

# Impact of the Germanwings plane crash on mental illness stigma: results from two population surveys in Germany before and after the incident

The Germanwings plane crash on March 24, 2015 and its wide international media coverage have prompted concerns about a possible setback in fighting mental illness stigma (1).

The influence of media coverage on mental health related attitudes has been repeatedly demonstrated (2,3). There is reason to expect that the presumed murder-suicide of the co-pilot, killing 150 persons and being linked to a diagnosis of depression, has increased perceptions of dangerousness, unpredictability, fear, anger and desire for social distance from persons with serious mental illness. In fact, a series of population surveys conducted in Germany in 1990 and 1991 before and after violent attacks on two politicians by persons with psychotic disorders demonstrated a considerable increase of stigma after the attacks. The proportion of the population being unwilling to sublet a room to a person with schizophrenia, for example, increased by 24% (4).

Using data from two consecutive representative online surveys in Germany before and after the plane crash, we examined whether and to what extent attitudes towards persons with mental illness did worsen after the incident in March 2015.

Two surveys were conducted among persons >15 years old from an established market research panel in Germany. The first survey in November 2014 was part of a survey experiment, from which we use a “no intervention” control group for the present analysis (N=598); the second survey in May 2015 was an identical replication of that condition (N=806). Quota sampling yielded two independent samples representative for the general population with respect to age, gender and region.

Respondents were randomly presented a case history of a woman, Anne, suffering from either depression or schizophrenia, without mentioning of the diagnosis (5). Afterwards, they answered questions on perceived dangerousness, blame, continuity beliefs, emotional reactions, support for structural discrimination, and desire for social distance. Responses were recorded on five-point Likert scales, which we combined into three categories: agree or likely, undecided, disagree or unlikely.

We then calculated multinomial logit regression models for all items, comparing the predicted probability for choosing each category between surveys. Analyses controlled for type of vignette, respondents' gender, age, and years of education. To establish significance, we computed 95% confidence intervals (CI) for the predicted difference between surveys with the delta method. We multiplied

probabilities by 100, so they can be read as percentages endorsing each category. All analyses were conducted using STATA, version 13.

Two items showed significant differences between surveys. After the plane crash, 24% of respondents regarded Anne as unpredictable, compared to 17% before the incident (change in predicted probability: 7%, CI: 3 to 11). On the other hand, 22% compared to 27% endorsed the statement “To some extent, most people will experience problems that are similar to those of Anne” (-5%, CI: -10 to 0). Agreement to other items related to dangerousness increased by smaller and not significant amounts: “Anne is a danger to other people” by 3% (CI: 0 to 6); “Anne is a danger to herself” by 5% (CI: -1 to 11).

Emotional reactions like fear, anger or sympathy, support for restrictions like compulsory treatment or withdrawal of the driving license, and desire for social distance (move next door, spend an evening socializing, make friends, work closely on a job, marry into family) did not differ significantly between surveys (changes in predicted probability: -2% to 3%).

An analysis of interaction effects for type of disorder did not show significant interactions, suggesting that the observed changes were not illness specific.

These results suggest that the plane crash did have a measurable impact on public attitudes towards persons with mental disorder. Increased perceptions of unpredictability and reduced notions of similarity between a person with mental illness and most other persons seem to be related to the flight incident and the suspected murder-suicide of the co-pilot. However, considering the horrible facts that have been made public about the incident, its broad media coverage and its frequent explicit linking to a mental disorder of the co-pilot, the observed changes were surprisingly small. In particular, emotional reactions towards a person with mental illness did not change, and the desire for social distance did not increase. It seems as if the public has largely resisted the impulse of generalizing negative stereotypes and reactions to all persons suffering from mental illness.

Probably, the intensity of attitude changes would have been stronger if elicited with regard to a person resembling more closely the co-pilot, for example depicting a young male person or even a pilot of a passenger airplane with mental illness. Still, our data suggest that it might be premature to complain about a general “resurgence” of mental illness stigma after the plane crash (6).

A limitation of our study is its restriction to an online sample. Online samples are usually better educated than

the general population, and the online population was presumably exposed to even stronger media coverage of the plane crash. While we did control all analyses reported here for educational achievement, we did not record the amount and type of media consumption of our samples.

Combating public stigma of mental illness has been proven a difficult task (7). In contrast to the early 1990s (4), media reporting of a single, extremely disturbing incident seems not to have caused a large scale shift in public attitudes, suggesting that the public may have become more resistant to negative generalizations about mental illness.

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