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Research Letter

Copycat effect after celebrity suicides: results from the French national death register

Introduction

Media coverage following the suicide of an anonymous person or a celebrity has been described to entail a significant increase in the number of suicides (Phillips, 1974). Recent reviews (Pirkis *et al.* 2001; Gould *et al.* 2005) and a meta-analysis (Stack, 2000, 2005) showed that contagion is likely to occur after heavy media coverage with a content rich in positive definitions of suicide. This phenomenon has been reported in several countries after the suicide of a single personality (Jonas, 1992; Sonneck *et al.* 1994; Hassan, 1995; Tousignant *et al.* 2005; Cheng *et al.* 2007; Fu & Yip, 2009; Chen *et al.* 2010) but has never been systematically assessed and described. The identification of early potential trigger events, however, could be useful to improve existing recommendations to the media.

Our objective was to study the suicide copycat effect following the most famous celebrity suicides in France between 1979 and 2006.

Method

Data

We obtained daily data on suicide deaths from 1 January 1979 to 31 December 2006, with sex, age group and lethal means from the French exhaustive death register (CépiDc – Inserm; France). Suicide means were recorded according to the International Classification of Diseases (ICD)-9 (from 1979 to 1999) and ICD-10 (from 2000 onwards).

Celebrity suicides

A list of celebrity suicides was built from Wikipedia (2010*a*). It included 80 celebrities. Those whose name appeared at least 100 000 times in pages indexed in French of a web search engine (Google) were selected. Six celebrities were selected : Soeur Sourire (singer), Dalida (singer), Pierre Bérégovoy (politician), Kurt Cobain (singer), Gilles Deleuze (philosopher) and Nino Ferrer (singer).

Control group

We selected celebrities who died from other violent deaths (transport accident or murder). The list was also built using Wikipedia (2010*b, c*). As previously, celebrities whose name appeared at least 100 000 times in Google pages indexed in French were selected. Seven celebrities were selected : Aaliyah, Notorious B.I.G., Tupac Shakur, Coluche, Marvin Gaye, Grace Kelly and John Lennon.

Statistical analysis

Daily counts of suicide deaths were aggregated into periods of 30 days (or 31 days, depending on the current months involved in the period) in order to capture any delayed effect due to media stimuli (Martin & Koo, 1997; Maris, 2002). Each period was defined from the day after the announcement of the celebrity death. Each of the resulting time series was analysed separately, using seasonal autoregressive integrated moving average (SARIMA) models (Box & Jenkins, 1994; Goh & Law, 2002). The resulting estimates can be interpreted as the estimated number of suicide deaths due to the celebrity death in the period following the announcement. Further analyses were stratified by sex, age groups, and suicide methods. Analyses were conducted using SAS PROC ARIMA 9.1 (SAS Institute, USA).

Table 1. *Estimated increase in number of suicide deaths in the month following each celebrity death announcement, based on estimated SARIMA models, France 1979–2006*

Name (age at death, method of suicide)		Total	Sex		Age, years					Same suicide method
			Men	Women	15–29	30–44	45–59	60–74	≥75	
Pierre Bérégovoy (67 years, firearm)	Estimate	187.4	140.8	48.4	57.4	74.1	27.9	27.8	2.6	68.85
	Increase, %	17.6	18.3	16.7	37.6	24.5	11.8	13.5	1.6	26.5
	p	<0.01	<0.01	0.01	<0.01	<0.01	0.11	0.07	0.85	<0.01
Kurt Cobain (27 years, firearm)	Estimate	118.9	80.5	36.3	35.0	60.7	15.7	7.2	1.0	83.43
	Increase, %	11.7	10.8	13.5	23.8	21.2	7.0	3.5	0.7	33.8
	p	0.01	0.05	0.05	0.01	<0.01	0.40	0.62	0.94	<0.01
Dalida (54 years, ingested poisons)	Estimate	55.2	39.3	17.9	−6.9	5.3	59.0	−14.6	13.3	21.70
	Increase, %	5.0	5.0	5.7	−4.5	1.9	23.5	−6.6	6.9	15.6
	p	0.22	0.28	0.32	0.60	0.77	<0.01	0.32	0.34	0.07
Soeur Sourire (51 years, ingested poisons)	Estimate	72.5	39.9	35.5	14.4	22.7	25.2	21.3	−5.1	21.3
	Increase, %	6.7	5.1	11.9	8.7	9.2	9.7	9.7	−3.0	16.6
	p	0.11	0.28	0.04	0.27	0.21	0.15	0.17	0.71	0.09
Gilles Deleuze (70 years, jumping from a height)	Estimate	8.7	8.4	0.9	13.4	14.9	−15.7	−10.1	6.8	7.59
	Increase, %	1.0	1.3	0.4	10.3	5.8	−7.3	−5.8	5.1	14.5
	p	0.84	0.81	0.96	0.31	0.40	0.36	0.50	0.63	0.35
Nino Ferrer (63 years, firearm)	Estimate	−30.2	−19.7	−10.6	4.9	−15.0	−13.5	−14.5	7.1	3.12
	Increase, %	−3.3	−2.9	−4.4	4.4	−5.9	−6.0	−8.4	4.8	1.6
	p	0.51	0.59	0.57	0.70	0.40	0.43	0.33	0.64	0.85

SARIMA, Seasonal autoregressive integrated moving average.

Results

A total of 314 493 suicides were recorded, with a mean number per month of 936. The sex ratio was 2.6 men for every one woman and 51% were aged from 30 to 59 years. The most common methods were hanging, strangulation or suffocation (39.4%) and firearms or explosives (21.3%).

Only the Bérégovoy and Kurt Cobain suicides had a significant effect on the number of suicides. Bérégovoy's suicide was followed by an excess of 187 suicide deaths in the following month (+17.6%). Those at higher risk were aged ≤45 years. We found an excess of 119 suicides in the month following Kurt Cobain's suicide (+11.7%). The effect was stronger among subjects aged ≤45 years. The number of suicide deaths by firearms or explosives was significantly increased for these two celebrities (+26% and +34%, respectively). No significant increase was found for other means.

The Dalida and Soeur Sourire suicides had no significant impact on the number of suicides except among people aged between 45 and 59 years for Dalida (+23%) and among women for Soeur Sourire (+11.9%). We found no significant effect after the Nino Ferrer and Gilles Deleuze suicides (Table 1).

No increase in suicides was found after the deaths of the seven celebrities who were selected as controls, except after Coluche's death in the 15–24 and 60–74 years subgroups.

Discussion

An effect was found after the suicides of the three singers (Dalida, Soeur Sourire and Kurt Cobain), a result consistent with literature findings. Stack (2005) explains the phenomenon by the great influence that entertainment stars exert on populations. They are strong models with a high media profile, they belong to an elite, and are symbols of success and talent; at the same time, their private lives are often unveiled in the newspapers, which allows the audience to compare themselves with them. Kurt Cobain was worshipped by his fans and was known to suffer from depression and addiction, and to have a troubled family life. He was the icon of the 'lost generation', and could have strongly encouraged imitation, especially in young people. Similarly, Dalida was perceived as a modest woman, scarred by life. The public knew her troubles, and could identify with her. Soeur Sourire was also perceived as belonging to the common people: she suffered from alcohol dependence, was rejected by the entire Catholic community, especially as she was speaking openly in favour of contraception, and was pursued by tax officials. These are characteristics that may have encouraged the public to identify with her.

The impact of Bérégovoy's death is also concordant with Stack's conclusions suggesting that politicians' suicides have a strong impact on the population. His background as a blue-collar worker contrasted with the political elite and made him a plausible model. By contrast, data did not point to any effect after the deaths of Gilles Deleuze and Nino Ferrer. Gilles Deleuze's suicide was caused by pain due to the terminal phase of a disease and Nino Ferrer committed suicide 13 years after the release of his main hits, as he was relatively old. This could explain the absence of any copycat effect.

To discuss these results, we explored some French media coverage of these events: three of the main French newspapers – *Le Figaro*, *Le Monde* and *Libération*; three of the main French television (TV) channels – Antenne 2, FR3, M6; and one major rock magazine – *Rock & Folk*.

We found evidence of strong media coverage after Pierre Bérégovoy's suicide. Similarly, Dalida's suicide was followed by multiple tributes. In both cases, the media were very quick to react. Kurt Cobain's suicide was mentioned in the media we studied, without extensive coverage. We were more surprised by the impact of Soeur Sourire's suicide. Indeed, at the time of her death, she was not as famous as she used to be at the time of her song 'Dominique', some 40 years before. The media devoted little space to her death. Nino Ferrer and Gilles Deleuze were little in the eye of the media at the end of their lives, and so perhaps unsurprisingly their deaths were not much covered in the media.

We also found that, in most cases, the official guidelines relating to reporting of suicides in the media (WHO, 2008) were not followed. The style was emotive, the victim glorified, and the reasons for the suicide often oversimplified.

In the printed press, Bérégovoy was presented as a sacrificial victim of politics. It was often postulated that he committed suicide in the belief that his death would restore his dignity. TV preferred the testimony of relatives and citizens, giving a pathetic tone to the report. For Dalida, the terms used in the printed press and TV were also mostly emotive, and very partial reasons for her suicide were given (loneliness). The mental disorders she was suffering from were never mentioned. Finally, the suicide method was described in detail. Again, TV reports were mostly man-on-the-street interviews reflecting the people's grief. When Kurt Cobain's suicide made the headlines of the national and specialized press, the method of his suicide was also detailed, but so was his psychological distress. The tone was respectful, and the ambivalence of the character was well described. TV reports were less ambiguous: they focused on the place and the method of suicide, and described Cobain as representative of an entire generation, called the 'crisis and AIDS generation'.

Among the limitations, it should be emphasized that some of our results could be due to confounding factors (i.e. events that occurred at the same time as the celebrity deaths). For instance, Nino Ferrer died on 13 August 1998, only 1 month after France won the Football World Cup Final. This event could in part explain the absence of a copycat effect after Nino Ferrer's suicide.

The celebrity lists were drawn from Wikipedia, as it proved to present the most complete and exhaustive lists available. The choice of a web search engine for further selection could be criticized: this is a young medium, and is not a very reliable way to assess the fame of a person at the time of his/her death. However, the selected celebrities committed suicide between 1982 and 1995 and our criteria did not lead to the selection of the most recent suicides.

Declaration of Interest

None.

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