

Perspectives

Preventing plane-assisted suicides through the lessons of research on homicide and suicide–homicide

Rice TR, Sher L. Preventing plane-assisted suicides through the lessons of research on homicide and suicide–homicide.

Objective: The Germanwings 9525 incident drew significant attention to the ‘plane-assisted suicide’ construct, yet little scientific literature exists on this topic. This paper reviews the available literature and applies lessons from the suicide-homicide and men’s mental health literature to better understand this construct from a scientific perspective.

Methods: A systematic review of the relevant clinical literature was undertaken.

Results: Multiple lines of evidence suggests the applicability and relevance of suicide-homicide research and men’s mental health to the plane-assisted suicide phenomenon. Plane-assisted suicides occur within an overwhelmingly male, middle aged population who, in addition to suicide, commit large scale acts of murder. Issues of divorce, separation, and threats to masculinity appear integral to an effective prevention program.

Conclusion: Further research in the understanding of plane-assisted suicide as a product of neuropsychiatric disorder may advance such prevention efforts and have the opportunity to reduce the loss of life in future tragedies.

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Summations

- Homicide and suicide–homicide research can inform prevention strategies for incidents where pilots kill themselves, passengers, and individuals on the ground through intentionally crashing a plane.
- Findings from the new field of men’s mental health can further inform prevention models in an industry where the vast majority of pilots are middle-aged men.
- Understanding ‘plane-assisted suicides’ as the tragic product of neuropsychiatric disorders and associated factors enables psychiatrists and mental healthcare practitioners to contribute to efforts towards their prevention.

Perspectives

- At present, programmes including the United States Air Force and the Australian Civil Aviation Safety Authority allow pilots with a history of suicidal behaviour to fly once the underlying psychiatric condition is controlled. As previous suicidal behaviour is the greatest predictor of future suicidal behaviour and suicide, these programmes may sub-optimally address risk.
- These programmes may benefit from specification to the risk factors unique to plane-assisted suicide, which emerge through comparisons in the homicide and homicide–suicide literature. Findings from the new field of men’s mental health can further inform prevention models in an industry where the vast majority of pilots are middle-aged men.

Preventing plane-assisted suicides through the lessons of homicide research

A recent plane crash: plane-assisted suicide or suicide–homicide?

‘Plane-assisted suicide’ is a new term in the media to denote the intentional act of a pilot involving an aircraft with the aim to kill both him or herself and the additional aircraft passengers as well as cause collateral ground damage. Although the suicidal element of this act is clear in the term, the homicidal element is disguised or ignored. It may indeed cause undue distress among the public to think that pilots may be homicidal.

Yet, a cautious look at the homicidal element of ‘plane-assisted suicide’ can allow the mental health provider to use the wisdom of homicide prevention in individuals with psychiatric disturbances in order to prevent further tragic incidents and their collateral damage. The goal of this communication is to consider the possible roles that psychiatrists and other mental and non-mental healthcare providers may play in prevention, and to suggest that the lessons of homicide prevention may be productively applied to this phenomenon.

Plane-assisted suicide: a rare event

In the prevention literature, it is abundantly clear that the prediction of rare events is challenging (1,2). Plane-assisted suicides are indeed rare; outside of terrorism, only a handful of instances of passenger aircraft in commercial flying have occurred.

These instances include that of Japan Airlines Flight 350 in 1982, Royal Air Maroc Flight 630 in 1994, Silk Air Flight MI 185 in 1997, EgyptAir Flight 990 in 1999, LAM Mozambique Airlines Flight 47 in 2013, and the recent Germanwings Flight 9525 incident (3). There are also a handful of non-commercial flight plane-assisted suicides within general aviation operations: these comprise approximately 0.33% of all fatal aircraft accidents – a percentage that is consistent among the United States, the United Kingdom, and Germany (4). There is some controversy whether all of the above commercial instances were in fact suicides; in the case of the Silk Air Flight MI 185 in 1997 and the EgyptAir Flight 990 in 1999, significant international disputes have arisen concerning the classification of the incidents.

The missing plane of 2014, Malaysia Airlines Flight 370, may also have been a plane-assisted suicide. There are reports of risk factors for suicide in the pilot, including acute family and relationship stressors (5). There is also speculation that the unusual flight may have been implemented to deprive passengers of oxygen and to enjoy a final

‘joy ride’ for a pilot who habitually spent hours immersed in fantasy aviation simulation (6).

Are plane-assisted suicides similar to other homicide–suicides?

To be able to apply the lessons of suicide–homicide research in order to overcome the challenges presented by the rarity of these events, we must ask whether plane-assisted suicides are indeed similar to ‘regular’ suicide–homicides. An example of such a regular suicide–homicide is when a man kills his wife and himself. If we can confirm that these incidents are indeed similar, research data on ‘regular’ suicide–homicides may be used to study and to prevent plane-assisted suicides. To determine whether these events are similar, we should consider what makes a suicide–homicide distinct and determine whether the characteristics of plane-assisted suicide fit this distinction.

Homicide–suicides are distinguishable from both homicides and suicides (7). Individuals who commit homicide–suicide are more likely to be male and of an older cohort than individuals who commit simple homicides or suicides. They are predominantly middle-aged men and are more likely to be married to or to be separated from their victims than simple homicide perpetrators (7).

These facts have special importance for the aviation industry, where the majority of pilots are middle-aged (average age 45.4 years in the United States) men: only 6911 of 108206 American commercial pilots are women (6%; 8). In the United Kingdom, about 200 of the 3500 pilots employed by British Airways are women (6%); globally, the percentage is less, where around 3% of airline pilots are women (9).

Thus, demographically, the high percentage of middle-aged men in the aviation industry – and the consistent appearance of this demographic characteristic within the small handful of plane-assisted suicides – supports the notion that plane-assisted suicides can be reliably compared with suicide–homicides. Thus, there is reason to believe that the accumulated body of knowledge regarding suicide–homicides may apply to plane-assisted suicides.

The role of divorce, separation, and masculinity

To understand suicide–homicides, it is especially important to consider the role of divorce and separation. Divorce and separation are very significant risk factors for homicide–suicide among men (10).

For example, in the handful of plane-assisted suicides, this factor appears quite frequently. It is reported that the cockpit voice recorder of the Royal Air Maroc Flight 630 recorded a ‘lovers’ quarrel’

between the pilot and his female co-pilot shortly before the crash (11). In another incident in 1976 in Russia when a pilot intentionally crashed a small passenger plane An-2 (without passengers or a co-pilot on board) into an apartment complex where his ex-wife lived, killing several people including himself (12), it was reported that this pilot had a history of traumatic brain injury. A very similar incident related to a conflict with a wife took place in 1972 in Ukraine when a pilot crashed an An-2 (without passengers or a co-pilot on board) into an apartment building where he lived with his family (15); no one was killed besides the pilot.

It is likely that the 1976 pilot knew about the 1972 incident. This also raises the following question: can a plane-assisted suicide increase a probability of future plane-assisted suicides?

Understanding the role of intimate partner discord may have special relevance in relationship to the speculations surrounding Malaysia Airlines Flight 370 as well. Understanding divorce, separation, and masculinity as important factors may have importance in the creation of effective screening and prevention programmes, which may benefit from specifically screening for legal histories of domestic violence, self-reported intimate relationship disturbances, or other markers of intimate partner discord.

Psychiatric illness, psychotropic medications, or both?

Another important factor to consider is the role of psychiatric illness (e.g. depression) and psychotropic medications (e.g. selective serotonin-re-uptake inhibitors). Perpetrators who commit homicide-suicide frequently have substance-use disorders and/or depression (5), and this may indeed be the case in plane-assisted suicides. In addition, pilots on antidepressants are problematic not only because they may be depressed but also because the potential effects of antidepressants on pilots (e.g., judgment) are inadequately studied.

For example, selective serotonin-re-uptake inhibitors (SSRIs) are frequently prescribed for treating depression. Aviation regulatory authorities have been reluctant to allow the use of SSRIs by pilots simply because SSRIs are psychotropic drugs (13,14). These drugs have the potential to affect the central nervous system, and thus might impair performance and compromise aviation safety. Owing to the pharmacological potencies and drug metabolism inhibitory properties of SSRIs and their metabolites, SSRIs may adversely affect the brain function and cause drug-drug interactions (11,12). Side-effects of SSRI and other antidepressants include nervousness, agitation, restlessness, dizziness, and drowsiness (15). It is of interest to note that the question whether or not

SSRIs are safe for drivers has been raised in the psychiatric literature (16).

Should pilots with a history of depression or suicidality fly?

Previous behaviour is the best predictor of a future behaviour, and this is a key maxim of any suicide-prevention programme (2). Yet, at present, programmes including the United States Air Force and the Australian Civil Aviation Safety Authority allow pilots with a history of suicidal behaviour to fly once the underlying psychiatric condition has been controlled (4). To the best of our knowledge, there are also no limitations on allowing pilots to fly with any history of domestic violence or homicidal behaviour. It is important to note that a history of violent behaviour is associated with both suicide and homicide (17,18).

What can be done to protect air passengers as well as pilots? Lowering barriers to care is one non-controversial and effective means to promote prevention (19), a truth that has been demonstrated among aviators in a United States Air Force prevention programme (20). Helping pilots to seek support and mental health care when taxed by relationship issues may be a non-stigmatising means towards prevention. An emphasis on dimensional taxonomies of mental illness may further help men to seek care for sub-clinical but nonetheless risk-promoting symptomatology.

Possible future clinical and research directions

The development of the field of men's mental health (21), in particular in homicide-prevention efforts within men with psychiatric conditions (22), may be particularly relevant. As the vast majority of pilots are men, therapeutic interventions that have been tailored to improve male treatment acceptability and that are sensitive to issues of masculinity and self-esteem may be crucial to prevent additional plane-assisted suicides (13).

Thus, comparison with other homicide-suicides about which a more extensive literature exists, such as in intentional car accidents, is promising (23). Applying the lessons of this literature to plane-assisted suicide may be productive – for example, the role of media publicity of plane-assisted suicide vis-a-vis copy-cat suicides or suicide-homicide incidents may be productive: can publicity surrounding the recent 'plane-assisted suicide' encourage more 'plane-assisted suicides' (24)? How might media coverage best promote help-seeking and presentation of individuals at risk (25)? In addition, as we have stated, as most commercial pilots are men, lessons from research in violence- and homicide-preventative efforts in

men's mental health are also relevant. Psychiatrists and mental and non-mental healthcare professionals should not shy away from the topic of plane-assisted suicide: their application of the knowledge of suicide–homicide research may prevent further tragic incidents.

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