



Young driver licensing: Examination of population-level rates using New Jersey's state licensing database

Allison E. Curry^{a,b,*}, Melissa R. Pfeiffer^a, Dennis R. Durbin^{a,b,c}, Michael R. Elliott^{d,e},
Konny H. Kim^a

^a Center for Injury Research and Prevention, The Children's Hospital of Philadelphia, 3535 Market Street, Suite 1150, Philadelphia, PA 19104, USA

^b Center for Clinical Epidemiology and Biostatistics, Perelman School of Medicine at the University of Pennsylvania, 423 Guardian Drive, Philadelphia, PA 19104, USA

^c The Department of Pediatrics, Division of Emergency Medicine, The Children's Hospital of Philadelphia, Perelman School of Medicine, University of Pennsylvania, 3401 Civic Center Blvd., Philadelphia, PA 19104, USA

^d Department of Biostatistics, School of Public Health, University of Michigan, 1415 Washington Heights, Ann Arbor, MI 48109, USA

^e Survey Methodology Program, Institute for Social Research, University of Michigan, Rm. 4068, 426 Thompson Street, Ann Arbor, MI 48109, USA

ARTICLE INFO

Article history:

Received 2 May 2014

Received in revised form 8 December 2014

Accepted 22 December 2014

Available online xxx

Keywords:

Adolescent

Driver licensing

Driving

Graduated driver licensing

Motor vehicle

Teenagers

ABSTRACT

Recent surveys have provided insight on the primary reasons why US teens delay licensure but are limited in their ability to estimate licensing rates and trends. State administrative licensing data are the ideal source to provide this information but have not yet been analyzed for this purpose. Our objective was to analyze New Jersey's (NJ) licensing database to: (1) describe population-based rates of licensure among 17- to 20-year-olds, overall and by gender and zip code level indicators of household income, population density, and race/ethnicity; and (2) examine recent trends in licensure. We obtained records on all licensed NJ drivers through June 2012 from the NJ Motor Vehicle Commission's licensing database and determined each young driver's age at the time of intermediate and full licensure. Data from the US Census and American Community Survey were used to estimate a fixed cohort of NJ residents who turned 17 years old in 2006–2007 ($n=255,833$). Licensing data were used to estimate the number of these drivers who obtained an intermediate license by each month of age (numerators) and, among those who obtained an intermediate license, time to graduation to full licensure. Overall, 40% of NJ residents—and half of those who ultimately obtained a license by age 21—were licensed within a month of NJ's minimum licensing age of 17, 64% by their 18th birthday, and 81% by their 21st birthday. Starkly different patterns of licensure were observed by socioeconomic indicators; for example, 65% of 17-year-olds residing in the highest-income zip codes were licensed in the first month of eligibility compared with 13% of residents living in the lowest-income zip codes. The younger an individual obtained their intermediate license, the earlier they graduated to a full license. Finally, the rate and timing of licensure in NJ has been relatively stable from 2006 to 2012, with at most a 1–3% point decline in rates. These findings support the growing body of literature suggesting that teens delay licensure primarily for economic reasons and that a substantial proportion of potentially high-risk teens may be obtaining licenses outside the auspices of a graduated driver licensing system. Finally, our finding of a relatively stable trend in licensure in recent years is in contrast to national-level reports of a substantial decline in licensure rates.

© 2015 Elsevier Ltd. All rights reserved.

1. Introduction

Prior studies have established the effectiveness of US graduated driver licensing (GDL) systems in reducing the incidence of crashes among young novice drivers, and in particular a benefit of a higher minimum licensing age (Masten et al., 2013; McCartt et al., 2010; Ulmer et al., 2001). However, GDL programs in almost all US states include novice drivers only up to age 18. Some (but not all) recent GDL evaluations have reported higher fatal crash rates among 18-year-old drivers (Ehsani et al., 2013; Masten et al., 2011; McCartt et al., 2010; Morrissey and Grabowski, 2010), raising the issue that

* Corresponding author at: Center for Injury Research and Prevention, The Children's Hospital of Philadelphia, 3535 Market Street, Suite 1150, Philadelphia, PA 19104, USA. Tel.: +1 267 426 9363; fax: +1 215 590 5425.

E-mail addresses: currya@email.chop.edu (A.E. Curry), m.rileypfeiffer@gmail.com (M.R. Pfeiffer), durbind@email.chop.edu (D.R. Durbin), mrelliot@umich.edu (M.R. Elliott), konnyhuh@gmail.com (K.H. Kim).

certain subgroups of teens may be delaying the onset of licensure to an age at which they are no longer covered by their state's GDL system. The young driver research community is beginning to delve into this issue and its potential implications; an important step in doing so is to gain a better understanding of licensure patterns among US teens and how these patterns vary among subgroups.

Several recent nationally-representative surveys have estimated driver licensing rates among teens. In 2010, the annual Monitoring the Future (MTF) survey estimated that 73% of US high school seniors reported having a driver's license (Shults and Williams, 2013). In a separate survey of 1039 18- to 20-year-olds conducted by the AAA Foundation for Highway Traffic Safety in 2011, 65% of 18-year-olds, 70% of 19-year-olds, and 76% of 20-year-olds reported being licensed (Tefft et al., 2013). Studies differ in terms of whether rates vary by gender (Shults and Williams, 2013; Tefft et al., 2013; Winston et al., 2009), but lower rates were noted among Hispanics and African-Americans compared with whites (Shults and Williams, 2013; Williams et al., 2011; Winston et al., 2009), those with lower income (Tefft et al., 2013), and those residing in denser urban areas compared with less dense urban areas (McDonald and Trowbridge, 2009). The specific timing of licensure and how that has changed in recent years is largely unknown, with only two recent surveys examining this question. Tefft et al. (2013) found that only 44% of teens were licensed within 1 year of their state's minimum licensing age, while McCartt et al. (2007) conducted interviews in three states (Rhode Island, North Carolina and Minnesota) with 16- and 17-year-olds who presented to Department of Motor Vehicle (DMV) offices to take their on-road driving test and found that most teens obtained their license within two months of eligibility.

Although the general perception is that licensure rates have declined in the US—in particular in the late 2000's coinciding with the economic recession—in truth, few studies have assessed trends (Lavelle, 2013). The only survey to do so showed a 12 percentage point decline in the proportion of licensed high school seniors from 1996 to 2010 (from 85% to 73%), with two-thirds of that decline occurring between 2006 and 2010 (Shults and Williams, 2013). Notably, these reports were based on the single question “Do you have a driver's license?” and traversed the time period in which states implemented GDL systems, adding to the possibility of different interpretations of the term “driver's license.” In addition, a Highway Loss Data Institute (HLDI) study (2013) showed that the level of insured teens declined between 2006 and 2012.

Several reasons have been posited regarding why US teens delay licensure, including to avoid GDL system requirements (Masten et al., 2011), an increased ability to connect virtually with friends (Sivak and Schoettle, 2011), and the availability of alternative transportation systems (McDonald and Trowbridge, 2009). Recent studies, however, provide evidence that teens delay licensure primarily for economic and practical reasons. Teens reported not having a car, the cost of gas or maintaining a vehicle, being able to get around without driving, and being busy with other activities as main reasons for not obtaining a license, while fewer mention their state's laws or virtual connectivity with friends (State Farm Mutual Automobile Insurance Company, 2013; Tefft et al., 2013). These results, combined with findings of delayed licensure among minority and lower-income teens and the HLDI's finding that unemployment was a significant factor in the decline of insured teens (Highway Loss Data Institute, 2013; Tefft et al., 2013), warrant further investigation of the role of socioeconomic factors on licensing rates.

Although surveys have provided important insight on the reasons for delayed licensure, they have significant limitations in estimating licensing rates. Their cross-sectional nature precludes assessment of trends, national studies do not always account for differences in minimum licensing ages across states and may

include respondents from only a fraction of states, sample sizes may preclude examination of subgroup differences, and teens may have to recall age at licensure. Further, cumulative proportions of time to licensure estimated by McCartt et al. (2007) were conditional on 16- and 17-year-olds having presented at the DMV for a road test—that is, rates were estimated among 16- or 17-year-olds seeking licensure instead of the entire population of 16- and 17-year-olds (the denominator of interest).

Analysis of population-level licensure data would overcome the above-mentioned limitations and complement in-depth surveys by providing information on the timing of and trends in teens' licensure. Thus far, only aggregate data provided by the Federal Highway Administration (FHWA) has been used to provide population-level licensure estimates. Using FHWA data, Sivak and Schoettle (2012) reported that 76% of US 19-year-olds were licensed in 2008 and that by 2010 the proportion had declined to 70%. However, serious concerns have been raised about the validity of FHWA data, and large year-to-year fluctuations in the number of licensed 16-year-olds have been reported in FHWA data for at least a dozen states (Curry et al., 2014a; Foss, 2013; Insurance Institute for Highway Safety, 2006).

State-level administrative licensing data serve as the ideal source for population-based data on licensing but have not yet been analyzed for this purpose. To this end, we aimed to utilize New Jersey's (NJ) state licensing database to describe population-based rates of licensure among 17- to 20-year-olds. New Jersey is unique in that its minimum licensure age of 17 is the highest of any US state and it is the only state for which full GDL requirements apply to all newly-licensed drivers under 21 years of age. While this limits the immediate generalizability to other states, it does provide a unique perspective from a state whose GDL system has long been hailed as a model and informs stakeholders in other states as they consider raising their minimum licensing age and/or extending GDL restrictions to older novice drivers (Williams, 2009). In addition, these analyses serve as an illustration of the types of data that may be extracted from state licensing databases to further advance young driver research. Specifically, our objectives were to: (1) determine the proportion of NJ residents who obtain an initial (intermediate) license by each month of age (17 through 20), both overall and by gender and zip code level indicators of household income, population density, and race/ethnicity; (2) describe rates of graduation from intermediate to full licensure; and (3) examine trends in licensure rates from 2006 to 2011.

2. Materials and methods

2.1. New Jersey GDL system

New Jersey has one of the most comprehensive GDL laws in the US (enacted in 2001), with the highest minimum age of licensure, and one of the lowest teen crash fatality rates (Durbin et al., 2012). Adolescents progress through three licensing phases: (1) learner's permit: eligible at a minimum age of 16 (17 if no formal driver training) and 180-day minimum holding period; (2) intermediate license (known as probationary in NJ): eligible at a minimum of age 17, 365-day minimum holding period, and subject to the following restrictions: (a) one-passenger limit unless a parent/guardian is in the vehicle; (b) ban on driving from 11:01 p. m. through 4:59 a.m.; (c) ban on driver use of hand held and hands-free interactive wireless communication devices; and (d) required seat belt use for all vehicle occupants; and (3) full (basic) license: eligible at a minimum of age 18 following completion of phases 1 and 2. NJ is the only state that applies full GDL rules to all newly-licensed drivers under age 21; in other states, newly-licensed drivers aged 18 and older are exempt from GDL

Download English Version:

<https://daneshyari.com/en/article/6965707>

Download Persian Version:

<https://daneshyari.com/article/6965707>

[Daneshyari.com](https://daneshyari.com)