Road Safety Impact Of Extended Drinking Hours In Ontario

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Abstract
The purpose of this study was to evaluate the safety impact of extended drinking hours in Ontario. This study used a quasi-experimental comparison time series design. The analysed datasets are monthly casualties for Ontario in comparison to neighbouring New York and Michigan pre-post policy change. The findings suggest a possible small effect post policy change.

Introduction
Recent statistics suggest that the world-wide progress to reduce impaired driving may have plateaued. In addition alcohol control policies in many jurisdictions have been moving towards greater liberalization, despite evidence that increased alcohol availability is related to increased consumption and safety-related problems. One control policy for which there is very little information is hours of sale.

On May 1, 1996, Ontario, Canada amended the Liquor Licence Act to extend the hours of alcohol sales and service in licensed establishments from 1 to 2 am. This amendment change provides an excellent natural experiment to evaluate an important alcohol policy. The purpose of this NIAAA-funded study was to evaluate the health and safety impact of this amendment. This paper presents preliminary results.

Method
This study used a multi-methods, multiple-measures approach within a quasi-experimental comparison time series design. The focus of this study was on the BAC+ casualties during the 11 pm to 3 am time windows. Additionally, these data were disaggregated by day of week. Post policy surveys by the former Liquor Licensing Board of Ontario found that licensed establishments in smaller communities maintained their 1 am closing for Sunday through Wednesday night because of lack of sufficient business, but kept open until 2 am on Thursday through Saturday nights. Thus, the data were collapsed into two weekday groups 1) Sun-Wed and 2) Thurs-Sat nights.

Three competing hypotheses were tested: 1) Availability theory predicts that an extended drinking hour would increase alcohol consumption and lead to increased alcohol-related...
consequences. Evening casualties and impaired driving charges should shift and increase by one hour; 2) The “power drinking” hypothesis posits that the former 1 am closing encouraged “loading up on the last call”. This led to a large number of impaired patrons driving after the establishment closed. The government advocated the extension of drinking hours as a way of extending the same quantity of drinking over an extra hour, thereby reducing the 1 am exodus of patrons from the licensed establishments. This hypothesis would thus predict a decrease for the 1-2 am times and no change for the 11-12, 12-1 and 2-3 am times; 3) The temporal shift in drinking pattern hypothesis posits that the amount of consumption will stay the same. Rather patrons shift their hours of patronage by one hour. This should lead to a temporal shift in problems, but no overall increase.

The criterion datasets for the evaluation are monthly motor vehicle casualties for the 11-12 pm, 12-1 am, 1-2 am and 2-3 am time windows, by weekday grouping (Sun-Wed vs. Thurs-Sat) for 4 years pre- and 3 years post-policy change in Ontario compared to New York and Michigan, two neighbouring American states.

This paper focuses on two different datasets: 1) Traffic Injury Research Foundation (TIRF) driver fatality database and 2) the US Fatal Accident Reporting System (FARS) database.

Results

Figure 1 presents the time series intervention analyses for the TIRF and FARS total driver fatalities. In Ontario there were two significant post-intervention downward trends for Sun-Wed for the 12-1 and 1-2 am time periods and one almost significant upward trend for the Thurs-Sat 3-4 am time period. No other trends were significant. In New York and Michigan, no significant trends were identified coincident with the Ontario extended drinking hours intervention.

Figure 2 provides the time series analyses for the TIRF and FARS BAC+ fatalities. The TIRF BAC+ data showed significant and insignificant downward trends for Sun-Wed 12-1 am and 1-2 am and Thurs-Sat 1-2 am, while the other time periods showed no change. By contrast, the FARS BAC+ data reflected significant and insignificant downward trends for Thurs-Sat 11 pm-12 am, 12-1 am, 2-3 am and 3-4 am while the other time periods showed no changes.

Discussion

These preliminary results are equivocal as no clear outcomes are visible. However, given that drinking in licensed establishments was extended for only one hour the possible effects on safety were expected to be small. Multiple measures were gathered to enhance validity by seeking convergence of findings, thereby enhancing the interpretability of findings. Additional datasets and analyses will be brought to bear on our final interpretations. To date our analyses tentatively support either the power drinking or temporal shift hypotheses. It is noteworthy that Ontario trends diverged from our control data trends. Clear downward trends occurred in BAC+ TIRF casualties during 1-2 am post-policy while no changes occurred in the FARS data. On the other hand, no changes were found with TIRF data during the other periods, while significant and nonsignificant decreasing trends were found with FARS during the same period. Differences were particularly noticeable for the Thurs-Sat time period, where New York-Michigan data were exhibiting downward trends, except for the 1-2 am time period, while the reverse was found for Ontario. This would suggest no overall change in drinking driving behaviour in Ontario, post-policy change apart from fewer patrons leaving establishments at the previous closing time of 1-2 am. However, these results are tentative and clearly, additional analyses are needed to disaggregate possible effects of the extended drinking hour policy change in Ontario.
References


Figure 1: Ontario Total Fatalities

New York and Michigan Total Fatalities

S=Sun-Wed; T=Thurs-Sat; 11=11-11:59 pm, 12=12am-12:59am, . . .

p=.132
p=.044
p=.006
p=.103
p=.088
Figure 2: Ontario Total BAC+ Fatalities

New York and Michigan Total BAC+ Fatalities

p=.08

p=.03

S=Sun-Wed; T=Thurs-Sat; 11=11-11:59pm, 12=12-12:59am, ...