

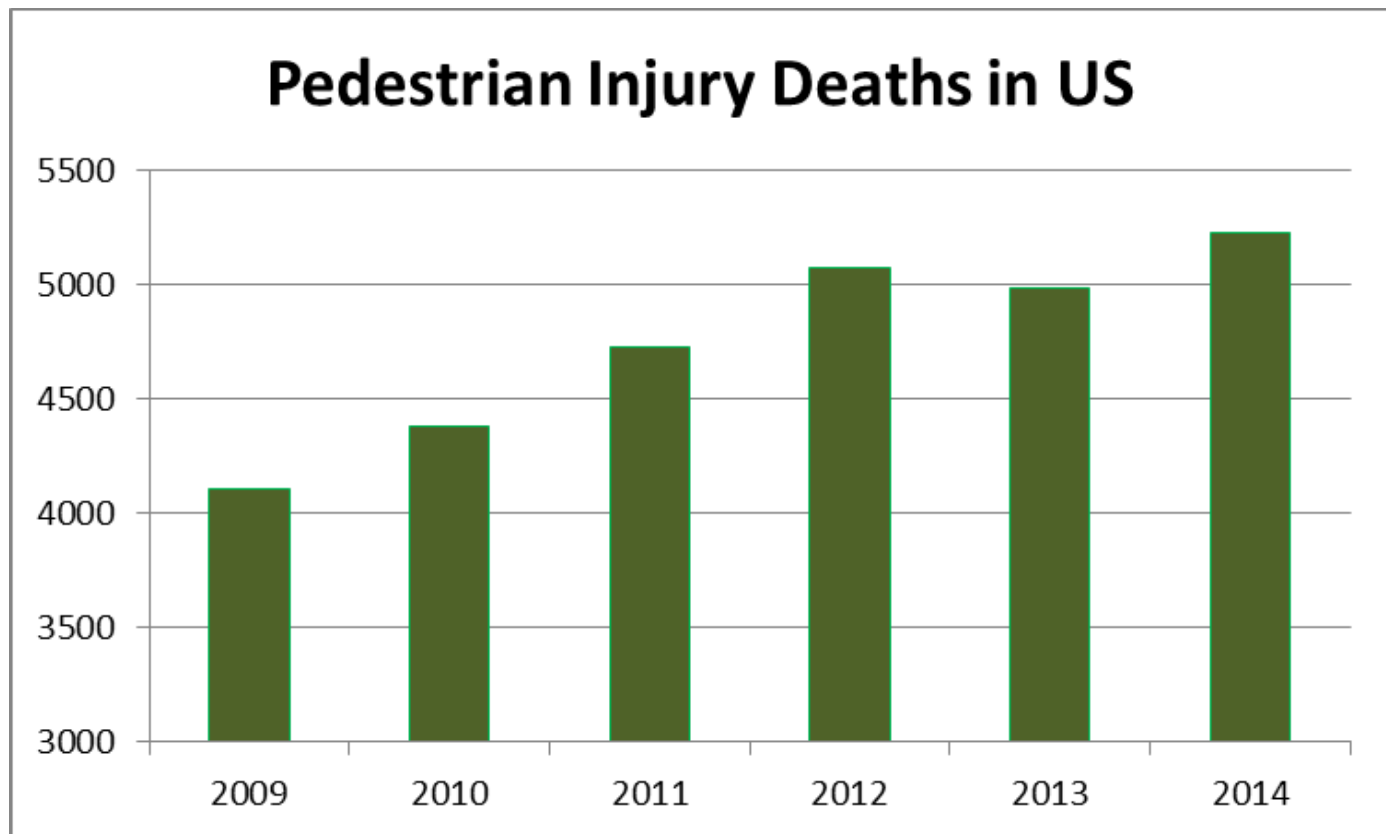


An Intervention to Reduce Distracted Walking

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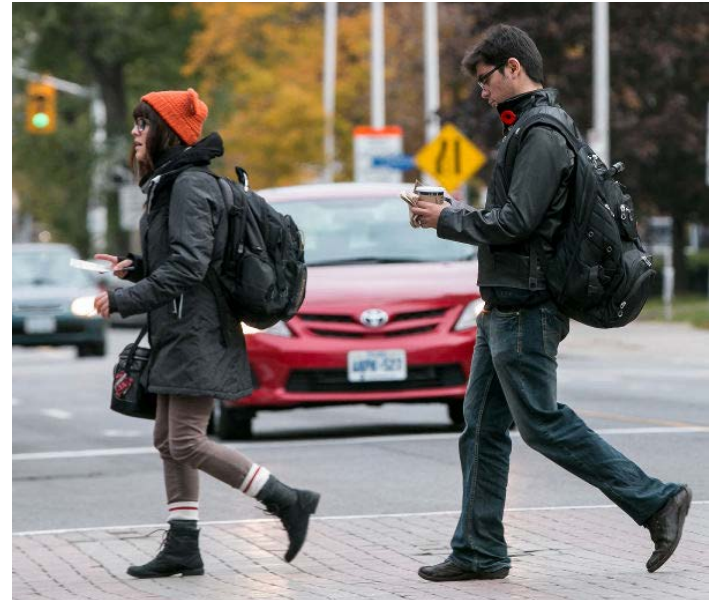
**Co-author collaborators: Leslie A.
McClure, Bryan Porter**

Pedestrian Injuries - Background



Why the increase???

- More driving – lower cost gas
- More walking – health promotion
- **More distraction – both drivers and pedestrians**



Background of Our Study

- Goal: reduce distracted pedestrian behavior on urban college campuses
- Theory-driven behavioral intervention, among the first ever to reduce distracted pedestrian behavior
- Young adults have high rate of smartphone and technology use
- Urban college campuses have high rates of pedestrian activity

Scope of the problem

- Before describing the intervention, how bad is the distracted pedestrian problem? Baseline data.
- Two campuses
 - Old Dominion University, Norfolk, VA
 - University of Alabama at Birmingham, Birmingham, AL
- Two target intersections – major boulevard with median and minor cross-street, signaled with traffic light
 - Hampton Blvd & 45th St in Norfolk
 - University Blvd & 14th St in Birmingham

Observational Data Collection - Methods

- Behavior coded continuously, weekdays 7:45 AM-5:45 PM
- 30 minute coding blocks from rotating single corner
- 3 sets of observations
 - 5 minutes, traffic count
 - 5 minutes, random selection of approaching pedestrian with observation for full crossing and detailed coding on individual differences, crossing behavior, and distraction
 - 15 minutes, coding of all approaching pedestrians as distracted or not distracted
 - (5 minutes rest/rotate)

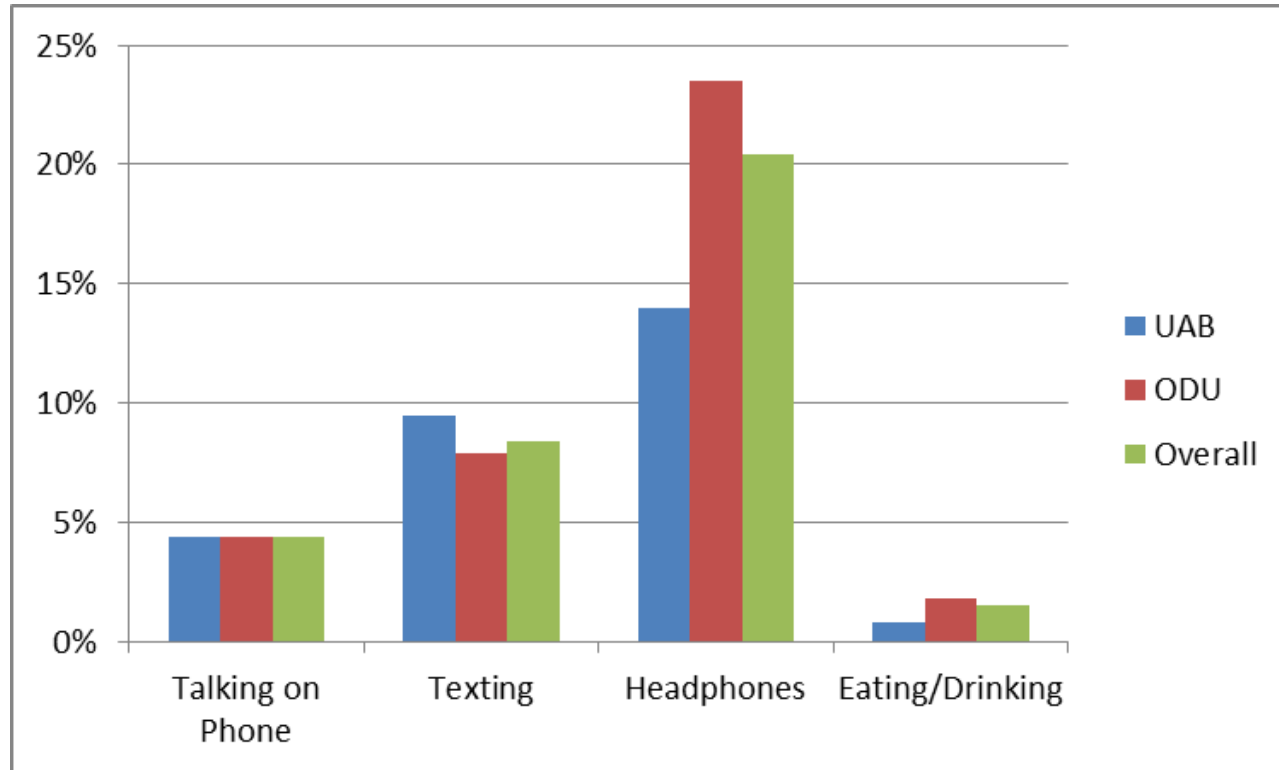
Observational Data Collection - Outcomes

- Traffic count (vehicles/hour)
- 5-minute individualized coding
 - Apparent gender
 - Estimated age
 - Enter with walk sign
 - Look left before entering road
 - Enter within crosswalk
 - Look right while leaving median
 - Exit within crosswalk
 - Distraction and type (phone, text, headphones, etc.)
 - Multiple distractions

Observational Data Collection - Outcomes

- 15-minute coding of all pedestrians
 - Distracted vs. not distracted
 - If distracted,
 - Talking on phone
 - Texting/looking down at phone
 - Wearing headphones
 - Reading
 - Eating
 - Other distractions
 - Multiple distractions

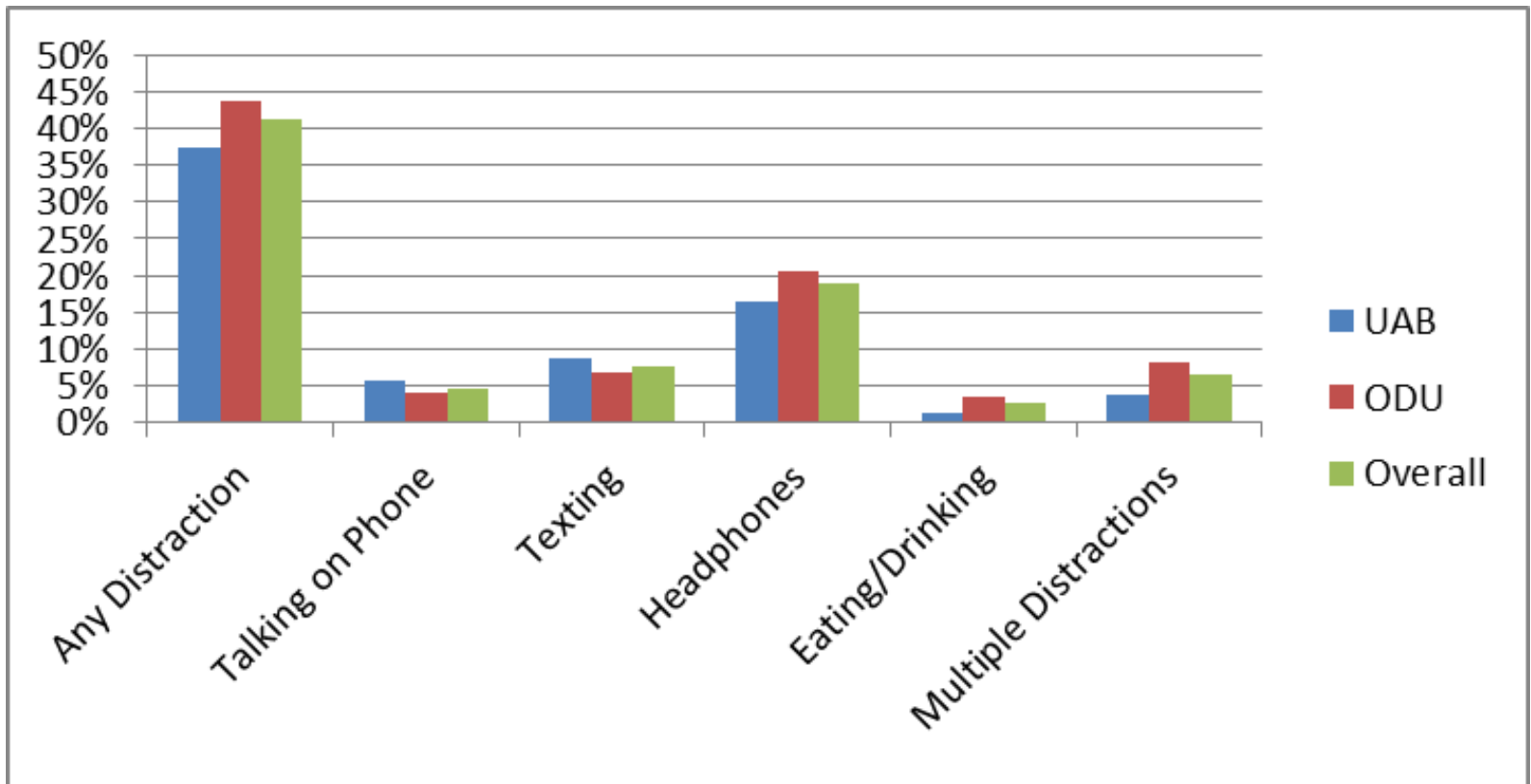
Baseline Results: 33% of All Pedestrians were Distracted (N=9,523)



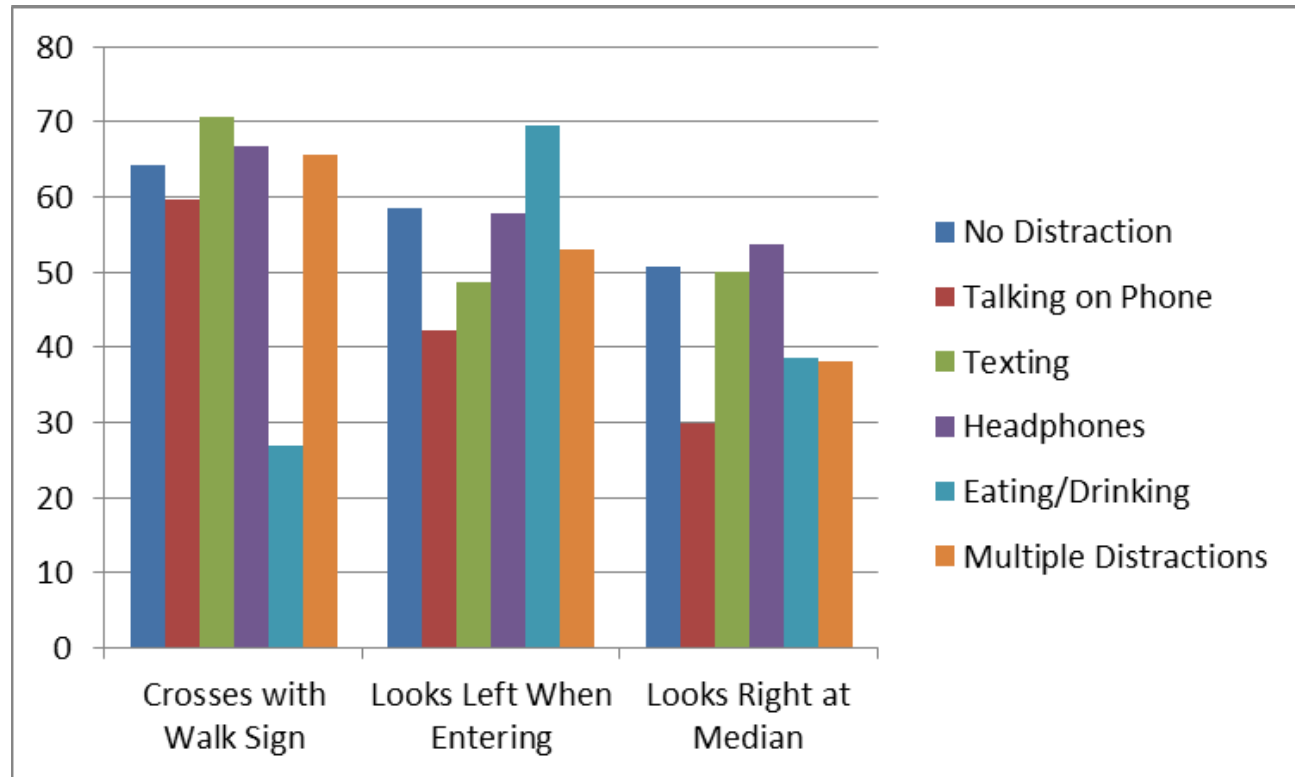
Results: Baseline Scope of Problem

- 1,020 individualized observations
- 89% young adults
- 51% female
- No major demographic differences across campuses

Baseline Results: Individualized Pedestrian Distraction (N=1,020)



Baseline Results: Distracted Pedestrians Engaging in Safe Behaviors (N=1,020)



Results: Individualized Pedestrian Gender Differences (N=1,020)

- Distraction
 - Women more likely to be distracted from talking on the phone, texting, and multiple distractions
 - Men more likely to be distracted from headphones
- Safety
 - Women more likely to exit within the crosswalk
 - Men more likely to look right at median

Scope of the problem

- Data show there is a problem - pedestrians are distracted on urban college campuses
- How do we create change???
- Health behavior theory – change is difficult

Health Behavior Change

- Distracted driving interventions show mixed results
- Distracted pedestrian interventions are few in number
- Distracted driving policy change has some efficacy
- Distracted pedestrian policy is extremely sparse

Health Behavior Change Theory

- Perceived Vulnerability: individuals must feel vulnerable or susceptible to a health risk in order to evoke behavior change (e.g., Health Belief Model, Transtheoretical Model).
- If one feels he/she may be harmed personally by a behavior, then there is motivation and reason to change.
- We sought this through experiential exposure – walking while texting in a simulated environment

Health Behavior Change Theory

- Change perceived/actual norms in the community – make it “normal” to behave in the safe way (e.g., seat belt use)
- We worked to accomplish a change in norms at a university campus by creating social contagion (also called diffusion), or the spreading of ideas, behaviors, and practices through local communities via established social networks of known individuals
- Urban college campus with intermingled social networks and “community” living/working/studying in close geographic proximity offers an ideal setting for change in norms
- Used both traditional face-to-face interaction and social media

Our approach

- Quasi-experimental pre-post design with control group
 - Baseline data collected at two campuses, ODU and UAB
 - Intervention at UAB – exposure to distracted pedestrian risk in virtual reality
 - Survey data collected at UAB at baseline, post-intervention, and 5 months
 - Post-intervention and 2-month and 6-month follow-up observation at both campuses

The intervention

- Exposure to crossing the street while texting in a virtual pedestrian environment (*goal: increase perceived vulnerability among individuals*)
- Significant media and advertising on campus during “Distracted Pedestrian Week” (*goal: change norms in community*)
 - Local television coverage
 - Posters and signs around campus
 - “Buzz” of discussion on topic created
 - Virtual pedestrian environments open to public in two classroom buildings, M-F, 9-6, for “walking and texting” attempts

The virtual reality environment

- Short film to give you a sense of what it looks like, from a study we conducted in a local school using it:

<http://www.uab.edu/cas/safetylab/>

Community-Based VR

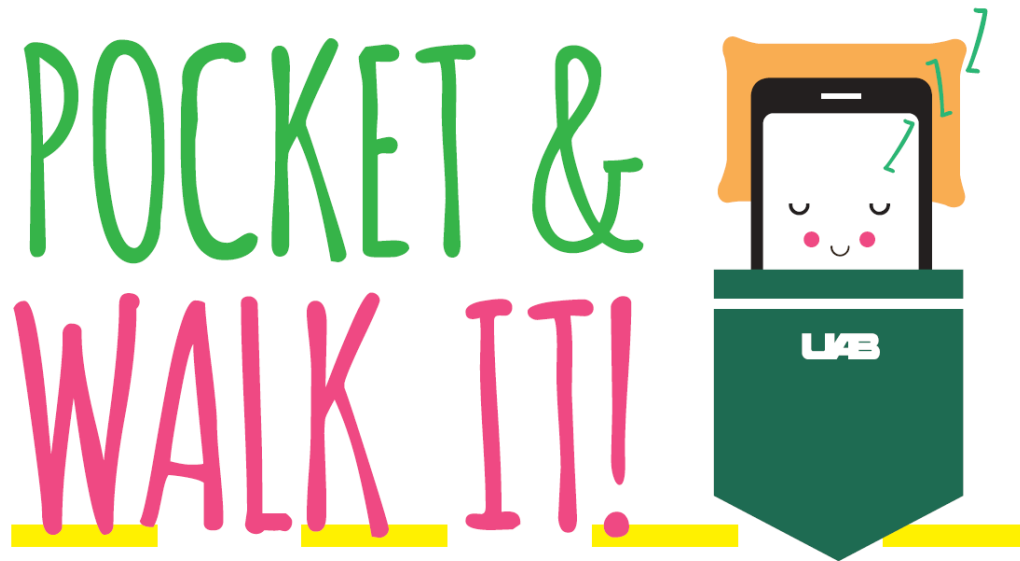


Community VR Screenshot



The intervention – yard signs

UAB YOUTH SAFETY LAB // Pedestrian Safety Awareness Week



Lobby of Heritage Hall and Campbell Hall

September 14-18 // 9:00AM-6:00PM

The intervention

- Social media
 - 18,000+ distributed
 - 7000+ video views

See:

<https://www.youtube.com/watch?v=VF9s2Y-k0AY>

The intervention

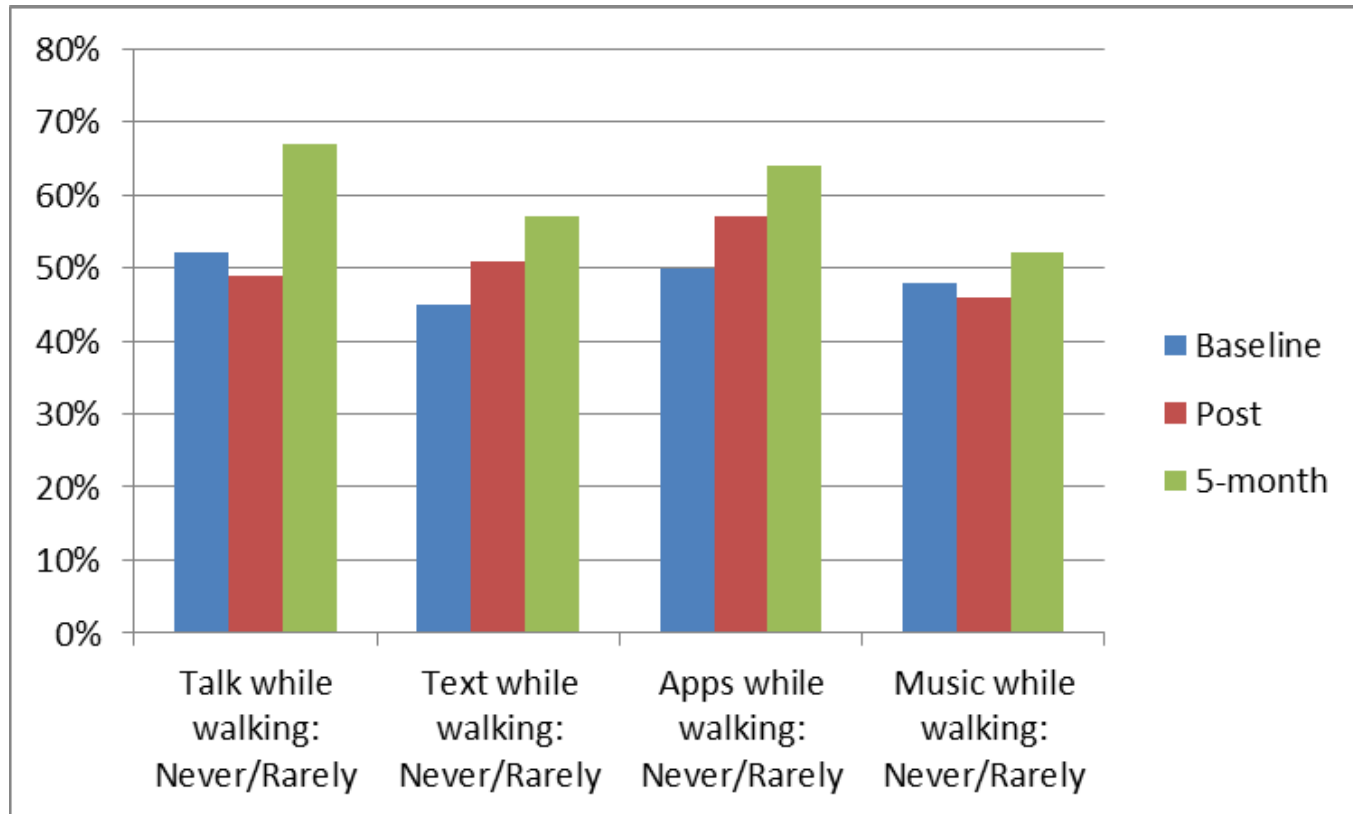




Self-Report Survey Results

- 78% received flyer/brochure on pedestrian safety
- 83% feel VR experience made them think more carefully about distracted pedestrian behavior
- 61% self-report changed behavior since engaging in the VR
- 84% feel VR experience was worthwhile to improve their health/safety
- 95% would recommend others try the VR experience

Self-Report Survey Results: Distracted Walking Behavior

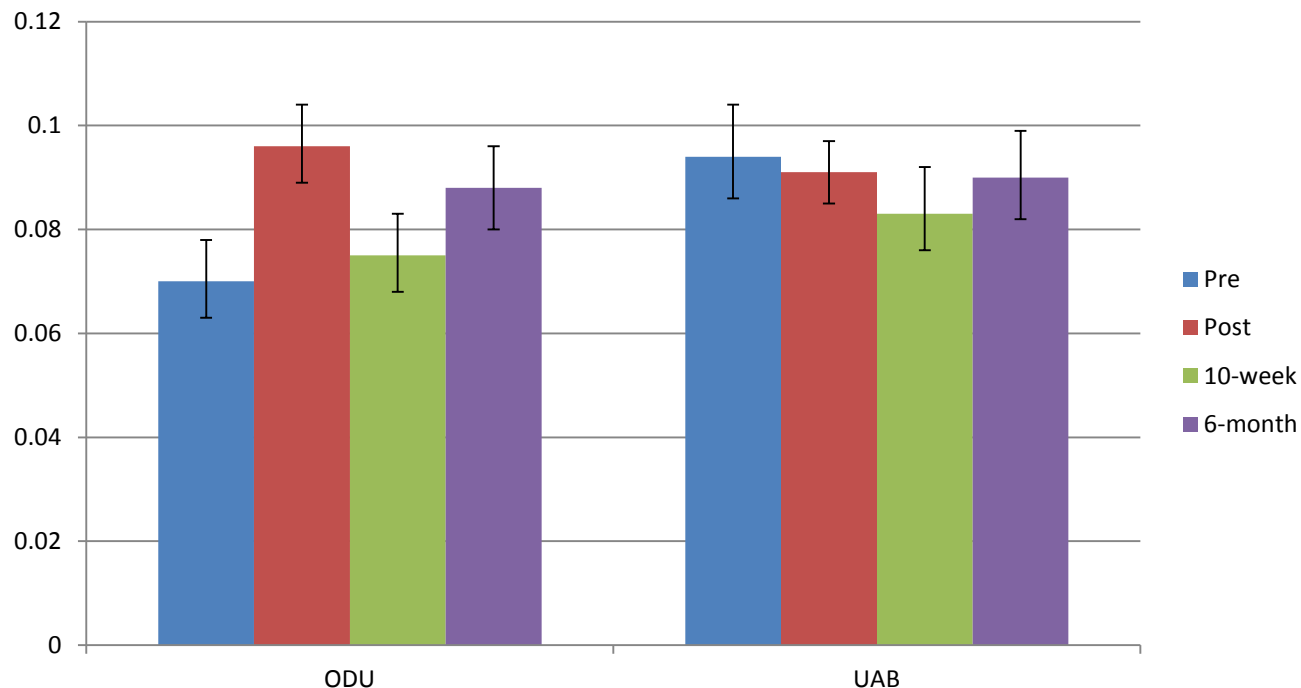




Summary: Survey Results

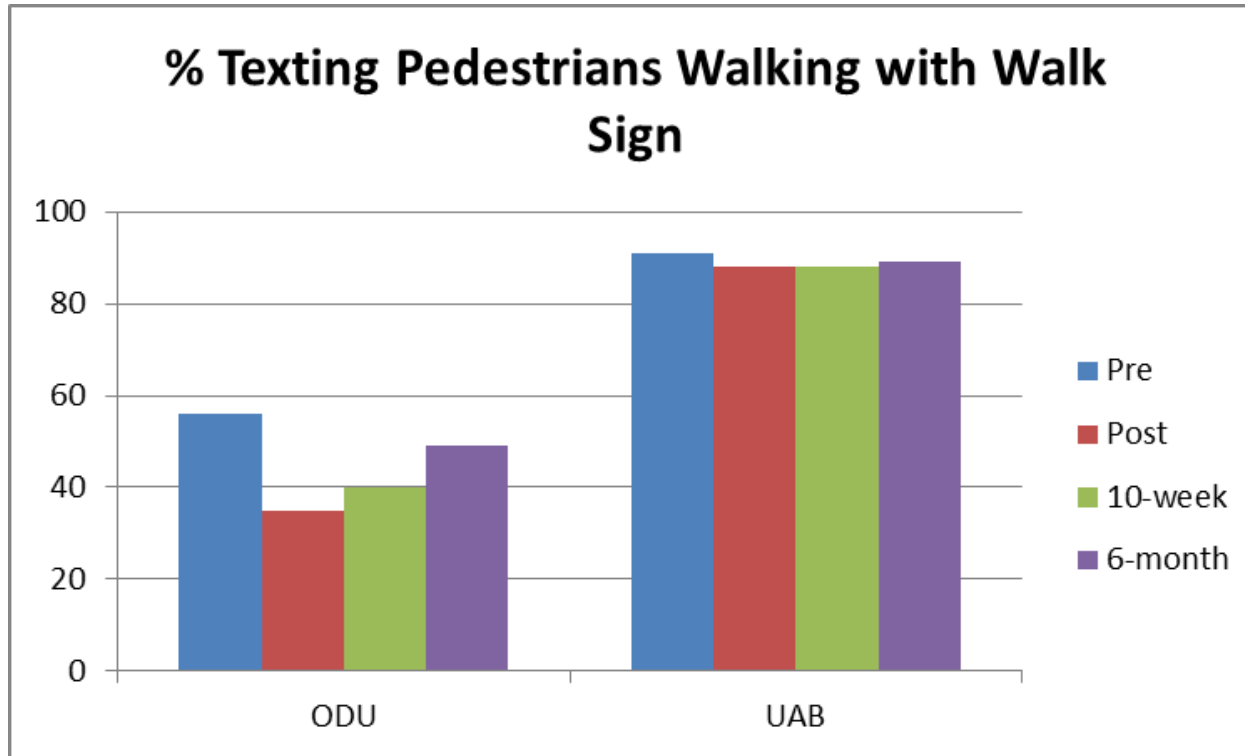
- We accomplished our goal to change perceived vulnerability
- Individuals reported greater intent to walk undistracted
- Exposure to experience of walking while distracted in simulation may have influenced behavior

Observational Results: Proportion of Individuals Walking while Texting



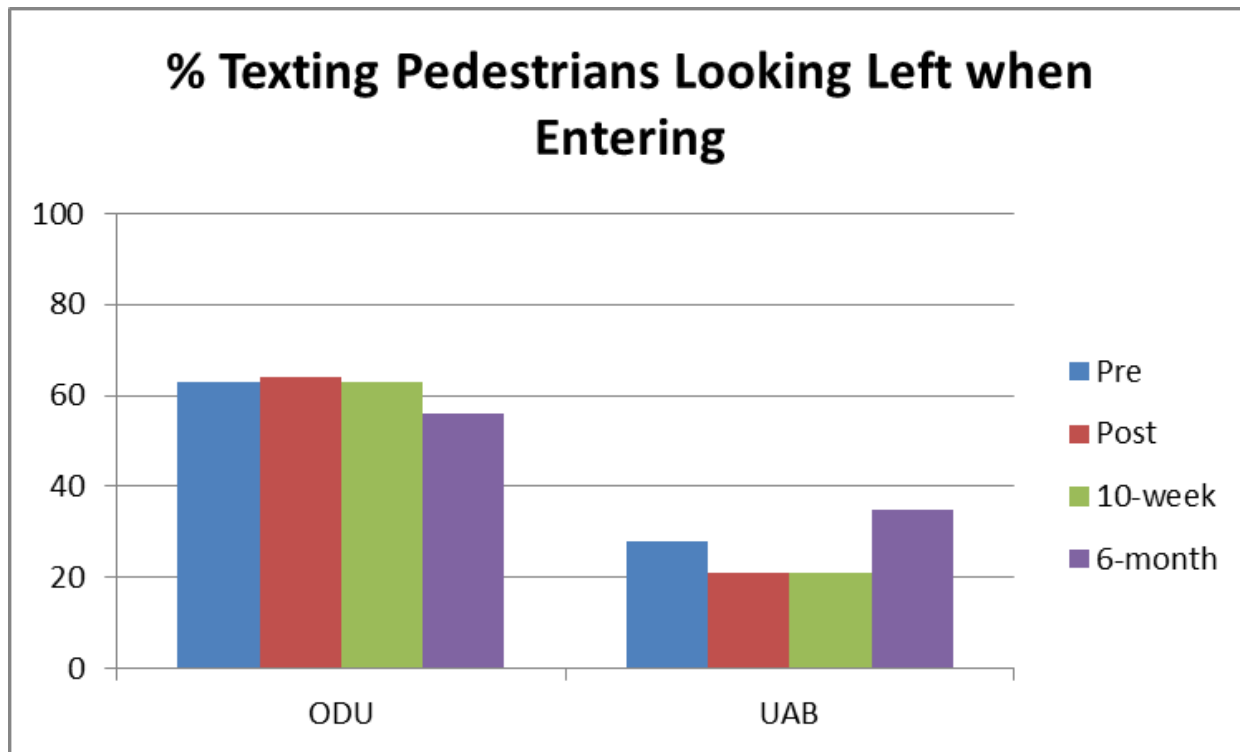
Note: Differences between campuses significant. Change over time not significant. Interaction significant but not behaviorally meaningful.

Observational Results: Safety



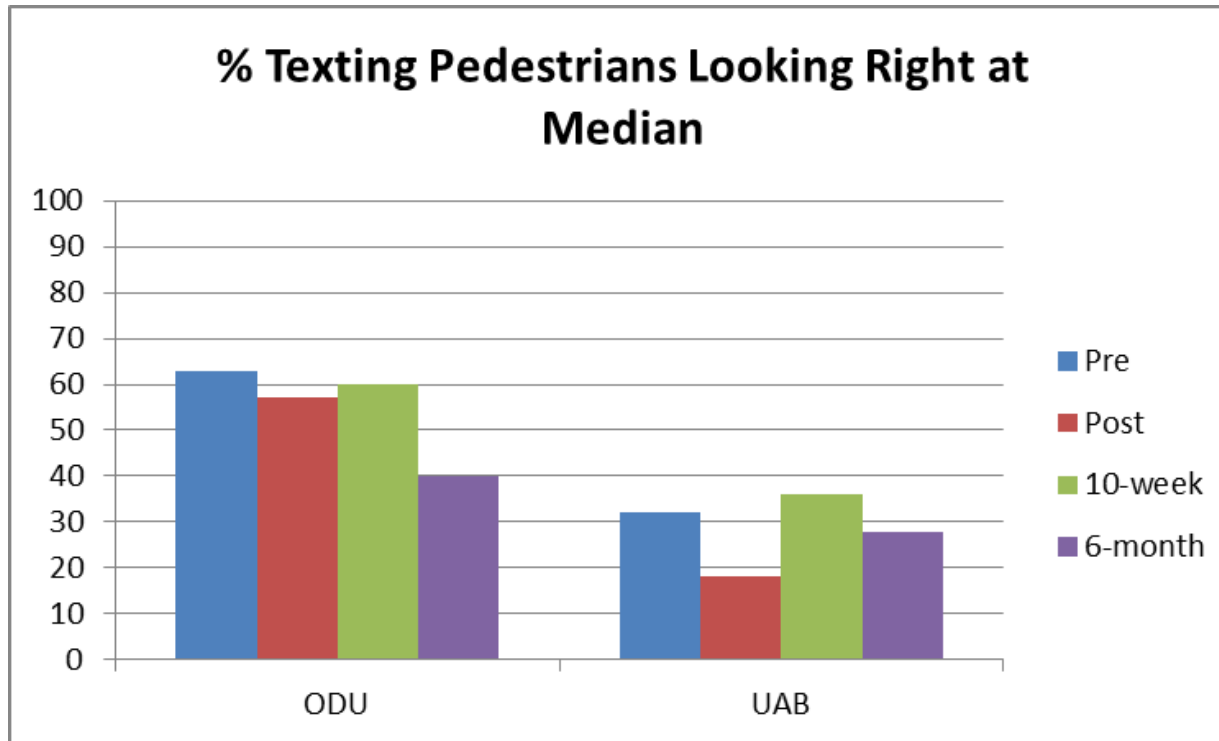
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Observational Results: Safety



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Observational Results: Safety



Note: Differences between campuses significant. Change over time not significant. Interaction not significant.



Summary: Observation Results

- We did not accomplish our goal to change community-based norms
- Some slight trends in expected direction, but mostly non-significant results in observed distraction at UAB compared to ODU

Conclusions

- Distracted pedestrian behavior is common on urban college campuses
 - About 33% of observed pedestrians crossing a major street were distracted
- Creating a “buzz” on campus, plus allowing pedestrians to try crossing a virtual street while distracted yielded:
 - Self-reported decrease in risky pedestrian behavior (change in perceived vulnerability)
 - Small and non-significant change in observed distracted pedestrian behavior (no significant change in perceived norms)



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Questions???

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POCKET & WALK IT!

SEPT 14 - 18 // 9AM- 6PM // CAMPBELL HALL LOBBY & HERITAGE HALL LOBBY
LET YOUR PHONE REST WHILE YOU BEAT OUR TEST!

