseas
	pharmacy website which sold prescription-only drugs without the need for a prescription.
Internatation	He survived, but died after a second overdose on discharge.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Becker and Schmidt (2004); Becker, Mayer and Nagenborg et al (2004)
Study type	Descriptive study Gormany
Country Dependent variable	Germany Attempted suicide
Dependent variable Method	Case study concerning influence of pro-suicide websites and chat rooms
	, , ,
Key findings	Two cases: 17-year-old female who ingested prescription medications following visits to
	pro-suicide websites to discuss her suicidal thoughts and seek information on methods; and 15-year-old female who was inspired to view suicide as a problem-solving strategy by
	Internet sites (although she also found the address of a clinic). Both survived.
Interpretation	Some evidence to suggest negative influence of media
Interpretation Investigators	Byard, Simpson and Gilbert (2006)
Study type	Analytical study: Ecological
Country Dependent variable	Australia Completed suicide
Dependent variable	Completed suicide
Method	Explored the relationship between suicide by asphyxiation (a method commonly

	recommended on pro-suicide websites) and Internet availability, using routinely-available
Voy findings	data.
Key findings	Suicides by asphyxiation increased over time as a function of increased community access
Interpretation	to the Internet. Some evidence to suggest negative influence of media
Investigators	Chodorowski and Sein (2002)
Study type	Descriptive study
Country	Poland
Dependent variable	Attempted suicide
Method	Case study concerning influence of chat rooms.
Key findings	25-year old female with depression and anorexia nervosa who was persuaded by someone
Key Illianigs	on a chat room to ingest prescription medications. She survived, and the case was sent to
	the public prosecutor's office.
Interpretation	Some evidence to suggest negative influence of media
Investigators	D'Hulster and van Heeringen (2006)
Study type	Descriptive study
Country	Belgium
Dependent variable	Attempted suicide
Method	Case study concerning influence of pro-suicide websites.
Key findings	Two cases where individuals prepared and carried out suicide attempts with the help of
, 0-	information from the Internet.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Forsthoff, Hummel, Moller and Grunze (2006)
Study type	Descriptive study
Country	Germany
Dependent variable	Attempted suicide
Method	Case study concerning influence of pro-suicide websites.
Key findings	18-year-old female who learned about methods of suicide from the Internet and then
	ordered medication. She survived.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Gallagher, Smith and Mellen (2003)
Study type	Descriptive study
Country	United States
Dependent variable	Completed suicide
Method	Case study concerning influence of pro-suicide websites.
Key findings	19-year-old female who died by asphyxiating herself after seeking information about the
	method from the Internet.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Janson, Alessandrini and Strunjas et al (2001).
Study type	Descriptive study
Country	United States
Dependent variable	Attempted suicide
Method	Case study concerning influence of chat rooms.
Key findings	Two cases: 38-year old female who threatened to overdose on prescription medications
	while on a chat room site, but another user notified customer services who contacted the
	police and she was subsequently hospitalised and treated; and 42-year old male who
	threatened to kill himself while on a chat room site, but friends using the same chat room
lutamanatatian	notified the police and he was brought to the emergency department and treated.
Interpretation	Some evidence to suggest negative influence of media
Investigators Study type	Melhum (2000)
Study type	Descriptive study Austria and Norway
Country Dependent variable	
Dependent variable	Completed suicide Case study concerning suicide past made over the Internet
Method You findings	Case study concerning suicide pact made over the Internet.
Key findings	17-year-old Austrian female and 20-year-old Norwegian male who met on the Internet and
Interpretation	arranged a suicide pact. Both died.
Interpretation	Some evidence to suggest negative influence of media
Investigators Study type	Mishara and Weisstub (2007)
Study type	Descriptive study United States United Kingdom Japan South Korea Austria
Country	United States, United Kingdom, Japan, South Korea, Austria
Dependent variable	Completed suicide

Method	Collation of widely reported case studies of suicides where the Internet appeared to have
Wethou	played a role
Key findings	Five widely-reported incidents:
ncy mumgs	Case of 21-year-old male from Arizona who took a lethal overdose while chatting
	online with friends who encouraged him to go through with the act.
	Case of two males, one from Scotland and one from England, who met on a suicide
	chat room site, arranged a suicide pact where only one person died The first was
	charged with aiding and abetting a suicide, and took his own life before the case went
	to trial.
	Case of 20 suicide pacts in Japan where all those who died did so with companions they
	had met online, many by the same method.
	Case of three suicide pacts in Korea where all those who died did so with companions
	they had met online.
	Case of Austrian teenager and 40-year-old Italian male who met online and arranged a
	suicide pact near Vienna. Both died. The Italian man had also made contact with two
	Germans online, but police intervened and alerted their families before they could go
Interpretation	through with their pacts.
Interpretation Investigators	Some evidence to suggest negative influence of media
Study type	Naito (2004) Descriptive study
Country	Japan
Dependent variable	Completed suicide
Method	Case study concerning the influence of pro-suicide website.
Key findings	Four cases, each involving people from different parts of Japan:
	Three people (a male aged 26 and two females aged 22 and 24) found dead from
	poisoning in vacant flat. Identified by a 17-year-old girl who had met them on Internet
	site and arranged pact with them, but had then lost contact with the organiser. She
	died by suicide herself two months later;
	• Six people (three males aged 20, 22 and 25, and three females aged 21, 30 and 41)
	found dead. The 22-year-old male had previously been interviewed by a news reporter
	and identified himself as seeking suicide companions over the Internet;
	Three people (a male aged 14, a female aged 17 and a female in her mid-20s) found
	attempting to take their own lives. They had met on a suicide prevention website, and
	the incident was prevented because the mother of the 14-year-old found evidence of
	the planned pact on his computer and the police intervened.
	Three people (a male aged 30, and two females aged 18 and 21) found dead. They had
	planned the pact over the Internet, and the male and the 18-year-old female had
Interpretation	attempted suicide together in the past. Some evidence to suggest negative influence of media
Investigators	Nordt, Kelly, Williams and Clark (1998)
Study type	Descriptive study
Country	United States
Dependent variable	Attempted suicide
Method	Case study concerning influence of pro-suicide websites.
Key findings	24-year-old male who ingested prescription medication after seeking information from a
, 0	website. He survived.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Prior (2004)
Study type	Descriptive study
Country	Canada
Dependent variable	Attempted suicide
Method	Case study concerning influence of pro-suicide websites.
Key findings	20-year-old male with depression and narcissistic personality disorder who ingested
	medication and purchased equipment for asphyxiation, after identifying these methods on
	the Internet. He survived.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Rajagopal (2004)
Study type	Descriptive study
Country	Japan
Dependent variable	Completed suicide
Method	Case study concerning the influence of pro-suicide website.

Key findings	Nine deaths in Japan, apparently in two suicide pacts. Pacts appeared to have been
	arranged by strangers who met over the Internet.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Ryu, Choi and Seo et al (2004); Kim, Ryu and Chon et al (2006)
Study type	Analytical study: Individual-level
Country	Korea
Dependent variable	Suicidal thoughts
Method	Administered questionnaire to Korean high school students.
Key findings	Those who qualified as being addicted to the Internet according to a standardised scale
	were significantly more likely to be suicidal and/or depressed than their non-addicted
	peers.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Sisask, Varnik and Wasserman (2005)
Study type	Descriptive study
Country	Estonia
Dependent variable	Attitudes towards suicide
Method	Identified seven Internet portrayals of a suicide pact involving a 14-year-old girl and a 15-
	year-old boy who attempted suicide (and survived), sourced from the sites of three of the
	most widely-read daily newspapers in Estonia, Eesti Paevaleht (Estonian Daily Paper),
	Potimees (Postman) and SL Ohtuleht (Evening Paper). Conducted a content analysis of the
	188 spontaneous comments on these portrayals posted on the newspapers' websites by
	readers.
Key findings	Articles with photographs attracted the greatest number of comments. More than half of
	the comments expressed negative attitudes towards suicide.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Wehner and Gawatz (2003)
Study type	Descriptive study
Country	Germany
Dependent variable	Completed suicide
Method	Case study concerning influence of pro-suicide websites.
Key findings	14-year-old boy who died from injesting a plant after investigating methods of suicide on
	various websites.
Interpretation	Some evidence to suggest negative influence of media

Appendix 5: Summary of studies of mixed media

Investigators	Bhugra (1991)
Study type	Descriptive study
Country	India
Dependent variable	Attempted suicide and completed suicide
Method	Described the self-immolation of 20-year-old male student (19 September 1990) who was
	protesting against a policy to reserve a greater proportion of jobs for the lower castes,
	potentially jeopardising his own job prospects and those of his peers. Notes that death was
	widely reported in newspapers and on television.
Key findings	Epidemic of completed and attempted suicides in response to media coverage.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Bras, Loncar and Boban et al (2007)
Study type	Descriptive study
Country	Croatia
Dependent variable	Attempted suicide
Method	Case series of suicide attempts among patients with chronic combat-related post-traumatic
	stress disorder.
Key findings	All cases employed the same method (self-immolation), and there was significant media
	coverage of several of them. The implication was that media reporting of the earlier
	attempts influenced the later attempts, but the investigators did not explicitly test this.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Brener, Simon and Anderson et al (2002)
Study type	Analytical study: Individual-level
Country	United States
Dependent variable	Suicidal thoughts
Method	Used data from the 1999 wave of the longitudinal Youth Risk Behavior Survey to examine
	the relationship between adolescents' suicidal thoughts and the widely-covered incident at
	Columbine High School in Colorado, where two teenagers killed themselves after murdering
	12 students and a teacher.
Key findings	The incident occurred part-way through the data collection period, and students who were
	surveyed after it were significantly less likely to report considering or planning suicide than
	those who were surveyed before it.
Interpretation	No evidence to suggest negative influence of media
Investigators	Cantor, Tucker and Burnett (1991)
Study type	Analytical study: Ecological
Country	Australia
Dependent variable	Completed suicide
Method	Considered the annual suicide rates in two regions of north Queensland during the 1980s in
	the light of two media events in 1987 and 1988.
Key findings	Significant peak in suicide rate in 1988, the year of extensive negative publicity about
	patients' suicides in the psychiatric ward of a local general hospital. Nonsignificant peak in
	1987, the year of widely reported cluster of Aboriginal deaths in custody.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Chan, Yip, Au and Lee (2005)
Study type	Descriptive study
Country	Hong Kong
Dependent variable	Attempted suicide
Method	Interviewed 25 survivors of attempted suicide by charcoal burning and sought information
14 C 11	about the extent to which the media had influenced their decision.
Key findings	The majority indicated that they had learnt of the method from the media.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Cheng, Hawton and Chen et al (2007)
Study type	Analytical study: Ecological
Country	Taiwan

Dependent variable	Attempted suicide
Method	Also explored the influence of widespread media coverage of the suicide of Taiwanese
	actor, MJ Nee, but this time considered suicide attempts in the three weeks after the media
	coverage began as the outcome of interest. Again, controlled for seasonal variation,
	calendar year, temperature, humidity and unemployment. Interviewed 124 suicide
	attempters from two Taiwanese counties who indicated that they had seen the media
	reports.
Key findings	Significant increase in the number of suicide attempts in the three weeks after the media
	reporting began, particularly for males and those who had made a previous attempt. One
	quarter of those interviewed who had seen the media reports said they were influenced by
	them.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Cheng, Hawton and Chen et al (2007)
Study type	Analytical study: Individual-level
Country	Taiwan
Dependent variable	Suicide attempts and suicidal thoughts
Method	Explored the influence of extensive media coverage the suicide of a celebrated Taiwanese actor, MJ Nee, on the suicidal behaviour of 461 depressed patients. The treating
	psychiatrists of these patients recorded clinical data (including data on suicidal thoughts
	and suicide attempts) occurring after the first media report of the celebrity's death. They
	also interviewed the patients about their exposure to the media reports, their history of
	suicidal thoughts and behaviours, and their perceptions of the influence of the media
	reports on these behaviours.
Key findings	Four hundred and thirty eight patients had been exposed to the media coverage, and 38%
, ,	of these claimed it had influenced subsequent suicidal behaviours. Those with severe
	depression and/or a recent history of suicide attempts were most susceptible to influence.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Cheng, Hawton, Lee and Chen (2007)
Study type	Analytical study: Ecological
Country	Taiwan
Dependent variable	Completed suicide
Method	Explored the influence of widespread media coverage of the suicide of a celebrated
	Taiwanese actor, MJ Nee. Nee died some time in late April 2005, and the media coverage
	began on 2 May and lasted for about 17 days. Examined completed suicide rates in four
	weeks after the media coverage began, controlling for seasonal variation, calendar year,
Key findings	temperature, humidity and unemployment. Marked increase in completed suicides in Taiwan in the four weeks after the media
key illiulings	coverage began (with the increase being most apparent in men and among individuals who
	chose the same method as Nee).
Interpretation	Some evidence to suggest negative influence of media
Investigators	Chowdhury, Brahma, Banerjee and Biswas (2007)
Study type	Descriptive study
Country	India
Dependent variable	Completed suicide
Method	Examined media coverage of a judicial hanging and copycat events that followed it.
Key findings	Identified 18 cases of copycat suicide among children following media reports of the initial
	event, one suicide and 17 other imitation acts (five of which ended in death).
Interpretation	Some evidence to suggest negative influence of media
Investigators	Chiu, Ko and Wu (2007)
Study type	Analytical study: Individual-level
Country	Taiwan
Dependent variable	Suicide attempts and suicidal thoughts
Method	Examined the relationship between exposure to suicide news in general over the past year
	and levels of suicidality in the past week in 2602 college students, using a self-report
v 6: 1:	survey.
Key findings	Exposure to suicide news only predicted levels of suicidality for individuals with severe
Intermedable :-	levels of depression.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Church and Phillips (1984)
	Applytical study (Foological
Study type Country	Analytical study: Ecological United Kingdom

Dependent variable	Completed suicide
Method	Identified suicides by asphyxiation between 1 February 1971 and 31 January 1981. Divided
	10-year period into two-month segments, and considered segments in which there was a
	suicide by asphyxiation and segments in which there was no such suicide.
Key findings	Suicide by asphyxiation in one segment significantly increased the probability of another in
	the next segment. Suggested that this provided evidence for the media playing a role.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Fu and Yip (2007)
Study type	Analytical study: Individual-level
Country	Hong Kong
Dependent variable	Suicidal thoughts
Method	Conducted a population-based study in Hong Kong, interviewing 2016 respondents (aged
	20-59) 8-15 months after the much-publicised suicide of a famous local male singer, Leslie
	Cheung.
Key findings	Those who indicated that they had been affected by the celebrity's suicide were
	significantly more likely to have severe levels of current suicidal ideation than those who
	had not been.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Fu and Yip (2009)
Study type	Analytical study: Ecological
Country	Hong Kong, Taiwan and South Korea
Dependent variable	Completed suicide
Method	Examined the impact of media reports of the suicides of three celebrities on subsequent
	suicides: one from Hong Kong (Leslie Cheung, male singer and artist, aged 46, who died by
	suicide); one from Taiwan (MJ Nee, male television actor, aged 59, who died by suicide; and
	one from South Korea (female actor, Eun-ju Lee, aged 25, who died by suicide). Aggregated
	suicide data from the three countries from before and after the reports, and controlled for
	a range of potential confounders (secular trends, seasonality, economic situation, temporal
	autocorrelation).
Key findings	Found that the combined risk for suicide was 1.43 in the first week after the reports, 1.29 in
	the second week, and 1.25 in the third week. They continued to observe a moderate
	increase in suicides up to the 24th week. The impacts were greater for same-gender
	suicides and same-method suicides, and greater still for same-gender-and-same-method suicides.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Huh, Jo and Kim (2009)
Study type	Descriptive study
Country	Korea
Dependent variable	Completed suicide
Method	Examined the impact of media reporting of two deaths involving charcoal burning, this time
cuiou	in Korea in 2007. The individuals who died were a 32-year-old male and a 45-year-old
	female, and considerable news time was devoted to the deaths, because of their novelty.
Key findings	Following the media reporting, there were three further cases in the same region of Korea
	in 2007, and an additional four in the same season in 2008.
Interpretation	Some evidence to suggest negative influence of media
Investigators	Lee, Chan and Lee et al (2002); Chan, Lee and Yip (2003)
Study type	Descriptive study
Country	Hong Kong
Dependent variable	Completed suicide
Method	Examined the rate of suicide by charcoal burning following the first case (a 35-year-old
	woman) in 1998, whose death was widely and graphically reported in the media.
Key findings	In the subsequent month, there were nine more deaths by this method, and within a year
. •	charcoal burning had become the most common method of suicide in Hong Kong
Interpretation	Some evidence to suggest negative influence of media
Investigators	Martin and Koo (1997)
Study type	Analytical study: Ecological
Country	Australia
Dependent variable	Completed suicide
Method	Considered the relationship between the widespread reporting of Kurt Cobain's death (5
	· · · · · · · · · · · · · · · · · · ·
	April 1994) and the number of suicides in Australia by people aged 15–24 in the following

	five years).
Key findings	Suicide rates in month in which Kurt Cobain's death was reported in 1994 for 15–24 year
.,	olds were significantly lower than for the corresponding months in previous years.
Interpretation	No evidence to suggest negative influence of media
Investigators	Mercy, Kresnow and O'Carrol et al (2001)
Study type	Analytical study: Individual-level
Country	United States
Dependent variable	Attempted suicide
Method	Case-control study in which investigators interviewed 153 people aged 13-34 who had
	made nearly-lethal suicide attempts and a random sample of 513 controls about a range of
	exposures.
Key findings	Cases were significantly less likely than controls to have been exposed to accounts of
	suicidal behaviour in the media.
Interpretation	No evidence to suggest negative influence of media
Investigators	Pirkis, Burgess and Francis et al (2006)
Study type	Analytical study: Ecological
Country	Australia
Dependent variable	Completed suicide
Method	Constructed a dataset of 4635 suicide-related items appearing in Australian newspapers
	and on radio and television news and current affairs shows between March 2000 and
	February 2001. Linked this to national data on completed suicides occurring during the
	same 12 months, by a process that involved identifying the date and geographical reach of
	the media items and determining the number of suicides occurring in the same location in
Var. Carllians	selected weeks pre- and post- each item.
Key findings	39% of media items were followed by an increase in male suicides, and that 31% were followed by an increase in famale suicides (but that similar proportions were followed by
	followed by an increase in female suicides (but that similar proportions were followed by no change or decreases in male and female suicides). Media items were more likely to be
	associated with increases in both male and female suicides if they occurred alongside
	multiple other reports on suicide (rather than occurring in isolation), if they appeared on
	television (instead of than on radio or in newspapers), and if they were about completed
	suicide (as opposed to attempted suicide or suicidal ideation).
Interpretation	Some evidence to suggest negative influence of media
Investigators	Stack (1983)
Study type	Analytical study: Ecological
Country	United States
Dependent variable	Completed suicide
Method	Examined the monthly suicide rate in the United States between January 1977 and June
	1980, the period around the Jonestown mass suicide in Guyana (November–December
	1978). Controlled for unemployment and divorce in regression model.
Key findings	No significant increase in national suicide rate in months of reporting of Jonestown event.
Interpretation	No evidence to suggest negative influence of media
Investigators	Zahl and Hawton (2004)
Study type	Descriptive study
Country	United Kingdom
Dependent variable	Attempted suicide
Method	Interviewed 12 young people (aged 17-25) who had recently engaged in an episode of self-
	harm about the influence of media stories (both news reports and fictional depictions) on
	their actions.
Key findings	The majority reported some effect of at least one story presented in the media, and four
	reported that the story had been a catalyst in their own self-harm.
Interpretation	Some evidence to suggest negative influence of media