

Knowledge, Attitudes, And Cannabis Use in Active Athletes

ICR Conference, Pueblo, CO 2020

Joanna S. Zeiger, MS, PhD

William S. Silvers, MD

Edward M. Fleegler, MD

Robert S. Zeiger, MD, PhD



CANNA
RESEARCH
FOUNDATION



<https://cannaresearchfoundation.org>

Athlete PEACE Survey

**English-speaking athletes ages ≥ 21 years
contacted through social media & email**

**Enrollment on SurveyGizmo from 9/6/18 to 12/7/18
(N=1,274)**

Completed surveys (N=1,161)

Demographics (n=1,161)

- 62.3% Male
- 67.8% over 40
- 89.8% Caucasian
- 72.5% Full-time employment
- 43.7% Adv. degree, 40.1% Bachelor's
- Cannabis use
 - ✓ Never used: 67.6%
 - ✓ Current user: 26.0%
 - ✓ Former user: 6.4%

Sports Features (n=1,161)

- Sports
 - ✓ 34.4% Triathletes
 - ✓ 25.8% Runners
 - ✓ 22.2% Cyclists
 - ✓ 17.7% Other
- Type of athlete
 - ✓ 42.5% “Competitive”,
 - ✓ 34.9% “Fitness”,
 - ✓ 22.6% Recreational/Other
- Hour per week of exercise
 - ✓ 46.2% >10 hrs/week
 - ✓ 43.3% 6-10 hours,
 - ✓ 10.5% 0-5 hours



Published Findings Athlete PEACE Survey*

- Primary analysis showed that cannabis improved pain and sleep and decreased anxiety in athletes
- There were adverse effects of decreased concentration, increased anxiety, and increased appetite
- Co-use of THC and CBD offered the most benefit (but also most adverse effects)
- Age-related differences exist in cannabis patterns of use and subjective effects

*Zeiger, J. S., et al. (2019). *PloS one*, 14(6), e0218998.

*Zeiger, J. S. et al. (2019).. *Journal of Cannabis Research*, 1(1), 6.

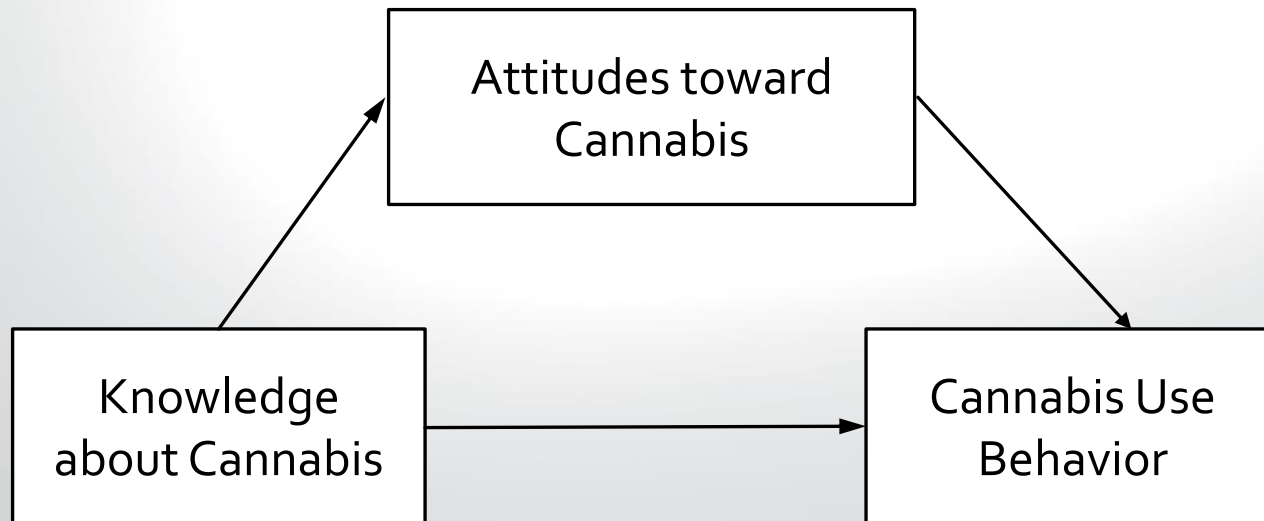


Questionnaire content

1. **Demographics**
2. **Have you ever used marijuana?**
Yes or No
3. **Current cannabis use:** “In the past two weeks, have you used marijuana (including THC and/or CBD)?”
4. **Knowledge about cannabis:** 4 questions
5. **Attitudes about cannabis:** 11 questions

Knowledge-Attitudes-Behavior

- Early theories: Attitudes directly guide behavior
- New theories: Intervening variables (mediators) in the relationship. Attitudes is a mediator that explains the underlying mechanism of the relationship between Knowledge (IV) and Cannabis Use (DV)



Zeiger, JS et al. (2020). Journal of Cannabis Research, 2, 1-13.

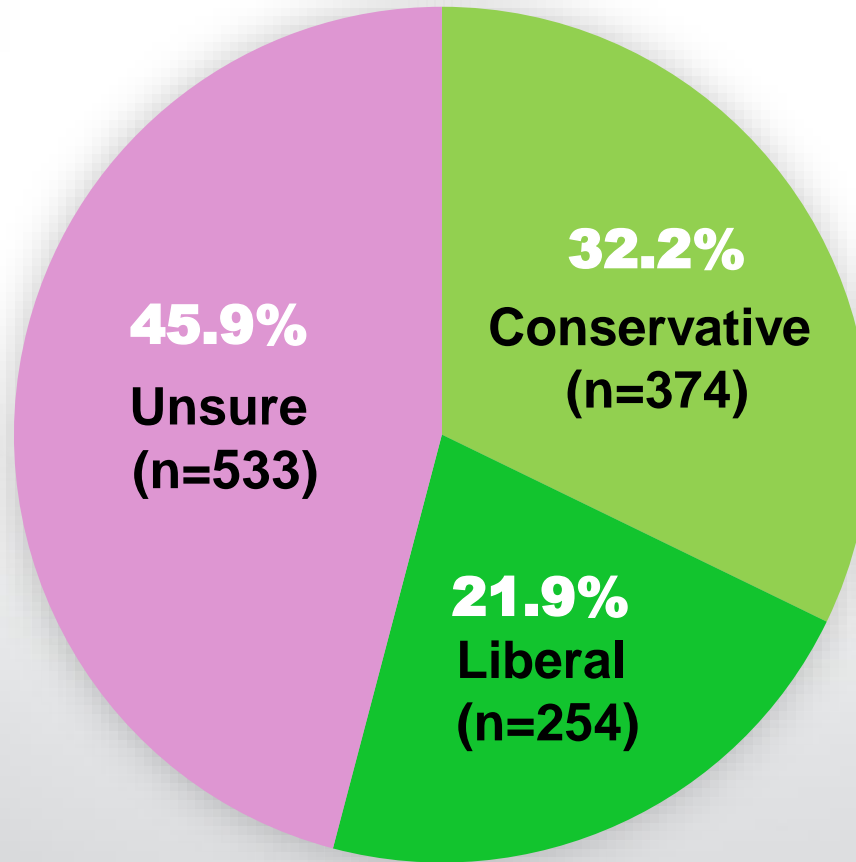
Methods for Cluster Analysis

1. Cluster analysis divides data into smaller groups with similar characteristics when there are no a priori assumptions about differences within the population; it creates homogenous groups within heterogenous data
2. SPSS Two-Step Cluster analysis based on the answers to the 11 questions about attitudes toward cannabis
3. BIC goodness-of-fit used to determine final cluster solution
4. Post-hoc tests used to determine cluster validity

Cluster Analysis findings(1)

- Three cluster solution was the best fit to the data
- Clusters were named:
 - ✓ Conservative (n=374)
 - ✓ Unsure (n=533)
 - ✓ Liberal (n=254)
- Clusters were significantly different from each other on all 11 attitudes questions

Cluster Analysis Grouping



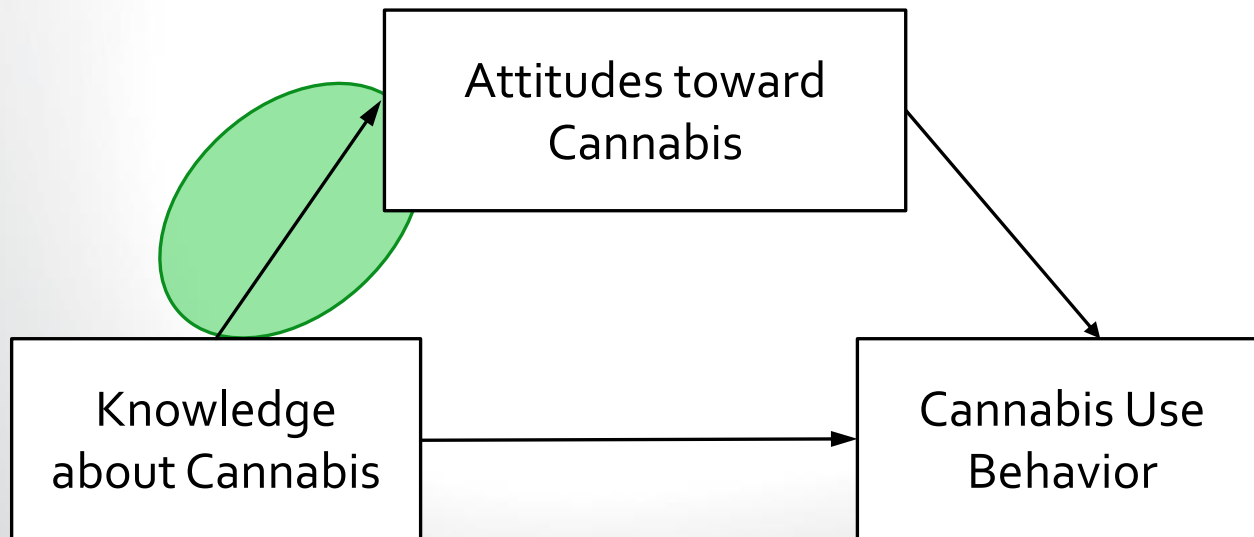
CANNA
RESEARCH
FOUNDATION



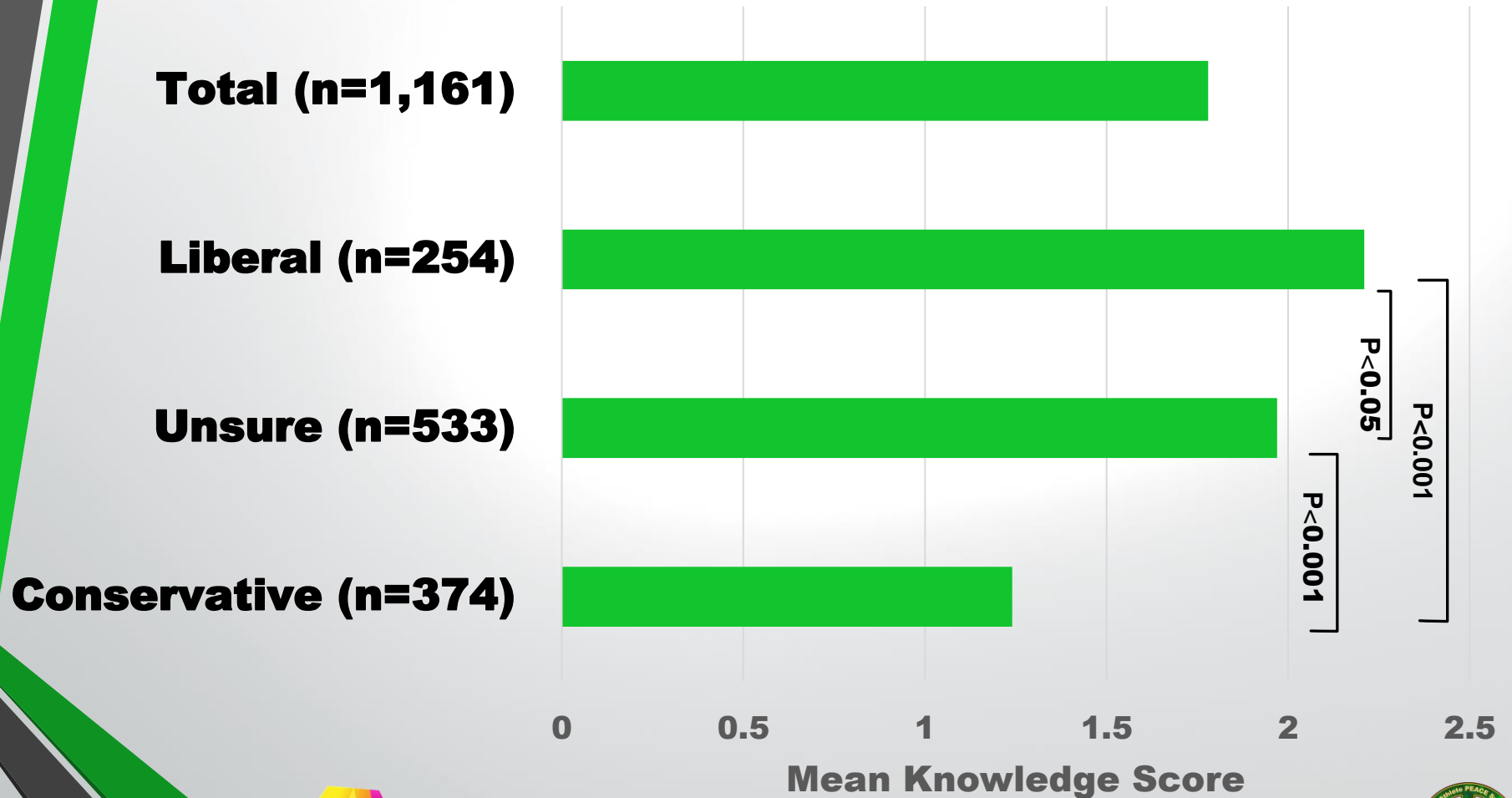
Methods for Knowledge

1. Four questions, each with a single right answer
2. Scores summed and total scores ranged 0-4
3. ANOVA was used to determine whether there were differences in knowledge scores by attitudes clusters

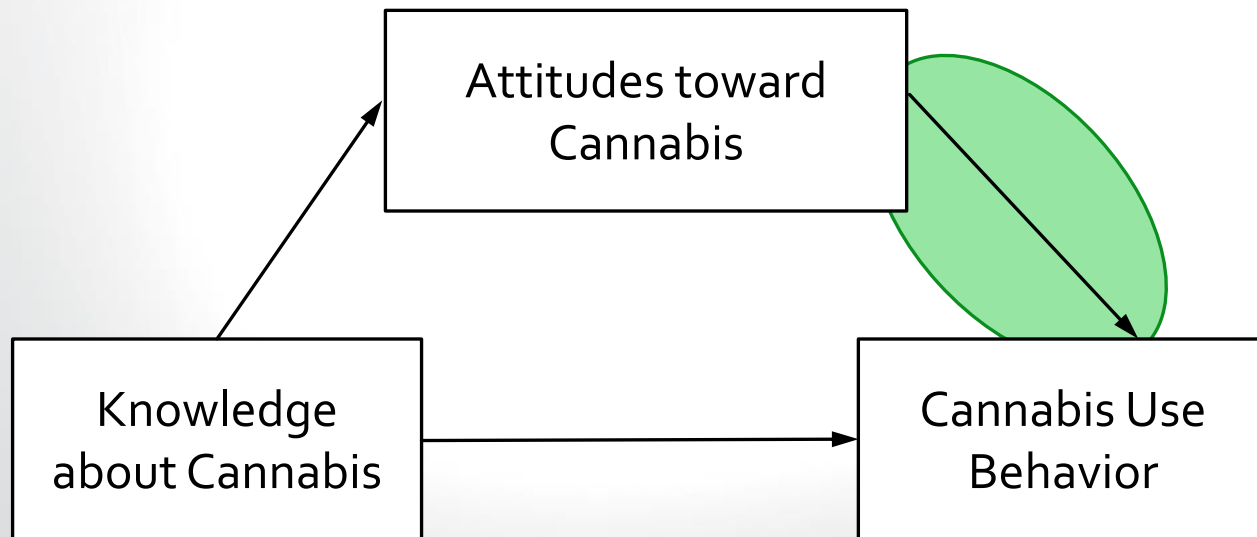
Knowledge-Attitudes-Behavior



Knowledge by Attitudes Cluster Membership



Knowledge-Attitudes-Behavior

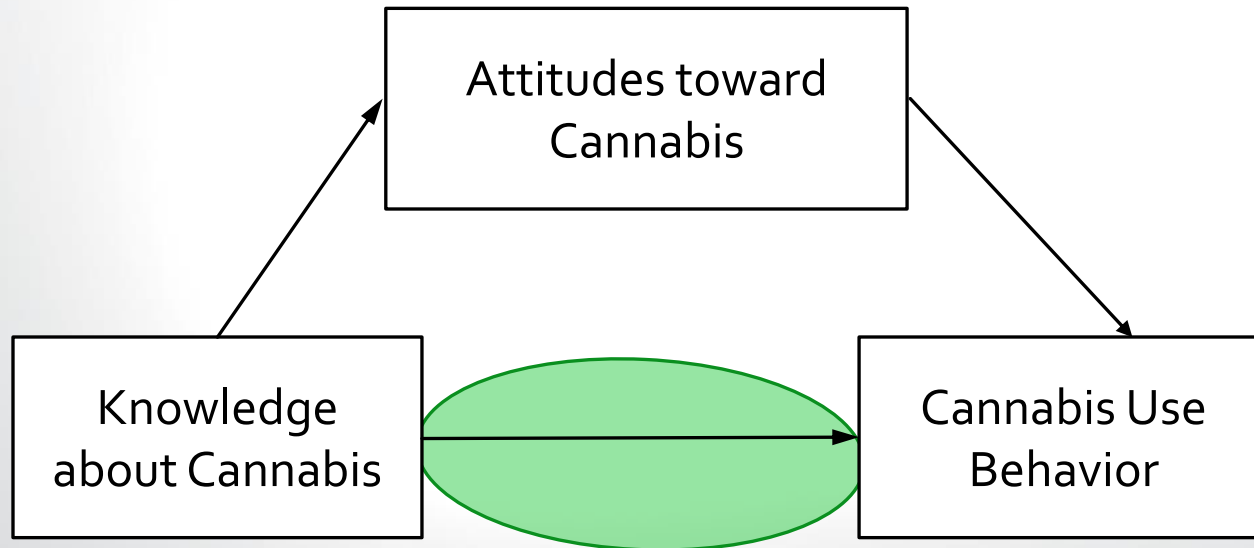


Attitudes Cluster Membership by Cannabis Use

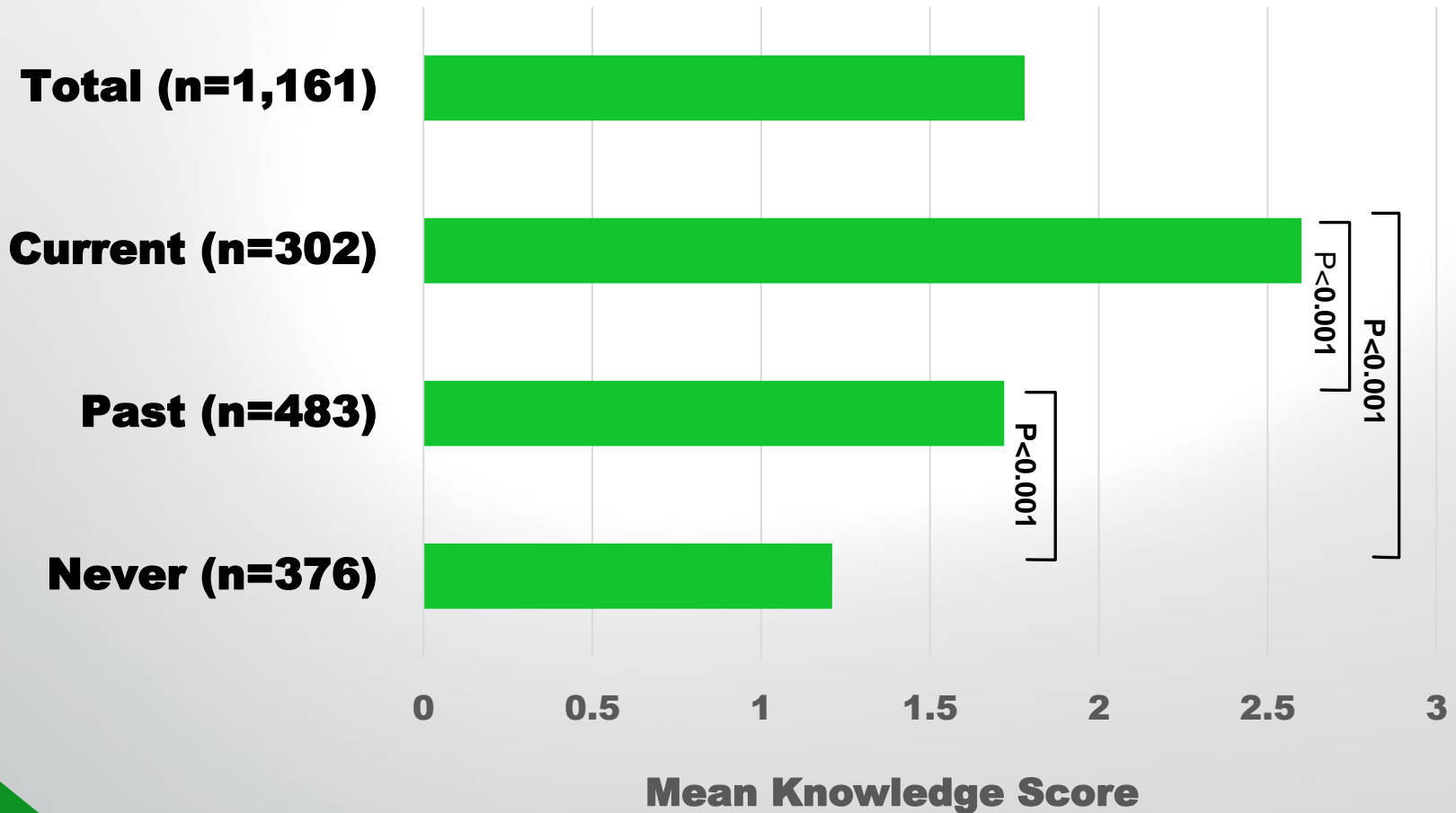
		Cannabis Attitudes Clusters [N (%)]		
		Conservative (n=374)	Unsure (n=533)	Liberal (n=254)
Cannabis Use*	Never	220 (58.8)	137 (25.7)	19 (7.5)
	Past	141 (37.7)	250 (46.9)	92 (36.2)
	Current	13 (3.5)	146 (27.4)	143 (56.3)

*Chi-square, $p < 0.001$

Knowledge-Attitudes-Behavior



Knowledge by Cannabis Use



Conclusions of Athlete PEACE Study

- Knowledge and attitudes separately impact cannabis use behavior
- Athletes with the most knowledge tended to have the most liberal attitudes & these athletes tended to be current cannabis users
- Education re: benefits/adverse effects can help form attitudes that will allow for informed decisions about behavior (i.e. to use or not)

Conclusions of Athlete PEACE study (II)

- Knowledge disseminated about cannabis should be unbiased: positive & adverse effects presented
- Proper knowledge is important for the safety and efficacy of patients who might want to initiate medical cannabis use
 - ✓ Will it help with pain?
 - ✓ Should it be used during pregnancy?
 - ✓ Will there be interactions with other medications?
 - ✓ Can it make me sick?

CannaResearchFoundation.org



CANNA
RESEARCH
FOUNDATION

**We thank the athletes who participated in
The Athlete PEACE Survey and appreciate
those who shared the study link.**

