



# BAC Per Se Laws: Are they Related to Drivers' Perceived Attitude, Acceptability, and Behaviors regarding DUI?

AAA Foundation for Traffic Safety

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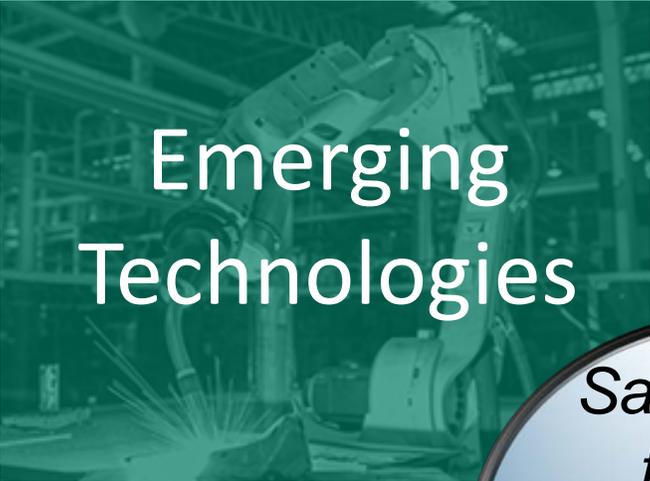
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# Research Focus Areas



Emerging  
Technologies

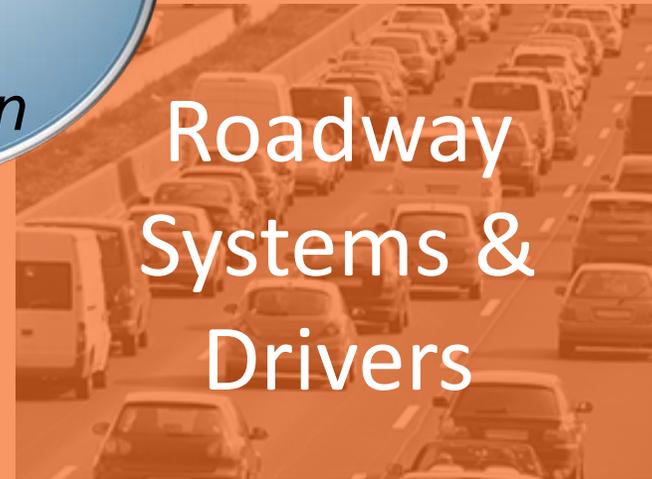


Vulnerable  
Road Users

*Saving lives  
through  
research  
and  
education*



Driver  
Behavior &  
Performance



Roadway  
Systems &  
Drivers

# Alcohol Impaired Driving

Driver Behavior  
&  
Performance



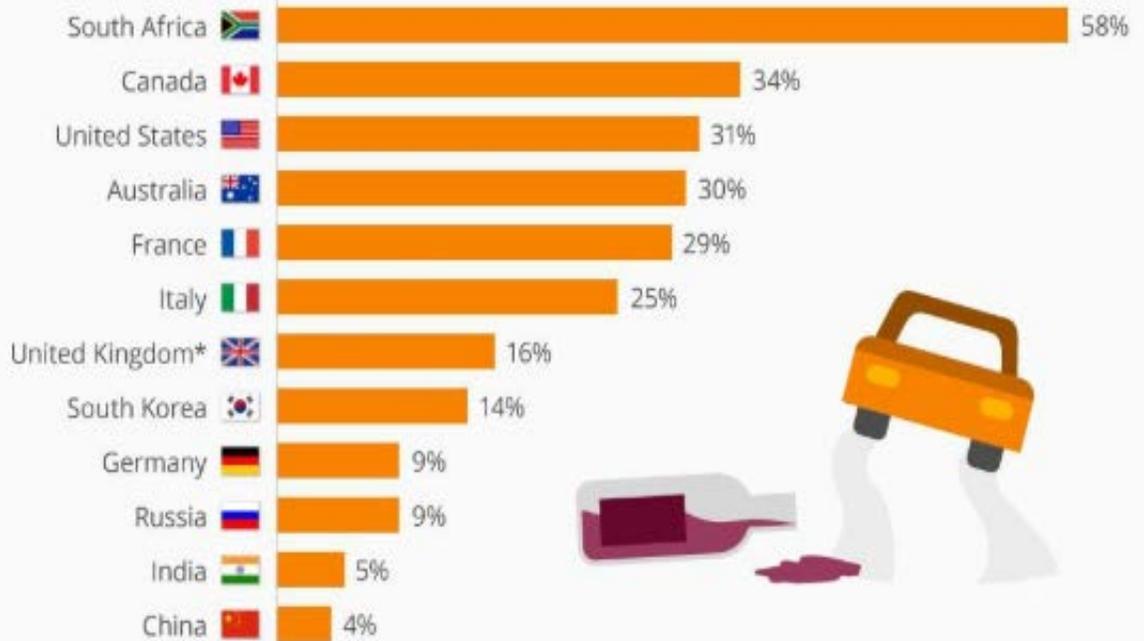
# Background: Road Deaths Involving Alcohol

(WHO, 2016 and 2018)

- 1.35 million people die each year from traffic crashes
- Alcohol impaired driving is a significant contributor

## The World's Worst Countries For Drunk Driving

Percentage of road accident deaths involving alcohol in 2015 (selected countries)



# Background: Best Practice Criteria of Drinking-Driving Laws

(WHO, 2018)

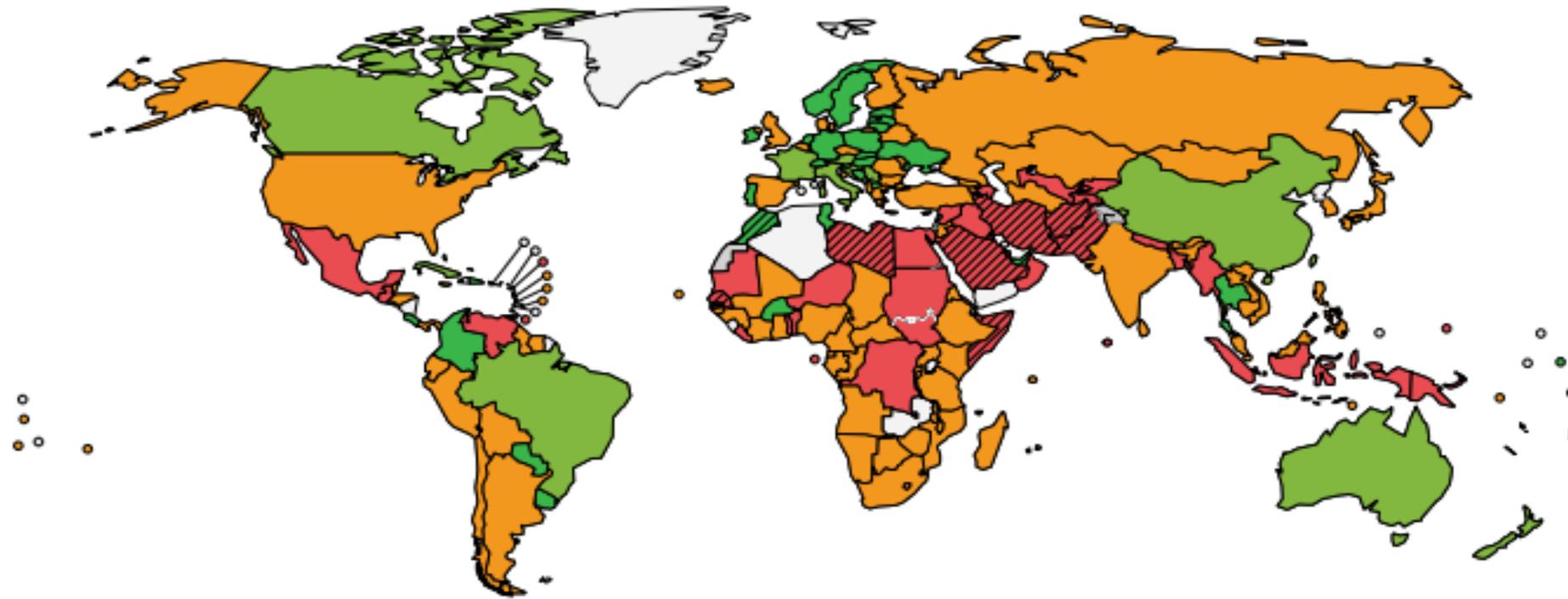
## SUMMARY



# GLOBAL STATUS REPORT ON ROAD SAFETY **2018**

- Presence of a national drink-driving law
- BAC limit for the general population not exceeding BAC 0.05 g/dl
- BAC limit for young and novice drivers not exceeding BAC 0.02 g/dl

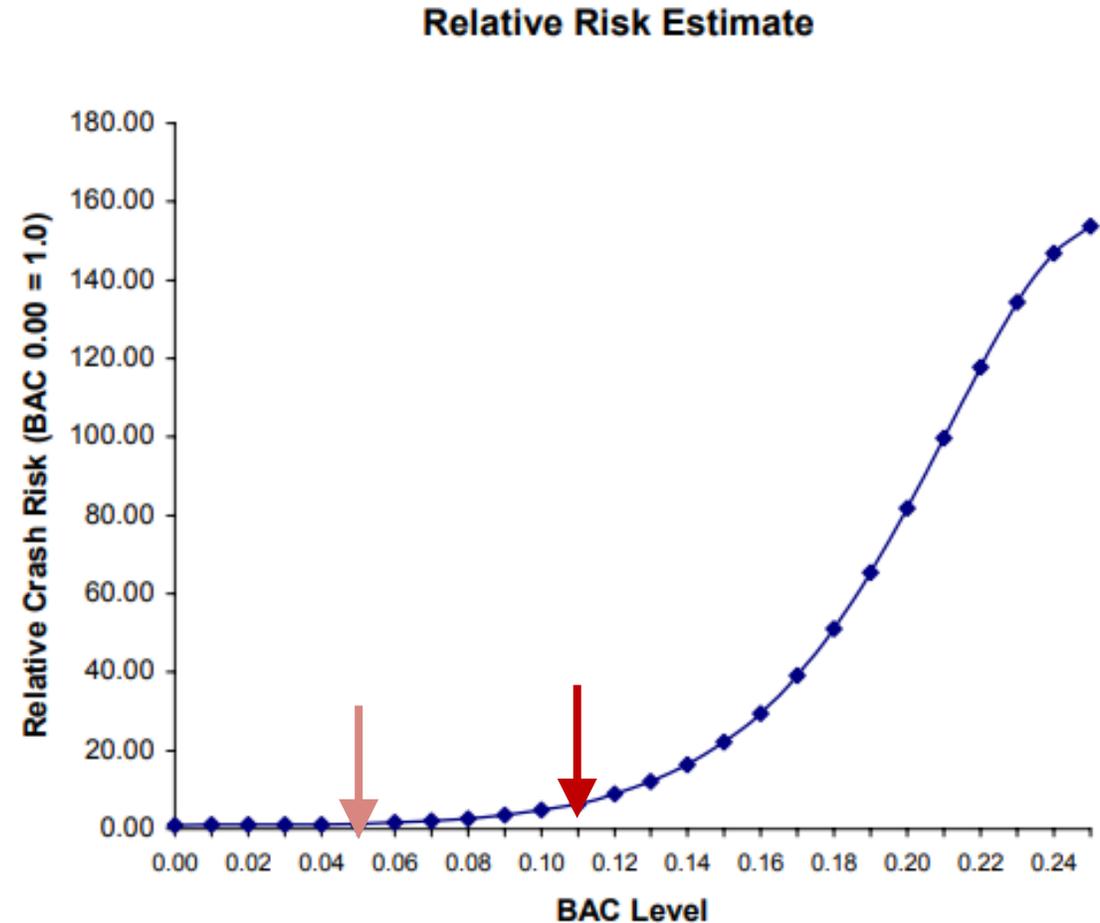
# Background: Countries with Drinking Driving Laws Meeting Best Practices (WHO, 2018)



-  BAC  $\leq$  0.05 g/dl and BAC for young/novice drivers  $\leq$  0.02 g/dl
-  BAC between 0.05 g/dl and 0.08 g/dl or BAC for young/novice drivers  $>$  0.02 g/dl
-  No drink-driving law/Law not based on BAC/ BAC  $>$  0.08 g/dl
-  Alcohol consumption legally prohibited
-  Data not available
-  Not applicable

# Background: Alcohol Impaired Driving Risk

- Case-Control Studies
- Controlling for age, gender, marital status, drinking frequency, and ethnicity
- Relative risk of crash involvement elevated beginning at 0.04 BAC
- Increasing risk as BAC increases, with an accelerated rise at 0.10 BAC+



# Background: Potential Impact of .05 BAC Laws



Pergamon

[www.elsevier.com/locate/jsr](http://www.elsevier.com/locate/jsr)

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[www.nsc.org](http://www.nsc.org)

The effectiveness of reducing illegal blood alcohol concentration (BAC) limits for driving: Evidence for lowering the limit to .05 BAC

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## Estimation of the Potential Effectiveness of Lowering the Blood Alcohol Concentration (BAC) Limit for Driving from 0.08 to 0.05 Grams per Deciliter in the United States

James C. Fell  and Michael Scherer

**Background:** In 2013, the National Transportation Safety Board (NTSB) issued a report recommending that states lower the illegal blood alcohol concentration (BAC) limit for driving from 0.08 to



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[www.nsc.org](http://www.nsc.org)

Potential effects of lowering the BAC limit on injuries, fatalities, and costs

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# Background: Potential Impact of Restrictive Alcohol Policies

Research

JAMA Internal Medicine | [Original Investigation](#)

## Association of State Alcohol Policies With Alcohol-Related Motor Vehicle Crash Fatalities Among US Adults

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Scott E. Hadland, MD, MPH, MS; Marlene C. Lira, BA; Monica H. Swahn, PhD;  
Robert B. Voas, PhD; Timothy C. Heeren, PhD

“Strengthening alcohol policies, including those that do not specifically target impaired driving, could reduce alcohol-related crash fatalities.”

# Objective

Examine if BAC per se laws are associated with drivers' acceptability, attitude (e.g., support of policies), and behaviors with respect to drinking and driving.

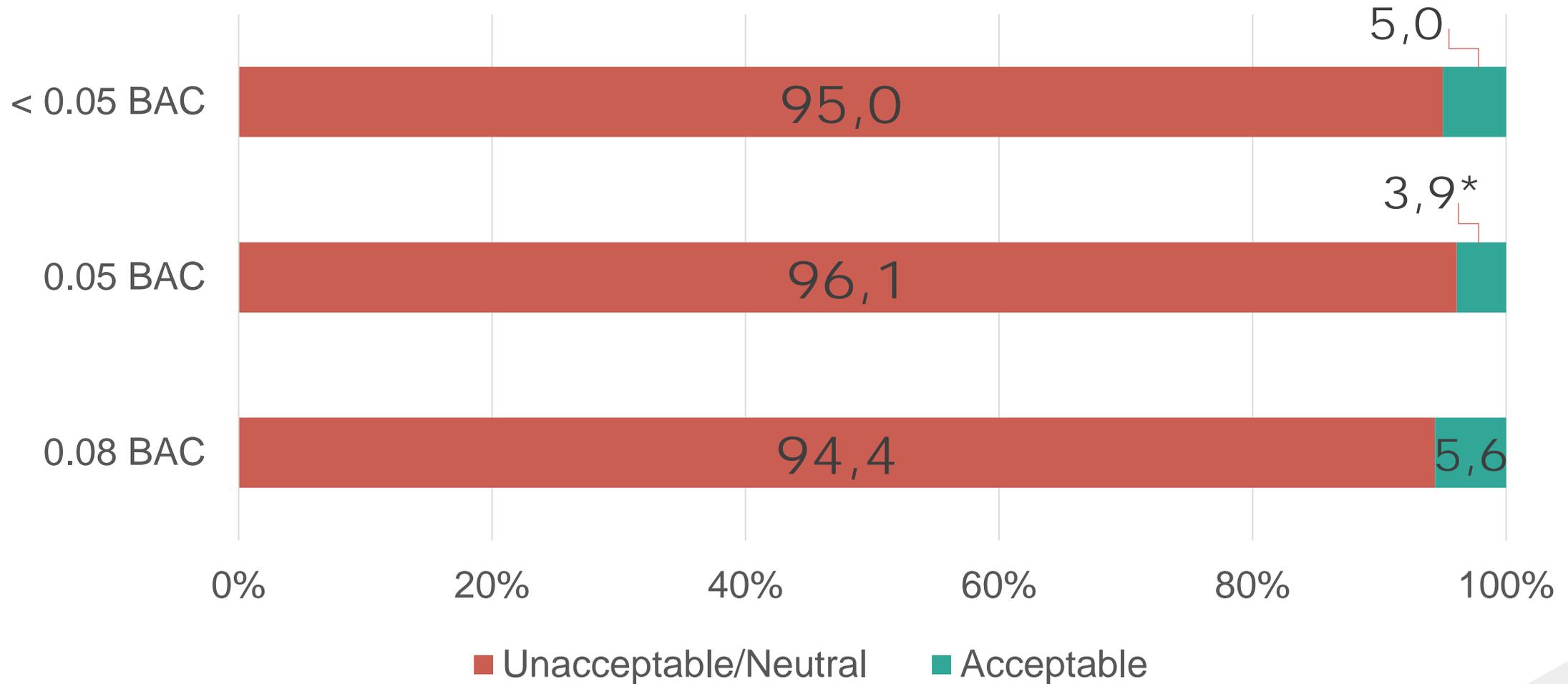
# Methods

- ESRA (E-Survey of Road Users' Attitudes) Survey – 2<sup>nd</sup> edition
  - Conducted in 32 countries
  - Fall, 2018
- Descriptive Analyses
- Countries included in this study
  - BAC < 0.05: 8 countries
  - BAC = 0.05: 20 countries
  - BAC = 0.08: 4 countries

## BAC Limits by ESRA2 Countries (N=32)

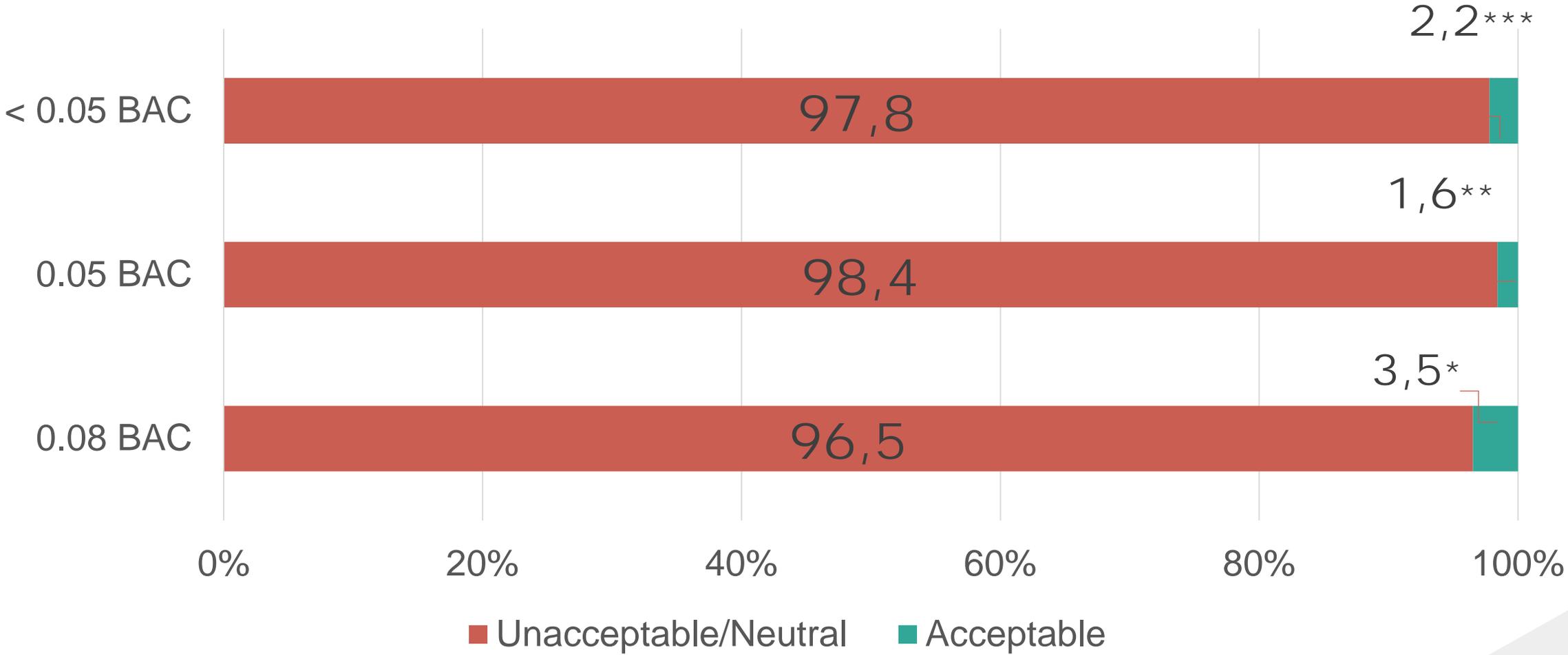
BAC < 0.05/n = 8	BAC 0.05/n = 20		BAC 0.08/n = 4
Czech Rep. (0)	Australia	Italy	Canada
Hungary (0)	Austria	Netherlands	Kenya
Morocco (0.02)	Belgium	Portugal	United Kingdom
Poland (0.02)	Denmark	Republic of Korea	USA
Sweden (0.02)	Finland	Slovenia	
India (0.03)	France	South Africa	
Japan (0.03)	Germany	Spain	
Serbia (0.03)	Greece	Switzerland	
	Ireland	Egypt	
	Israel	Nigeria	

# Results: General Acceptability - Drinking and Driving Over the Legal Limit



\* Significantly different from other groups

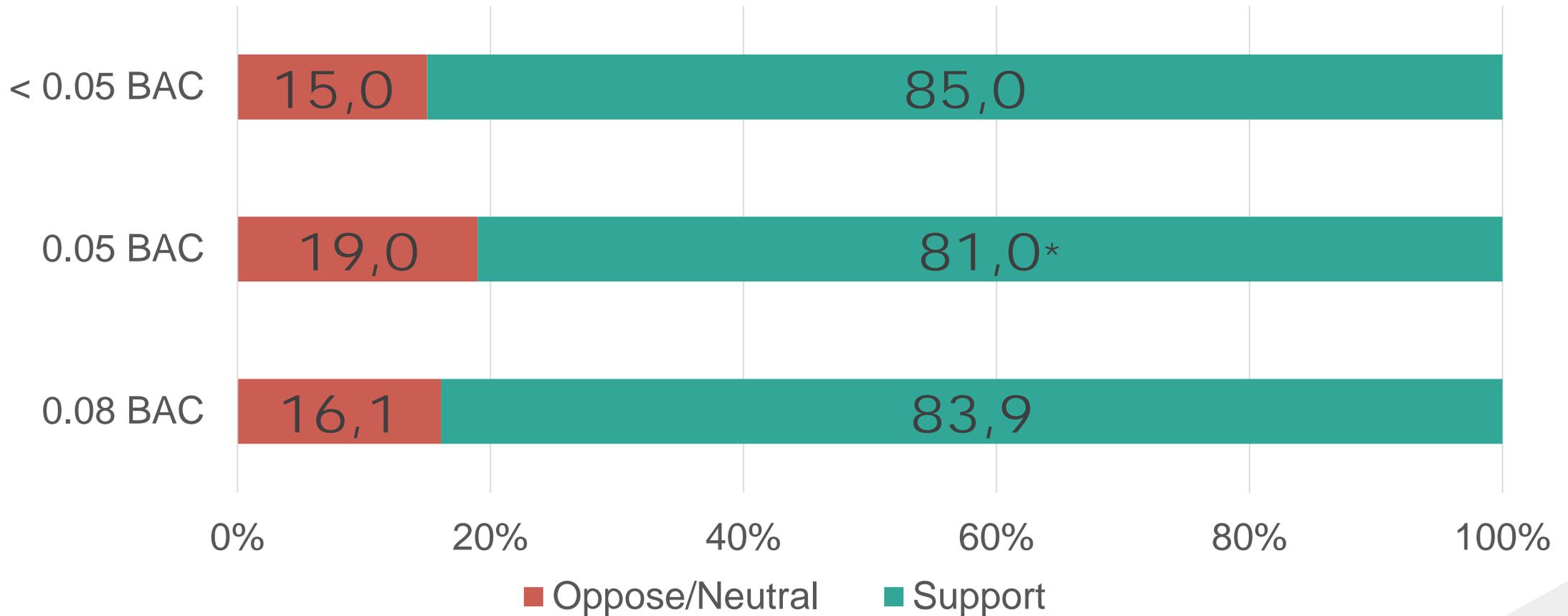
# Results: Personal Acceptability - Drinking and Driving Over the Legal Limit



\* Denotes a subset of BAC categories is significantly different from each other

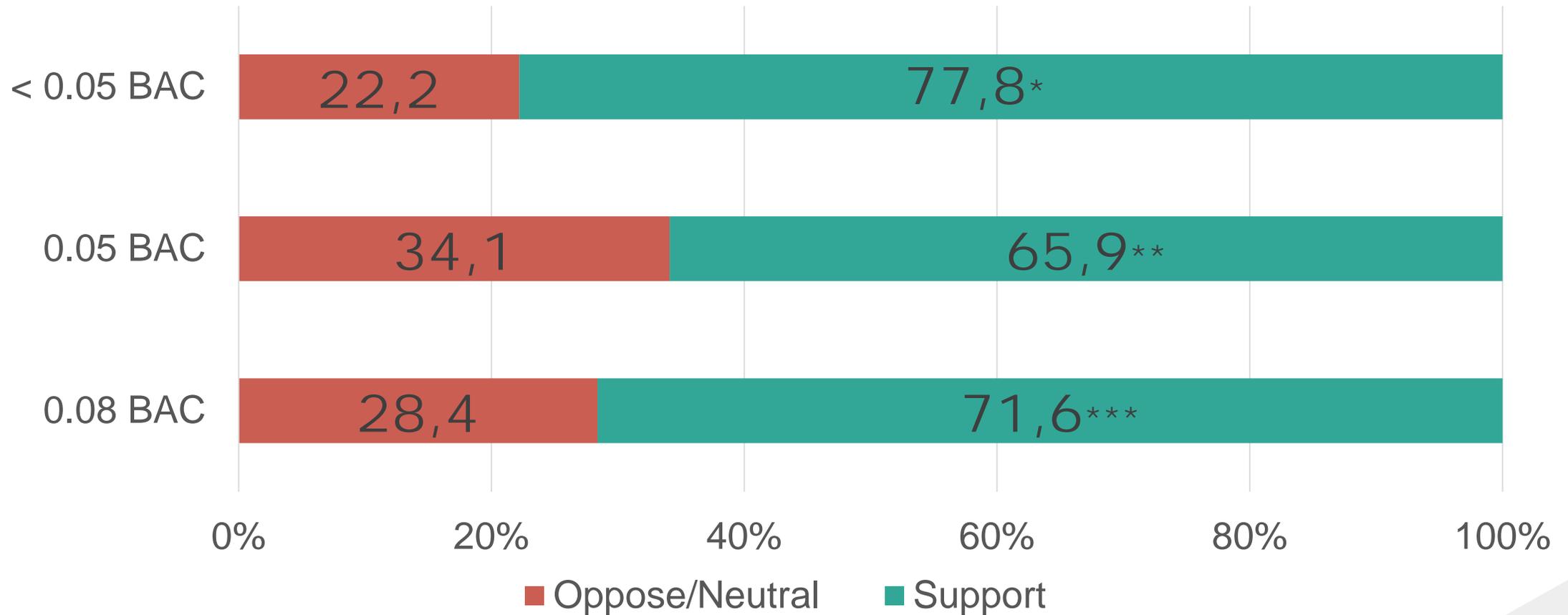


# Results: Support For Measures – Install an Alcohol Interlock



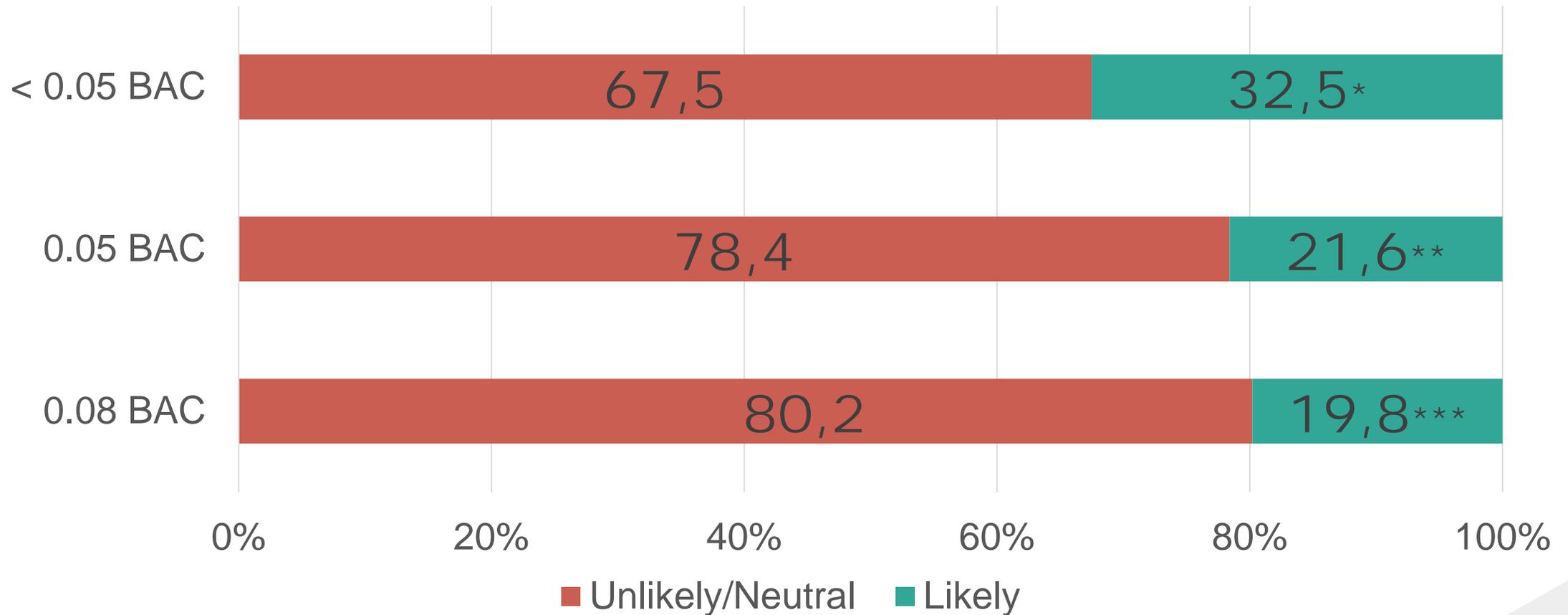
\* Significantly different from other groups

# Results: Support For Measures – Zero Tolerance



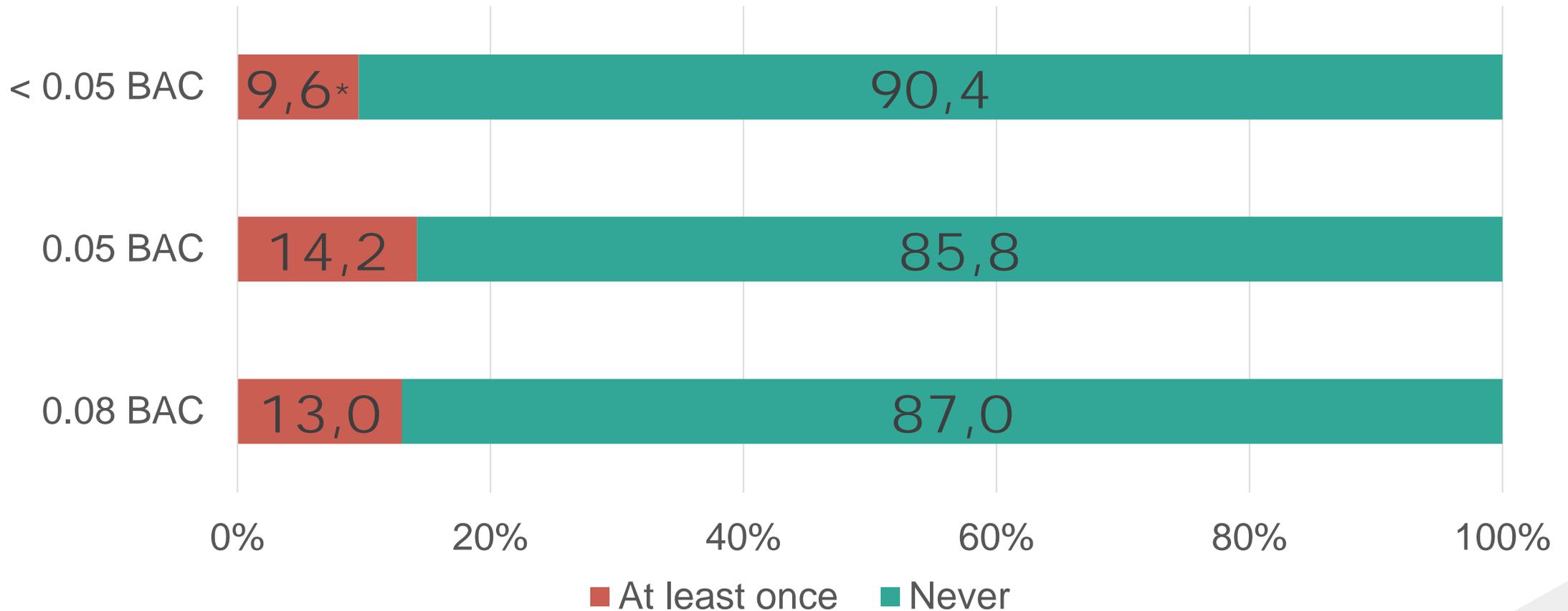
\* Denotes a subset of BAC categories is significantly different from each other

# Results: Enforcement – Driver Check by Police



\* Denotes a subset of BAC categories is significantly different from each other

# Results: Personal Behavior - Driven When Driver May Have Been Over the Limit



\* Significantly different from other groups

## Results: Summary

- Hypothesis that laws establishing lower legal BAC limits are associated with:
  1. lower acceptability of DUI
    - Not confirmed
  2. greater attitudes against DUI
    - Somewhat confirmed
  3. lower DUI behaviors
    - Somewhat confirmed

# Study Limitations

- Limitation of data
  - Limited representativeness of older age groups (65+) in
    - Greece, India, South Korea, Morocco, Nigeria, Serbia, Slovenia, and Spain
  - Low internet user rate in
    - South Africa (56%), Egypt (45%), India (34%), Nigeria (28%) and Kenya (18%)
- Potential differences in interpretation of questions due to language differences
- Underlying differences between countries
  - Level of development and “westernization”
  - Alcohol production, distribution, and regulation
  - Enforcement and education practices
  - Culture - shared customs, values and traditions and religion

# Conclusions

- “Strengthening alcohol policies, **including those that do not specifically target impaired driving**, could reduce alcohol-related crash fatalities” (JAMA, 2018)
  - Countries  $<0.05$  significantly more likely to report lower drinking and driving behaviors
  - Little difference between countries at BAC = 0.05 and BAC = 0.08
- Alcohol plays a significant role in each country’s culture
- Education and enforcement – for BOTH alcohol and drinking and driving

# AAAFTS 2018 Traffic Safety Culture Index



- Recruited 3,349 U.S. respondents
  - 19+ years of age: n = 2,432
  - 16-18 years of age: n = 917
- Deepening understanding of traffic safety culture
- Annual nationally representative survey of U.S. motorists started in 2008
- Identifies driver's attitudes, beliefs, and behaviors related to traffic safety

Questions?

Thank you!



# Foundation for Traffic Safety

<https://www.aaatoundation.org>