STATE OF KNOWLEDGE:
FEMALE DRUNK DRIVERS

EXECUTIVE SUMMARY

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Traffic Injury Research Foundation (TIRF)
171 Nepean Street, Suite 200
Ottawa, Ontario
Canada K2P 0B4
www.tirf.ca
Toll Free: 1-877-238-5235
Fax: 613-238-5292

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Robyn D. Robertson
Kyla Marcoux
Erin Holmes
Ward G.M. Vanlaar

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Jane C. Maxwell, Ph.D.
Senior Research Scientist
Addiction Research Institute
Center for Social Work Research
The University of Texas at Austin

Hon. Peggy Fulton Hora
Judge of the Superior Court (Ret.)
Senior Judicial Fellow, National Drug Court Institute (NDCI)
NHTSA Judicial Outreach Liaison Region 9

Heidi Coleman, JD
Chief, Behavioral Research Division
Traffic Injury Control
National Highway Traffic Safety Administration

Maya Hennessey
Author/Criminal Justice Consultant and Trainer
Maya Hennessey and Associates

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Purpose and objectives

- The purpose of this report is to provide a current state of knowledge about drunk driving among female drivers. Its objectives are to describe the magnitude of the female drunk driver problem, the characteristics of these offenders, the current involvement of female drivers testing positive for alcohol in fatal crashes, and effective strategies that are available and being applied to manage this population.
- Research ranging from the 1980s through to present day is reviewed in chronological order in Section 3 (Magnitude of the Problem) and Section 4 (Characteristics of Offenders) to provide a complete perspective on this problem and also a sense of how it has evolved over time. This approach is useful to explore claims that the problem has grown in recent years. However, it is important to keep in mind that some of the studies described in this report were conducted more than two decades ago. As such, those findings stemming from much older studies should be interpreted with caution as they may or may not still be applicable today. Similarly, studies also utilized different blood/breath alcohol concentration (BAC) ranges and age ranges (particularly for young drivers) which make comparisons difficult at times.
- It is further important to note that terminology used to describe the drunk driving issue has also evolved in the traffic safety field, particularly in the last decade. Historically, terms such as alcohol-related, impaired driving, drunk driving, and drinking and driving were often used interchangeably.

However, in the past decade, there has been a much clearer distinction drawn between these terms which are understood to mean different things. Generally speaking these terms mean the following:

- Alcohol-related crashes refers to any crashes (including those involving pedestrians and cyclists) involving any level of alcohol;
- Alcohol impaired crashes refers to crashes involving a driver with a BAC over the per se BAC limit of .08;
- Alcohol impaired driving means driving with a BAC over the per se BAC limit of .08 or otherwise meeting the legal impairment threshold for a criminal conviction;
- Alcohol positive drivers means drivers who have consumed alcohol but who may not reach the per se BAC limit of .08 or a legal threshold for impairment;
- Drunk driving refers to a criminal offense (either over the per se BAC limit of .08 or impaired as defined by impairment-based statutes);
- Drinking and driving refers to driving after consuming any amount of alcohol; and,
- DWI[1] means driving while intoxicated or driving while impaired and is used as a general term to refer to criminal offenses for drunk driving across the United States (U.S.) although terms used in specific states may vary.

> As such, the authors of this report have utilized these terms as described above wherever possible. However, in reference to a few studies or to some older studies where the meaning of these terms is not well-defined, the authors of this report have relied upon the terms specifically utilized by the authors of the cited studies for consistency purposes. Hence, results should be interpreted with this caveat in mind.

1 The abbreviation DWI (driving while intoxicated or impaired) is used throughout this report as a convenient descriptive label, even though some states use other terms such as OUI (operating under the influence) or DUI (driving under the influence), and in some states they refer to different levels of severity of the offense. We have used DWI not only to maintain consistency throughout the report but also because it is more descriptive of the offense usually associated with drunk drivers.

Introduction

- For several decades, road safety research has demonstrated that fatalities and injuries related to road crashes (due to alcohol or other unsafe driving behaviors) have predominantly involved males[2]. Similarly, drunk driving has also predominantly been considered a male based problem[3]. To illustrate, men and young adults are more likely than women or older age groups of drivers to self-report drinking and driving behavior, to be arrested for DWI, or to be fatally injured or to fatally injure others while driving drunk[4].
- In the past three decades, attention to female involvement in drunk driving events has grown. This interest has become more pronounced as a result of increases in female involvement in DWI arrests and incremental increases in alcohol impaired crashes in the past decade[5].
- Since the increase in female drunk driving behavior first garnered attention in the late 1980s[6], there have been three main hypotheses regarding factors associated with this phenomenon. These explanations center on changes in female roles in society[7], changes in social norms[8], and changes in social control mechanisms[9].
- Regardless of the reason why this growth in the female drunk driver problem has occurred, there is hard data illustrating the growing prevalence of female arrests for DWI and, to a lesser extent, incremental increases in female drivers testing positive for alcohol in fatal crashes in a small number of jurisdictions[10].

2 Mayhew et al. 1981; Beirness 1988; Mayhew and Simpson 1990; Mayhew et al. 1990; Kelley-Baker and Romano 2010.
3 Waller 1997; Simpson and Mayhew 1991; Jones and Lacey 2001.
4 Mayhew et al. 2003; Zador et al. 2000.
5 Robertson et al. 2011; Tsai et al. 2010; FBI 2008.
6 Underhill 1986; Argeriou 1986.
7 Popkin 1991; Bergdahl 1999; Mayhew et al. 2003; Robertson et al. 2011; Tsai et al. 2008.
8 Gudrais 2011; Popkin 1991.
9 Farrow and Brissing 1990; Robertson et al. 2011; Schwartz and Rookey 2008; Schwartz and Steffensmeier 2007.
10 Robertson et al. 2011; Tsai et al. 2010; FBI 2008.

Magnitude of the problem

- Generally speaking, women consistently self-report that they drive after drinking less frequently than men[11]. However, available self-report data on female drinking and driving behavior is mixed.
- Despite differences in survey methodologies and variations in age groups and BAC levels studied, it is apparent that a relatively small percentage of females self-report drinking and driving (10-20%) and this percentage has been stable for many years[12].
- DWI arrests are the largest category of alcohol-related crimes that bring women into contact with the criminal justice system[13]. There is growing data that suggest that DWI arrests for women have risen nationally, and especially in some jurisdictions[14].
- In 1980, just 9% of those arrested for DWI were female with the percentage rising to nearly 15% by 1996 and 20% by 2004. The number of female DWI arrests has risen nationally by 28.8% between 1998 and 2007[15].
- Several explanations for the growth in female DWI arrests have been proposed. Some have suggested that the increase in arrests reflects a real trend of growing female involvement in drinking and driving; others have postulated that dramatic reductions in arrests among males have skewed the perception of female involvement in arrests. Still others have argued that changes in legal policy and enforcement practices have resulted in the greater likelihood that law enforcement will detect and

11 Marelich et al. 2000.
12 Drew et al. 2010; Royal 2003; Schwartz and Rookey 2008; Wilsnack et al. 1984.
13 Parks et al. 1996.
14 NHTSA 2009a; Schwartz and Steffensmeier 2007.
15 Lapham et al. 2000; Schwartz and Rookey 2008.

arrest female drunk drivers. Some have further suggested that these legal and enforcement changes have brought more attention to women who tend to be more impaired at lower BACs due to physiological differences between males and females[16].

- Data regarding the level of convictions of females for drunk driving offenses is sparse, but there is some indication that it may also be increasing incrementally. The percentage of females in jail for drunk driving has grown incrementally since 1983 when they accounted for just 5% of those in jail for DWI as compared to 1996 when women accounted for 7%[17]. More recent data are unavailable.
- U.S. road fatality data from the Fatality Analysis Reporting System (FARS) demonstrate that the trend in female driver involvement in alcohol impaired driving crashes (which involve a driver or motorcycle rider with a BAC of .08 or greater) has remained fairly stable during the past three decades with only incremental increases.
- According to a study of female DWI arrests by Schwartz and Rookey (2008), an analysis of FARS data to examine legally drunk female drivers in fatal crashes revealed that the percent of female drunk drivers averaged 12% in the 1980s, 13% in the 1990s, and 14% in the 2000s. They further argue that the incremental increases in female drunk drivers in crashes is due to sharper declines in male compared to female rates of DWI from the 1980s to the 1990s. They further note that the gender composition in relation to arrests and crash data is highly similar until the late 1990s, at which point the portion of female arrestees far surpasses their share of legally drunk drivers.[18]
- Even more recently, TIRF's analysis of FARS data from all U.S. jurisdictions between 2005 and 2009 reveals that the total number of female drivers who tested positive for any amount of alcohol in fatal crashes has generally declined during this period. Similarly, the percentage of female drivers who tested positive for any amount of alcohol in fatal crashes has also declined from 18% to 16%.

16 Dawson et al. 1995; Wells-Parker et al. 1996; NIAAA 1997.
17 Maruschak 1999.
18 Schwartz and Rookey 2008.

- Although increases in the number or percent of females testing positive for alcohol in fatal crashes have been recorded in a small number of jurisdictions, these increases should be considered in the context of the overall stable trend in the past five years.
- Recent FARS data from 2008 reveal that 1,837 fatalities in crashes involved an alcohol impaired female driver[19].

Characteristics of female offenders

- For the most part, the profile of a female drunk driving offender differs somewhat from that of a male drunk driving offender, yet they also share some common characteristics.
- Studies demonstrate that a substantial proportion of female drunk drivers are experiencing alcohol problems, and that the gravity and complexity of those problems is not insignificant[20]. As evidence of this, a five year follow-up study of convicted DWI offenders in New Mexico revealed that 85% of female offenders (compared to 91% of male offenders) were diagnosed with either alcohol abuse or alcohol dependence[21].
- A Texas study examining the characteristics of DWI offenders in treatment found that females were most likely to be diagnosed with a primary problem with sedatives or opiates, whereas males were most likely to be diagnosed with a primary problem with alcohol and cannabis[22].
- In general, women are different from men in regard to the development of substance abuse and related problems. Females tend to develop substance abuse problems when they are older and they also tend to develop them faster than men[23].
- Among female DWI offenders in treatment in Texas, one of the strongest predictors of not being abstinent at a 60-day follow-up from treatment is living with someone who had a substance abuse problem[24].
- The average age of female first DWI offenders is 31 and the average age of recidivists is 30, although this fact is drawn from older research[25]. Generally, rates of involvement in alcohol impaired motor vehicle crashes

19 NHTSA 2009a.
20 White and Hennessey 2006.
21 Lapham et al. 2001.
22 Maxwell 2011.
23 Green 2006.
24 Maxwell and Freeman 2007.
25 Shore and McCoy 1987.

decrease with age, and the population of greatest concern is often young females[26]. In particular, the increasing involvement of young women with alcohol, in combination with their inexperience driving and their growing propensity for risky driving[27] warrants our attention and further research.

- Findings in the literature regarding levels of education and employment among female drunk drivers are mixed. However, female drunk drivers are generally older than men and have higher levels of education[28] but lower paying jobs[29].
- A significant proportion of female drunk drivers is single, divorced or separated, or is more likely to be living with a partner with an alcohol problem[30].
- Findings indicate that there is a need to treat a not insignificant part of the female drunk driver population, not only for alcohol misuse problems, but also mental health problems[31]. Female DWI offenders have significantly higher psychiatric co-morbidity relative to their male counterparts[32]. Diagnoses of anxiety, depression, and post-traumatic stress disorder (PTSD) are common among female drunk driving offenders. The use of drugs also appears to be more prevalent among female DWI offenders[33].
- Research also shows that when female and male offenders in treatment return to an environment that lacks sources of support, they will likely repeat their pattern of alcohol and/or drug abuse[34].
- A constellation of family factors are associated with female DWI offending to varying extents, however, the specific influence of each factor is unclear. Many female DWI offenders who were admitted to addiction treatment had multiple factors that contributed to their alcohol consumption including a history of alcoholism within the family, experience with abuse, anxiety and depression, and family and personal relationships that encouraged heavy drinking[35].

26 Peck et al. 2008.
27 Lynskey et al. 2007; Tsai et al. 2010.
28 Peck et al. 2008.
29 Chalmers et al. 1993; Shore and McCoy 1987.
30 McMurran et al. 2011; Chang et al. 1996; Shore and McCoy 1987; Argeriou et al. 1986.
31 McMurran et al. 2011.
32 Laplante et al. 2008.
33 Maxwell and Freeman 2007; SAMHSA 2005.
34 Maxwell and Freeman 2007.
35 White and Hennessey 2006.

- Findings regarding recidivism among female drunk drivers as compared to males are somewhat consistent. Available data suggest recidivism risk may be higher for young males than women[36], but it appears that risk of recidivism may converge as adults of both genders age[37]. Few studies have been conducted to examine this issue and more research is needed.
- A study in 2000 involving a five year follow-up of 2,615 convicted first DWI offenders in New Mexico revealed that overall 26% of offenders had been re-arrested (20% of females and 33% of males[38]). The study further reported that, after controlling for a range of factors, young males had a recidivism rate 2.5 times that of women. However, a comparison of rates among older offenders revealed few differences between genders[39].
- A more recent study (2010) in Maryland, reported that, following their first conviction for drunk driving offenses, the risk of recidivism is as pronounced among female offenders as it is among male offenders. The study also noted that on average, drivers with repeat alcohol offenses (as measured by violations on their driving record) were younger than drivers who did not have repeat alcohol offenses on their driving record[40].
- Female DWI recidivists often share similar characteristics to their male counterparts with minor differences[41]. For example, repeat female DWI offenders have higher levels of psychiatric co-morbidity than male repeat offenders and are more likely to also use drugs[42].
- There is limited data to suggest that a smaller number of female first DWI offenders (relative to male first DWI offenders) have a history of other traffic offenses or criminal offenses, although more research into this topic is needed. Common criminal offenses may include drug offenses, theft offenses, and assault[43].
- Generally speaking, all female offenders, including DWI offenders, are more likely to be the primary caretaker of children at the time of arrest, more likely to have experienced abuse, and more likely to have physical and mental health needs[44].

36 Argeriou et al. 1986; Jones and Lacey 2001; McMurran et al. 2011; Webster et al. 2009; Wells-Parker et al. 1991.
37 Lapham et al. 2000.
38 Lapham et al. 2000.
39 Laplante et al. 2008.
40 Rauch et al. 2010.
41 Argeriou et al. 1986.
42 Laplante et al. 2008; Maxwell 2011.
43 Caldwell-Aden et al. 2009.
44 Bloom et al. 2003.

Involvement of female alcohol positive drivers in fatal crashes

- The characteristics of fatal crashes involving female drivers testing positive for alcohol were investigated using the National Highway Traffic Safety Administration's (NHTSA) FARS data[45].
- National results revealed that in general, the profile of male alcohol positive drivers in fatal crashes resembles that of female alcohol positive drivers in fatal crashes. However, male drivers testing positive for alcohol were more often considered by police to be using drugs, to be speeding, to not be properly licensed at the time of the fatal crash, and more often had previous other convictions and previous license suspensions compared to female drivers testing positive for alcohol.
- When comparing different BAC levels, the higher the BAC level of a female driver in a fatal crash, the more likely it is the driver was involved in a single vehicle crash. Likewise, the higher the BAC level of a female driver in a fatal crash, the more likely it is that they were not wearing a seatbelt or helmet and that the driver was considered by police to have been using drugs. As BAC levels rise from below .08 to above .08, the more likely it is for a female driver to be between the age of 21 and 34. With regards to speeding and not having a valid license at the time of the fatal crash, the higher the BAC of the female driver in the fatal crash, the more likely it is the driver was considered by police to have been speeding or that the driver did not have a valid license. The same patterns were noted for males.

45 http://www-fars.nhtsa.dot.gov/.

- For females who had been previously convicted of DWI on one or more occasions, as BAC levels of drivers increase to higher levels, the more likely it is that the driver had a previous DWI conviction. The same was true for previous license suspensions. Finally, as levels of BAC among female drivers increase, the more likely it is that the fatal collision occurred at night (9:00pm-5:59am). The same patterns were noted for males.
- The crash characteristics of female drivers testing positive for alcohol in fatal crashes were also examined from one state for each of the U.S. Census Bureau divisions: Midwest – Ohio (OH), Northeast – New Jersey (NJ), West/South – Texas (TX) and South – Florida (FL). In terms of crash characteristics, the profile of female drivers in fatal crashes who tested positive for alcohol in each of these states is largely consistent with the national profile.

Effective programs and practices

- With regards to effective programs and practices, little is known about the effectiveness of programs and interventions for women convicted of drunk driving offenses. However, there is some evidence of differences between women and men's alcohol-related offending, their respective needs, and treatment outcomes that can inform the development of interventions targeted towards this population[46].
- Due to the more rapid progression of alcohol dependence, women often require medical intervention an average of four years earlier than males who are problem drinkers[47].
- Women may experience different barriers in relation to initiating and completing treatment for a substance abuse disorder as compared to men, including lack of transportation and childcare[48].
- Data illustrate that a significant number of female DWI offenders participate in a wide range of drunk driving programs and interventions. Anecdotal data indicate that women comprise between 15% and 25% of traditional drunk driving programs such as alcohol monitoring and DWI courts. However, there is little research to date to demonstrate the effectiveness of these approaches with female drunk drivers relative to male drunk drivers. One systematic review of interventions for alcohol-

46 McMurran et al. 2011.
47 Gudrais 2011.
48 Green 2006.

related offending by women found that interventions that increase women's negative emotions may increase their risk of recidivism[49].

- Once in treatment, there is little difference between males and females generally in terms of effectiveness and this goes for different measures of effectiveness including program retention, completion, and outcomes[50].
- A review of studies examining substance abusing women in treatment found that certain characteristics are associated with better outcomes in terms of treatment retention and completion for both men and women. These characteristics include lower levels of psychiatric symptoms, higher income, being employed, having higher levels of education, and social supports, as well as having personal and social stability[51]. However, many of these predictors vary by gender and have been found to be associated with women's retention in substance abuse treatment. For example, the prevalence of co-occurring disorders among females with substance use disorders is higher than that of males and this has been shown to have a negative impact on treatment retention[52].
- Programs which address the needs of different sub-groups of female offenders may be more beneficial than gender-specific programs alone[53].
- In terms of treatment for substance abusing women in general, gender-specific treatment has been recommended. It has been found that single-gender treatment (i.e., women only) may be perceived more positively than mixed-gender treatment[54]. Thus, women-only programs should be made available when possible, and when not, the option of women-only groups should be offered[55]. It is still unknown however, which aspects of women-only programs actually affect positive outcomes.
- In terms of features of effective programs, access to substance abuse treatment could be enhanced by providing childcare and family services to women, as well as transportation[56].

49 McMurran et al. 2011.
50 Greenfield et al. 2007.
51 Greenfield et al. 2007.
52 Greenfield et al. 2007.
53 Tsai et al. 2010.
54 Greenfield et al. 2007.
55 Grella and Greenwell 2004.
56 Sun 2006.

- To ensure the proper care of the individual seeking help, treatment needs to be customized to the client and should address each person's particular needs[57].
- Individual counseling should be additionally offered to women when possible[58].
- More research about what works with female drunk drivers in relation to the effectiveness of traditional sanctions is needed. Similarly, it still must be determined what particular components of treatment produce better outcomes and what specific features contribute to change[59].

57 Freeman et al. 2011.
58 Sun 2006.
59 Sun 2006.

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Traffic Injury Research Foundation (TIRF)
171 Nepean Street, Suite 200
Ottawa, Ontario
Canada K2P 0B4

www.tirf.ca
Toll Free: 1-877-238-5235
Fax: 613-238-5292

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