Introduction. Cell phone use while driving restricts peripheral awareness and impairs reaction time. This study assessed the 3-year prevalence of cell phone use (CPU) of drivers and characteristics associated with its use in six cities across Texas, 2011–2013. Methods. CPU and driver characteristics were observed among motor vehicles (n = 1280) stopped at major intersections in medical and academic campuses. A multivariable logistic regression model described the association between driver characteristics and CPU. Results. The overall prevalence of any CPU was 18.7%. Any type of CPU and talking tended to decline, while texting seemed to increase from 2011 to 2013. CPU was more likely among female drivers (OR = 1.63; 95% CI = 1.21, 2.20), drivers <25 years of age (OR = 4.12; 95% CI = 2.29, 7.39), and drivers without passengers (OR = 4.40; 95% CI = 2.82, 6.88). Conclusion. Despite its dangers, CPU remains popular among Texas drivers. CPU and texting bans should target public health campaigns towards female and younger drivers. © 2015 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).
Characteristics of randomly sampled vehicles and factors associated with cell phone use among drivers in major medical and academic campuses in Texas, 2011–2013.

Table 1

|                  | 2011 (n = 537) | 2012 (n = 396) | 2013 (n = 347) | Total (n = 1280) | CPU OR* (95% CI) | Texting OR* (95% CI) | Talking OR* (95% CI) |
|------------------|----------------|----------------|----------------|------------------|------------------|---------------------|---------------------|
| **City**         |                |                |                |                  |                  |                     |                     |
| Houston          | 378 (70.4)     | 272 (68.7)     | 246 (70.9)     | 896 (70.0)       |                  |                     |                     |
| Austin           | 60 (11.2)      | 45 (11.3)      | 11 (3.3)       | 116 (9.0)        |                  |                     |                     |
| Brownsville      | –              | –              | 15 (4.3)       | 15 (1.2)         |                  |                     |                     |
| Dallas           | 39 (7.2)       | 49 (12.4)      | 30 (8.6)       | 118 (9.2)        |                  |                     |                     |
| San Antonio      | 60 (11.2)      | 30 (7.8)       | 30 (8.6)       | 120 (9.4)        |                  |                     |                     |
| El-Paso          | –              | –              | 15 (4.3)       | 15 (1.2)         |                  |                     |                     |
| **Vehicle type** |                |                |                |                  |                  |                     |                     |
| 2 or 4 door car | 266 (49.6)     | 193 (48.9)     | 194 (55.9)     | 653 (51.1)       |                  |                     |                     |
| Minivan/SUV      | 200 (37.2)     | 139 (35.3)     | 105 (30.3)     | 444 (34.7)       |                  |                     |                     |
| Pickup truck     | 71 (13.2)      | 62 (15.8)      | 48 (13.8)      | 181 (14.2)       |                  |                     |                     |
| **Driver gender**|                |                |                |                  |                  |                     |                     |
| Male             | 314 (58.6)     | 208 (52.7)     | 189 (54.5)     | 711 (55.6)       | Ref              | Ref                 | Ref                 |
| Female           | 222 (41.4)     | 187 (47.3)     | 158 (45.5)     | 567 (44.4)       | 1.63 (1.21–2.20) | 2.22 (1.42–3.47)   | 1.27 (0.89–1.80)   |
| **Driver age**   |                |                |                |                  |                  |                     |                     |
| <25 years        | 38 (7.1)       | 36 (9.1)       | 33 (9.5)       | 107 (8.4)        | 4.12 (2.29–7.39) | 5.76 (2.39–13.86)  | 2.41 (1.20–4.85)   |
| 25–50 years      | 372 (69.4)     | 274 (69.4)     | 218 (62.8)     | 864 (67.6)       | 2.40 (1.54–3.73) | 2.72 (1.29–5.77)   | 2.00 (1.20–3.34)   |
| >50 years        | 126 (23.5)     | 85 (21.5)      | 96 (27.7)      | 307 (24.0)       | Ref              | Ref                 | Ref                 |
| **Driver seatbelt use** |            |                |                |                  |                  |                     |                     |
| No               | 23 (4.5)       | 12 (3.1)       | 9 (2.8)        | 44 (3.6)         | Ref              | Ref                 | Ref                 |
| Yes              | 487 (95.5)     | 380 (96.9)     | 317 (97.2)     | 1184 (96.4)      |                  |                     |                     |
| **Passengers**   |                |                |                |                  |                  |                     |                     |
| No               | 378 (71.6)     | 282 (73.2)     | 220 (63.8)     | 880 (70.0)       | 4.40 (2.82–6.88) | 3.21 (1.68–6.14)   | 4.46 (2.53–7.87)   |
| Yes              | 150 (28.4)     | 103 (26.8)     | 125 (36.2)     | 378 (30.0)       | Ref              | Ref                 | Ref                 |

Abbreviations: CPU, cell phone use; CI, confidence interval.

* Odds ratios adjusted for other variables included in the model: driver gender, driver age, and presence of passengers.

b Missing data: vehicle type, n = 1; sex of driver, n = 2; age of driver, n = 2; driver seatbelt use, n = 52; passengers, n = 22.
The majority of observations occurred in Houston, limiting the generalizability to other campuses. Although Houston drivers may not represent the CPU habits of drivers in other cities, the prevalence of CPU did not differ significantly between locations when city was added to the model. Additionally, the driver characteristics were similar across locations. Data were not collected in El Paso and Brownsville every year due to limited data collector availability; thus generalization of findings should be done carefully.

The timing and location of data collection likely excluded technology-savvy, adolescent drivers and rush hour commuters. Data were collected on an October weekday at mid-morning, thus teen drivers were likely at school unless they were visiting the medical center for health-related concerns. The drivers observed in this study were likely more representative of a cross-section of the local population, employees, and visitors less familiar with the area. Thus, the reported prevalence of CPU may underestimate the prevalence during peak driving hours or in areas with a high volume of younger drivers.

The prevalence of CPU among drivers could be misestimated given the difficulty in identifying handsfree talking. Data collectors received training, but may have incorrectly recorded handsfree talking for drivers who were singing or talking to passengers. Accuracy of observing handsfree talking was probably aided by having two data collectors observe each vehicle and reach a consensus on driver handsfree usage. Finally, this study, like previous studies, did not estimate the prevalence of CPU among moving vehicles.

Cell phone use remains prevalent among drivers in Texas academic and medical campuses. Many states have passed legislation prohibiting CPU while driving and the Texas state legislature is considering a number of measures to combat CPU by drivers (Anon, 2012). Both Austin and San Antonio had bans on texting while driving, enacted in 2010; yet, the prevalence of texting in these cities did not differ from others in the study. Females and younger drivers appear to be more likely to engage in CPU, thus public safety campaigns should target these groups. Future legislation should incorporate public health campaigns to stop CPU while driving and reduce traffic related injuries.

Contributors

ALB and RSD conceived the study and all authors were involved in the data collection and data entry. MLW, ALB, and IM performed analysis and prepared tables and figures. All authors were involved in the interpretation of data. MLW, ALB, and RSD prepared the first draft and all authors participated in revising and approving the final version.

Conflict of interest

The authors declare that there are no conflicts of interest.

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