IMPACT OF EDUCATION AND AWARENESS PROGRAMS ON THE USAGE AND ATTITUDE TOWARDS TEXTING WHILE DRIVING AMONG YOUNG DRIVERS

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Outline

- Problem Statement
- Literature Review
- Research Questions and Hypotheses
- Methodology
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Problem Statement

- Driver distraction due to “Texting While Driving” is rapidly increasing and is estimated to be a major cause of automobile accidents. Problem is more acute among young drivers.

- What is the effectiveness of awareness and education programs on texting-while-driving behavior on the targeted population?
Literature Review

- **National Highway Traffic Safety Administration (2009)**
  - 5,500 people were killed from distracted driving
  - 1,000 of these were attributed to cell phone use

- **Attitude of Young drivers**
  - Behavior that could predict texting while driving (Atchley, Atwood, & Boulton, 2011)
  - Relationship of demographic factors, environmental factors, personality traits with driving behavior (Shope, 2012)
  - Psychosocial influences on young people’s texting intentions and behavior. Theory of planned behavior. (Nemme & White, 2010)
Literature Review (cont.)

- **Effectiveness of Education**
  - Education, training, legislation and enforcement, phone design, etc. as the focus to curb the use of cell phones while driving (Ragan, 2006).
  - Social marketing: fear appeal's impact on action and intent of driver. (Lennon; Rentfro; & O'Leary, 2010)
  - The effects of perception of risk and importance of answering and initiating a cellular phone call while driving (Nelson, Atchley, & Little, 2009).

- **Use of Other Methods to Change Behavior**
  - Simulator—Compare driving performance in a simulator while dialing phone number (Reed and Green 1999)
  - Simulator—Cognitive research—Memory recall testing—Driving function impairment (.Salvucci and Beltowska, 2008)
Literature Review (cont.)

- Impact of Law
  - Drivers’ use of hand-held cell phones before and after New York State’s cell phone law. (MvCCartt, Braver & Geary, 2003).
  - Effects of Washington, D.C. law on drivers’ hand-held cell phone use. (McCartt, Hellinga & Geary, 2006).
  - Longer-term effects of Washington, DC, law on drivers’ hand-held cell phone use. (McCartt & Hellinga, 2007).
  - Evaluating the impact of legislation prohibiting hand-held cell phone use while driving – analysis based on accident data in various counties in State of NY (Nikolaev, Robbins & Jacobson, 2010)
Research Question and Hypotheses

Questions:

– Is driver education an effective deterrent against ‘texting while driving’ for young college age drivers?
– Are PSAs effective deterrent against ‘texting while driving’ for young college age drivers?
Research Question and Hypotheses

Hypotheses:

1. $H_0$: Driver education reduces “texting while driving.”
2. $H_0$: Driver education decreases intent of “texting while driving.”
3. $H_0$: Exposure of PSAs reduces “texting while driving.”
4. $H_0$: Exposure of PSAs decreases intent of “texting while driving.”
Other research variables

- **Demographics**
  - Gender
  - Urban/Rural

- **Environmental**
  - Family
  - Friends

- **Experiential Variables**
  - Exposure to PSA, Lecture, Articles
  - Personal experience (self, family, friend)

- **Personality Traits**
  - Grades
  - Extrovert/introvert
  - Anger
Research Methodology

- Environmental Factors
- Demographical Factors
- Personality Traits
- Exposure/Experiential Factors

Risk Attitude

Driving Behavior
Research Methodology (experiment)

- Environmental Factors
- Demographical Factors
- Personality Traits
- Exposure/Experiential Factors
- PSA Exposure
- Risk Attitude
- Modified Driving Behavior
- Education
Research Methodology

- Two True Experiments
  - PSA Exposure
    - Exp. Group1 (PSA Exp): O1 × O2
    - Exp. Group2 (Edu): O3 × O4
    - Control Group: O5 O6

- Effect
  - (O2-O1) – (O6-O5) (PSA Exp)
  - (O3-O4) – (O6-O5) (Education)
Research Methodology

- **Focus group**
  - Two focus groups
    - To assess prevailing attitudes towards “texting while driving”
    - Basis of survey instrument design
    - Basis for education and PSA selection

- **Selection of PSA and Education Material**
  - Rational Appeal
  - Fear Appeal
Research Methodology

- Instrument Design
  - Questionnaires Design—Pre-test and post tests
  - Pre-testing of questionnaires—remove errors and ambiguities
- Administering Pre-treatment Questionnaire
Research Methodology

- **Delivery of PSA**
  - 60 minutes
    - Minutes Power-point with facts
    - Five small PSAs

- **Delivery of Education Material**
  - Lecture by Law Enforcement official
  - Question Answer

- **Administering Post-treatment Instrument**
  - Slightly different instrument to each group
  - Administered at least after 14 days
Data Collection

- Population:
  - HU freshmen

- Selection Voluntary
  - Paid --$50 for completing both pre and post treatment survey and attending required treatment
  - Sample size 72
Data Collection

– Control Group Randomly assigned 18
– Education Group 32
– PSA group 22
Data Collection

Focus groups

- Two focus groups attended by 28 students
- Generally students felt that texting was safe “as long as” they are careful
- Most students report that their parent or other family members are active ‘texters’. They usually consider them poor “texters”.
- They report little or no exposure to PSAs and very limited exposure to educational material.
Data Collection

- Design of Survey
  - Dependent variables
    – Intent to text
    – Actual texting
  - Independent Variables
    – Demographical
      » Age, Gender, Race
      » Urban/Rural
    – Environmental
      » Parent/Other family members
      » Older Siblings
      » Friends
Data Collection

- **Design of Survey**
  - Experiential
    - Exposure
    - Incident in family, friend, community
  - Personal and Other Traits
    - GPA
    - SAT/ACT
    - Anger
    - Substance abuse
    - Friend circle
Data Collection

- **Pre-testing**
  - Distributed to a class of 20 students
  - Errors were corrected

- **Selection of PSA**
  - Generally using fear appeal
  - 5 short films from You-Tube

- **Education**
  - Law enforcement (requested to use fear appeal along with other educational issues)
Data Collection

- Collection Time
  - Focus groups
    - Nov 2011
  - PSA
    - Three separate times
      - Nov 2011-March 2012
  - Educational
    - March 2012
  - Post Treatment Survey
    - April 2012
Results

■ Descriptive Statistics

• n= 72
• Gender:  F45, M27
• Age: 18-19—68, 19+ --- 4
• Race: AA-66, C-1, Other-5
• Mean High School GPA: 3.34
• Mean SAT: 1447
• Follow Rules: 1.01
• Follow Speed Limit: 1.07
Results—cont.

- **Dependent Variables**
  - Perception of Safety of Texting While Driving (Likert Scale) (Mean 2.03—1 is very unsafe)
  - Relative Frequency of Texting While Driving (Reading, Replying or Initiating Texting--Likert) (Mean 1.81 –1is very often)

- **Chi-square test—Pre-treatment**
  - Demographic factors
    - Gender, Urban Rural
      - Insignificant difference
Results—cont.

- Chi-square test—Pre-treatment
  - Environmental factors
    - Parents, Friends, Siblings
      - No Difference
  - Personal and Personality Traits
    - GPA, SAT
      - No Difference
    - Anger, no. friends, fights, substance usage
      - No difference
  - Experiential Factors
    - Sample was small
Results—cont.

- Chi-square test—Post treatment
  - Control, PSA Treatment, Education Treatment
    - Environmental factors, Personal, Education
      - Usage of texting
      - No Difference (mean 1.73, 1.95, 1.84)
    - Environmental factors, Personal, Education
      - Perception
      - Mean (2.10, 1.96, 1.67)
      - Education has an impact on perception—Stat. significant
      - GPA is significantly related to perception of safety
Results—cont.

- Some environmental observations
  - No local history
  - Student show no “testing impact”
  - Time gap---
    - PSA---Post treatment survey 2 months later
    - Education—Post treatment survey 2 weeks later
Conclusions

- There is some impact of education on perception of safety but not on action.
- Longevity of impact is not clear.
- Repeated treatments have not been tried.
Future Research

- Simulator based exposure
  - Drive Square Simulator
- Long-term impact  Repeat survey
- Multiple exposures
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