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**THE LAST FIVE PERCENT:
WHO ARE THE NON-USERS OF SEAT BELTS IN WASHINGTON
STATE?**

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Background

The Click it or Ticket campaign that began in May 2002, enactment of a primary enforcement seat belt law in June 2002, and focused enforcement of the primary seat belt law by the Washington State Patrol and local agencies resulted in an unprecedented 95% seat belt use rate in 2003. Media campaigns and highway signs concentrated on educating the public about the new law and the \$101 fine if they were found to be in violation. Enforcement efforts were highly visible to the traveling public. The Click it or Ticket enforcement and media messages have continued in subsequent years, and the belt use rate has remained high at 94% in 2004 and 95% in 2005.

However, even with a 95% belt use rate in the general traveling public, 44% of motor vehicle occupants who were killed in 2003 were not wearing seat belts (Fatality Analysis Reporting System, 2003). Five percent of motor vehicle occupants account for almost half of the motor vehicle fatalities. Non-users of belts represent an extremely high risk for fatal traffic crashes. Learning more about the characteristics of this segment of the population would assist in developing new programs to further increase the belt use rate and reduce motor vehicle fatalities in Washington.

An earlier study in a state with a lower rate of belt use (80%) examined characteristics of those who do not use seat belts. The University of North Carolina Highway Safety Research Center (Reinfurt et al, 1996) conducted telephone and mail surveys and reported that non-users of belts were more likely to be younger males with less formal education. They were also more likely to have traffic-related convictions on their records; 46 violations per 100 drivers compared to 26 per 100 among those who wore seat belts.

Efforts to get the remaining non-users of belts in Washington to change their behavior will most likely require new and different strategies. Development of any new strategies depends upon first identifying the characteristics of those who so far have resisted or ignored the new primary seat belt law and the extensive media and enforcement campaigns. This study is designed to identify characteristics of the few remaining drivers who do not use belts.

Methods

The subjects in the study had been issued a traffic ticket by the Washington State Patrol (WSP). One group of subjects had received seat belt tickets, and the other group had been cited for other traffic violations. These two groups of subjects were the primary comparison groups in this study.

The traffic tickets used for the study were selected from a file of all WSP tickets issued between August 1 and October 31, 2003. The procedure was to randomly select seat belt tickets and then select the next non-seat belt ticket in the file. The vast majority of violations in the other ticket group were for speeding. There were a few cases where a subject in the other violation group had also been cited for a seat belt violation (i.e., the second or third violation on the ticket); these subjects were added to the seat belt group. Between 200 and 300 tickets were selected from each of the eight WSP districts encompassing the entire state.

There were a total of 2107 subjects in the study: 1016 in the seat belt group and 1091 in the other violation group. Subjects were predominately the drivers of vehicles, however, 14% of the subjects in the seat belt group were passengers. The Washington seat belt law applies to all occupants in a vehicle, and a vehicle may be stopped by police under the primary enforcement provision if an unbuckled passenger is observed.

Information from each ticket was entered into a data spreadsheet by WSP staff. The disposition of court proceedings was not included in the data used for this study. The tickets were considered confidential and retained by the WSP during this study to protect the privacy of individuals. The data elements entered into the spreadsheet included: WSP district, type of violation (seat belt or other); person type (driver or passenger); zip code of residence; licensing state, gender; birth year; day and time of violation; county in which the violation occurred; year, make, model and type of vehicle; if there was a collision; whether the vehicle was a commercial vehicle, violation type (up to three); and speed and speed zone information if the violation was speed related.

Driving records were obtained from the Department of Licensing computer database. The driver history data elements entered on the study spreadsheet included: violation type and year for up to fifteen traffic violations, the number of collisions on record and license suspensions or revocations. The violation that led to a subject's inclusion in the study was not counted in the DOL driving record data.

Results

Subject Characteristics:

Males accounted for 75% of all subjects in the study and were over-represented in the seat belt group (80%) compared to the other violation group (71%). The majority of subjects in the study were under age 40 (62%). However, there was an over-representation of older drivers (age 40+) in the seat belt group; 42% compared to 33% in the other violation group. The average age of the seat belt violators was 38 years old while the average age of the other violation group was 35 years old. Thus, it appears that older drivers were more likely to be cited for seat belt violations while younger drivers were more likely to receive other traffic violations, most commonly for speed violations.

There were relatively few subjects who had no driver's license (either from Washington or another state), but there were 5 times as many unlicensed drivers in the seat belt group as in the other violation group (3.9% vs. 0.7%).

Vehicles:

There was a large percentage of pickup truck drivers in the seat belt violation group. While they made up 16% of the subjects cited for other violations, pickup trucks accounted for 40% of the seat belt violators. Older vehicles (pre 1990) accounted for a substantial portion of the seat belt group compared to the other violation group, 35% vs. 19%.

The over-representation of pickup trucks among the seat belt violators was consistent regardless of vehicle year, i.e., the percentage of pickup trucks in the seat belt group was high even for newer vehicles (40% of year 2000 or newer vehicles were pickup trucks).

Among male subjects, pick up truck drivers accounted for 44% of seat belt violators compared to 19% of subjects in the other violation group. A similar pattern was evident among female subjects, although the percentages were lower, 22% vs. 7%. This over-representation of pickup trucks was also consistent for both younger and older drivers; 35% of seat belt violators under age 40 were in pickup trucks, and 47% of older seat belt violators had been in pickup trucks.

An analysis of vehicle makes showed little differences between the two groups. Chevrolets, Fords, and Toyotas were slightly over-represented in the seat belt group, while Hondas were somewhat under-represented.

Prior Driving History:

One of the major hypotheses of this study was that seat belt violators would have worse prior driving records than subjects in the other violation group. The seat belt subjects had significantly more ($p = .002$) total prior violations, mean of 281 priors per 100 drivers, compared to those who had received other violations, mean of 237 priors per 100 drivers.

Analysis of various types of traffic violations revealed the following:

- The seat belt violation group was 1.4 times more likely to have DUI violations on their prior driving history, mean of 14.1 per 100 drivers vs. 10.4 per 100 drivers in the other violation group ($p = .036$).
- They were also 1.4 times more likely to have prior insurance violations, mean of 33.0 per 100 drivers vs. 23.0 per 100 drivers ($p = .001$).
- The seat belt group had more prior suspensions and revocations of their driver licenses, mean of 71.0 per 100 drivers vs. 60.0 per 100 ($p = .023$).
- There were 1.9 times more vehicle licensing violations (tabs, plates, vehicle registration) among subjects with seat belt violations, mean of 14.7 per 100 drivers vs. 7.8 per 100 in the other violation group ($p = .000$).
- Many of the subjects who received seat belt tickets had been previously cited for the same offense. The seat belt violation group was 2.5 times more likely than the other violation group to have prior seat belt citations on their records, mean of 45.9 per 100 drivers vs. 18.3 per 100 ($p = .000$).
- No significant differences were found for prior speed violations, sign/signal violations, other moving violations, equipment related violations and other non-moving violations. The numbers of traffic collisions on driver records did not differ.

Time of Day, Day of Week:

Over 80% of all traffic tickets were issued during daylight hours. Seat belt violations were over-represented in daytime hours, 89%, compared to other violations, 78%. There were no consistent differences comparing days of the week.; 78% of seat belt violations were issued on weekdays and 22% on weekends, and these percentages were identical in the other violation group.

Discussion

The profile of the seat belt violator that emerges from the data examined in this study is a male, who is older than those cited for other violations, with a poor driving history, who is driving an older vehicle or a pickup truck:

- **Males.** The percentage of males in the seat belt group was 80% compared to 71% in other violation group.
- **Older.** There was an over-representation of subjects over age 40 in the seat belt group; 42% were age 40+ compared to 33% of other violation subjects.
- **Pickup truck drivers.** Pickup trucks accounted for 40% of seat belt violation subjects, 2.5 times greater than those who were cited for other violations.
- **Older vehicles.** Unbuckled drivers were more likely to be in older (pre 1990) vehicles, 35% vs. 19%. However, the over-representation of pickup trucks was consistent for both older and newer trucks.
- **Poor driving record.** Prior driving records of subjects in the seat belt group were worse than those in other violation group. Seat belt violators had more prior DUIs, more insurance violations, more previous license suspensions and revocations, more vehicle license-related violations, and a history of previous seat belt violations. Almost 4% of the belt violators were unlicensed compared to under 1% of those with other violations.

One finding of this study that was unexpected was the over-representation of older drivers among seat belt violators. Although the majority of traffic violators in this study were under age 40, there were relatively more older subjects in the seat belt group compared to the other violation group. While previous research has found a higher incidence of seat belt violations among younger drivers, the very high belt use rate in Washington is atypical compared to other states. It may be that as the belt use rate increases in a state, older drivers are less likely to be converted to belt users than are younger drivers. The results of this study suggest that occupant protection programs in Washington should not focus exclusively on younger drivers.

The finding that seat belt tickets were less likely than other violations to be issued during night hours, 11% vs. 22%, most likely reflects the fact that belt violations are difficult for police to detect at night. This result does not imply that the seat belt use rate is higher during night hours. In fact, a WTSC survey of belt use at night (Salzberg, unpublished data, 2004) found a slightly lower rate of belt use at night compared to observations during daytime hours.

The over-representation of pickup trucks among the seat belt violators is consistent with previous studies and surveys. Observation surveys of belt use in Washington and nationally have found lower rates of belt use in pickup trucks than for passenger cars, passenger vans, and SUVs.

The finding that seat belt violators had poor driving records is consistent with the earlier North Carolina study (Reinfurt et al, 1996). Belt use was 80% in North Carolina when that study was conducted. In contrast, the present study suggests that the records of drivers cited for belt violations in a state with a much higher use rate are even worse than previously reported. Seat belt violators in this study had an average of 281 prior traffic violations per 100 subjects compared to 46 priors per 100 in the NC study. The prior violations of the seat belt non-users included more DUIs, insurance violations, previous seat belt violations, and license suspensions than those in the other violation group. These findings are consistent with the hypothesis that

non-users of belts are higher risk drivers than those who use belts, and that as belt use increases in a population and begins to approach 100%, it is the highest risk drivers who are the last to convert to using seat belts (Salzberg et al, 2002).

One promising area for future research would be a more in-depth assessment of the characteristics of Washington drivers who do not use seat belts. It is possible that high risk behaviors on the road may be associated with risky behavior in other arenas. We would predict a greater prevalence of social deviance and criminal behavior in addition to high risk driving behavior among those who do not use seat belts.

References

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