Dissemination Research to Promote Evidence-Informed Policymaking

Jonathan Purtle, DrPH, MSc
Associate Professor
New York University School of Global Public Health
Global Center for Implementation Science

July 6, 2022

National Academies of Sciences, Engineering, and Medicine Workshop on Accelerating the Use of Findings from Patient-Centered Outcomes Research in Clinical Practice to Improve Health and Health Care

My Burning Research Question:
How Do We Translate Mental Health Evidence into Policy?
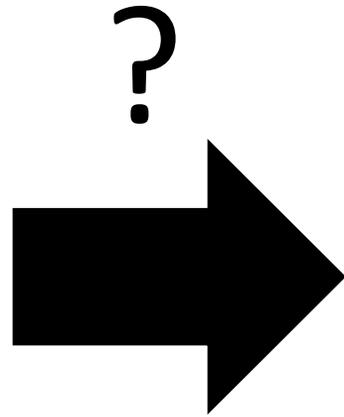
What is Dissemination Research?

- "The scientific study of targeted distribution of information and intervention materials to a specific public health or clinical practice audience. The intent is to understand how <u>best to spread and sustain knowledge</u> and the associated evidence-based interventions." (NIH PAR-18-007)
  - "Implementation is the use of strategies to adopt and integrate evidence-based health interventions and change practice patterns within specific settings."

Communication and Dissemination Strategies To Facilitate the Use of Health-Related Evidence

Toward the Data-Driven Dissemination of Findings From Psychological Science

Jonathan Purtle
Drexel University

Jacob S. Marzalik, Raquel W. Halfond, and Lynn F. Bufka
American Psychological Association, Washington, DC

Bethany A. Teachman
University of Virginia

Gregory A. Aarons
University of California, San Diego

"The designs of dissemination strategies are **typically based on anecdote instead of evidence** and are often ineffective at reaching practice audiences or meaningfully changing their awareness about, attitudes toward, or intentions to adopt an intervention or guideline."
– Purtle et al., 2020

A Three Stage Approach For Dissemination Research Focused on Policymakers

Formative Audience Research → Audience Segmentation Research → Dissemination Effectiveness Research
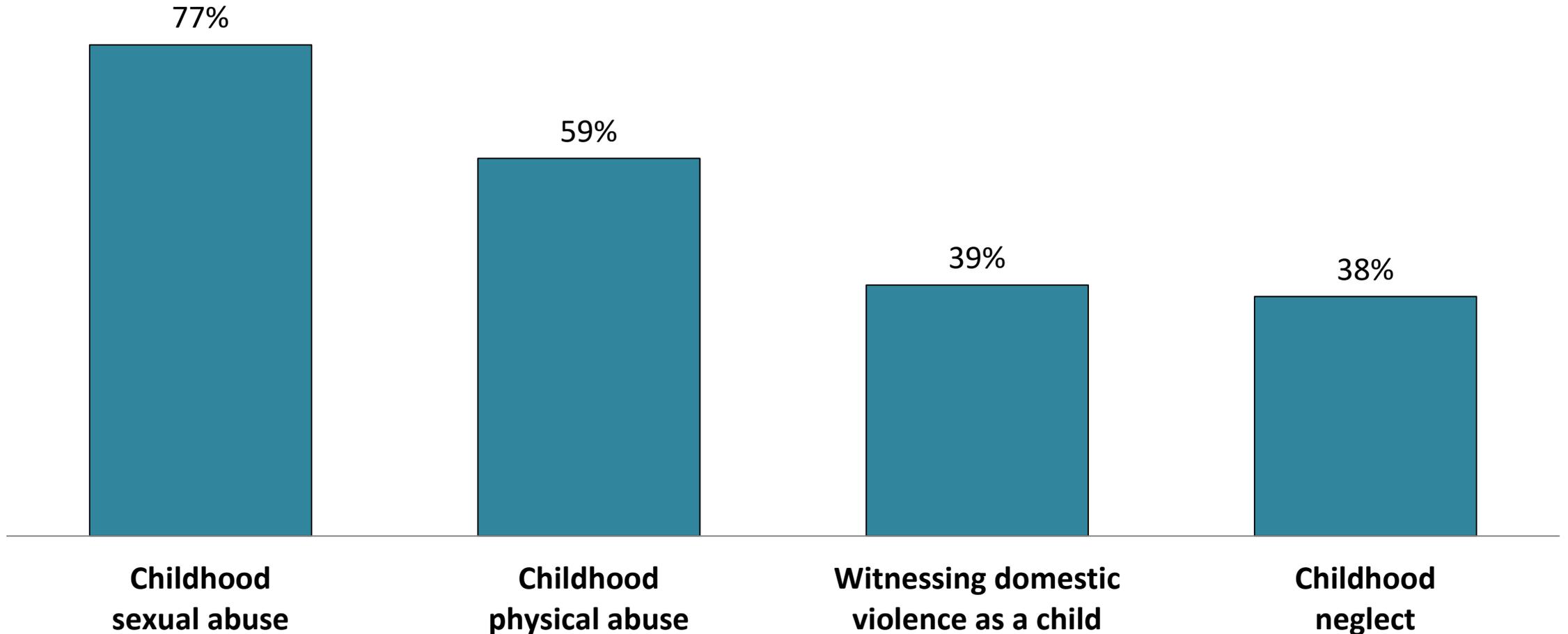
Purtle, J., Marzalik, J. S., Halfond, R. W., Bufka, L. F., Teachman, B. A., & Aarons, G. A. (2020). Toward the data-driven dissemination of findings from psychological science. *American Psychologist*, 75(8), 1052.

Formative Audience Research

- <u>Goal</u>: Generate data to inform the design of dissemination materials and how they are distributed

- Assess…
  1. Awareness of an evidence-based intervention or problem that the intervention addresses

Legislator Opinions about Adverse Childhood Experiences as Risk Factors for Adult Behavioral Health Conditions

77%

59%

39%

38%

Childhood sexual abuse

Childhood physical abuse

**Witnessing domestic violence as a child**

Childhood neglect

Purtle, J., Lê-Scherban, F., Wang, X., Chilton, M. Legislators' Opinions about Adverse Childhood Experiences as Risk Factors for Adult Behavioral Health Conditions. *Psychiatric Services.* 2019.

Formative Audience Research

- Goal: Generate data to inform the design of dissemination materials and how they are distributed

- Assess…

  1. Awareness of an evidence-based intervention or problem that the intervention addresses

  2. Attitudes towards the intervention
     - E.g., Rogers' constructs (relative advantage, complexity, trialability)

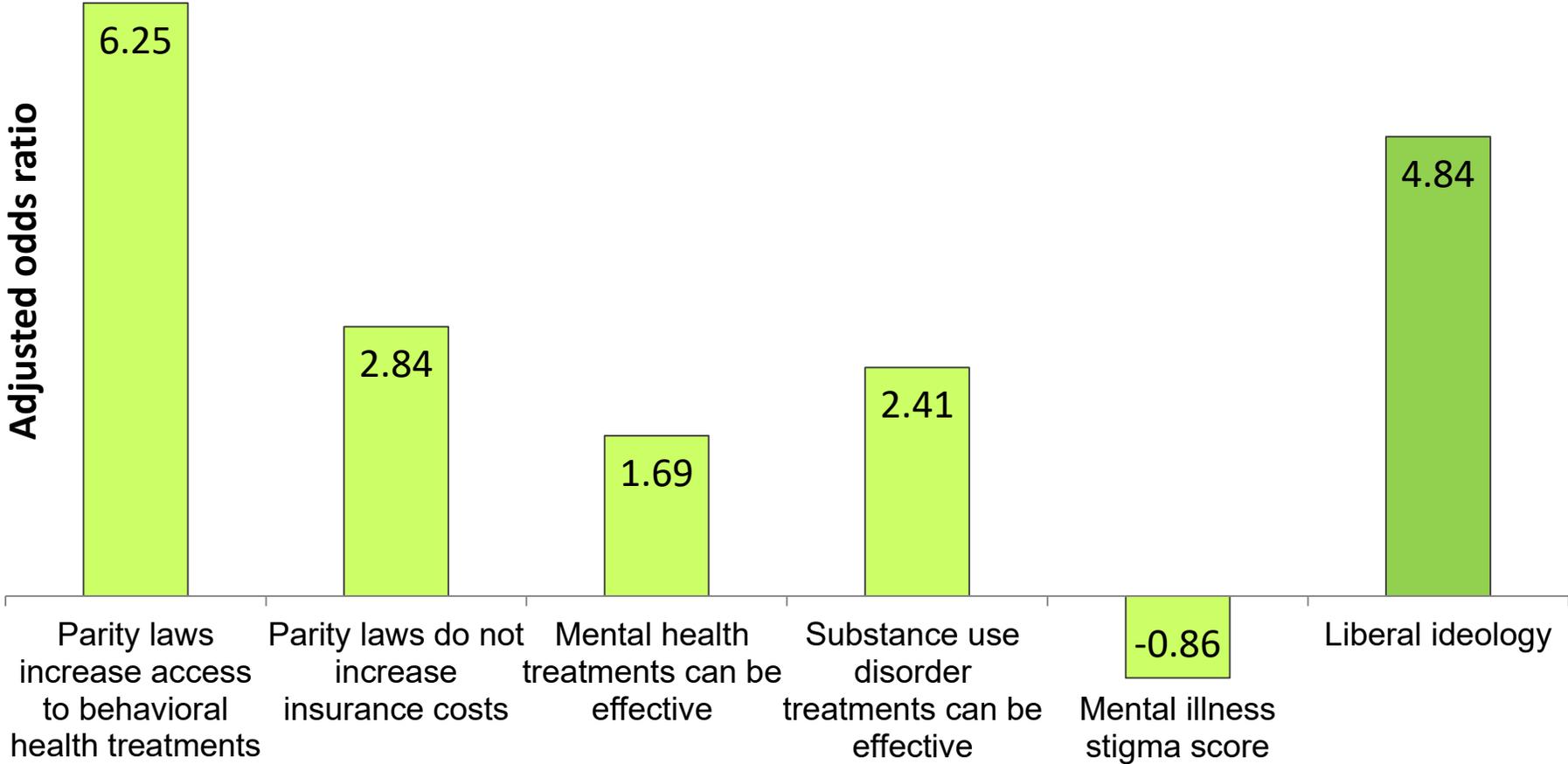# Legislator Attitudes Related to State Behavioral Health Parity Laws
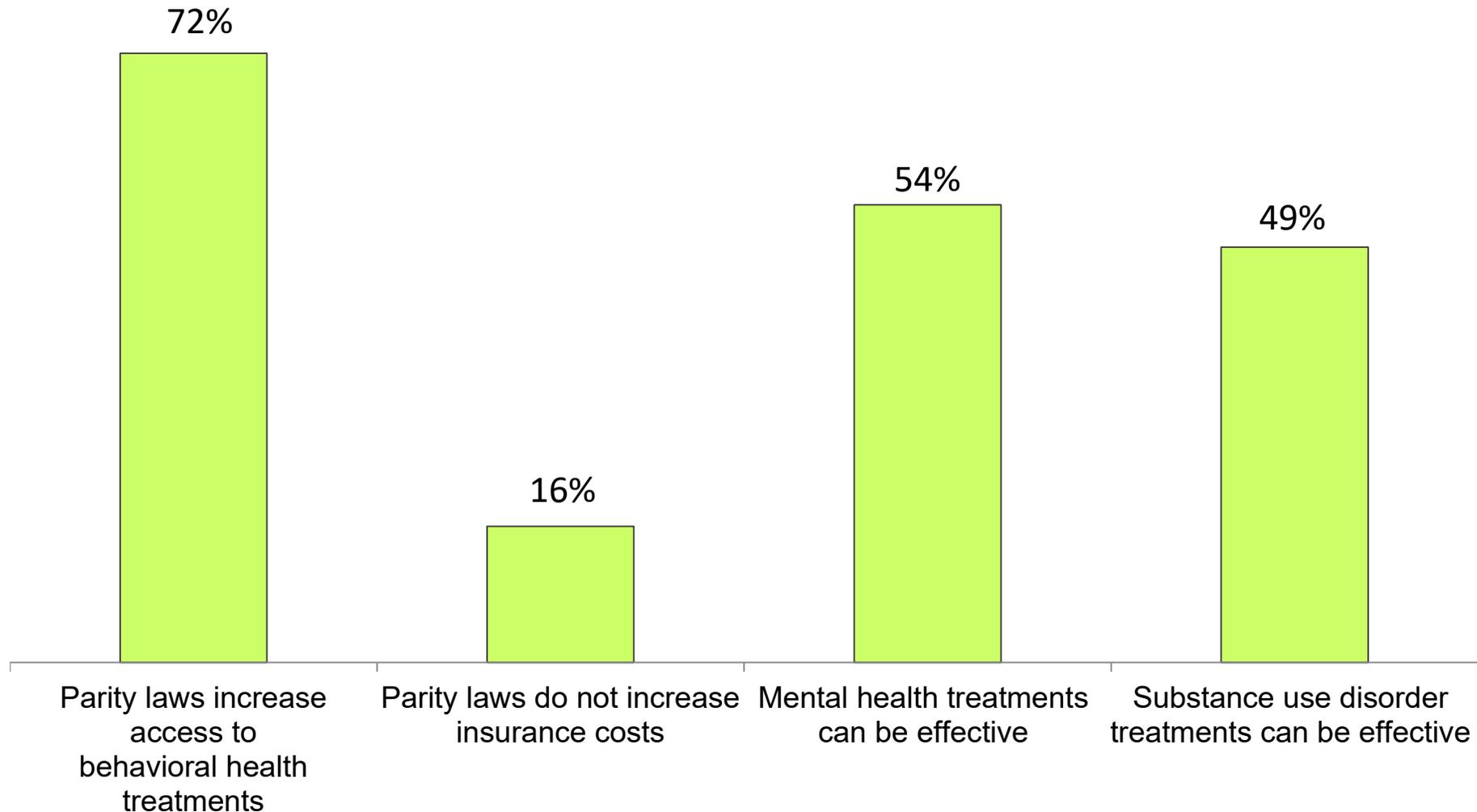
Purtle, J., Lê-Scherban, F., Wang, X.,... Brownson, RC. State Legislator Support for Behavioral Health Parity Laws: The Influence of Mutable and Fixed Factors at Multiple Levels. *The Milbank Quarterly.* 2019.

Formative Audience Research

- Goal: Generate data to inform the design of dissemination materials and how they are distributed

- Assess…
  1. Awareness of an evidence-based intervention or problem that the intervention addresses

  2. Attitudes towards the intervention
     - E.g., Rogers' constructs (relative advantage, complexity, trialability)

  3. Adoption of, support for, intention to adopt the intervention

Legislator Factors Associated with Support for State Behavioral Health Parity Laws
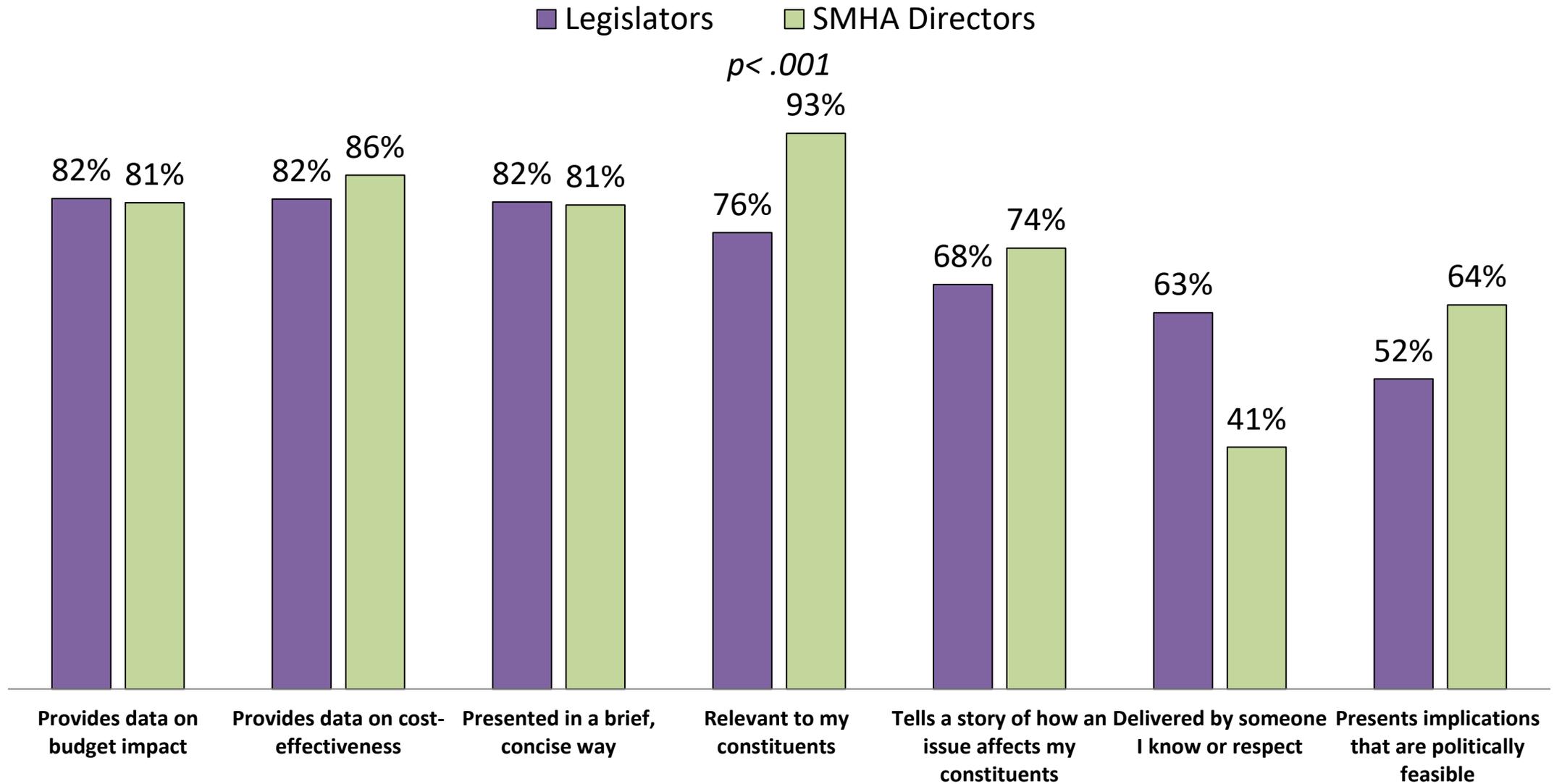

Purtle, J., Lê-Scherban, F., Wang, X.,… Brownson, RC. State Legislator Support for Behavioral Health Parity Laws: The Influence of Mutable and Fixed Factors at Multiple Levels. *The Milbank Quarterly.* 2019.

Formative Audience Research

- <u>Goal</u>: Generate data to inform the design of dissemination materials and how they are distributed

- Assess…

  1. Awareness of an evidence-based intervention or problem that the intervention addresses

  2. Attitudes towards the intervention
     - E.g., Rogers' constructs (relative advantage, complexity, trialability)

  3. Adoption of, support for, intention to adopt the intervention

  4. Preferences for receiving information about the intervention
     - E.g., content, source, mode of delivery

"Very Important" Features of Behavioral Health Evidence:

Legislators   SMHA Directors

p< .001

	Legislators	SMHA Directors
Provides data on budget impact	82%	81%
Provides data on cost-effectiveness	82%	86%
Presented in a brief, concise way	82%	81%
Relevant to my constituents	76%	93%
Tells a story of how an issue affects my constituents	68%	74%
Delivered by someone I know or respect	63%	41%
Presents implications that are politically feasible	52%	64%

Purtle, J., Lê-Scherban, F., Nelson, K.L., Shattuck, P., Proctor, E.K., Brownson, R.C. State Mental Health Agency Officials' Preferences for and Sources of Behavioral Health Research. *Psychological Services*. 2019

A Three Stage Approach For Dissemination Research Focused on Policymakers

| Formative Audience Research | Audience Segmentation Research | Dissemination Effectiveness Research |

Purtle, J., Marzalik, J. S., Halfond, R. W., Bufka, L. F., Teachman, B. A., & Aarons, G. A. (2020). Toward the data-driven dissemination of findings from psychological science. *American Psychologist*, *75*(8), 1052.

Audience Segmentation Research

- <u>Goal</u>: Understand how dissemination materials might be tailored for different groups within a target audience

- Standard practice in marketing, common in health communication

- Premise: Members of a population are heterogeneous in their knowledge, attitudes, and behaviors related to an issue
  - Identify discrete sub-groups that have similar characteristics
  - Tailored dissemination strategies are generally more effective than "one-size-fits-all" strategies
  - Demographic separation and empirical clustering approaches

Demographic Separation:
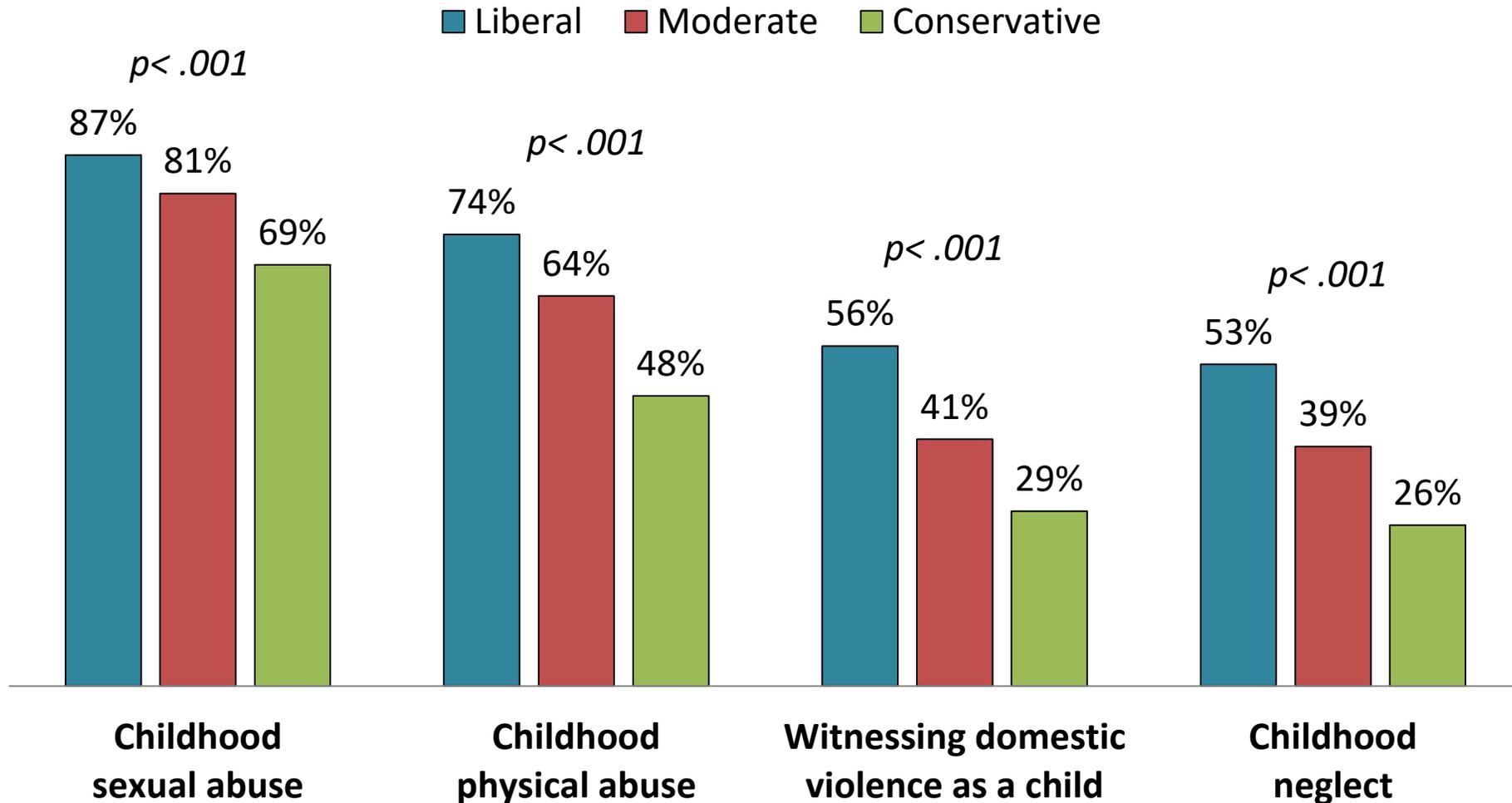
Purtle, J., Lê-Scherban, F., Wang, X., Chilton, M. Legislators' Opinions about Adverse Childhood Experiences as Risk Factors for Adult Behavioral Health Conditions. *Psychiatric Services.* 2019.

Empirical Clustering:

RESEARCH   Open Access

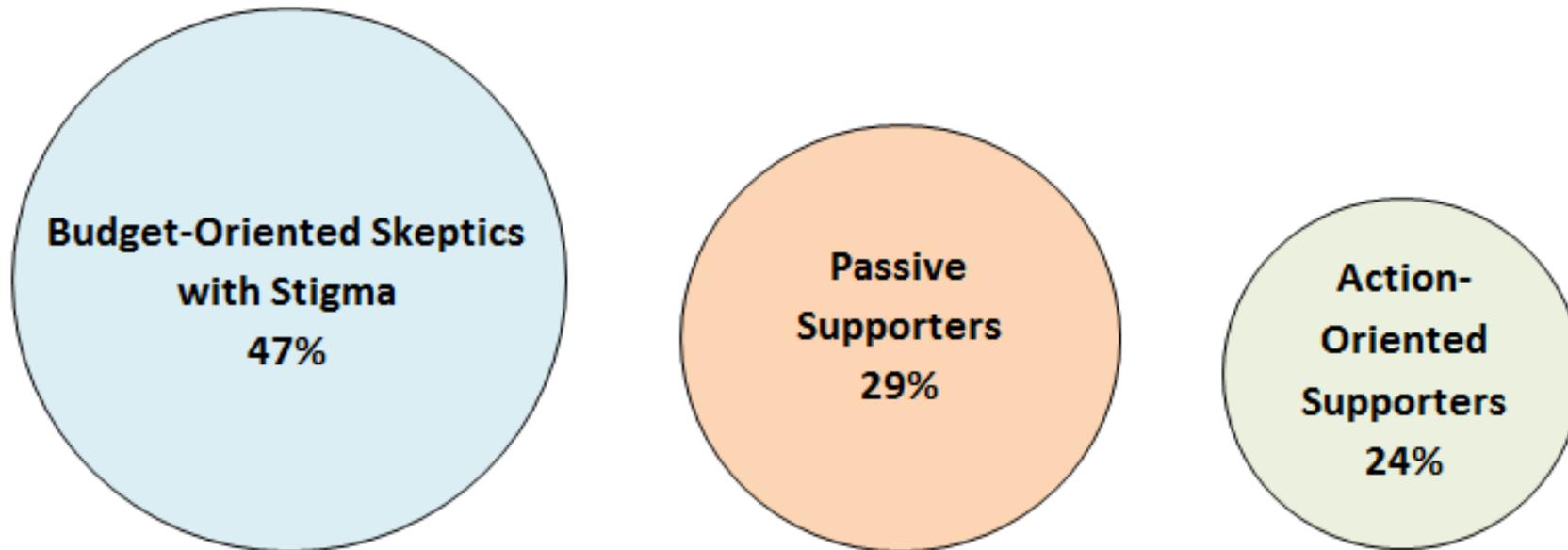# Audience segmentation to disseminate behavioral health evidence to legislators: an empirical clustering analysis

Jonathan Purtle[1*], Félice Lê-Scherban[2], Xi Wang[2], Paul T. Shattuck[1,3], Enola K. Proctor[4] and Ross C. Brownson[5,6]

Results:
Three Audience Segments Emerged

Budget-Oriented Skeptics with Stigma
47%

Passive Supporters
29%

Action-Oriented Supporters
24%

	Budget-Oriented Skeptics with Stigma (47%)	Action-Oriented Supporters (24%)	Passive Supporters (29%)
Perceptions of behavioral health treatment effectiveness			
Strong agreement that mental health treatments can help people with mental illness lead normal lives			
Strong agreement that substance disorder treatments can help people with a substance use disorders recover			
Mental illness stigma score quartile			
1st quartile (least stigma)			
2nd quartile			
3rd quartile			
4th quartile (most stigma)			
Factors have the most influence on support for a behavioral health bill			
Extent to which the bill is going to impact the state budget			
Extent to which the bill is based on scientific evidence			
Most important health issues for legislative action in the state			
Mental health			
Substance use			
Ever introduced a bill focused on…			
Mental health			
Substance use			

	Budget-Oriented Skeptics with Stigma (47%)	Action-Oriented Supporters (24%)	Passive Supporters (29%)
Perceptions of behavioral health treatment effectiveness			
Strong agreement that mental health treatments can help people with mental illness lead normal lives	16.9%	73.8%	98.9%
Strong agreement that substance disorder treatments can help people with a substance use disorders recover	12.6%	78.5%	84.8%
Mental illness stigma score quartile			
1st quartile (least stigma)	12.0%	47.1%	46.6%
2nd quartile	11.2%	19.6%	27.1%
3rd quartile	42.6%	23.2%	18.5%
4th quartile (most stigma)	34.2%	10.1%	7.8%
Factors have the most influence on support for a behavioral health bill			
Extent to which the bill is going to impact the state budget	61.4%	29.2%	40.5%
Extent to which the bill is based on scientific evidence	46.1%	74.1%	72.7%
Most important health issues for legislative action in the state			
Mental health	29.3%	45.6%	43.0%
Substance use	41.1%	58.3%	40.2%
Ever introduced a bill focused on...			
Mental health	13.4%	90.7%	23.2%
Substance use	15.4%	96.3%	4.6%

	Budget-Oriented Skeptics with Stigma (47%)	Action-Oriented Supporters (24%)	Passive Supporters (29%)
Perceptions of behavioral health treatment effectiveness			
Strong agreement that mental health treatments can help people with mental illness lead normal lives	16.9%	73.8%	98.9%
Strong agreement that substance disorder treatments can help people with a substance use disorders recover	12.6%	78.5%	84.8%
Mental illness stigma score quartile			
1st quartile (least stigma)	12.0%	47.1%	46.6%
2nd quartile	11.2%	19.6%	27.1%
3rd quartile	42.6%	23.2%	18.5%
4th quartile (most stigma)	34.2%	10.1%	7.8%
Factors have the most influence on support for a behavioral health bill			
Extent to which the bill is going to impact the state budget	61.4%	29.2%	40.5%
Extent to which the bill is based on scientific evidence	46.1%	74.1%	72.7%
Most important health issues for legislative action in the state			
Mental health	29.3%	45.6%	43.0%
Substance use	41.1%	58.3%	40.2%
Ever introduced a bill focused on...			
Mental health	13.4%	90.7%	23.2%
Substance use	15.4%	96.3%	4.6%

	Budget-Oriented Skeptics with Stigma (47%)	Action-Oriented Supporters (24%)	Passive Supporters (29%)
Perceptions of behavioral health treatment effectiveness			
Strong agreement that mental health treatments can help people with mental illness lead normal lives	16.9%	73.8%	98.9%
Strong agreement that substance disorder treatments can help people with a substance use disorders recover	12.6%	78.5%	84.8%
Mental illness stigma score quartile			
1st quartile (least stigma)	12.0%	47.1%	46.6%
2nd quartile	11.2%	19.6%	27.1%
3rd quartile	42.6%	23.2%	18.5%
4th quartile (most stigma)	34.2%	10.1%	7.8%
Factors have the most influence on support for a behavioral health bill			
Extent to which the bill is going to impact the state budget	61.4%	29.2%	40.5%
Extent to which the bill is based on scientific evidence	46.1%	74.1%	72.7%
Most important health issues for legislative action in the state			
Mental health	29.3%	45.6%	43.0%
Substance use	41.1%	58.3%	40.2%
Ever introduced a bill focused on…			
Mental health	13.4%	90.7%	23.2%
Substance use	15.4%	96.3%	4.6%

A Three Stage Approach For Dissemination Research Focused on Policymakers

Formative Audience Research → Audience Segmentation Research → Dissemination Effectiveness Research

Purtle, J., Marzalik, J. S., Halfond, R. W., Bufka, L. F., Teachman, B. A., & Aarons, G. A. (2020). Toward the data-driven dissemination of findings from psychological science. *American Psychologist*, *75*(8), 1052.

Dissemination Effectiveness Research

- <u>Goal</u>: Determine which dissemination strategies are more effective than others

- Outcomes:
  - Attitudes, appropriateness, acceptability, awareness
    - Surveys
  - Adoption/intention to adopt an intervention
    - Surveys
    - Observed engagement with evidence (e.g., e-mail open and link clink rates)
    - Analysis of artifacts of policymaking processes (e.g., public statements, legislative committee reports, social media posts)
    - Analysis of claims data

RESEARCH

Partisan differences in the effects of economic evidence and local data on legislator engagement with dissemination materials about behavioral health: a dissemination trial

Jonathan Purtle[1]* , Katherine L. Nelson[2], Luwam Gebrekristos[2], Félice Lê-Scherban[2] and Sarah E. Gollust[3]

Adverse Childhood Experiences in Arkansas:
Costs and Mental Health/Substance Use Impacts

Drexel UNIVERSITY

What are Adverse Childhood Experiences (ACEs)?

Adverse childhood experiences (ACEs) include things like abuse and neglect, having a parent with a serious substance use disorder or mental illness, and witnessing domestic or community violence. Studies have repeatedly shown that the risk of having mental health or substance use problems as an adult increases with the number of ACEs that a person has had. Positive childhood experiences can also prevent the consequences of ACEs (1). Research suggests that the social and economic consequences of the COVID-19 pandemic could result in more ACEs.

ACEs Increase Risk for Adult Mental Health and Substance Use Problems (2)

Compared to adults with 0 ACEs, adults with 4 or more ACEs have:
- 30.1 times higher odds of attempting suicide
- 10.2 times higher odds of problematic drug use
- 5.8 times higher odds of problematic alcohol use
- 4.4 times higher odds of depression

Percentage of Mental Health and Substance Use Problems in the U.S. Attributable to ACEs (3)

Depression 44%

Heavy Drinking 24%

ACEs are Common and Costly in Arkansas (4)

In Arkansas in 2017 there were:
- 9,334 cases of child maltreatment reported
  - 2,051 cases of child physical abuse
  - 1,783 cases of child sexual abuse
  - 5,043 cases of child neglect

Lifetime Public Systems Costs Caused by Cases of Child Maltreatment in Arkansas, 2017 (4,5)

Child Welfare: $78,396,266
Special Education: $81,140,462
Criminal Justice: $68,446,222

State Laws Can Prevent ACEs and their Consequences (7)

The National Conference of State Legislators summarized evidence about state laws that work. These include:
- Increasing access to early childhood education
- Expanding school-based mental health services
- Raising the minimum wage, extending earned income tax credits
- Funding nurse-family partnerships
- Increasing access to treatments than are proven to help people recover from mental health and substance use conditions

Percentage of Children in Arkansas with ACEs, Parent Reported, 2018 (6)

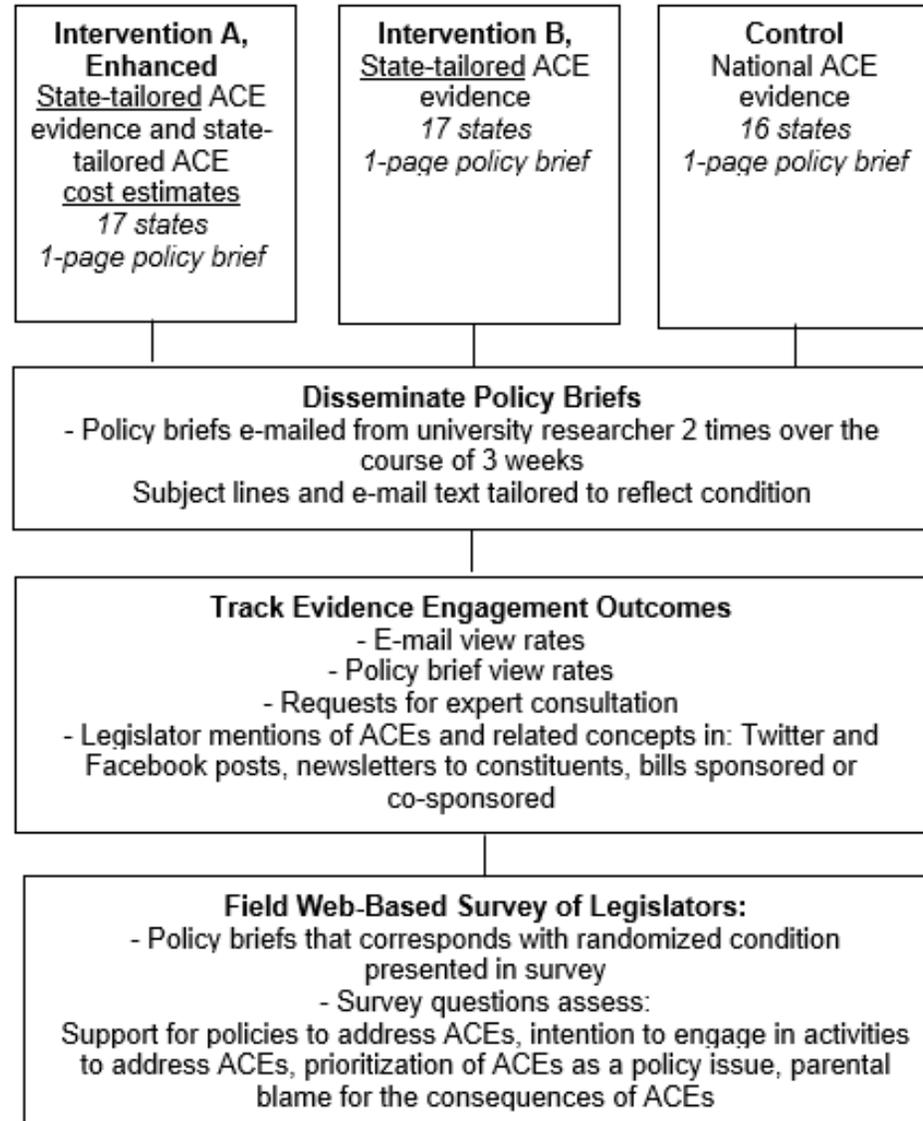2 or more ACEs — 22%
1 or more ACEs — 27%
(0% 10% 20% 30%)
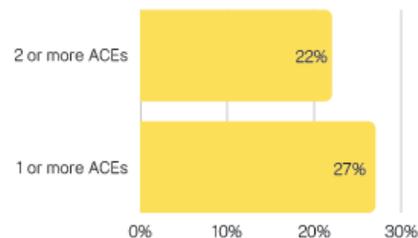
More Information and References:
1. Bethell et al. Positive childhood experiences and adult mental and relational health in a statewide sample. *JAMA Pediatrics.* 2019.
2. Hughes et al. The effect of multiple adverse childhood experiences on health: *The Lancet Public Health.* 2017.
3. Merrick et al. Estimated Proportion of Adult Health Problems Attributable to Adverse Childhood Experiences. *MMWR.* 2019.
4. US Department of Health and Human Services. *Child Maltreatment.* 2017. https://bit.ly/2Z7lgGZ
5. Peterson et al. The economic burden of child maltreatment in the United States, 2015. *Child Abuse & Neglect.* 2018.
6. National Survey of Children's Health. 2018 https://www.childhealthdata.org/browse/survey/allstates?q=7442
7. NCSL. Preventing and Mitigating the Effects of Adverse Childhood Experiences. 2018. https://bit.ly/38U6JEr

Questions?
Evidence brief by:
Jonathan Purtle, DrPH
Associate Professor
Drexel University
School of Public Health
E-mail: JPP46@Drexel.edu
Phone: 267-546-7541

---

50 States
Clustered, Stratified Randomization
N= 6,964 Legislators

Intervention A, Enhanced
<u>State-tailored</u> ACE evidence and state-tailored ACE <u>cost estimates</u>
17 states
1-page policy brief

Intervention B,
<u>State-tailored</u> ACE evidence
17 states
1-page policy brief

Control
National ACE evidence
16 states
1-page policy brief

Disseminate Policy Briefs
- Policy briefs e-mailed from university researcher 2 times over the course of 3 weeks
Subject lines and e-mail text tailored to reflect condition

Track Evidence Engagement Outcomes
- E-mail view rates
- Policy brief view rates
- Requests for expert consultation
- Legislator mentions of ACEs and related concepts in: Twitter and Facebook posts, newsletters to constituents, bills sponsored or co-sponsored

Field Experiment

Field Web-Based Survey of Legislators:
- Policy briefs that corresponds with randomized condition presented in survey
- Survey questions assess:
Support for policies to address ACEs, intention to engage in activities to address ACEs, prioritization of ACEs as a policy issue, parental blame for the consequences of ACEs

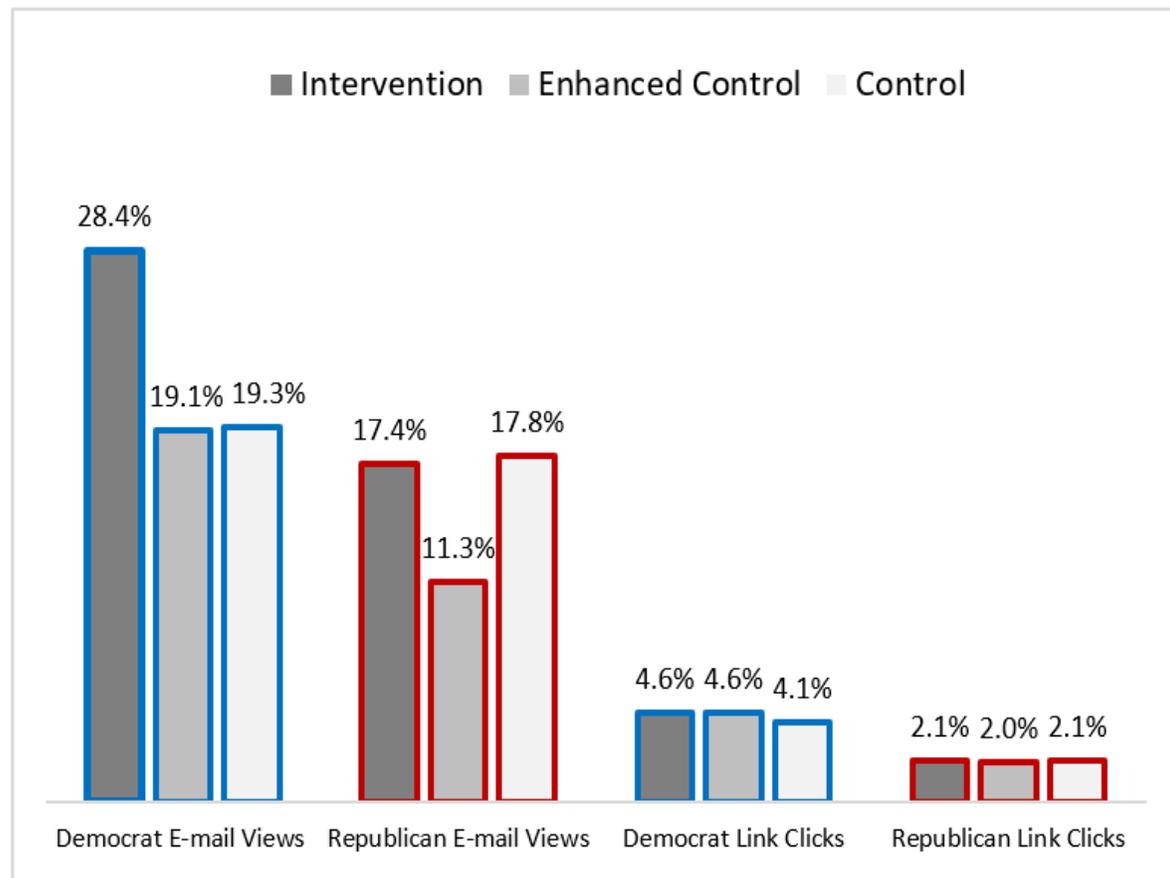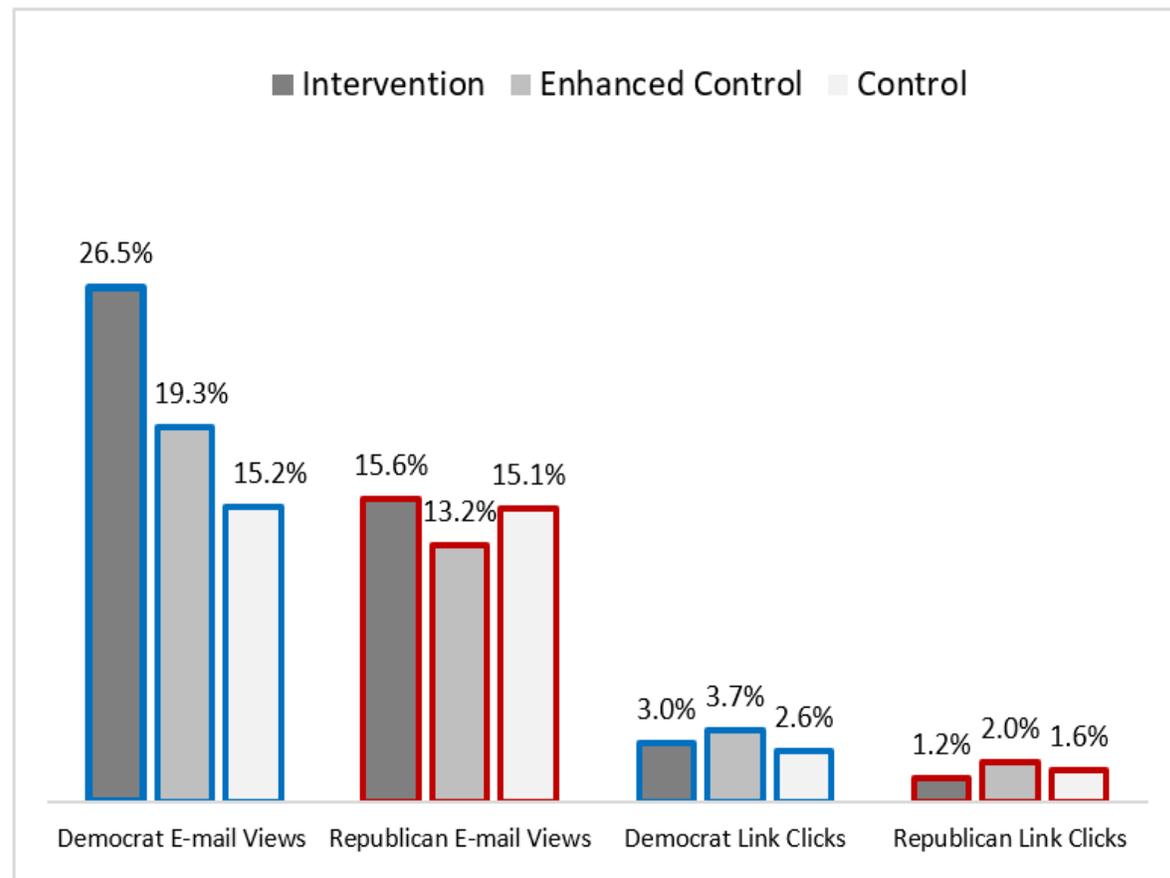**Web-Based Survey Experiment**

Unadjusted Rates of Engagement with Dissemination Materials Among U.S. State Legislators Stratified by Political Parity and Study Condition, 2021, n= 6,153
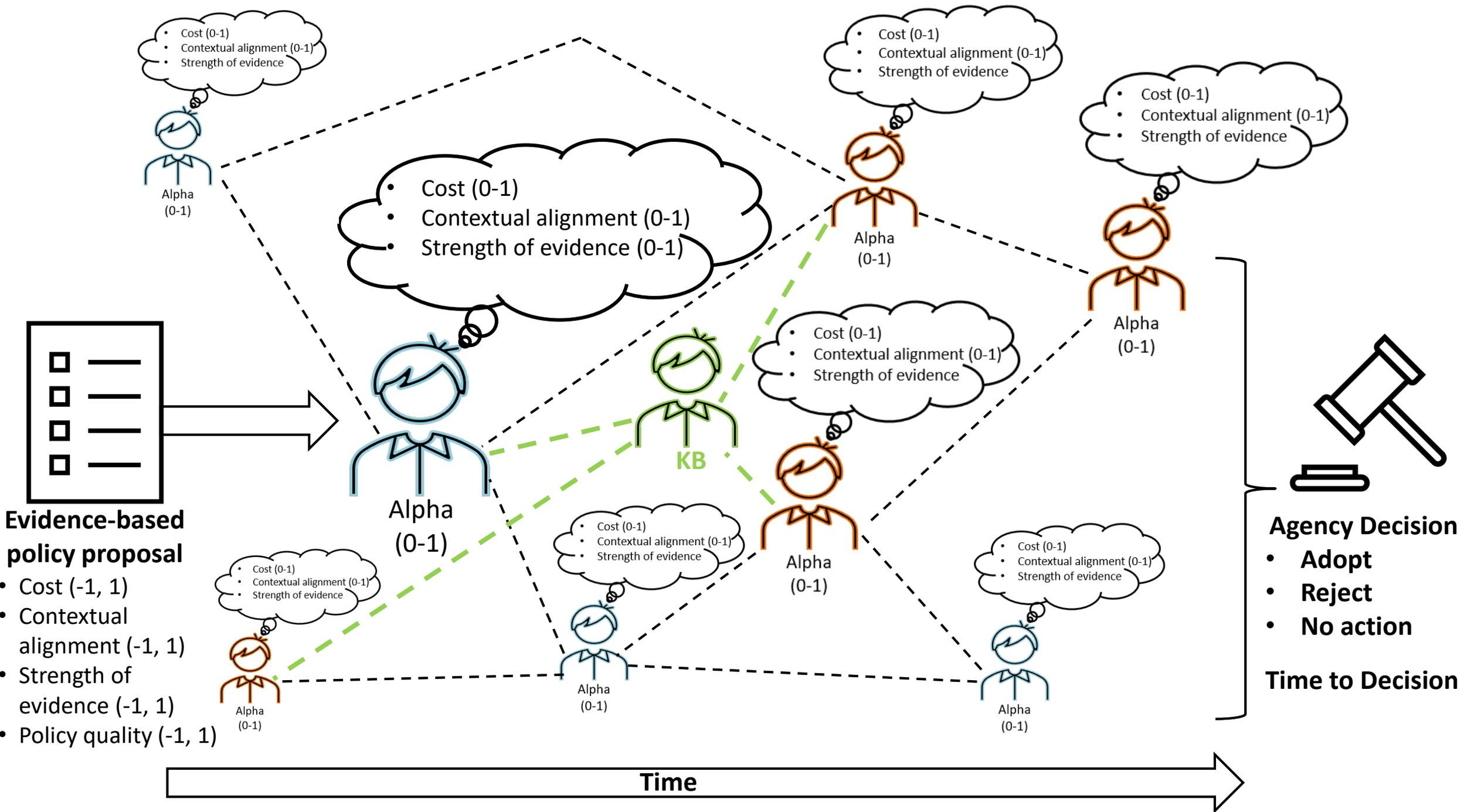

Panel A. First Dissemination E-mail, n= 6,509

Panel B. Second Dissemination E-mail, *(n= 6,153)*

Purtle, J., Nelson, K.L., Gebrekristos, L., Lê-Scherban, F., Gollust, S.E. Partisan Differences in the Effects of Economic Evidence and Local Data on Legislator Engagement with Dissemination Materials about Behavioral Health: A Cluster-Randomized Dissemination Trial. Under review.

Simulating the Role of Knowledge Brokers in Mental Health Policymaking in State Agencies: An Agent-Based Model

Combs, T.B., Nelson, K.L., Luke, D., McGuire, F.H., Cruden, G., Henson, R.M., Adams, D., Hoagwood, K., Purtle J. *Health Services Research*. 2022.

Evidence-based policy proposal
- Cost (-1, 1)
- Contextual alignment (-1, 1)
- Strength of evidence (-1, 1)
- Policy quality (-1, 1)

Cost (0-1)
Contextual alignment (0-1)
Strength of evidence

Cost (0-1)
Contextual alignment (0-1)
Strength of evidence (0-1)

Alpha (0-1)

Agency Decision
- Adopt
- Reject
- No action

Time to Decision

Time

RED_Mod Explore Doug Luke — 7/12/2021 ⮜ </> Source Code

RED_Mod (Research Evidence Decisionmaking Model)

Network size
25 ▾

Network type
Dekker ▾

Policy quality
Random ▾

Decision maker tie type
Low Degree ▾

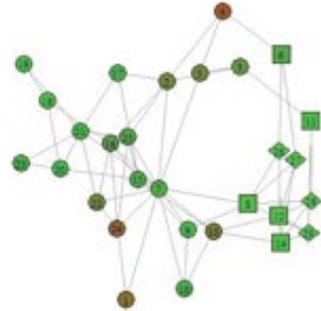# of knowledge brokers
4 ▾

Knowledge broker tie type
DM ▾

- Circles are regular agency members
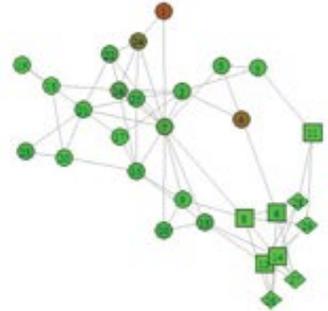- Squares are decision makers
- Rhombuses are knowledge brokers

Network - Time 1
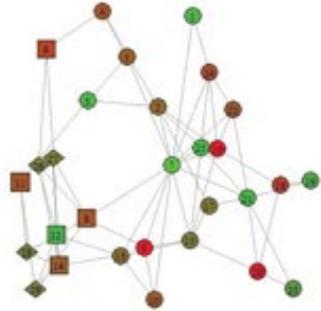
Network - Time 25

Network - Time 50

13	0.39	5	0.18
Maximum Degree	Centralization	Diameter	Policy Quality

-0.08	-0.31	0.93
Policy Cost	Policy Feasibility	Policy Research

Behavior over Time (Scaled)

Scaled support (All)

Graph for random policy
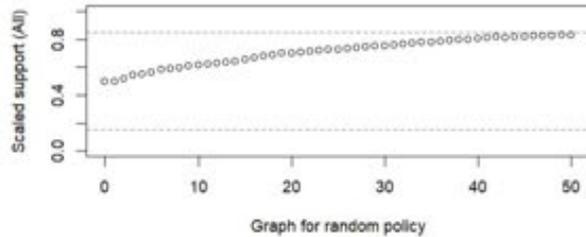
Behavior over Time (Decisionmakers)

Scaled support (DM)

Graph for random policy
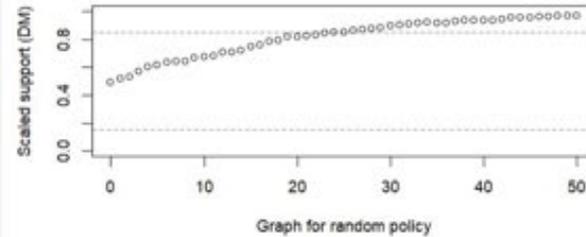
Model Outcomes

Who	Qual	Dec	Tick	FinSupp	MaxSupp	MaxTick
All	0.18	Neither	NA	0.83	0.83	50
DM	0.18	Adopt	24	0.97	0.97	48

Final Thought:
Policy Making Is Political

"The policy making process is a political process, with the basic aim of reconciling interests in order to negotiate a consensus, not of implementing logic and truth.
The value issues in policy making cannot be settled by referring to research findings."
- Carol Weiss, 1977