

The lack of an adult seat belt law in New Hampshire: Live free and die?

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Abstract

New Hampshire (NH) is the only state with no adult seat belt law. The lack of a restraint law may stem from a reluctance to infringe on individual freedoms. Dartmouth-Hitchcock Medical Center (DHMC) is located in NH, only 4 miles from the Vermont (VT) border. As a result, residents of both states are well represented in the Emergency Department (ED) population. This provided an opportunity to investigate the relationship between opinions, behaviors and the presence or absence of a restraint law. Adult DHMC ED patients were surveyed with respect to seat belt use in states with and without restraint laws, risk taking behaviors, and feelings of infringement on personal freedom. The results demonstrated no difference in restraint use between NH and VT residents while traveling in a state with a seat belt law. However, significantly fewer NH residents reported restraint use when traveling in a state without a seat belt law. These dissimilarities were not explained by differences in risk taking behaviors or by differences in feelings of infringement on freedom. This suggests that actual seat belt use reflects adherence to the law rather than concerns over personal freedom. This may inspire a reassessment of the acceptability of an adult restraint law in New Hampshire.

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1. Introduction

Motor vehicle crashes are the leading cause of death in the United States for persons aged 4–34 years (NHTSA, 2006). In the year 2005, 43,200 people died in traffic crashes in the US, and an additional 2.68 million were injured (NHTSA, 2005). The use of safety belts is the single most effective means of reducing fatal and non-fatal injuries in motor vehicle crashes (Dinh-Zarr et al., 2001), saving over 15,000 lives in 2004 alone (NHTSA, 2004). Unbelted occupants suffer twice as many head and facial injuries, nearly twice as many chest injuries, and five times as many abdominal injuries compared with belted occupants (NHTSA, 1997). When used properly, lap/shoulder restraints reduce the risk of moderate to critical injury by 50% (NHTSA, 2001a,b). Mandatory seat belt laws have been shown to increase the use of seat belts by 17–26% (NHTSA, 2000b).

Twenty-five states and the District of Columbia have passed primary restraint laws, allowing police to stop drivers who are

not wearing a seat belt. Twenty-seven states have secondary seat belt laws which permit police to ticket only those unrestrained drivers who are stopped for another reason. New Hampshire is the only state with neither a primary nor a secondary restraint law. Further, the National Highway Traffic Safety Administration (NHTSA) has identified New Hampshire as the state with the lowest rate of seat belt use. With the state motto, “live free or die”, it has been suggested that the lack of restraint law in New Hampshire stems from a reluctance to infringe on individual freedoms.

Dartmouth-Hitchcock Medical Center (DHMC) is a university hospital with an annual Emergency Department (ED) volume of 30,000 and an annual trauma volume of 1200. The hospital is located in New Hampshire (NH), but is only 4 mile from the Vermont (VT) border. As a result, residents and travelers in both states are well represented in the ED population.

We sought to take advantage of the unique location of DHMC to investigate the relationship between opinions, behaviors, and the presence or absence of a restraint law. Our hypothesis was that the lack of seat belt use by New Hampshire residents is not due to feelings of infringement on personal freedom.

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Table 1
Knowledge of the current restraint laws

State of residence	% (n)	Knows the law in state of residence, % (n)	Knows the law in other state, % (n)	Knows the law in both states, % (n)
NH	55 (293)	72 (211)	73 (215)	58 (169)
VT	45 (243)	82 (200)	33 (79)	35 (84)
p-Value		0.005	<0.001	<0.001

2. Methods

Using an IRB-approved 12-item questionnaire, a convenience sample of adult DHMC Emergency Department patients was surveyed from September to December 2004. Questions investigated state of residence, awareness of current laws, overall seat belt use, seat belt use in states with and without restraint laws, risk taking behaviors, and feelings of infringement on personal freedom. With respect to the validity of the survey instrument, a well-validated five-category response tool was used for questions involving seat belt frequency (NHTSA, 2000a). The questions employed regarding risk-taking behaviors have also been previously published (Preusser et al., 1991).

Study inclusion and exclusion criteria were as follows:

Inclusion criteria:

1. age ≥ 18 years;
2. resident of New Hampshire or Vermont;
3. licensed to operate a motor vehicle;
4. English speaking.

Exclusion criteria:

1. acute or chronic medical condition that makes survey completion inappropriate;
2. clinical suspicion of alcohol intoxication.

Eligible subjects were approached by a Research Associate and asked if they were willing to complete an anonymous 12-question survey about their seat belt use. Participants completed the survey while the Research Associate was not present. In the majority of cases, surveys were collected prior to discharge. For patients who had insufficient time to complete the survey, a stamped, addressed envelope was provided.

Statistical analysis: survey responses of NH and VT residents were compared using Chi-squared test or Fisher's exact test as appropriate. All *p*-values were two-sided and *p* < 0.05 was taken to indicate significance.

To investigate the validity of the questionnaire, we explored the correlation between reported average driving speed on interstate highways and self-assessment of risk taking behaviors using a Spearman's rank correlation test.

3. Results

Five hundred and thirty-six surveys were completed. Fifty-three eligible patients refused or did not complete the survey, yielding a response rate of 91%. Fifty-five percent of respondents were NH residents and 45% were VT residents. In terms of knowledge of the current laws, a high percentage of respondents from each state correctly identified their own restraint law (NH: 72% versus VT: 82%). However, New Hampshire residents were much more knowledgeable with respect to the law in the adjacent state (73% versus 33%, *p* < 0.001) (Table 1).

With respect to overall restraint use, a significantly greater number of Vermont residents reported using their seat belt $\geq 75\%$ of the time (NH: 73%; VT: 84%; *p* = 0.002) (Table 2; Fig. 1). When driving in states with a seat belt law (i.e. VT), residents of both states reported similar rates of restraint use (NH: 87%; VT: 87%; *p* = 0.953). In contrast, when traveling in a state without a seat belt law (i.e. NH), significantly fewer NH residents reported frequent restraint compared with residents of VT (NH: 73%; VT: 85%; *p* = 0.001) (Table 2).

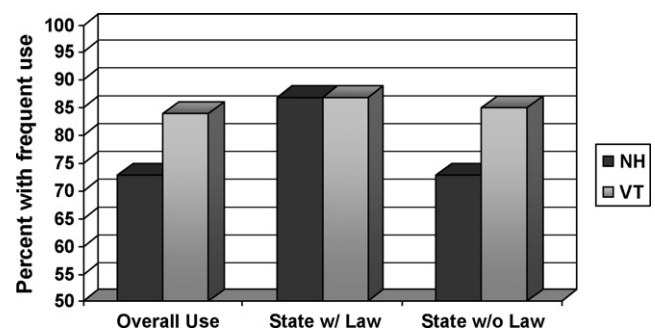


Fig. 1. Percentage of respondents exhibiting frequent seat belt use.

Table 2
Summary of seat belt use by state of residences

State of residence	% (n)	Use overall ^a , % (n)	Use in state w/SB law ^a , % (n)	Use in state w/no law ^a , % (n)
NH	55 (293)	73 (213)	87 (252)	73 (211)
VT	45 (243)	84 (203)	87 (209)	85 (202)
p-Value		0.002	0.953	0.001

^a SB use $\geq 75\%$ of time.

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