

The Interface



ROAD RAGE:

What's Driving It?

by Randy A. Sansone, MD, and Lori A. Sansone, MD

Psychiatry (Edgemont) 2010;7(7):14–18

This ongoing column is dedicated to the challenging clinical interface between psychiatry and primary care—two fields that are inexorably linked.

ABSTRACT

Up to one-third of community participants report being perpetrators of road rage, indicating that various forms of road rage are relatively commonplace. However, only two percent or less of incidents culminate in serious damage to persons or vehicles. The most common offenders appear to be

young and male. A number of factors may contribute to road rage, including environmental factors (e.g., greater number of miles driven per day, traffic density), nonspecific psychological factors (e.g., displaced aggression, attribution of blame to others), and bona fide Axis I and II disorders. The most common Axis I disorders appear to be related to alcohol and

substance misuse, whereas possible Axis II disorders include borderline and antisocial personality disorders. Being aware of these contributory factors to road rage may improve general clinical awareness of the nature and treatment of perpetrators.

KEY WORDS

road rage, reckless driving, alcohol abuse, drug abuse, borderline personality

INTRODUCTION

Road rage is fairly well known to most of us, either through direct experience or news reports. According to epidemiological data, about one-third of the citizenry report committing road rage at one time or another. While most of these incidents involve shouting and gesturing at other drivers, a small minority of encounters escalate to direct and damaging contact. Offenders are most often young and male. Contributory factors to road rage may include various environmental factors, psychological factors, and Axis I and II psychiatric disorders. In this installment of *The Interface*, we review these data.

ROAD RAGE: A WORKING DEFINITION

Road rage encompasses a variety of aggressive behaviors by the driver of a motor vehicle, which seem well beyond the perceived offense committed by the victim. These behaviors range from shouting, screaming, and yelling at another driver to using a weapon, including the vehicle, to incite damage to the victim or the victim's vehicle. While *road rage* is an intuitively recognized phenomenon for most of us, for research purposes, a consistent definition of the term appears to be lacking.¹ As

a working definition for this article, *road rage* may be described as a constellation of thoughts, emotions, and behaviors that occur in response to a perceived unjustified provocation while driving.² Road rage may also be defined as those driving behaviors that endanger or potentially endanger others and are accompanied by intentional acts of aggression toward others, negative emotions while driving, and risk-taking.³ Interestingly, one author⁴ has proposed that road rage be recognized as a bona fide psychological disorder and labeled as “road rage disorder.”

THE EPIDEMIOLOGY OF ROAD RAGE

Prevalence of road rage. The prevalence of road rage has undergone relatively limited examination, but data are available from several Canadian studies. According to the findings of a Canadian telephone survey of 1,395 individuals, 31.7 percent reported shouting or cursing at another driver and 2.1 percent reported threatening to hurt someone or damage a vehicle.⁵ In another Canadian study of more than 2,500 adults, the 12-month prevalence rate for admittedly shouting at another driver was 32 percent, threatening another driver 1.7 percent, and attempting to damage or actually damaging another driver's vehicle 1.0 percent.⁶ In a Canadian study of nearly 2,500 adults, researchers found that frequent road ragers accounted for five percent of participants in their sample.⁷ These data indicate that around one-third of community drivers have engaged in aggressive behavior toward another driver while on the road, but far fewer ($\leq 2\%$) actually report serious threatening behavior or damage to another person or vehicle. In

examining temporal relationships, rates for road rage appear to be fairly stable.⁸

Gender and age profiles of offenders. A number of studies have examined the epidemiological characteristics of individuals who perpetrate road rage. In a study by Smart and Mann,⁹ individuals with road rage were predominantly young (33.0 years of age on average) and male (96.6%)—findings that have been reported by other investigators.^{10,11} Being a predominantly male behavior, other investigators have found that road rage behavior may extend across all age groups with the exception of seniors.¹²

CONTRIBUTORY FACTORS TO ROAD RAGE

Environmental/nonpsychological factors. A number of environmental or nonpsychological factors may contribute to road rage incidents. These include a greater number of miles driven per day and busy roads;¹⁰ carrying a firearm;^{11,13} and traffic density.^{14,15} Other factors may include the context of anonymity as well as aggressive environmental stimuli in the form of billboards and building signs.¹⁶

General psychological factors. A number of nonspecific psychological factors may contribute to road rage, as well. These include the tendency to displace anger¹⁷ and attribute blame to others¹⁸ as well as unrewarding and stressful employment situations.^{15,19} Several authors^{15,16,20} have also underscored the role of high levels of general stress as well as the strains of modern urban living.¹⁵

Associations with Axis I disorders. Studies indicate that various Axis I disorders may contribute to road rage, particularly

alcohol^{6,7} and substance misuse, especially marijuana.^{7,21} Only one study⁹ has reported contradictory findings in this regard, concluding that there was no association between road rage and alcohol/drug misuse. As for other forms of Axis I psychiatric disturbance, Smart et al²² found that individuals with severe forms of road rage evidenced higher scores on the General Health Questionnaire, which is a screening tool for several current psychiatric disorders (i.e., anxiety, depression, somatic symptoms).

Associations with Axis II disorders. *Borderline personality disorder.* Borderline personality disorder (BPD) is an Axis II dysfunction that seems to harbor the relevant prerequisites for road rage. This disorder is characterized by impulsivity (e.g., reckless driving), intermittent intense dysphoria, inappropriate intense anger, difficulty controlling anger, and transient paranoid ideation.²³ In addition, a number of assessments for BPD have a sub-criterion for reckless driving, a related behavior, which is typically positioned in the midst of a general inquiry about other types of impulsivity (e.g., binge eating, sexual impulsivity). Assessments with this criterion include the Diagnostic Interview for Personality Disorders,²⁴ the Zanarini Rating Scale for Borderline Personality, the borderline personality scale of the Personality Disorder Examination,²⁶ the Diagnostic Interview for Borderlines-Revised,²⁷ the borderline personality scale of the Personality Diagnostic Questionnaire-4 (PDQ-4),²⁸ the Structured Clinical Interview for *The Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-III-R)* Personality Disorders (SCID-

II),²⁹ and the Self-Harm Inventory (SHI).³⁰ The ubiquitous and consistent diagnostic queries about vehicular recklessness strongly suggest that reckless driving is a potentially relevant clinical feature of BPD.

Several studies have examined the relationship between reckless and/or aggressive driving, features likely related to road rage, and BPD. In a 1994 study, Lex et al³¹ examined 33 incarcerated women and found associations between antisocial behavior, BPD, and drunk driving. In a 2002 study, using the SCID-II for diagnosis, Galovski et al³² found that, compared with nonaggressive drivers referred for treatment, court-referred aggressive drivers were significantly more likely to harbor an Axis II disorder, most often antisocial personality or BPD (the total number of participants was 30). In a 2005 Canadian controlled study, investigators found that BPD was significantly more prevalent among young male drivers in fatal accidents (N=122).³³ In another 2005 study, Malta et al³⁴ examined students in college psychology courses and found that, in comparison with nonaggressive drivers (n=40), aggressive drivers (n=40) were more likely to evidence Cluster B personality disorders as determined by the SCID-II Screening Questionnaire. To summarize these studies, note that all four suggest a possible association between hazardous driving and BPD. However, the potential limitations of these past studies include small sample sizes (no more than a total of 122 participants in the various samples); relatively unique samples, making the generalization of findings difficult (e.g., women incarcerated for drunken driving, court-referred individuals, males

involved in fatal motor vehicle accidents, college students taking psychology classes); and nonspecific Axis II assessments (i.e., Cluster B relationships).

Only two previous studies^{35,36} have examined the explicit relationship between road rage and BPD. In a 2001 controlled study, Fong et al³⁵ found no between-group differences in prevalence rates using the Clinical Interview Schedule-revised version for personality disorder assessment (N=131). In the other study, Sansone et al³⁶ examined a large sample of internal medicine outpatients in a mid-sized, mid-western city. Using a consecutive, cross-sectional sample, the authors surveyed 419 individuals. The prevalence of self-reported road rage in this sample was 35.3 percent, which seems to be consistent with the findings of Canadian researchers. According to the borderline personality scale of the PDQ-4,²⁸ BPD was significantly more prevalent among participants with road rage than those without road rage (24.8% versus 9.8%). These findings indicate that a substantial minority of individuals with road rage have BPD. In addition, we found that compared to those without road rage, those with road rage reported statistically significantly higher numbers of different types of driving citations, including moving and nonmoving violations, as well as having had a driver's license suspended. These latter findings confirm that those with road rage tend to be reckless drivers.

Antisocial personality disorder. While far more data exist on the possible relationships between aggressive driving, road rage, and BPD, several of the previous studies allude to a relationship between aggressive or

reckless driving and antisocial personality disorder. For example, Lex et al³¹ encountered antisocial personality features in women who were incarcerated for drunken driving—a form of reckless behavior. Likewise, Galovski et al³² encountered antisocial personality features among aggressive drivers who were referred for court-ordered treatment. Finally, Malta et al³⁴ found that aggressive drivers were more likely to harbor a Cluster B personality disorder, which includes antisocial personality disorder.

CONCLUSIONS

Approximately one-third of drivers in the community acknowledge various forms of road rage, with the majority being young and male. Contributory variables to road rage include environmental variables, such as crowded roads and high levels of traffic density; psychological factors, such as displaced anger, illogical attributions, and high life stress; and bona fide psychiatric disorders. Regarding psychiatric disorders, those with road rage appear to have high rates of alcohol and drug difficulties; high general psychiatric symptomatology (anxiety and depression) as measured by the General Health Questionnaire; rates of BPD that are four times that encountered in the general population, given a community rate of six percent;³⁷ and possible antisocial features. These findings suggest that individuals with road rage come from a variety of psychological substrates, all of which may culminate in an event that not only places the victim at risk, but also the perpetrator.

REFERENCES

1. Galovski TE, Malta S, Blanchard EB. Defining driving aggression

- and related constructs. In: Galovski TE, Malta LS, Blanchard EB eds. *Road Rage: Assessment and Treatment of the Angry, Aggressive Driver*. Washington, DC: American Psychological Association; 2006:15–26.
2. Britt TW, Garrity MJ. An integrative model of road rage. *Revue Internationale de Psychologie Sociale*. 2003;16:53–79.
 3. Dula CS, Geller ES. Risky, aggressive, or emotional driving: addressing the need for consistent communication in research. *J Safety Res*. 2003;34:559–566.
 4. Ayar AA. Road rage: recognizing a psychological disorder. *J Psychiatry Law*. 2006;34:123–150.
 5. Smart RG, Mann RE, Stoduto G. The prevalence of road rage: estimates from Ontario. *Can J Public Health*. 2003;94:247–250.
 6. Mann RE, Smart RG, Stoduto G, et al. Alcohol consumption and problems among road rage victims and perpetrators. *J Stud Alcohol*. 2004;65:161–168.
 7. Butters JE, Smart RG, Mann RE, Asbridge M. Illicit drug use, alcohol use and problem drinking among infrequent and frequent road ragers. *Drug Alcohol Depend*. 2005;80:169–175.
 8. Smart RG, Mann RE, Zhao J, Stoduto G. Is road rage increasing? Results of a repeated survey. *J Safety Res*. 2005;36:195–201.
 9. Smart RG, Mann RE. Deaths and injuries from road rage: cases in Canadian newspapers. *Can Med Assoc J*. 2002;167:761–762.
 10. Smart R, Stoduto G, Mann R, Adlaf E. Road rage experience and behavior: vehicle, exposure, and driver factors. *Traffic Inj Prev*. 2004;5:343–348.
 11. Hemenway D, Vriniotis M, Miller M. Is an armed society a polite society? Guns and road rage. *Accid Anal Prev*. 2006;38:687–695.
 12. Asbridge M, Smart RG, Mann RE. The “homogamy” of road rage: understanding the relationship between victimization and offending among aggressive and violent motorists. *Violence Vict*. 2003;18:517–531.
 13. Miller M, Azrael D, Hemenway D, Solop FI. “Road rage” in Arizona: armed and dangerous. *Accid Anal Prev*. 2002;34:807–814.
 14. Parker D, Lajunen T, Summala H. Anger and aggression among drivers in three European countries. *Accid Anal Prev*. 2002;34:229–235.
 15. Lupton D. Road rage: drivers’ understandings and experiences. *J Sociol*. 2002;38:275–290.
 16. Sharkin B. Road rage: risk factors, assessment, and intervention strategies. *J Couns Dev*. 2004;82:191–198.
 17. Lawton R, Nutter A. A comparison of reported levels and expression of anger in everyday and driving situations. *Br J Psychology*. 2002;93:407–423.
 18. Britt TW, Garrity MJ. Attributions and personality as predictors of the road rage response. *Br J Soc Psychology*. 2006;45:127–147.
 19. Hoggan BL, Dollard MF. Effort-reward imbalance at work and driving anger in an Australian community sample: is there a link between work stress and road rage? *Accid Anal Prev*. 2007;39:1286–1295.
 20. Garase ML. On the road to deviance: explaining road rage. *Dissert Abstr Int*. 2004;65:1972A.
 21. Butters JE, Mann RE, Smart RG. Assessing road rage victimization and perpetration in the Ontario adult population: the impact of illicit drug use and psychiatric distress. *Can J Public Health*. 2006;97:96–99.
 22. Smart RG, Asbridge M, Mann RE, Adlaf EM. Psychiatric distress among road rage victims and perpetrators. *Can J Psychiatry*. 2003;48:681–688.
 23. American Psychiatric Association. *The Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision*. Washington, DC: American Psychiatric Association; 2000.
 24. Zanarini MC. *Diagnostic Interview for Personality Disorders*. Belmont, Massachusetts: Author; 1983.
 25. Zanarini MC, Frankenburg FR. Zanarini Rating Scale for Borderline Personality Disorder. Belmont, Massachusetts: Author; 2001.
 26. Loranger AW. *Personality Disorder Examination*. Yonkers, NY: DV Communications; 1988.
 27. Zanarini MC, Gunderson JG, Frankenburg FR, et al. The Revised Diagnostic Interview for Borderlines: discriminating BPD from other Axis II disorders. *J Pers Disord*. 1989;3:10–18.
 28. Hyler SE. *Personality Diagnostic Questionnaire-4*. New York: Author; 1994.
 29. First MB, Spitzer RL, Gibbon M, et al. The Structured Clinical Interview for DSM-III-R Personality Disorders (SCID-II). Part II: Multi-site test-retest reliability study. *J Pers Disord*. 1995;9:92–104.
 30. Sansone RA, Wiederman MW, Sansone LA. The Self-Harm Inventory (SHI): development of a scale for identifying self-destructive behaviors and borderline personality disorder. *J Clin Psychol*. 1998;54:973–983.
 31. Lex BW, Goldberg ME, Mendelson JH, et al. Components of antisocial personality disorder among women convicted for drunken driving. *Ann N Y Acad*

- Sci.* 1994;708:49–58.
32. Galovski T, Blanchard EB, Veazey C. Intermittent explosive disorder and other psychiatric comorbidity among court-referred and self-referred aggressive drivers. *Behav Res Ther.* 2002;40:641–651.
33. Dumais A, Lesage AD, Boyer R, et al. Psychiatric risk factors for motor vehicle fatalities in young men. *Can J Psychiatry.* 2005;50:838–844.
34. Malta LS, Blanchard EB, Freidenberg BM. Psychiatric and behavioral problems in aggressive drivers. *Behav Res Ther.* 2005;43:1467–1484.
35. Fong G, Frost D, Stansfeld S. Road rage: a psychiatric phenomenon? *Soc Psychiatry Psychiatr Epidemiol.* 2001;36:277–286.
36. Sansone RA, Lam C, Wiederman MW. Road rage: relationships with borderline personality and driving citations. *Int J Psychiatry Clin Pract.* 2010;40:21–29.
37. Grant BF, Chou SP, Goldstein RB, et al. Prevalence, correlates, disability, and comorbidity of DSM-IV borderline personality disorder: results from the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions. *J Clin Psychiatry.* 2008;69:533–545.

FUNDING: There was no funding for the development and writing of this article.

FINANCIAL DISCLOSURES: The authors have no conflicts of interest relevant to the content of this article.

AUTHOR AFFILIATIONS: Dr. R. Sansone is a professor in the Departments of Psychiatry and Internal Medicine at Wright State University School of Medicine in Dayton, Ohio, and Director of Psychiatry Education at Kettering Medical Center in Kettering, Ohio; Dr. L. Sansone is a family medicine physician (government service) and Medical Director of the Primary Care Clinic at Wright-Patterson Air Force Base. The views and opinions expressed in this column are those of the authors and do not reflect the official policy or the position of the United States Air Force, Department of Defense, or US government.

ADDRESS CORRESPONDENCE TO:

Randy A. Sansone, MD, Sycamore Primary Care Center, 2115 Leiter Road, Miamisburg, OH 45342; Phone: (937) 384-6850; Fax: (937) 384-6938; E-mail: Randy.sansone@khnetwork.org. ●