

PSYCHOSOCIAL FACTORS IN MOTOR VEHICLE ACCIDENTS (INCIDENTS)

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Abstract

Motor vehicle incidents (MVIs) cause more death and injury than wars, acts of terrorism, and disasters put together. Their major cause now is human error. This clinical study separates victims and causers of MVIs, and describes different categories in each group. The clinical distinctions provide the potential for new approaches to MVI victim treatment, and through better understanding of human error, of MVI prevention.

KEY WORDS: Motor vehicle accidents; motor car accidents; motor vehicle incidents; post-traumatic stress disorder; perpetrators; vulnerability

INTRODUCTION

Motor vehicle accidents or motor vehicle incidents (MVI's) as I prefer to call them (see below), are a major source of death and suffering in our communities. MVIs cause more death and injury than wars, acts of terrorism, and disasters put together, and they are the leading cause of PTSD in the general population (Blanchard & Hicklin, 1997). Though measures such as better roads, sturdier cars, seat belts, air bags, and speed and drink driving legislation have diminished MVI mortality and morbidity, both are still outrageously high. MVIs are now thought to be mainly due to human error. Anything that may increase understanding of human error and diminish it must be most welcome.

Most current MVI studies involve PTSD. They show that only 15-33% of those involved in MVIs develop PTSD after the event (e.g., Ehlers, Mayou and Bryant, 1998). This does not mean that the rest are symptom-free. For instance, Schnyder & Buddeberg (1996) and Blaszczynski, Gordon, Silove, Sloane & Panasetis (1998) found distressing symptoms post-MVI ranging over many diagnoses.

Among traumatic situations MVIs are unique in that traumas are caused by humans, yet victim and causer status is often clinically ignored. This may be because determination of fault is seen as a legal, not a clinical matter. Yet causers and victims may have different clinical histories. (I use the term causer rather than perpetrator, to avoid the implication of conscious intent.) Though causer and victim clinical histories are generally not distinguished, a number of studies have explored precedents that could contribute to understanding 'human error' in MVIs.

Easily measurable precursors of MVIs, such as age, speed and blood alcohol levels have dominated the literature. Youth, high speed and high blood alcohol levels have been found common in a significant albeit minority group of young male sociopathic alcoholics (e.g., Wells-Parker, Cosby & Landrum, 1986; NYS Governor's Traffic Safety Committee, 2000).

Other psychosocial groups have recently been identified to be predisposed to MVIs. They included those with low education (Murray, 1998), those with previous personality and emotional problems including depressions (Blanchard, Hickling, Taylor & Loos, 1995; Ehlers, Mayou & Bryant, 1998; Norris, Matthews & Riad, 2000), those exposed to stresses such as war (Richter, 1991), and those experiencing individual turmoils, as in relationships and work (Simon & Corbett, 1996).

Stress factors may be funneled into emotional end plates immediately preceding incidents. The emotions were anger (including road rage), hurt, anxiety, blow to self-esteem and depression (Chan, 1987; NYS Governor's Traffic Safety Committee, 2000).

MVI's could also be covert suicidal acts. Isherwood, Adam and Hornblow (1982) found that 10% of vehicle impact patients in an emergency department, though not formally depressed, had pre-MVI suicidal intentions. In a prospective study, many young people who had been in a crash subsequently committed suicide, often by other means (Grossman, Soderberg & Rivara, 1993). In a Finnish study, six per cent of driver fatalities were classified as suicides mainly in people stressed by life events, who had secondarily consumed alcohol (Ohberg, Penttila & Lonnqvist, 1997).

Though alcohol is frequently cited as a cause of accidents, alcohol consumption may only be secondary to less measurable and more subtle psychosocial factors. In this context, Donovan,

Marlatt, and Salzburg (1983) noted that underlying personality, stress and emotions were more important predictors of MVI's than alcohol levels.

These latter studies point to the possibility that an important proportion of those involved in MVIs may have contributed to them, alongside significant personal and emotional upheavals. It is for this reason that I agree with Stewart and Lord (2002; 2003) in eschewing the generic term motor vehicle 'accident'. However, I prefer the term 'motor vehicle incident' to their 'motor vehicle crashes', as not all motor vehicle incidents are crashes (e.g. case 1 below). Blanchard, Hickling and Kuhn (2003) object to deleting the term accident, implying conscious intent to MVIs. However, as we know in traumatology, and as will become clear from the cases below, intent ranges across all shades of grey from conscious to unconscious.

In order to determine what disorders other than PTSD may be involved in MVIs, and to determine possibly different clinical scenarios among victim and causer groups, it was decided to go back to first principles (Valent, 1998; McFarlane, 2000) and explore *de novo* clinical pre-traumatic, traumatic, and post-traumatic features of MVIs.

There is a surprising scarcity of such basic clinical exploration. The reason may be that MVIs have generally not been conceptualized as symptoms in a process of a possible variety of precedents, and a possible variety of consequences. The literature over many decades has concentrated on whether MVI victims seeking compensation were really suffering or were malingering.

METHOD

The method was consistent with a pilot clinical study, in which an individual clinician appraises clinical observations into certain patterns.

The sample consisted of three groups of patients seen by the author in his private psychiatric practice. A group of 65 patients had been referred in a one year period of study, either because they were suffering symptoms as a consequence of MVIs, or had been referred for other reasons, but had been involved in an MVI within a year prior to referral. A further group of 17 patients were referred over the same period plus over two prior years, due to concerns that their near misses and fantasies involving vehicles posed suicidal risks.

All the subjects had full psychiatric clinical assessments using initially non-structured and later semi-structured interviews. The following were explored in each case: gender, age, marital status, educational level and occupation; family history, personal history, history of previous psychiatric and psychological problems, previous personality, and current problems; family history of MVIs, past personal traumas including MVIs, other prior vulnerabilities, recent psychosocial stresses and emotional states just prior to MVIs or threatened MVIs; features of such MVIs, whether self- or other-inflicted, nature of perceived and actual threat, alcohol intake, and mental state at the time of the incident; progress and symptoms since the incident, legal proceedings, and treatment and its efficacy since the incident.

In many cases family, medical and legal corroboration were obtained. Assessment interviews were over one to three one hour sessions, but many patients were or became well known to the interviewer while in treatment with him over more prolonged periods. All these factors were tabulated and marked with YES/NO or 1-5 pluses as appropriate. More exact psychometric tests were not used.

RESULTS

The sample was a heterogeneous convenience sample subjected to clinical rather than empirical and statistical criteria. Therefore only clinical anecdotes and impressions will be conveyed from the study.

Only one MVI was due to external conditions. This was a blown tire. The other MVIs were due to human errors.

Two broad clinical pictures emerged, one for victims of MVIs, the other for causers of MVIs. These will now be described.

Victims

Forty victims (though four contributed in a minor way to their MVIs) were found, all from among those assessed during the year of the study. Many were referred for assessment in their legal compensation cases.

There were two evenly divided clinical groups of victims. 20 MVI patients were victims in objectively severe MVIs in which they felt that they were going to die. They had severe unabated MVI related symptoms from the time of the event. 8 of the 20 subjects suffered clinical PTSD. The other 12 fitted this clinical cluster, though they fell short of the full diagnostic criteria for PTSD. This group tended to be relatively older, married, employed, with relatively stable family and current histories.

Comorbid intermittent anxiety and depressive symptoms were common in this group. Loss of consciousness in the collision in 7 subjects did not protect them from post-traumatic symptoms, as has sometimes been claimed. Rather, their symptoms were more severe for what they did remember. In 5 cases symptoms of previous traumas (Holocaust, combat and rape) resurged secondarily, and variably compounded with symptoms from the current incident. The following case is one of typical uncomplicated PTSD.

Case 1: A 28 year old tram conductor had his ticket bag caught in the handle of a passing car while he was changing a tram pole. He remembered his head pounding against the tram. He woke an hour later in hospital, feeling "totally out of control". He heard doctors discussing his grave prognosis.

Over the many months, he kept reliving the incident, in all its various details, in intrusive images, dreams, and eruptions of emotion. At other times he was numb and withdrawn. His personality changed. The legal process triggered and aggravated painful responses.

The other 20 victims comprised younger, more vulnerable individuals. Most had a specific vulnerability as well which was exposed by the MVI. Even an objectively minor incident could be symbolically important and re-expose earlier major stress situations. Past vulnerabilities stemmed from MVIs only in a few cases. More common were early severe illnesses and non-MVI injuries that had severely affected body security and self-image. The current MVI could shatter fragile defenses and return subjects to their prior vulnerable states.

These subjects did not suffer PTSD, but a variety of acute stress responses and a range of adjustment, mood, anxiety, somatoform and personality disorders.

Case 2. A 28 year old motor mechanic had been a frail irritable asthmatic child, overprotected by his mother. He compensated for his vulnerability by immersion in body building, athletic achievements, and physical type work. An MVI threatening little danger to life led to a slight leg disability, but sufficient to interfere with sport and work. Excessive rumination about the incident led to regression to being once more a child-like, dependent, irritable, person, hypochondriacally worried about his breathing and heart.

Causers

A group of 8 patients fitted the subset of young male antisocial alcoholics described in the literature as MVI causers (Wells-Parker, Cosby & Landrum, 1986; NYS Governor's Traffic Safety Committee, 2000). All in this group were young males under the influence of alcohol at the time of the MVIs that they caused. Each subject's behavior on roads reflected antisocial behaviors in other areas. The incidents, like their other actions, caused the causers neither regrets nor subsequent post-traumatic symptoms. This was the youngest, clinically least stable and most disturbed and vulnerable group of patients assessed.

The MVI under investigation was likely to be an impulsive acting out on the basis of intense emotion in the context of additional stress to the usual. Some in this group had caused repeated MVIs under stress.

Case 3. A 25 year old man came from an antisocial family and he followed the family pattern both of criminal offences and causing MVI's. In one of them a friend had died. The man had been a heavy drinker from the age of 15. He drank to calm his anxiety, and he drank more when especially stressed. Alcohol then released aggressive feelings for his hurts. This was the case in the current incident, which followed immediately after his girlfriend rejected him. Fear of death in incidents was never an issue, and he never dwelt on past MVIs. Nor had he any remorse for any of the incidents he had caused.

The group of 17 who caused MVIs while in treatment for other issues, and the other group of 17 who were referred as potential MVI suicidal risks, formed a heterogeneous group with generally greater family and personal problems than the victim groups, but not as great as the antisocial causers. They did not have major psychiatric disorders, but some tended to Axis II personality, and impulse control disorders. Typically, subjects' backgrounds and current conflicts came into a noxious confluence which preceded MVIs.

The striking feature in this combined group was that the MVIs were subsidiary factors in larger distressing psychosocial processes. In other words, MVIs were used to discharge emotions

pertaining to distress, acted as symbolic communications about it, or were used as calls for help, and even means of solving the distress. In that sense they were like other parasuicidal actions.

Case 4. A woman with a dependent personality had used pregnancy and overdoses to keep her husband bound to her. When she discovered her husband's infidelity, she decided reluctantly, and with mounting anxiety, that the right thing was to leave her husband. The day prior to her announced departure, she caused an MVI. She used the relatively minor physical injuries resulting from the MVI as the reason that she could not leave her husband. As well, her symptoms elicited care and remorse from him.

The following two cases demonstrate MVIs as part of discharge of intense emotions, and of symbolic communication about distress.

Case 5. A man caused a collision after he left his mother's wedding to a man his own age. He was inebriated, enraged, as well as hopeless at the time of the collision.

Case 6. A woman caused an MVI just having had an esophagoscopy. To her it symbolized a previous oral rape, and she felt highly distressed. She had caused a similar MVI two years previously after she felt that she had been prevailed on to swallow tablets against her will. At the time of both MVIs she felt anger and self-disgust.

The above patient was one of 11 who had multiple MVIs within one year. Here is another example. It also illustrates repeated MVIs communicating unresolved distress.

Case 7. A 50 year old strictly religious man had never been involved in an MVI. He had three serious ones in one year after his daughter became pregnant out of wedlock, and his own marriage became strained as a consequence. The MVIs occurred after special emotional turmoils, which evoked depressed and hopeless moods.

As in other studies, here too, anger and depression were the commonest emotions preceding MVI causation. Cases 3, 5 and 7 are examples. Anger was the emotion present in all the antisocial causers. In addition to case 3, two had fantasized buying guns before their MVIs, and one had punched his baby just before he caused the MVI.

For three of the eight young antisocial males, MVIs appeared to be almost a way of life. Even so, close inspection revealed that MVIs occurred at times of extra stress.

'Depression', even among those referred for suicidal risk, was not clinical depression but a mixture of loss of control, powerlessness and despair. Case 7 was an example. Here is another.

Case 8. A 32 year old woman was one of those referred for reckless driving and suicidal fantasies. She had already caused an MVI in which she could have been killed. She described an unhappy violent marriage which she could not bear anymore. She carried a loaded gun "to shoot my husband in

case he assaulted me again". Referring to her dangerous driving and MVI, she said, "I didn't care if I lived or died."

It is notable that a quarter of causers had suffered recent deaths of close family or friends. Unresolved acute or chronic grief may have been a factor in some MVIs.

Case 9. A man had the first car crash in his life three days after his fiancée died in an MVI.

Case 10. A 16 year old learner driver was at fault in a traffic incident soon after her birthday. Her older sister had been killed in a car crash when she was 16. In therapy it emerged that the patient had survivor guilt fantasies in relation to her sister which the MVI might have assuaged. The incident also had the effect of drawing her parents' attention to herself, away from her dead sister.

Treatment

A number of victims only wanted assessments for legal reports. Similarly, a number of antisocial MVI causers rejected help, and were seen only once or twice. However, most of the vulnerable victims, and the causers and potential causers, were seen over three to twenty sessions.

Most PTSD and post-traumatic stress patients had already received therapy prior to assessment. Five patients had received antidepressants for comorbid depressive symptoms. Most of these patients had improved, in spite of having pending court cases. Victims, whose vulnerabilities had been exposed, received help for their current as well as their past wounds by the author. Case 2 was an example. His shattered self-esteem was seen in terms of both his current and past traumas. He accepted return to work resting his leg. In time he returned to full capacity, but a little wiser about his body.

Crisis intervention type psychotherapy and grief therapy were appropriate to most MVI causers. Most patients improved, though long term underlying problems remained in many. However, not a single patient had an MVI post-intervention while under therapeutic surveillance.

DISCUSSION

It may be that the high proportion of psychopathological problems in this sample is due to the population being drawn from a psychiatric practice. On the other hand, many of the patients were involved in serious incidents, and the fact that they survived them seemed to be a matter of chance. Therefore it is wise to take at least a minimalist view- that at least some MVIs have psychosocial contributions in their causation, and at least some MVI victims have psychosocial consequences beyond PTSD.

Further, the lack of psychopathological, distress and emotional factors in other MVI studies may also be due to biases. They may include not enquiring at all for psychological factors in MVIs, or scanning only for serious mental illnesses or PTSD. Thus the sample may have given voice to otherwise silenced witnesses.

This study agrees with Schnyder & Buddeberg, (1996), and Blaszczynski, Gordon, Silove, Sloane & Panasetis (1998) that post-MVI symptoms range over many diagnoses as well as PTSD. This study adds the possibility that many of these symptoms, especially in those whose injuries are objectively minor, are due to re-exposure of old wounds and vulnerabilities. Such patients may collapse ‘Humpty-Dumpty’ style (Ford, 1978), and expose past traumatic symptoms and their subterranean radiations.

The study also confirms the importance of family and personal history, stresses and personal turmoils as contributors to MVIs (Richter, 1991; Blanchard, Hickling, Taylor & Loos, 1995; Simon & Corbett, 1996; Ehlers, Mayou & Bryant, 1998; Norris, Matthews & Riad, 2000). The study adds the possibility of unresolved griefs, and family modeling being significant factors too.

The study also agrees with the findings that anger and depression are the most frequent emotional end plates discharged in MVIs (Chan, 1987; NYS Governor’s Traffic Safety Committee, 2000). The cases in this study accord with findings in the NYS study that in 20% of MVI fatalities drivers had been in an aggressive altercation in the previous six hours, often with rejecting partners. The study also accords with findings by Isherwood, Adam and Hornblow (1982) where 10% of vehicle impact patients in an emergency department, though not formally depressed, had parasuicidal intentions relating to MVIs.

Hence it may be that in a significant proportion of cases, the human error in MVIs, and behind irrational high speed and alcohol levels, include crises and emotions that overwhelm normal logic and concentration at the time. Like guns in the drawer, or tablets in the cabinet, the ever present car is indeed a ready vehicle to impulsively express, dramatize, draw attention to, or even try to resolve conflicts.

The fact that it is qualitatively possible for MVIs to have differing psychopathological consequences and contributions has implications for both treatment and prevention.

In the treatment of victims, it is important to look for dysfunctions other than PTSD, and to tailor trauma therapy to other diagnoses as well. Therapy may need to address past vulnerabilities and traumas as well as current consequences. Practitioners should be alerted to this need especially when patients suffer symptoms out of keeping with objective injuries or threat to life.

Prevention of MVIs may be enhanced by identifying ideation of enacting MVIs. Search for such ideation should be routine in all patients suspected of self-harm or aggression, patients who have had multiple MVIs, and those whose families or close friends had MVIs. Successful prevention of MVIs in 17 subjects in this study with such ideation is potentially promising.

Public health education may enhance prevention on a larger scale. The general population could be taught to take extra care when driving during generally stressful times, such as following natural disasters, and at personally stressful times, such as after bereavements, relational upheavals, and work stresses.

Television vignettes depicting how distress, anger, depression and anxiety contribute to MVIs may raise the level of caution in the community. Education about anniversary vulnerability may alert those approaching the anniversaries of loved ones’ fatalities, or the ages when they died in MVIs.

This study is short of much information. Examples are the types of family personal history and premorbid personality that contribute to MVIs, and factors that mitigate or exacerbate symptoms post-MVI. The study requires replication with more refined samples and

instruments which could measure the validity of psychosocial consequences and contributions mooted in this study.

CONCLUSIONS

This study alerts clinicians and public health administrators to the perspective that MVIs can be associated with complex psychosocial factors. On the whole, these are different for victims and causers of MVIs. Victims suffer PTSD and post-traumatic symptoms, as well as a wide array of symptoms depending on past traumatic exposure. Causers may be young male sociopathic alcoholics, or a wide array of people under different types of stress and distress, such as relational problems or unresolved grief.

In spite of the caveats in this study, it does highlight the importance of a multidimensional clinical view of MVIs. It indicates the need to take thorough psychosocial histories of those involved in MVIs. A multidimensional clinical view can help to tailor rehabilitation and treatment strategies for victims, and prevent further MVIs among causers. As well, the cases presented here give indications of possible public health measures that may help communities to understand and prevent some of the contributors to the 'human factors' that are now widely recognized as the major causes of MVIs.

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