



foundation for
healthy generations

CREATING ENDURING HEALTH EQUITY

Flourishing Communities



Sustained, Continuous, Steady, Strong, Living into Well



NEAR

Neuroscience

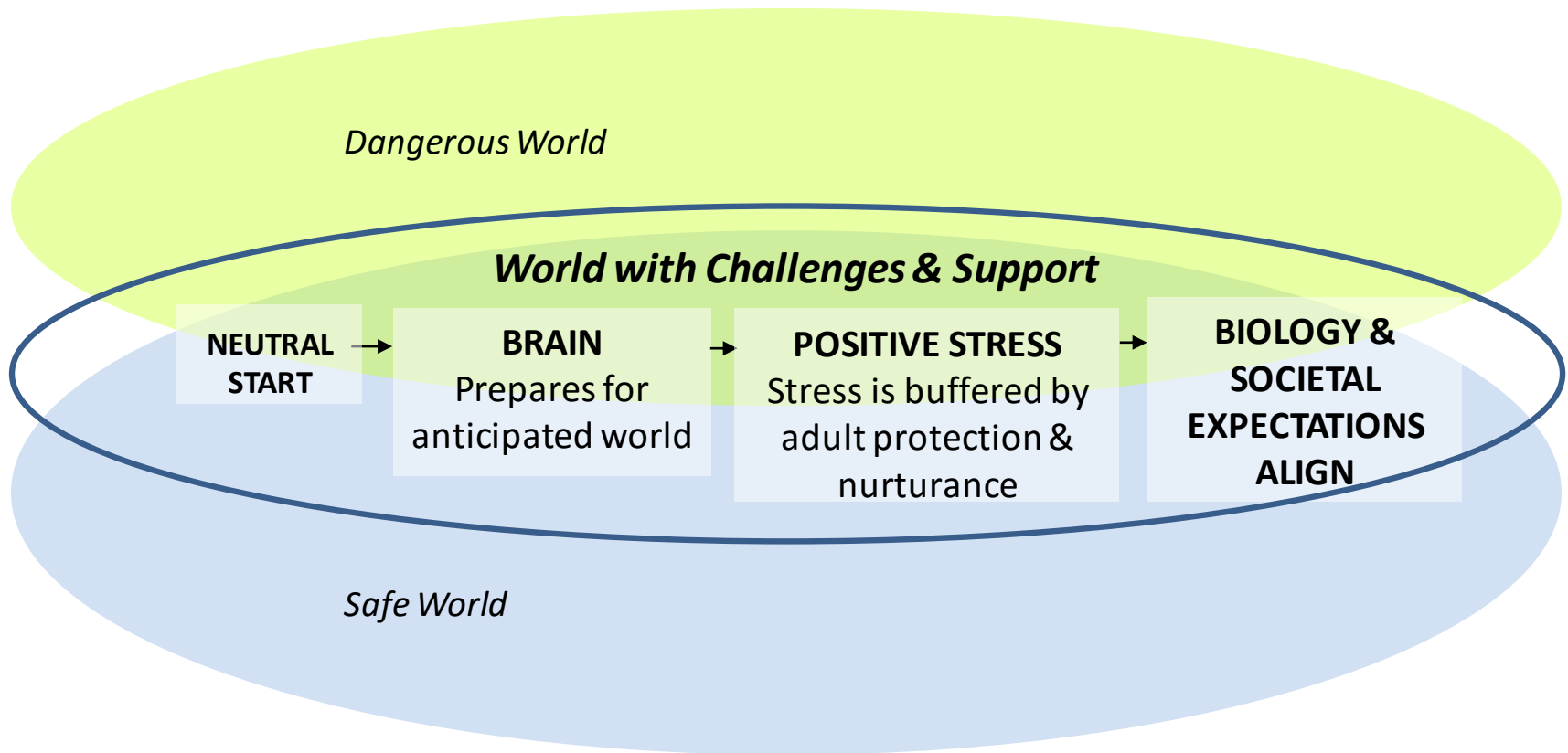
Epigenetics

Adverse Childhood Experience

Resilience



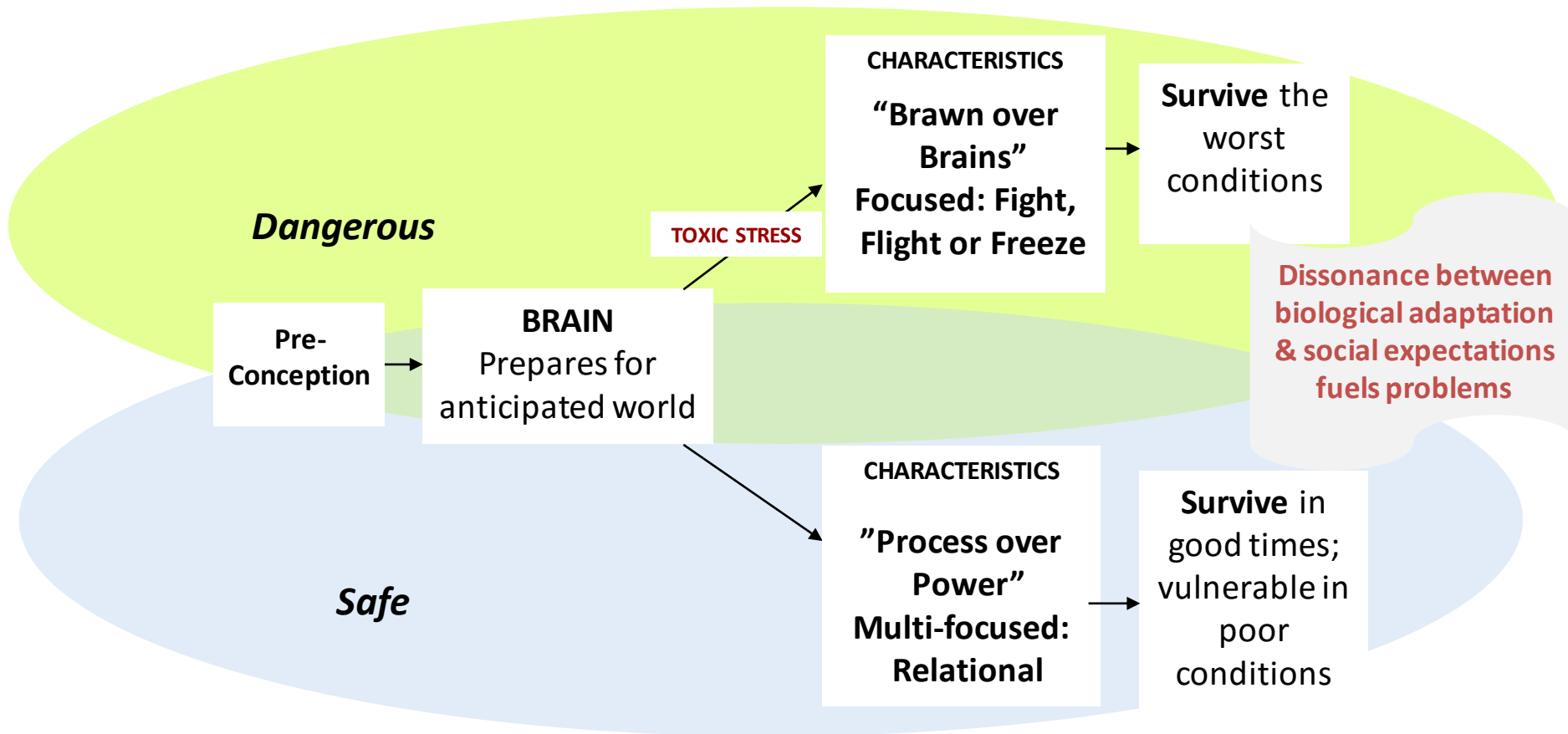
Experience & Adaptation



*Adapted from the research of Martin Teicher, MD, Ph.D
By Washington Family Policy Council*



Hardwired for Anticipated World



Adapted from the research of Martin Teicher, MD, Ph.D



“... experiences of a parent, before even conceiving offspring, markedly influence both structure and function in the nervous system of subsequent generations.”



Miasma vs. Germ Theory

Dr. John Snow
1854

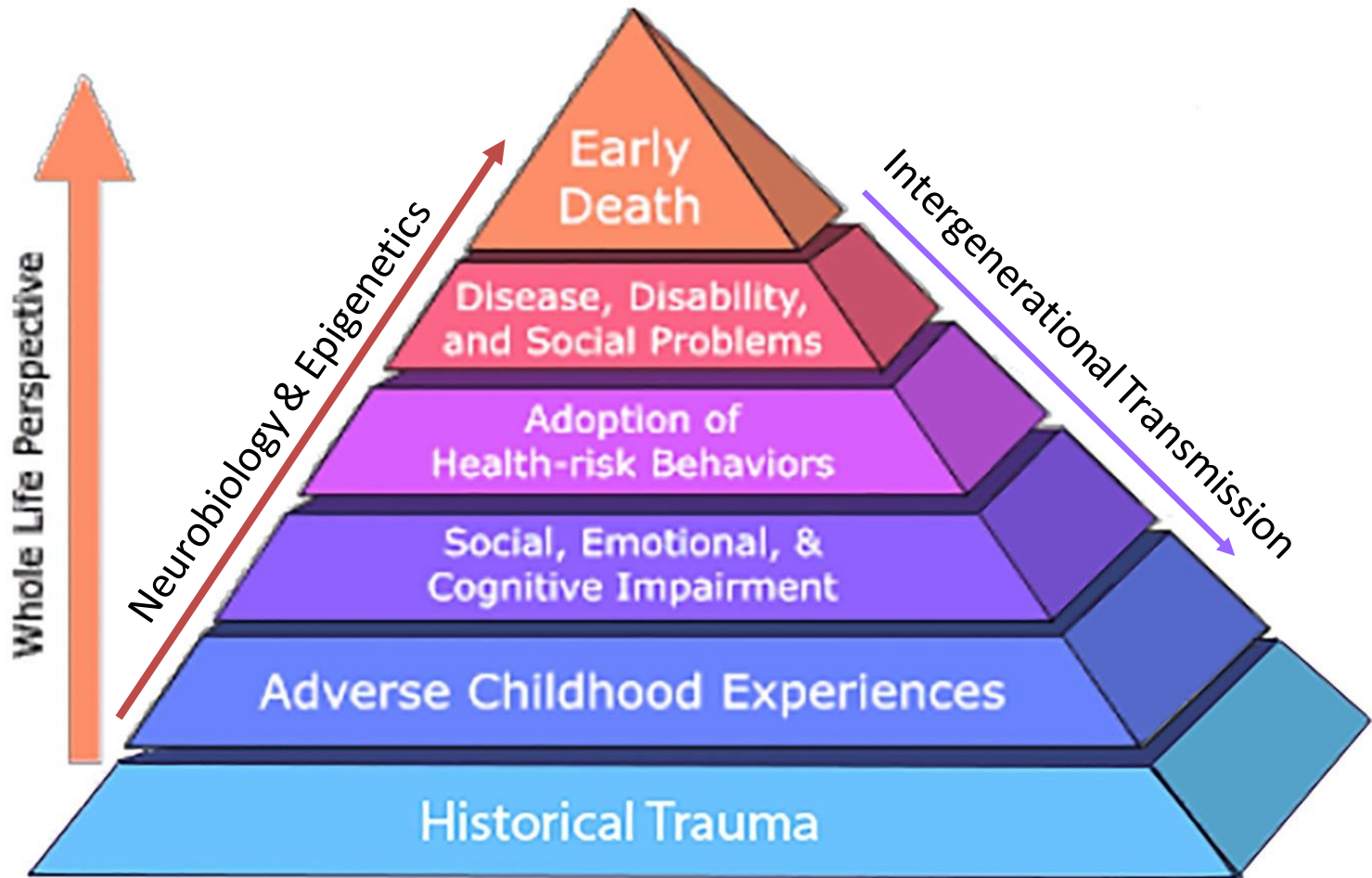
~~Cholera Death is
Caused by Miasmas~~

1. New Way of Thinking
2. Shoe Leather Epidemiology
3. Lives Saved





Adverse Childhood Experience Study





ACE Study

Indicators of Family Dysfunction

1. Mentally ill, depressed or suicidal person in home
2. Drug addicted or alcoholic family member
3. Parental discord – indicated by divorce, separation, abandonment
4. Witnessing domestic violence against the mother
5. Incarceration of any family member

Abuse

6. Child physical abuse
7. Child sexual abuse
8. Child emotional abuse

Neglect

9. Physical Neglect
10. Emotional Neglect

Accumulation Matters

ACE Score = Number of Categories (0-10)



Local Data

North:

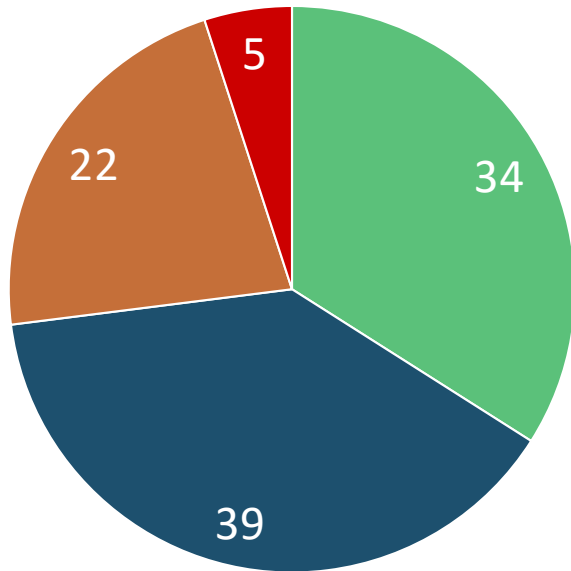
Schools: Boistfort, North River, Ocosta, Pe Ell, Raymond, South Bend, and Willapa Valley
(Parts of Pacific, Grays Harbor and Lewis Counties)

South:

Schools: Naselle, Grays River, Ocean Beach, and Wahkiakum
(Parts of Pacific and Wahkiakum Counties)

ACE Scores

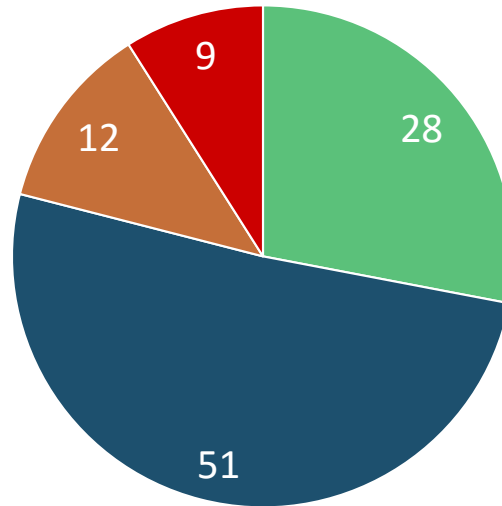
Washington Adults



0 1-2 3-5 ≥6

27% ≥3

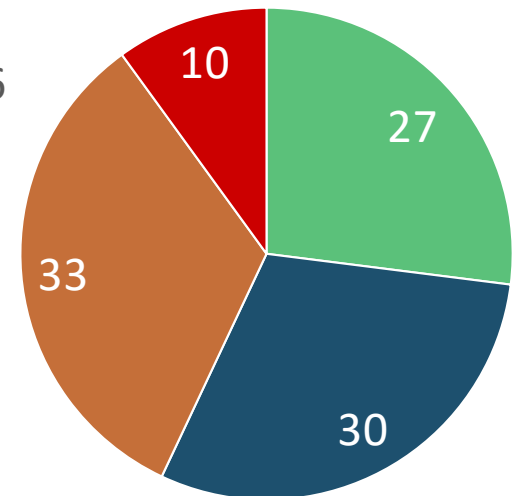
North



0 1-2 3-5 ≥6

21% ≥3

South



0 1-2 3-5 ≥6

43% ≥3



ACE Study Major Findings

ACE Categories (ACEs) are Interrelated

- 87% of people with 1 have >1

ACEs are Common

- Nearly 2/3 of adults have ≥ 1

Accumulation of ACEs Matters

- Higher # (ACE Score) = higher population risk

Graded Relationship: Disease, Disability, Social, Productivity

Scores = Good Proxy Measure Childhood Toxic Stress Dose

ACEs are the Most Powerful Known Determinant of Health

- Mental, Physical, Behavioral, Productivity, Disability, & Social Problems

A Significant Portion Of Risk for Disease Is Attributable to ACEs...

Smoking

Heavy Drinking

Binge Drinking

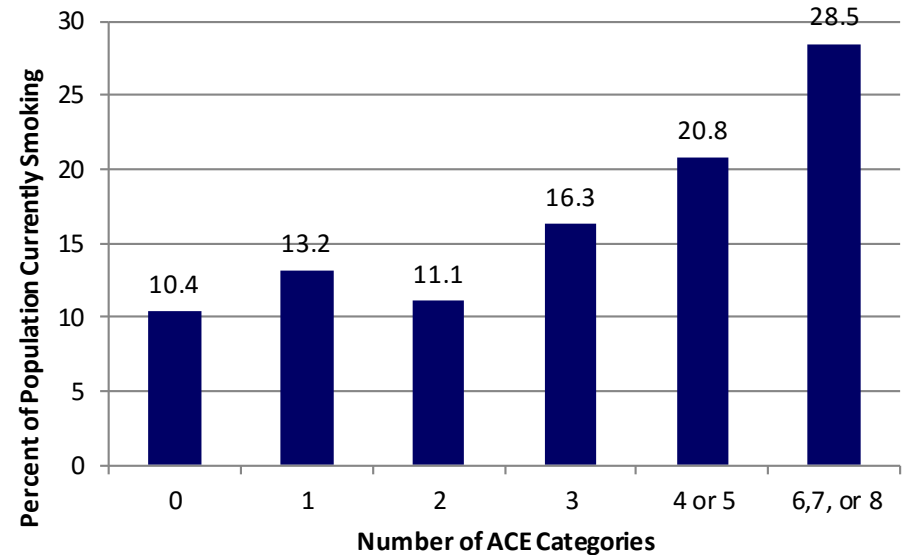
Drinking and Driving

Had a Drug Problem

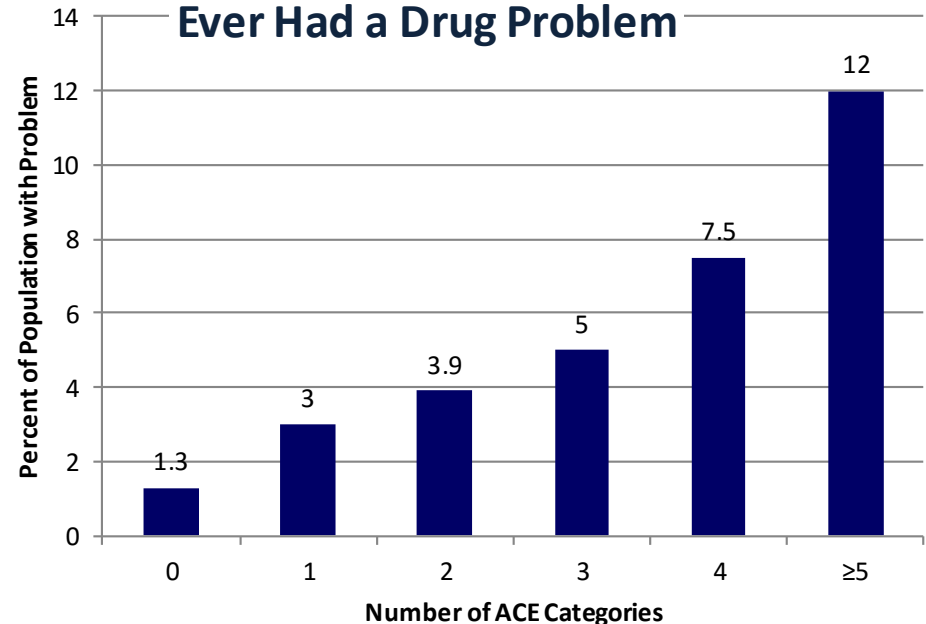
Addicted to Drugs

Ever Injected Drugs

Current Smoking- Washington



Original ACE Study Ever Had a Drug Problem



A Significant Portion of Chronic Disease is Attributable to ACEs

Cardio Vascular Disease

Cancer

Diabetes

Asthma

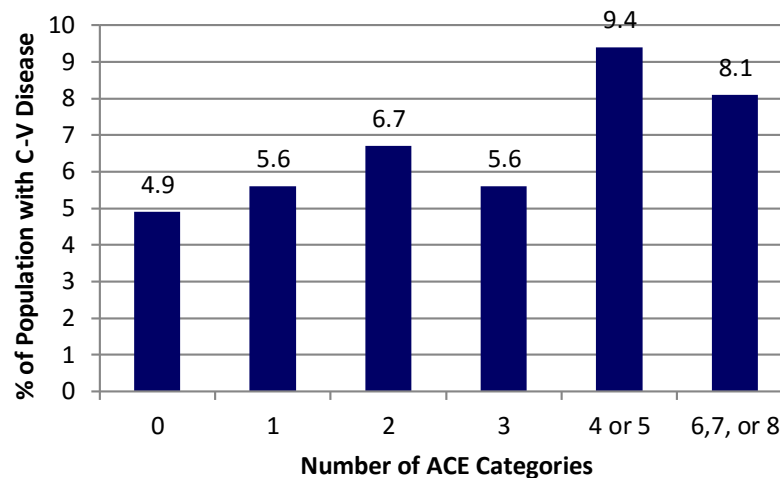
Auto Immune Disease

Chronic obstructive pulmonary disease

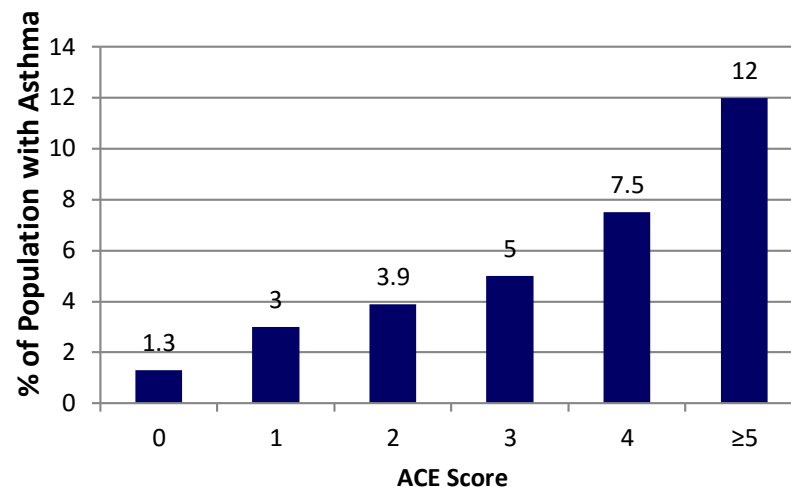
Ischemic heart disease

Liver Disease

Cardio Vascular Disease

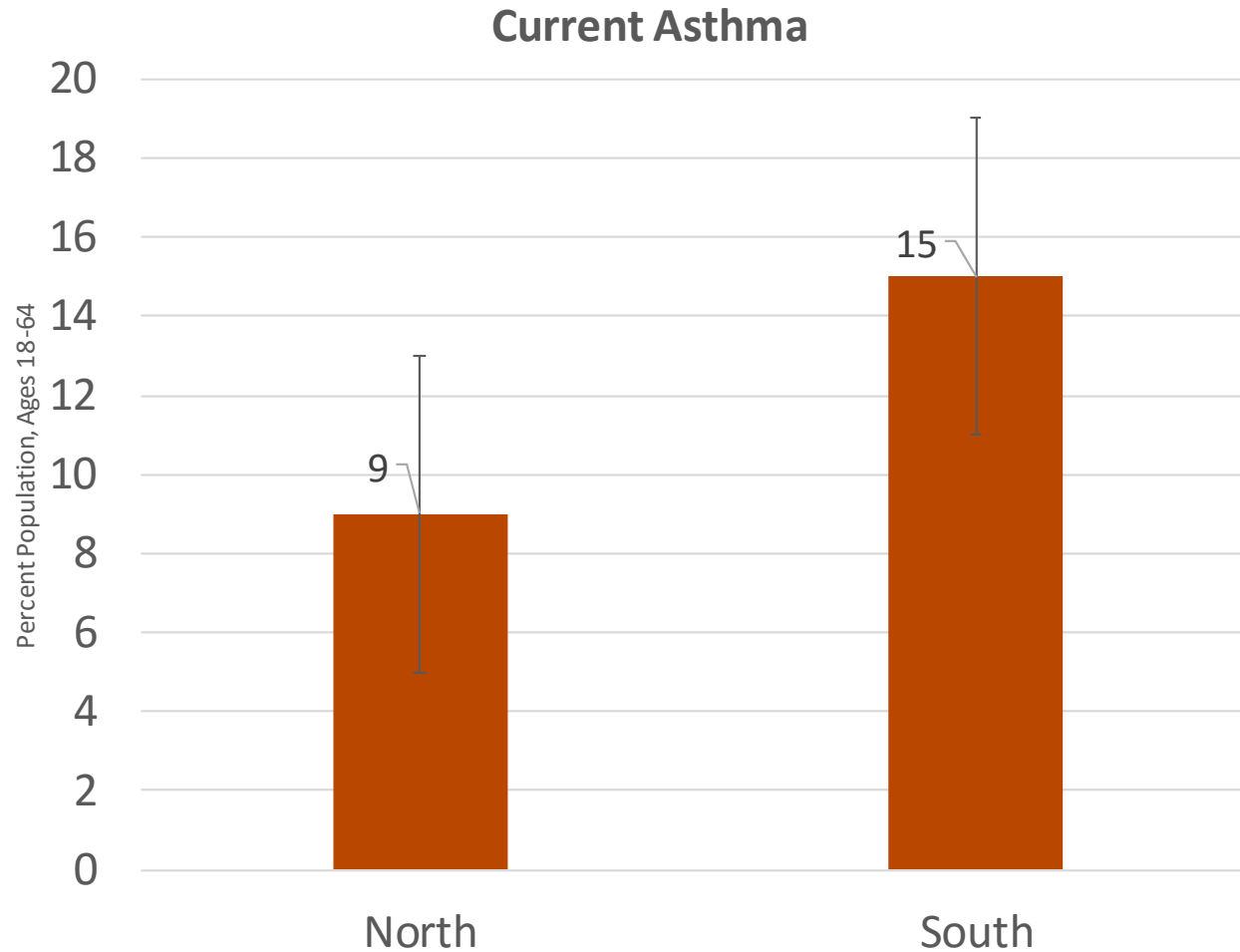


Asthma



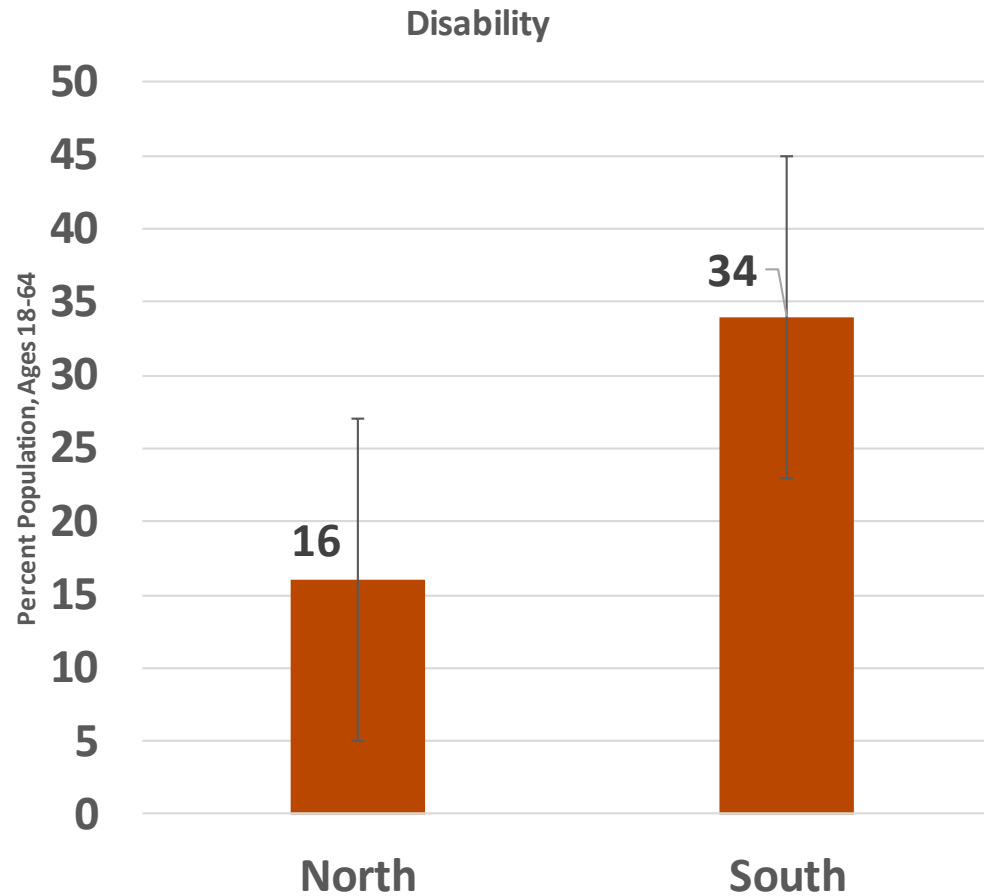


People Who Have Asthma





Disability



A Large Portion of Mental Illness Is Attributable to ACEs...

Depression

Serious & persistent
mental illness

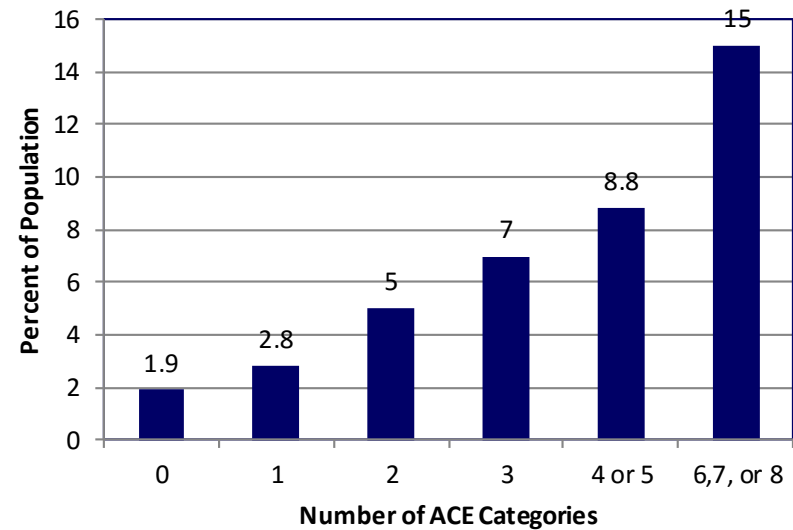
Frequent mental distress

Nervousness

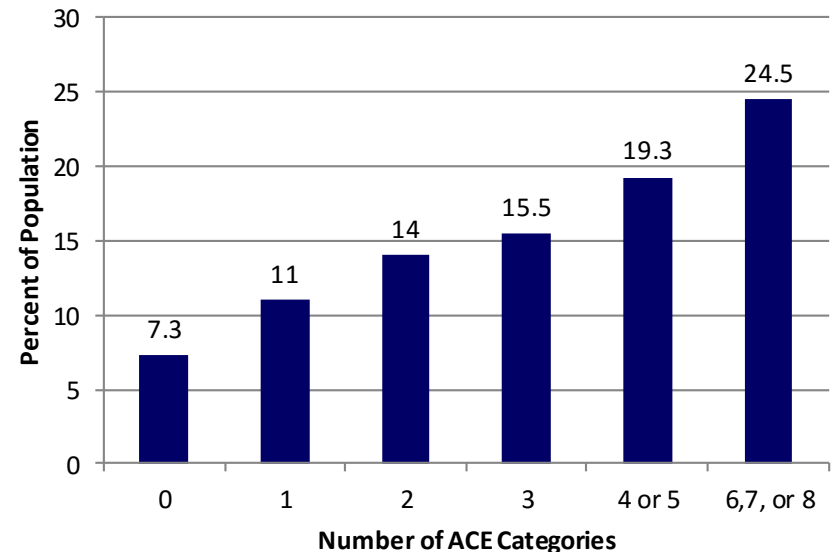
Suicide attempts

Emotional problems
restrict activities

Anxiety

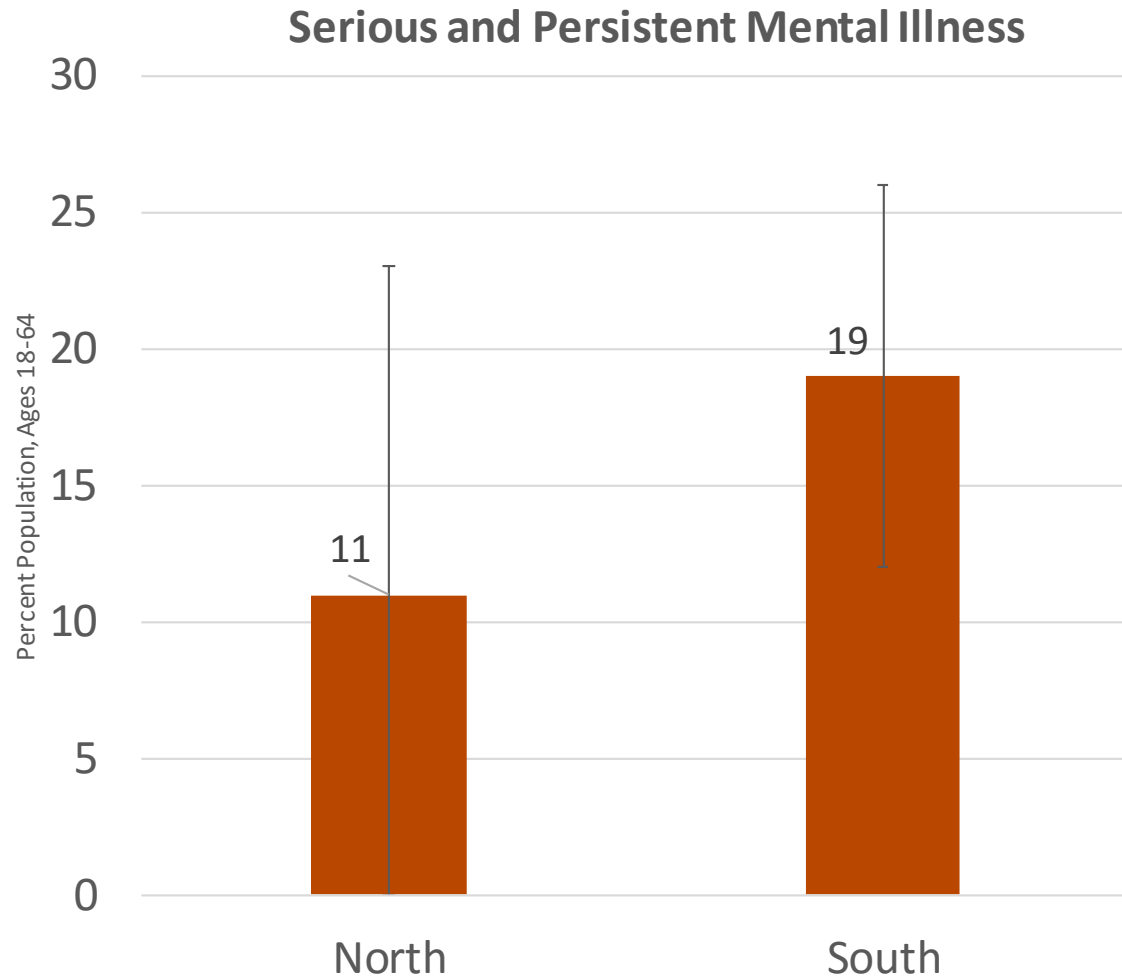


Treatment for Mental Health Condition



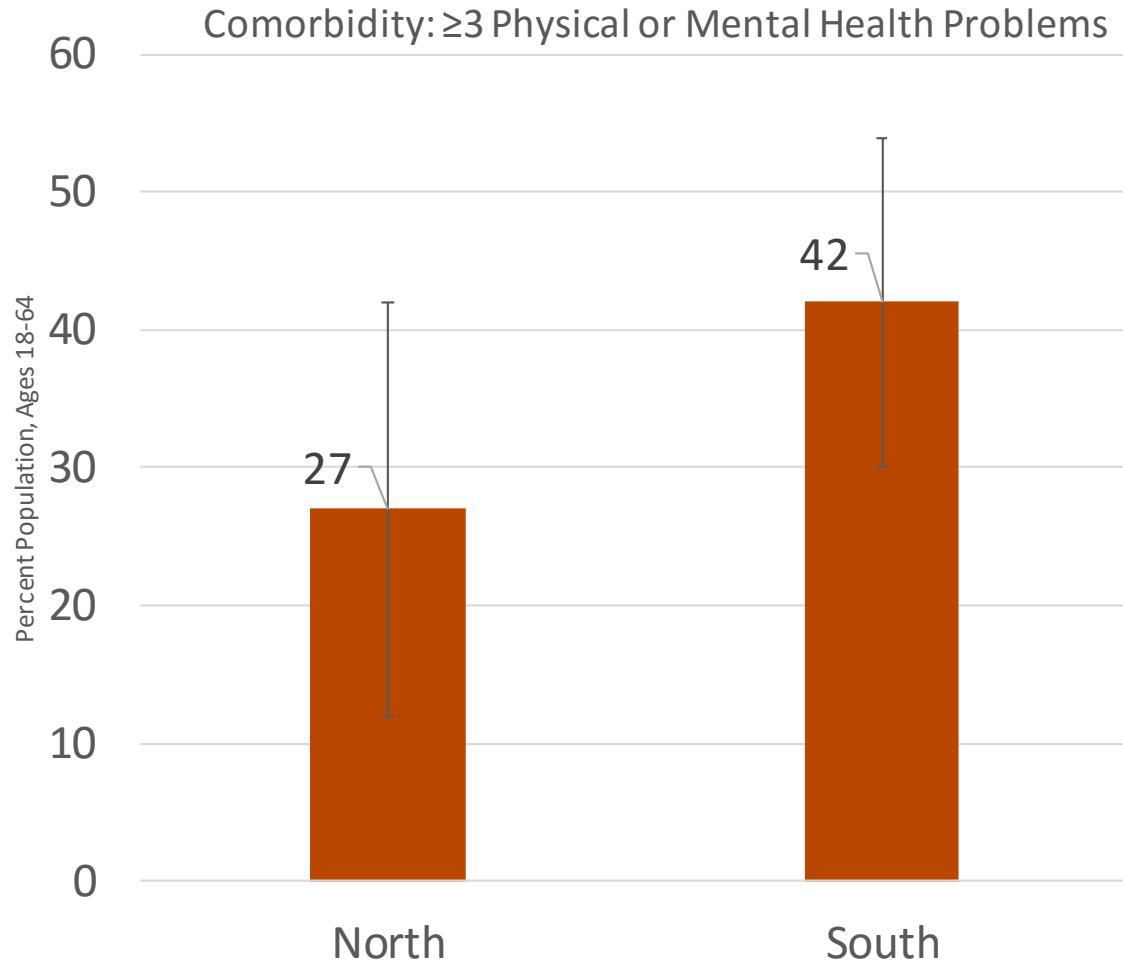


Population with Mental Illness Symptoms





Population with ≥ 3 Co-Occurring Diseases



“At ≥ 6 ACEs, adults are 9 times more likely to experience life dissatisfaction and 4.6 times more likely to suffer from chronic diseases and engage in risky behaviors such as smoking.”

Anda and Brown, 2009



ACE Attributable Outcomes

Risk

- Smoking
- Heavy drinking
- Obesity
- Risk of AIDS
- Taking painkillers for high Obesity

Prevalent Disease

- Cardiovascular
- Cancer
- Asthma
- Diabetes
- Auto immune
- COPD
- Ischemic heart disease
- Liver disease

Poor Mental Health

- Frequent mental distress
- Sleep disturbances
- Nervousness
- MH problem requiring medication
- Emotional problems restrict activities
- Serious & persistent mental illness

Intergenerational ACE Transmission

- Mental Illness
- Drugs or Alcohol Problem
- Multiple divorces, separations
- Victim of family violence
- Adult incarceration

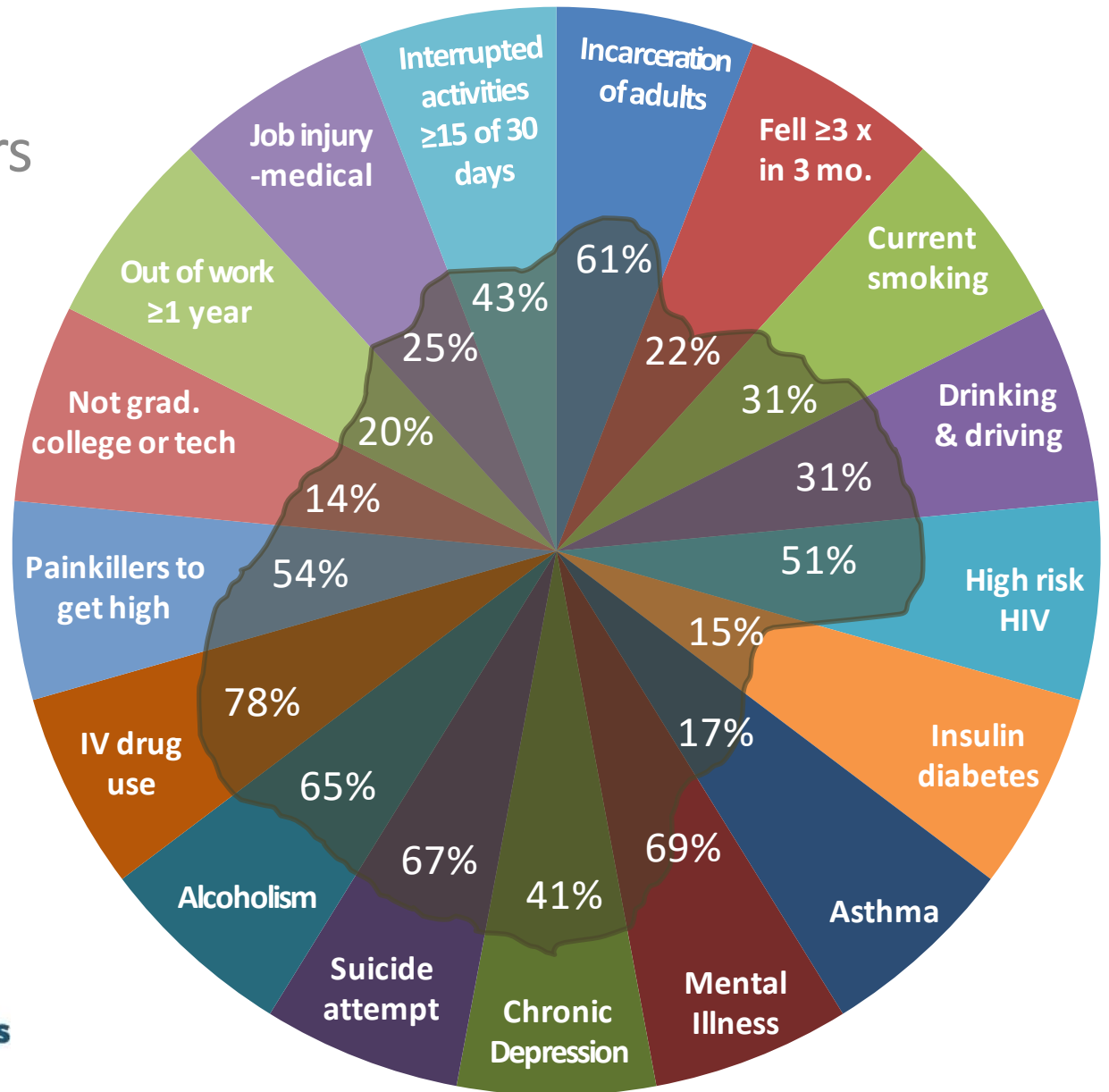
Health & Social Problems

- Fair or poor health
- Life dissatisfaction
- Health-related limits to quality of life
- Disability that impedes daily functioning
- Don't complete secondary education
- Unemployment
- History of adult homelessness

Population Risk Attributable to ACEs

Major Cost Centers

- Behavioral Health
- Child Welfare
- Corrections
- Economic Assistance
- Health
- Housing & Shelter
- Special Education
- Workforce



foundation for
healthy generations

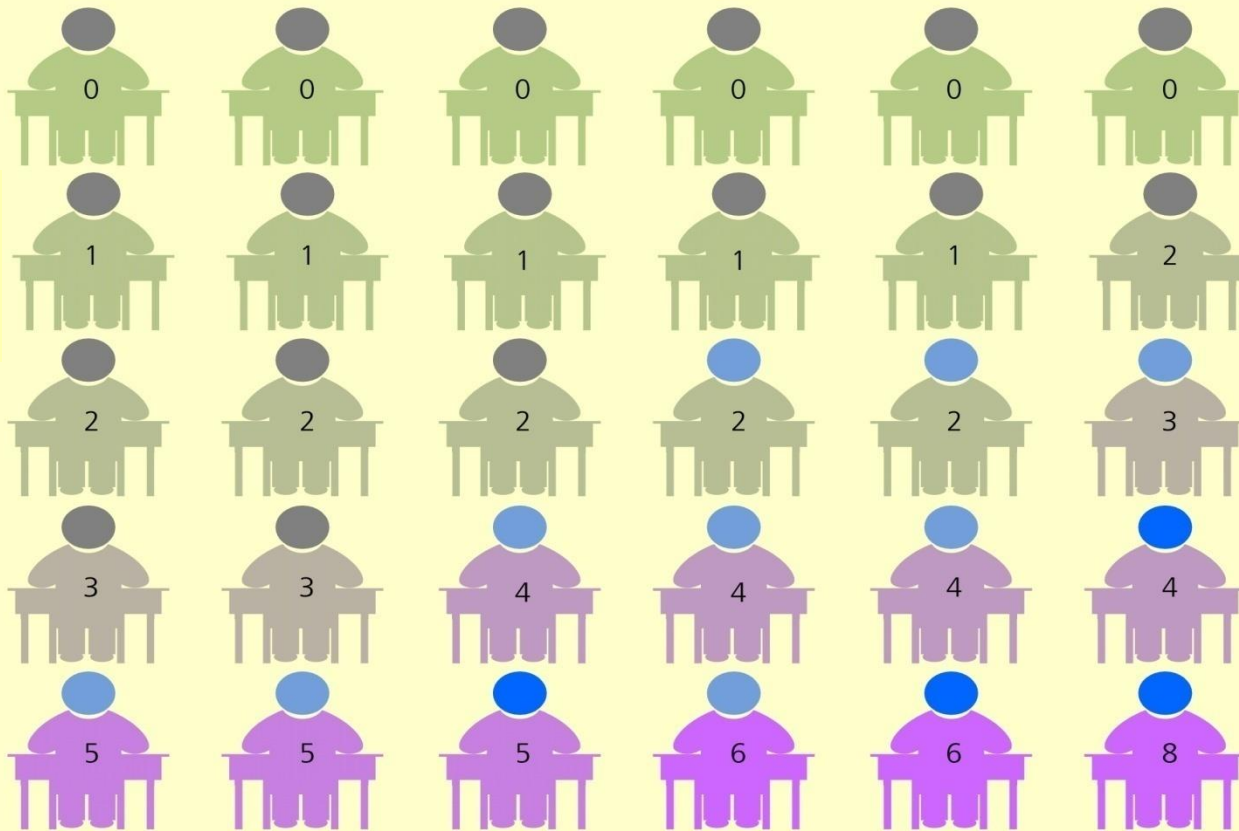
CREATING ENDURING HEALTH EQUITY

Washington School Classroom (30 Students)

Adverse Childhood Experiences (ACEs)

- 6 students with no ACE
- 5 students with 1 ACE
- 6 students with 2 ACEs
- 3 students with 3 ACEs
- 7 students with 4 or 5 ACEs
- 3 students with 6 or more ACEs

Population
Average-
10th Grade



Three Systems Promote Resilience



“Nurturing the healthy development of these protective systems affords the most important preparation or ‘inoculation’ for overcoming potential threats and adversities in human development. Similarly, damage or destruction of these systems has dire consequences for the positive adaptive capacity of individuals.”

Ann Masten, 2009



Culture Change



We Create Culture
in Our
Moment by Moment
Interactions
with One Another

Each Person: A Unique Experience of the World





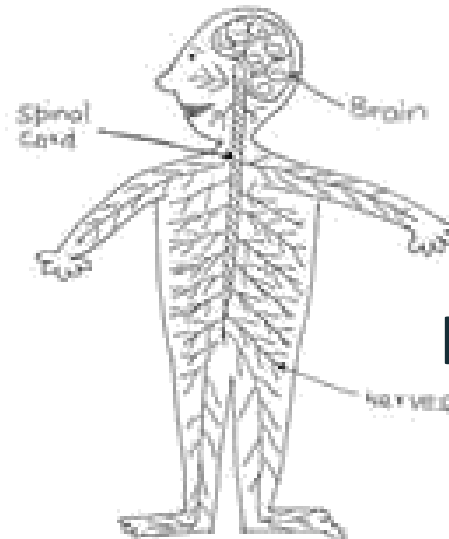
Sequential Development

Sensitive and Critical Periods

Early

Hippocampus &
Amygdala

Memory, Learning,
Response to Danger
Delayed Effects



Early & Middle

Corpus Collosum
Language
Math

Integration of Creative &
Analytical Thought
Infant Neglect, Sexual
Abuse 9-10

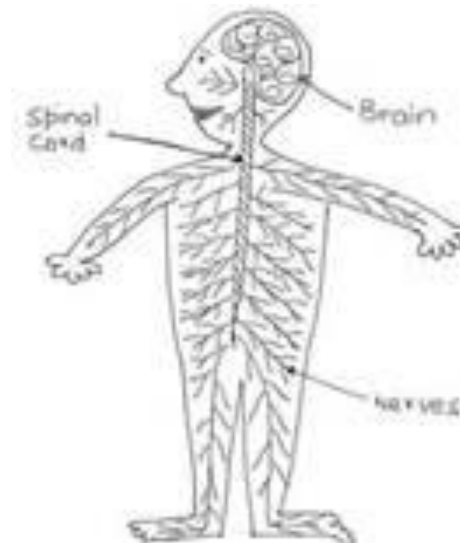


Sensitive and Critical Periods

Powerful Opportunities for Protection

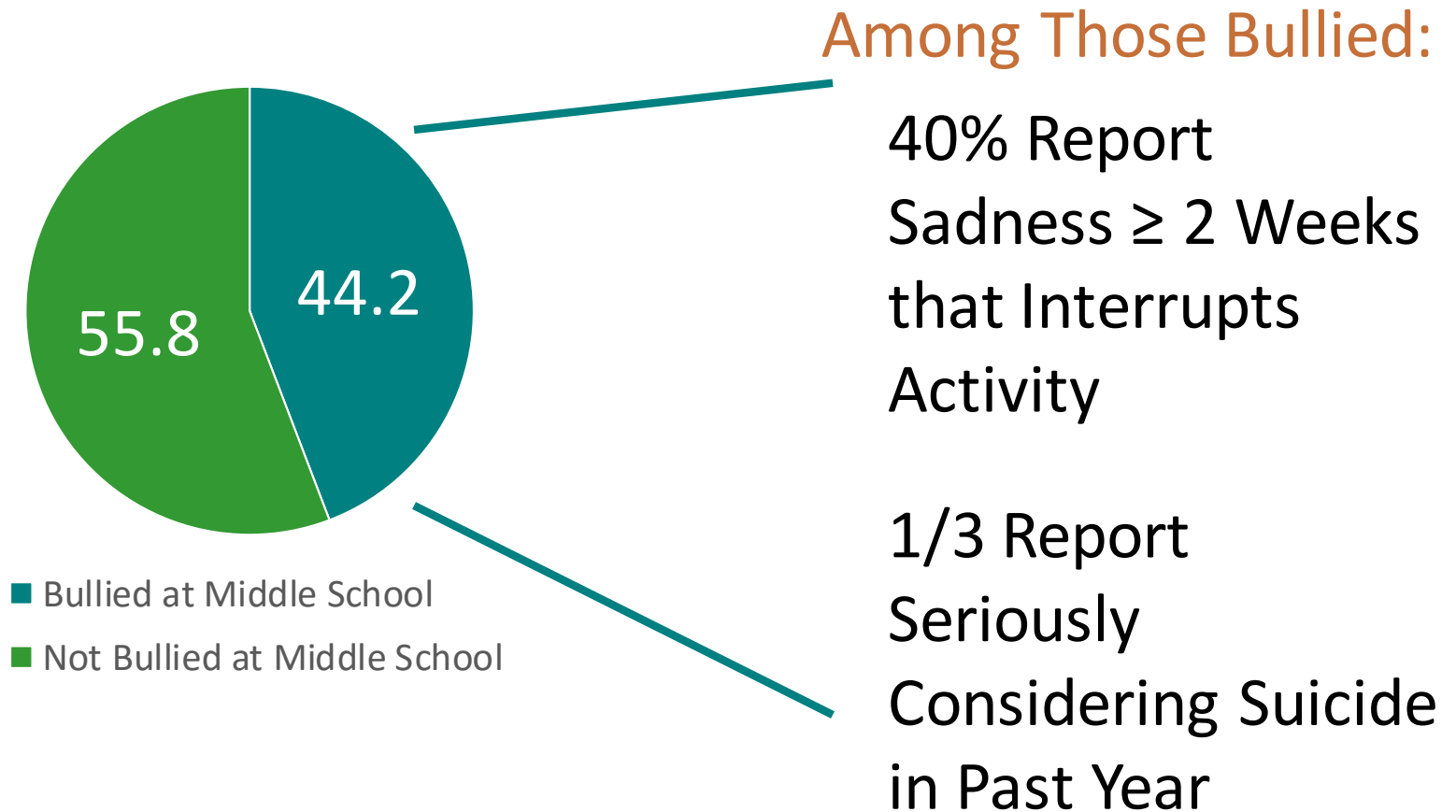
Middle

R. Temporal Gyrus
Spoken Language
Social Cognition
Profound Depression
Suicidality
Emotional Abuse,
Including Bullying





Bullying & Suicide Risk





Youth Voice - Washington

Associated with:

Feeling Sad ≥ 2 Weeks Interrupts Activities

Being Bullied at School Last 30 Days

Being Female

Experienced Boy/Girlfriend Violence, Threats, Safety Concerns Last Year

Feeling Unsafe at School

Seriously Considering Suicide in Past Yr.

Being Bullied at School Because of Gender

Being Female Minority (Asian in WA)

Females Only: Boyfriend Limits Activity, Threatens, I Feel Unsafe

Carrying a Weapon to School

Have Been Physically Abused by Adult

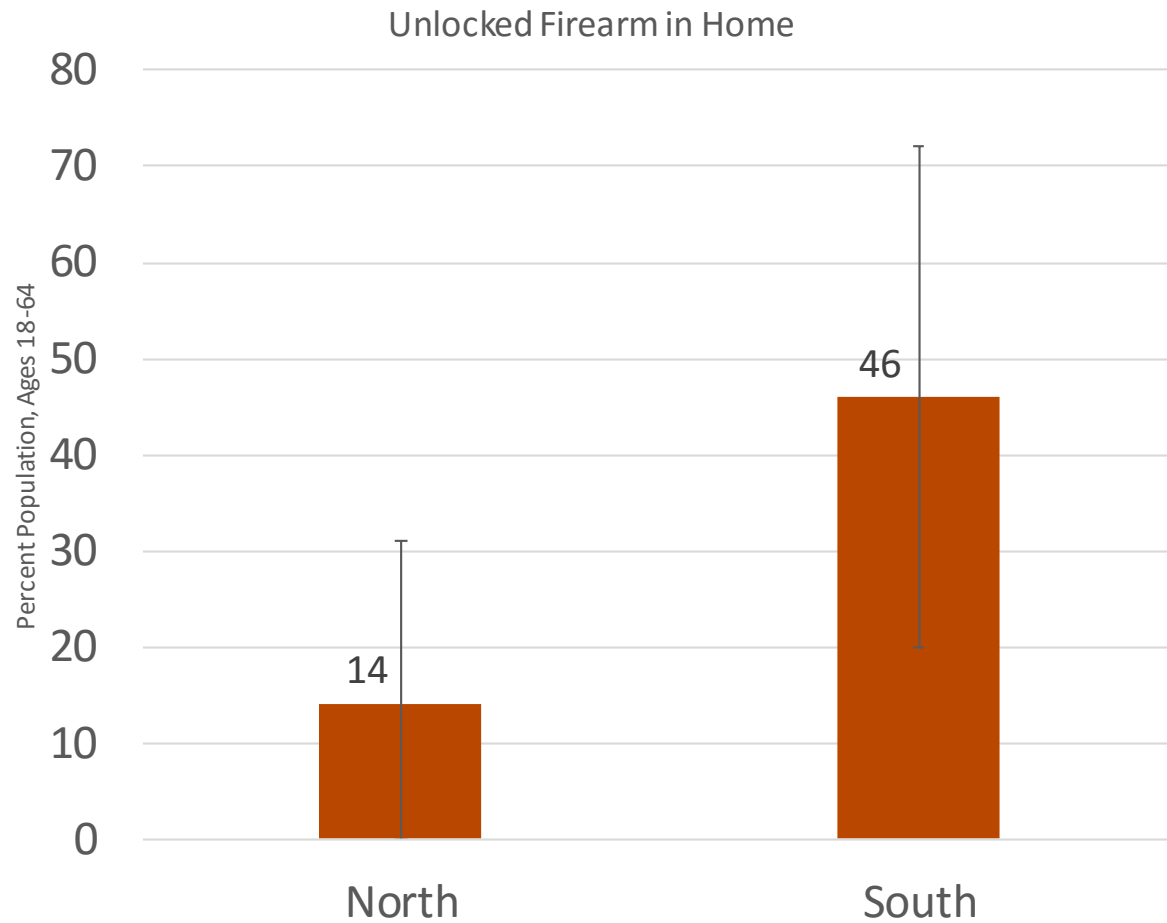
Using Pain Killers to Get High

Feeling Alone

Females Only: Smoking Cigarettes



Unlocked Firearm in Home



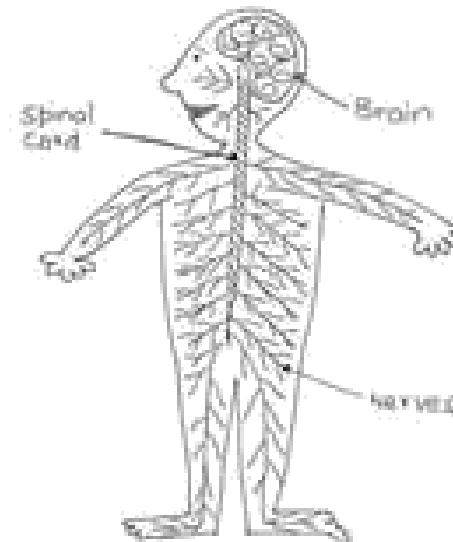


Sensitive and Critical Periods

Powerful Opportunities for Recovery

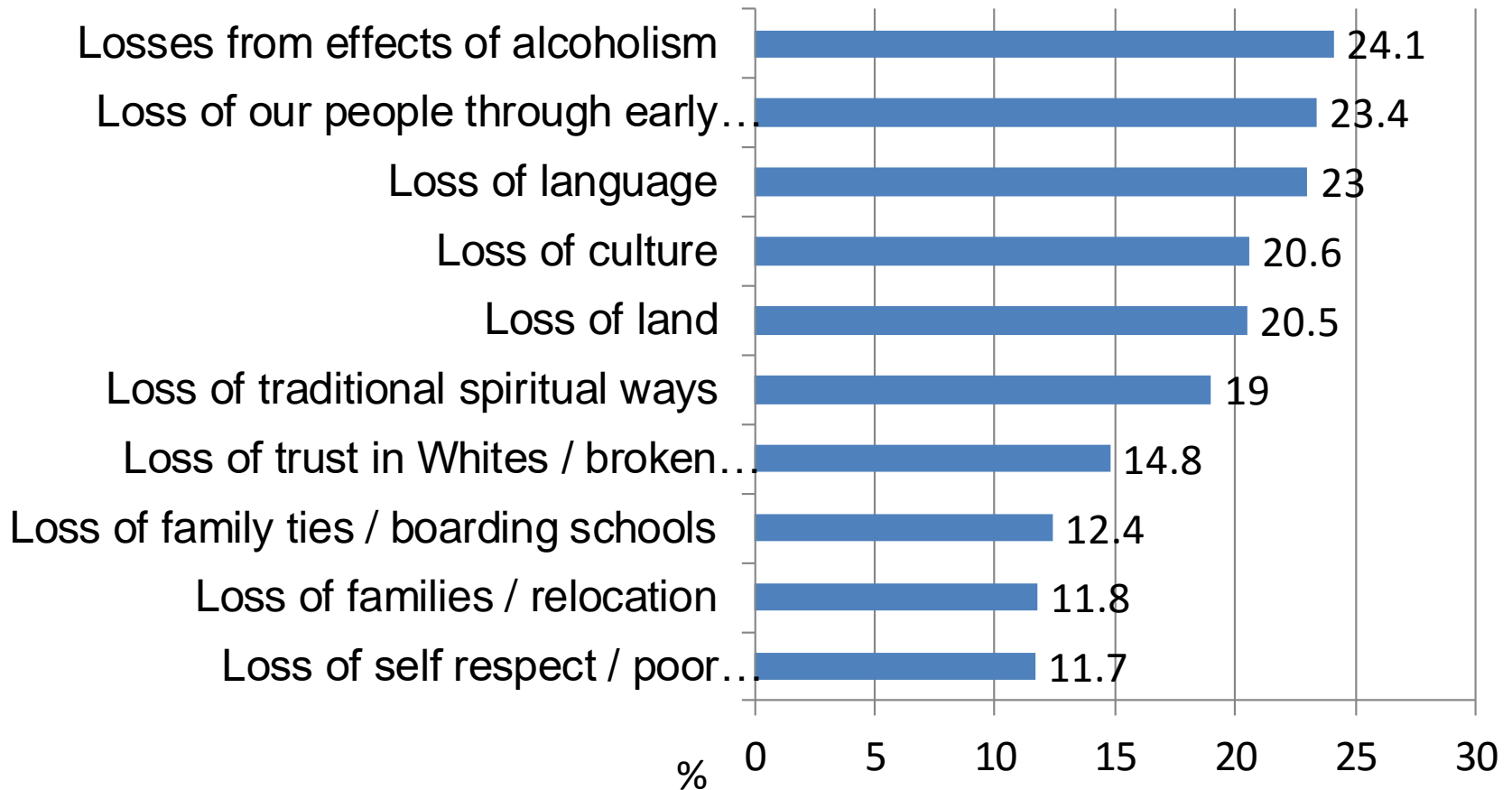
Pre-Puberty

Cerebellar Vermis
Affect, Attention,
Movement,
Substance Abuse &
Mental Health
Delayed Effects



Thoughts of Historical Loss Among Indigenous Youth (Ages 11-13)

Thoughts daily or several times a day





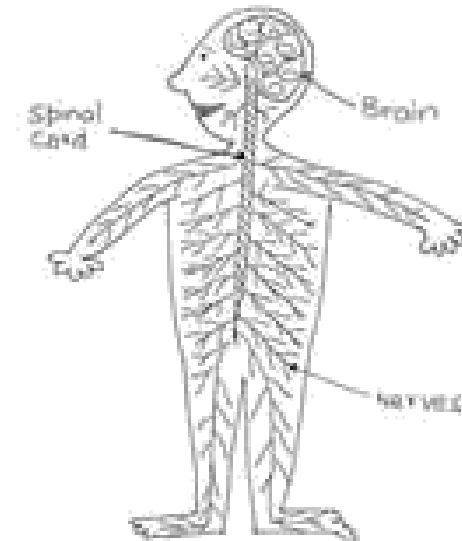
Sensitive and Critical Periods

Powerful Opportunities for Recovery

Into Adulthood

Cortex

Thinking, Judgment,
Long-Term Memory,
Executive Function,
Hope





Elements of Executive Function

Response Inhibition
Working Memory
Emotional Control
Flexibility
Sustained Attention
Task Initiation

Planning and Prioritizing
Organization
Time Management
Goal-directed persistence
Metacognition



Stress-Induced Executive Dysfunction

Influences:

Processing loads (how much the brain can handle until it gets “full”)

Verbal memory (retaining information given verbally)

Working memory (the brain’s short-term memory chalkboard)

Generalizing ability (applying information from one situation to another)

Initiating (“getting going” or “when to start”)

Organizing and planning



Prevention Across Generations

Historic Trauma



Adverse
Childhood
Experience

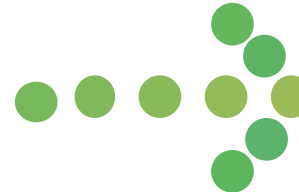


Adverse Peer
&/or School
Experience



Adverse Adult
Experience

Multiple Mental,
Physical,
Relational, &/or
Productivity
Problems



ACE
Transmission
Risk

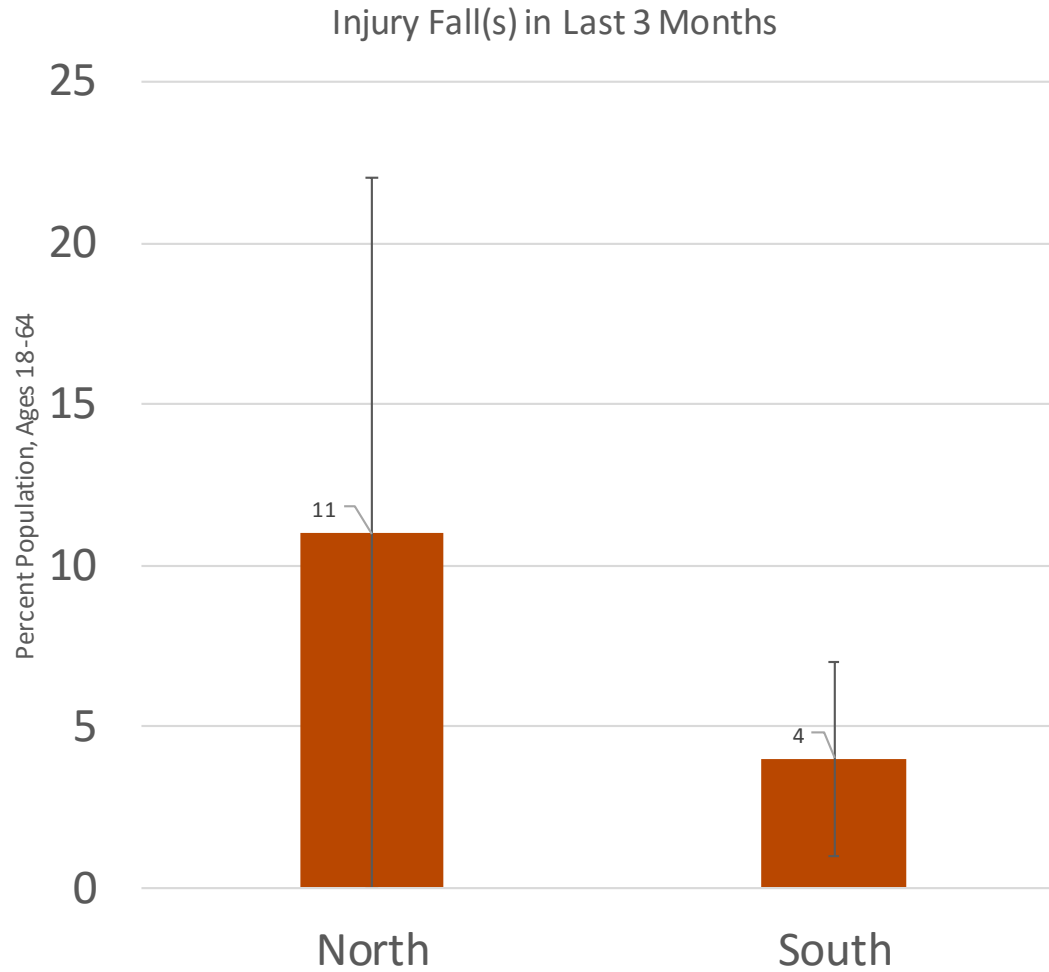


Major Stress Categories:

- 1.Homelessness**
- 2.Incarceration**
- 3.Chronic illness**
- 4.Separation/Divorce**
- 5.Severe Depression**
- 6.Work-related Injury/ Illness**

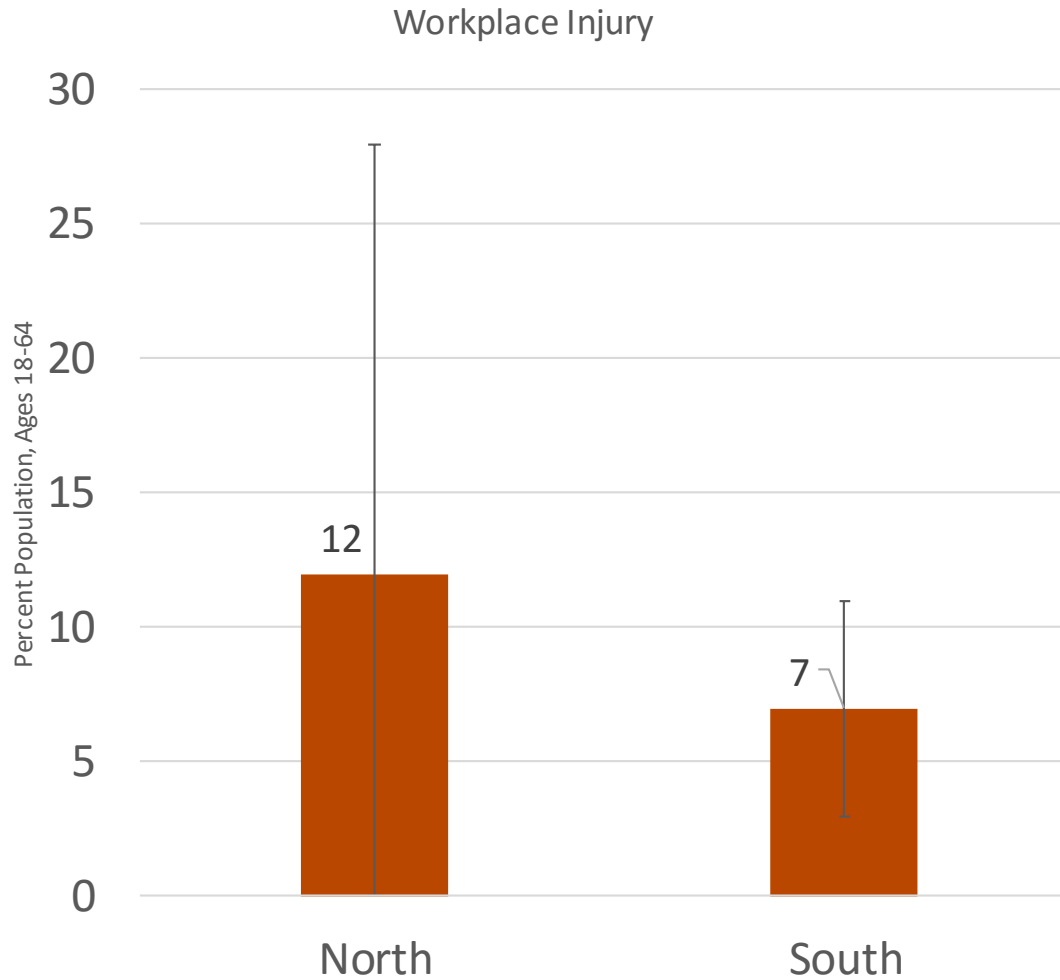


Fall(s) that Cause Injury



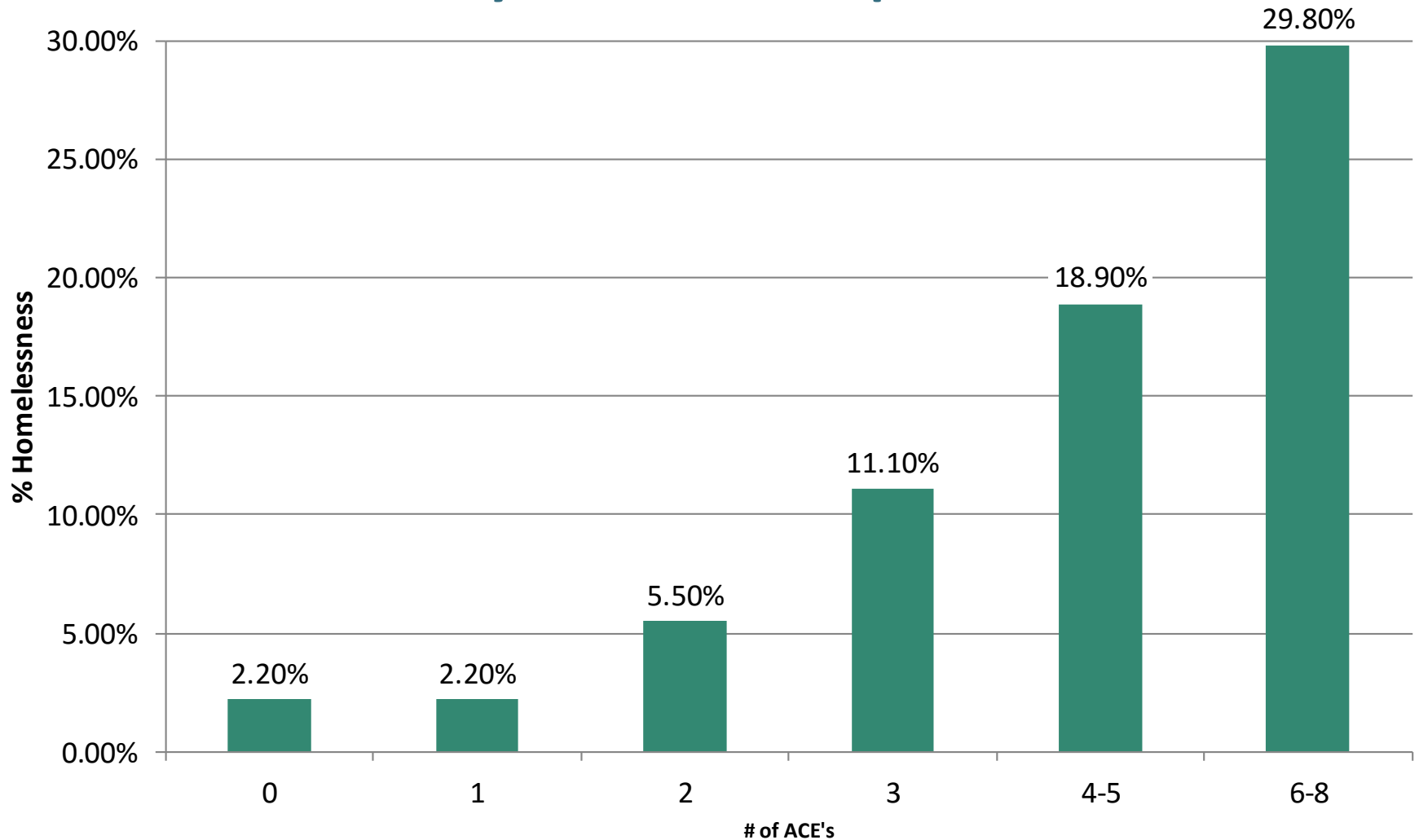


Workplace Injury



ACEs & History of Homelessness

25-54 yr Old Adult Population





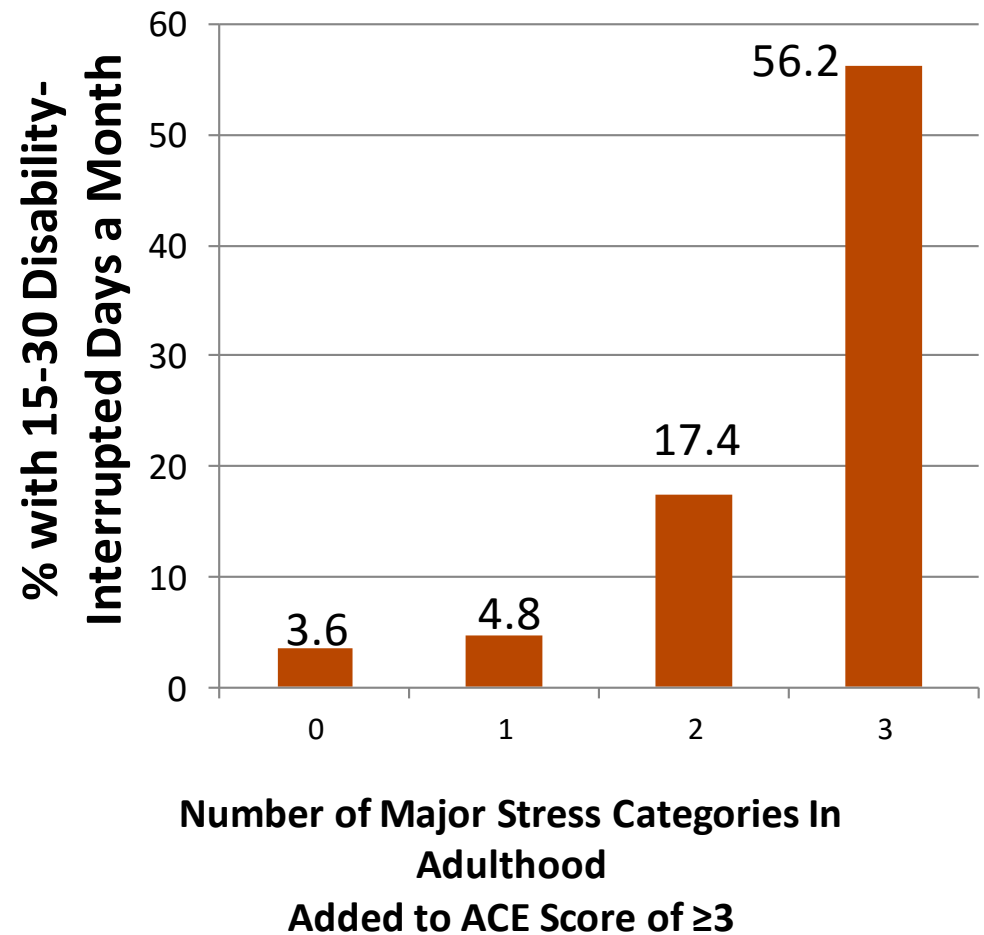
Adult Adversity Compounds Effects

Adults with ≥ 3 ACEs

Plus

Major Stress Categories:

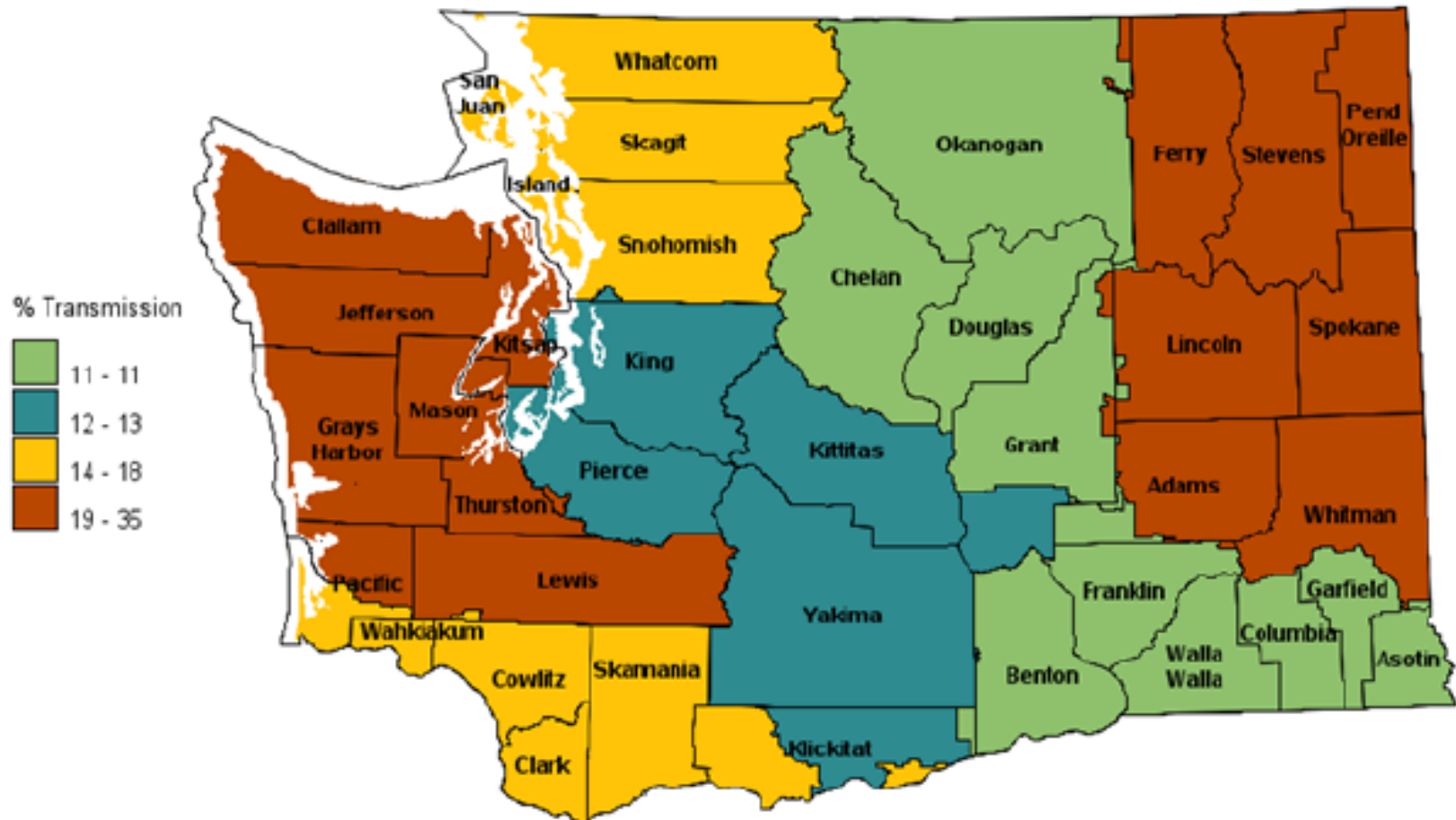
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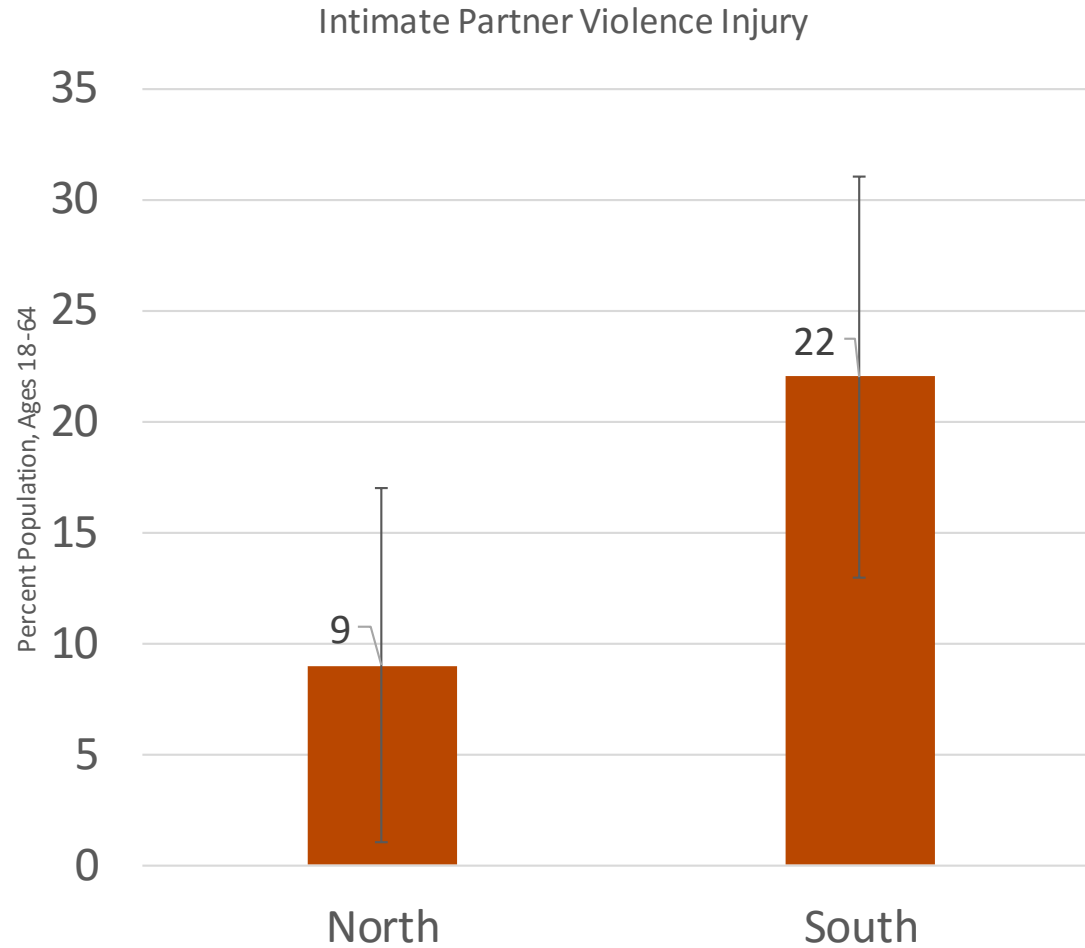
Generational Transmission

Percent of Adult Population Transmitting ≥ 2 Household Functioning ACEs



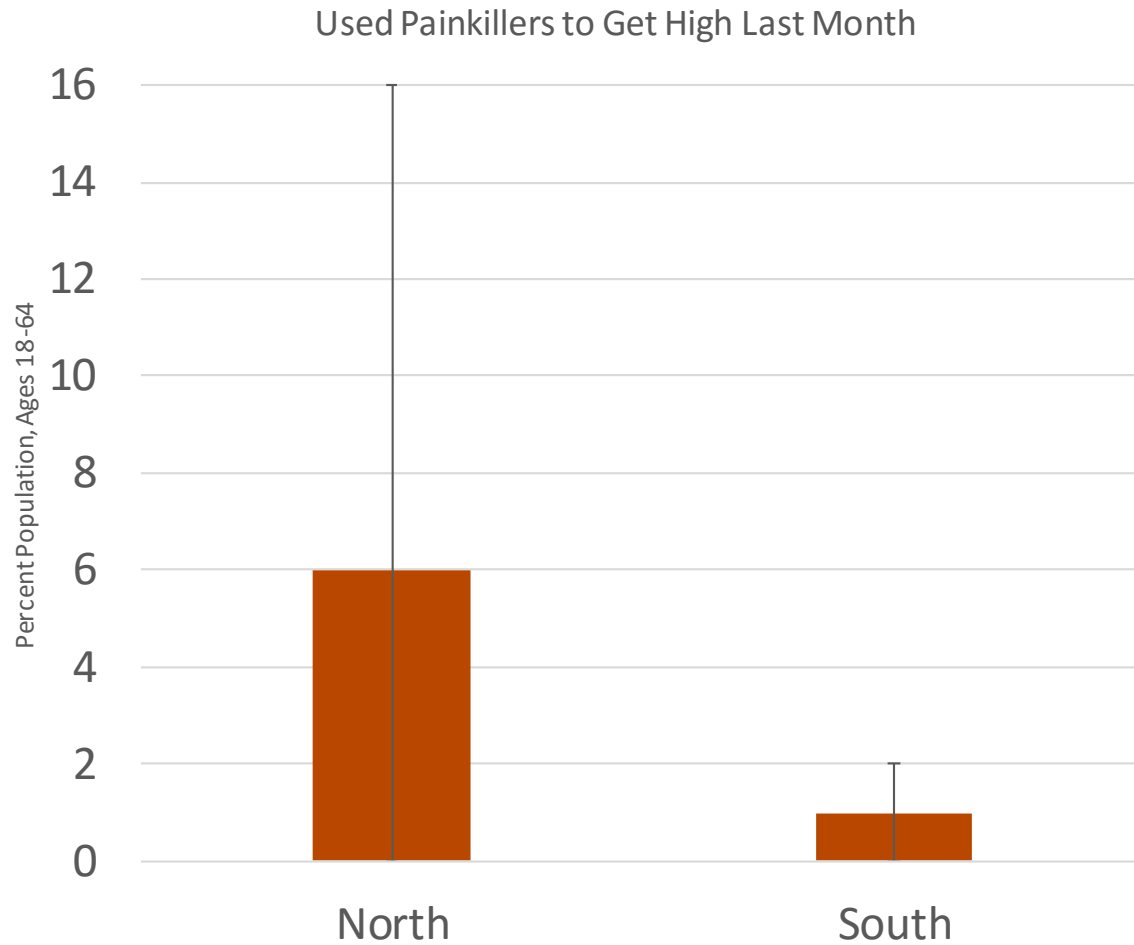


Injury Due to Intimate Partner Violence





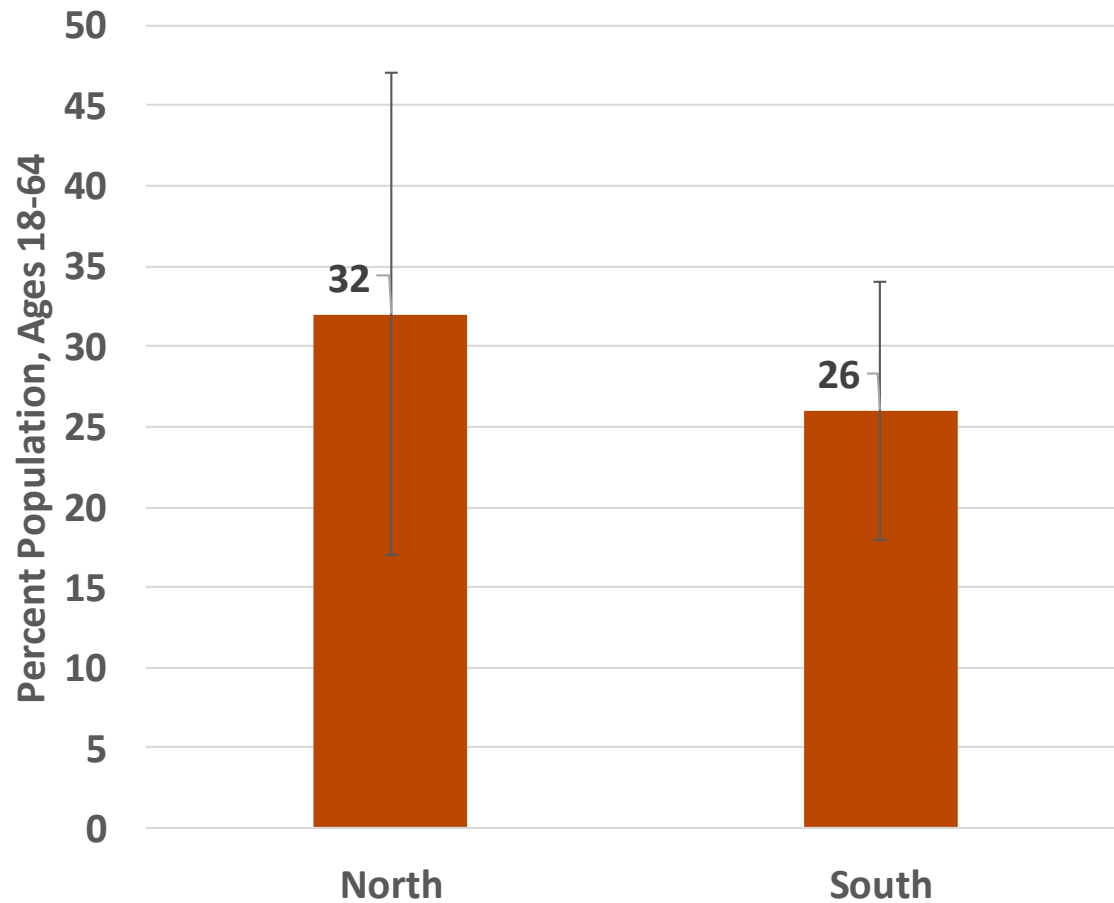
Painkillers to Get High





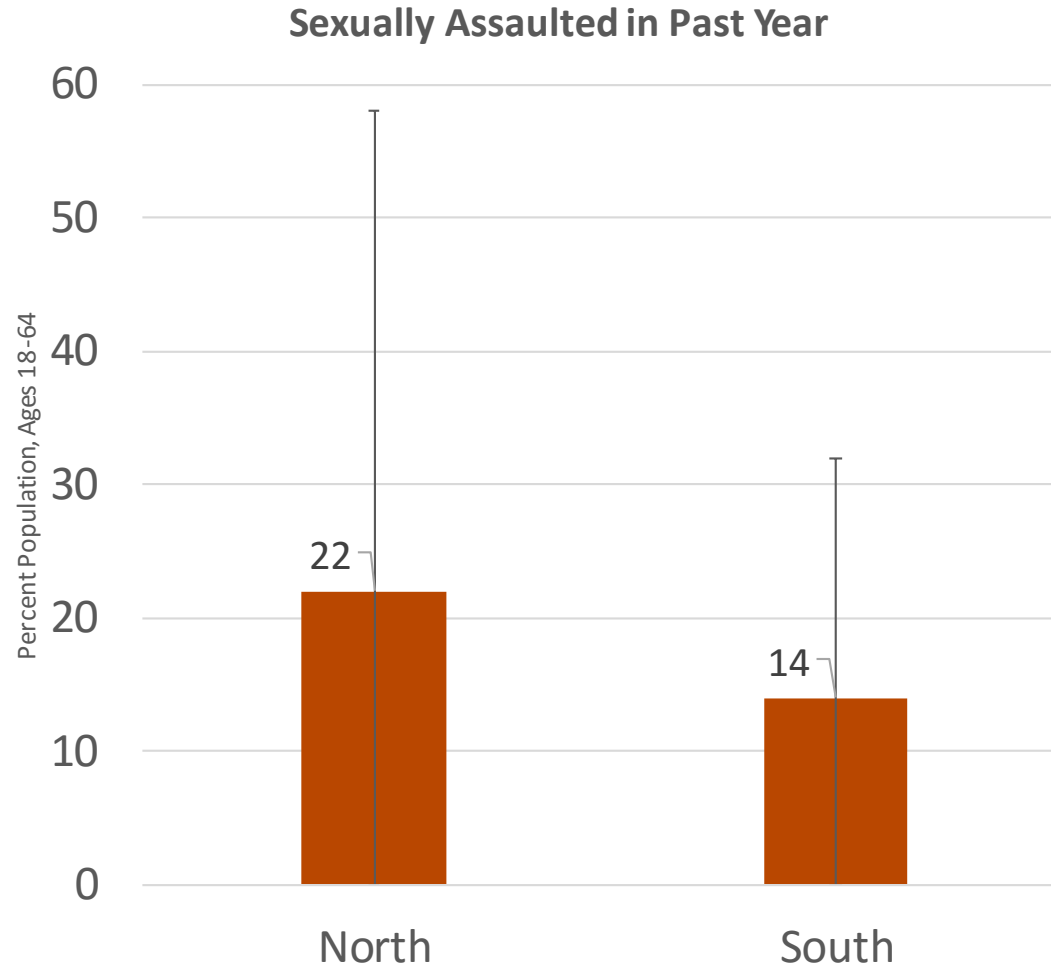
Drug and Alcohol Abuse

Substance Use, Including Binge Drinking





Sexual Victimization

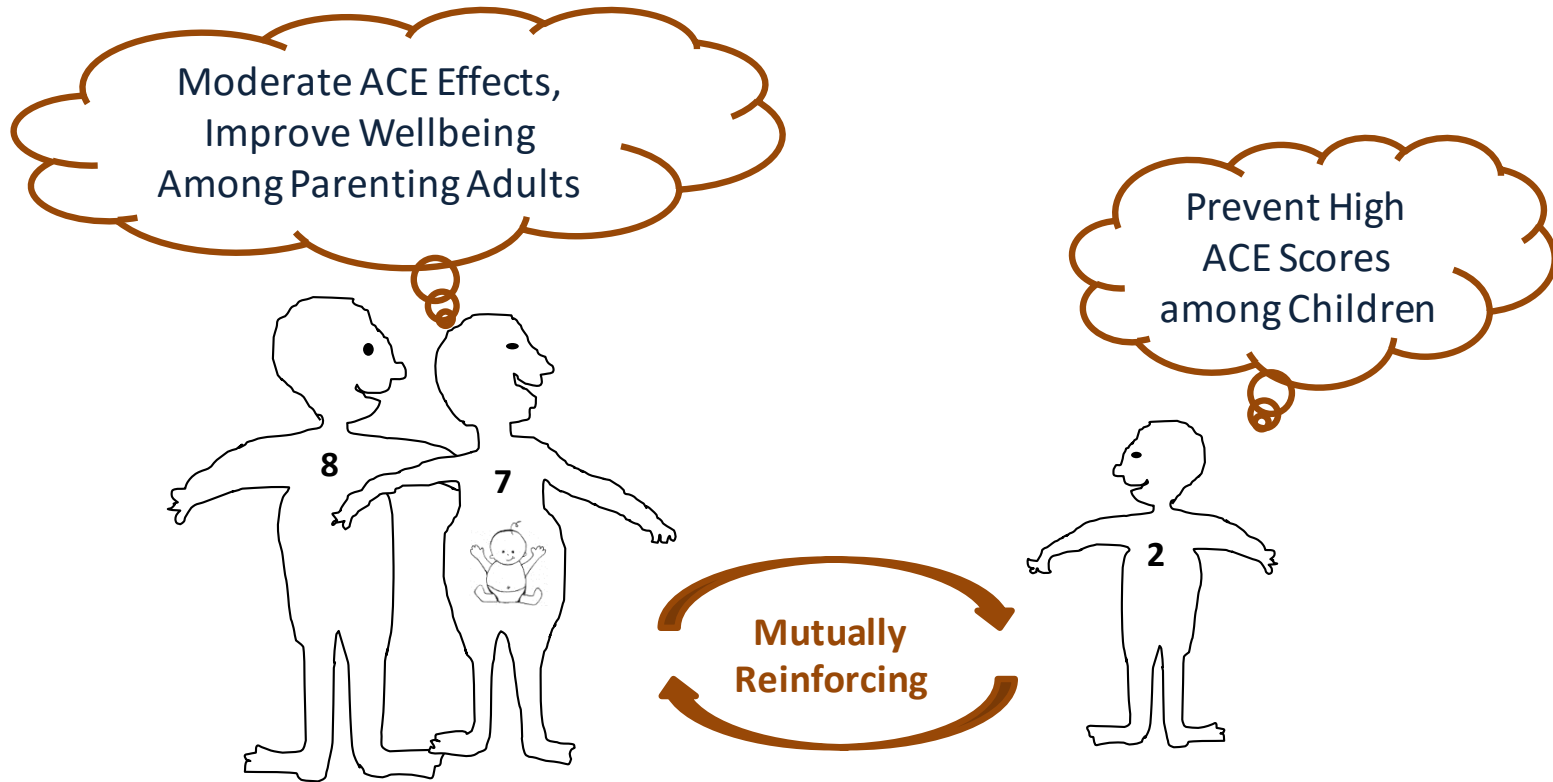




The Science of Recovery & Resilience



High Leverage Strategy





CAPABILITY

Capabilities can be impacted by trauma.

- Intellectual & Employable Skills
- Self regulation – self control, executive function, flexible thinking
- Ability to direct and control attention, emotion, behavior, Positive self view
- Efficacy



What Helps People Self-Regulate?

Mindfulness, Reflection, Biofeedback

Massage

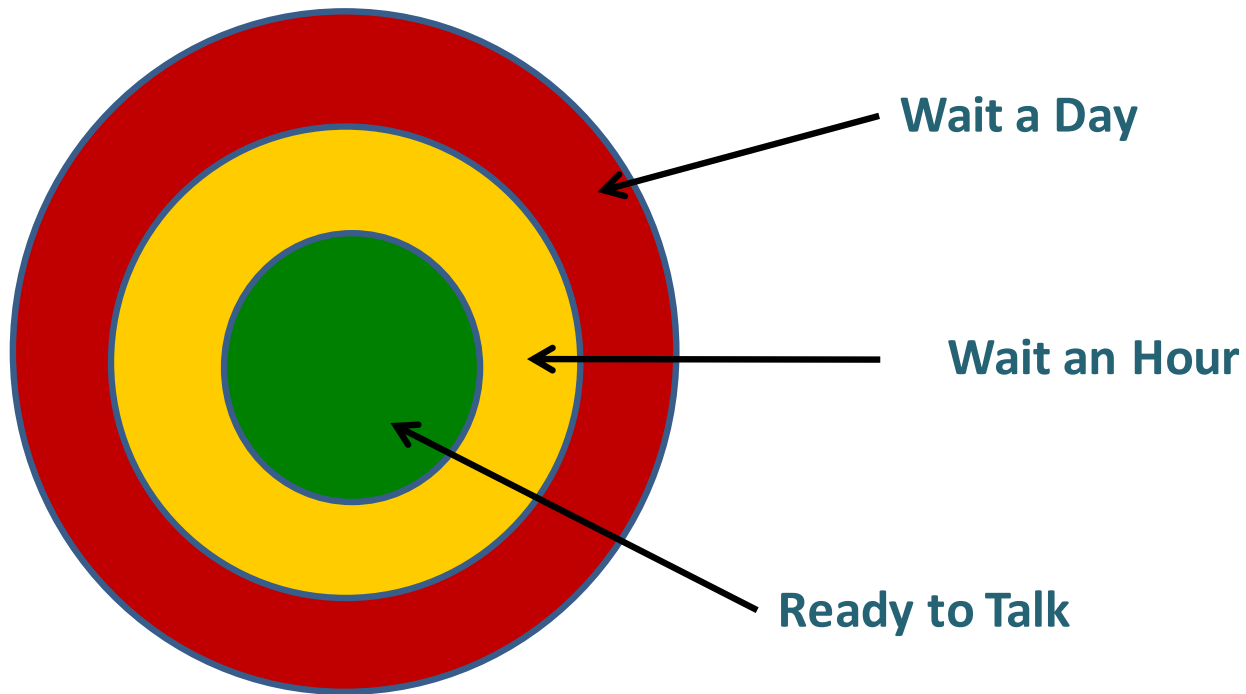
Movement and Music

Practicing Connection

Exercise & Play

- Activities that integrate visual information with fine- and gross-motor movements (striking, kicking, and catching)
- Physical activities: exploration of environment
- Cognitive Re-Appraisal

Mindful Discipline: Lincoln High





ATTACHMENT & BELONGING

Caring and Competent

- Bonds with parents and/or caregivers
- Positive relationships with competent and nurturing adults
- Friends or romantic partners who provide a sense of security / help with emotion coaching
- Social/Emotional Support



Help that Helps

1. **Support:** Feeling socially and emotionally supported and hopeful
2. **Help:** Having two or more people who give concrete help when needed



Support

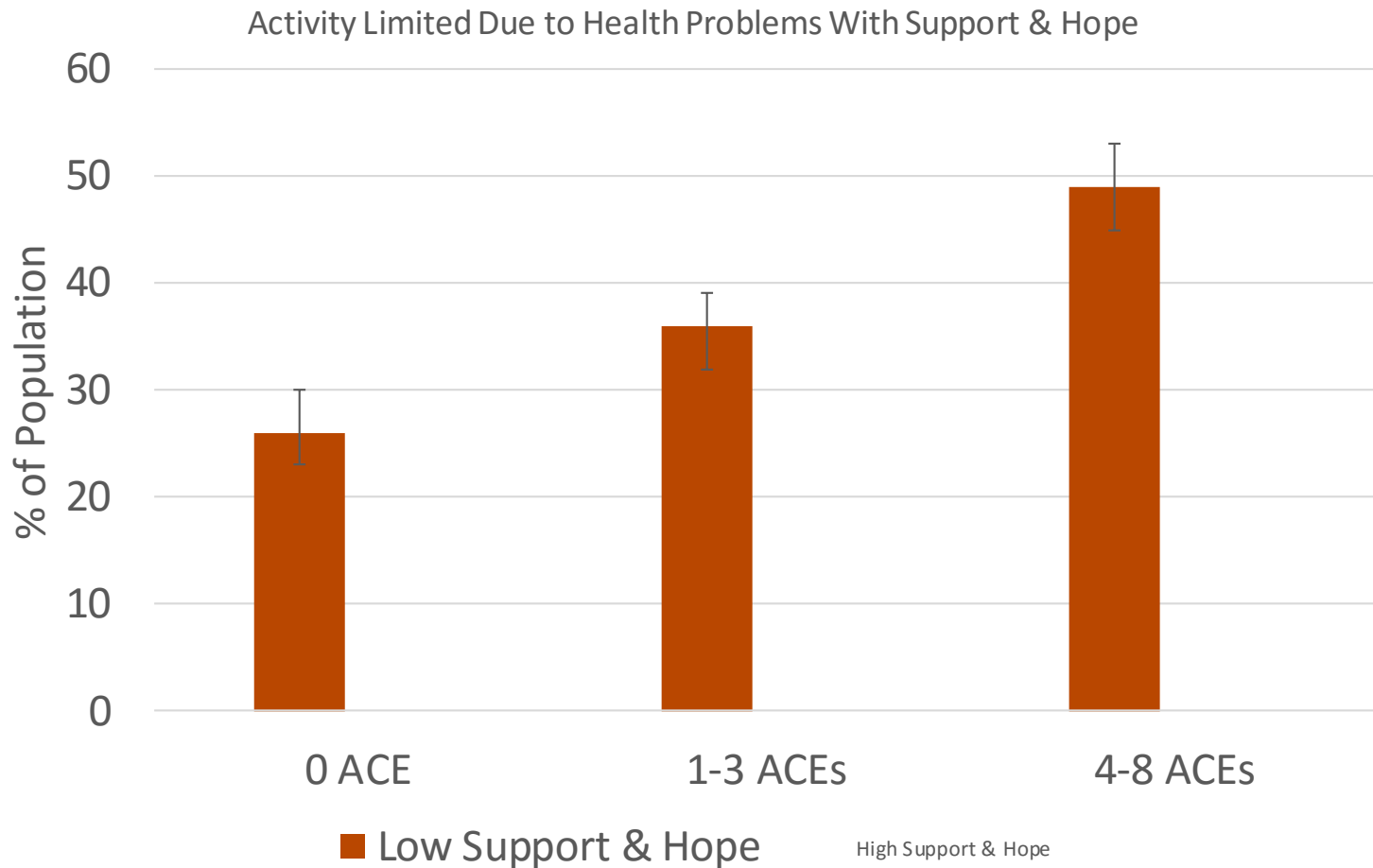
Feeling socially and emotionally supported and hopeful

... Always or Usually
(vs Rarely or Never)

North 78%, South 77%



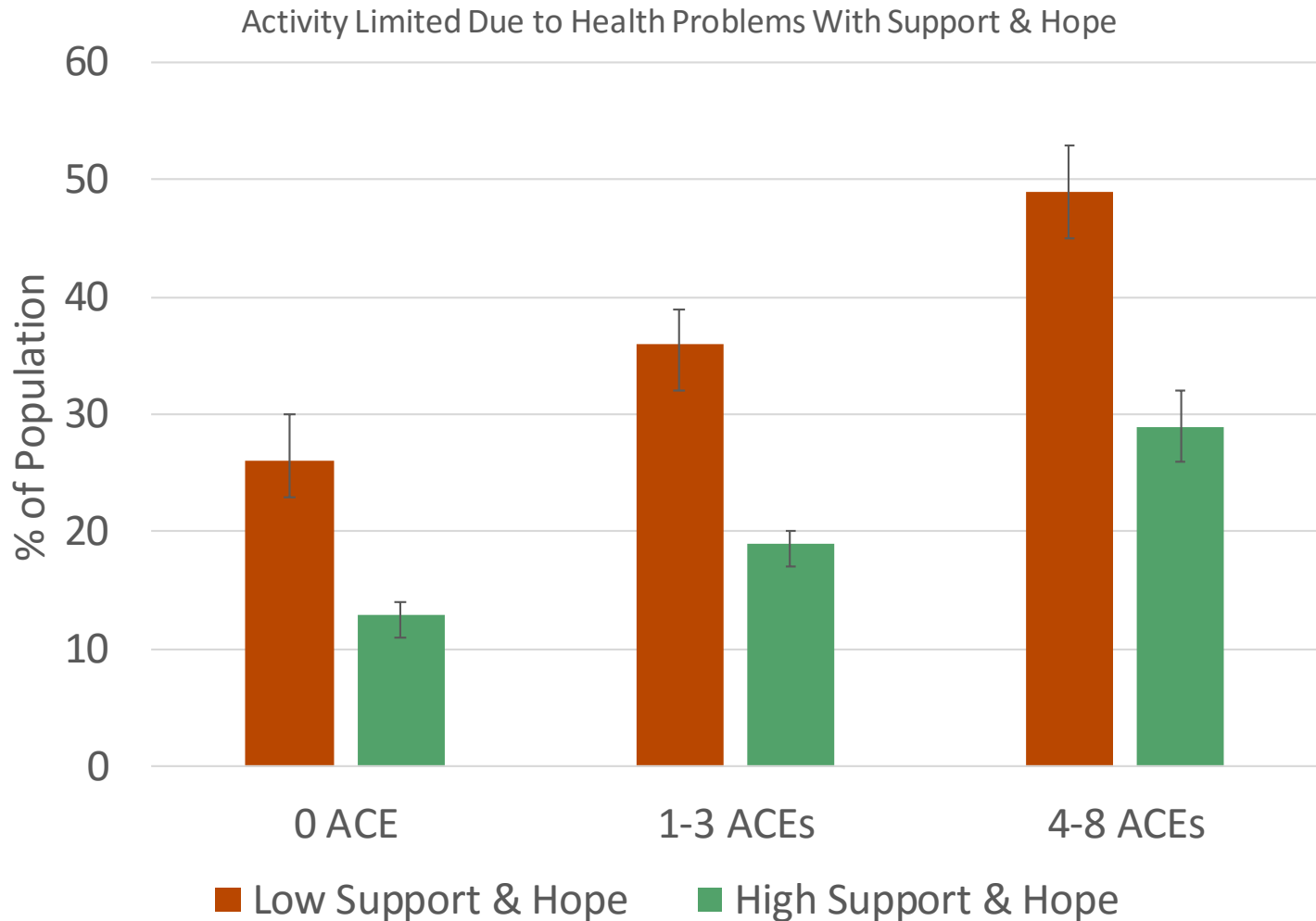
ACEs & Activity Limitations



Limited Activity Due to Poor Health

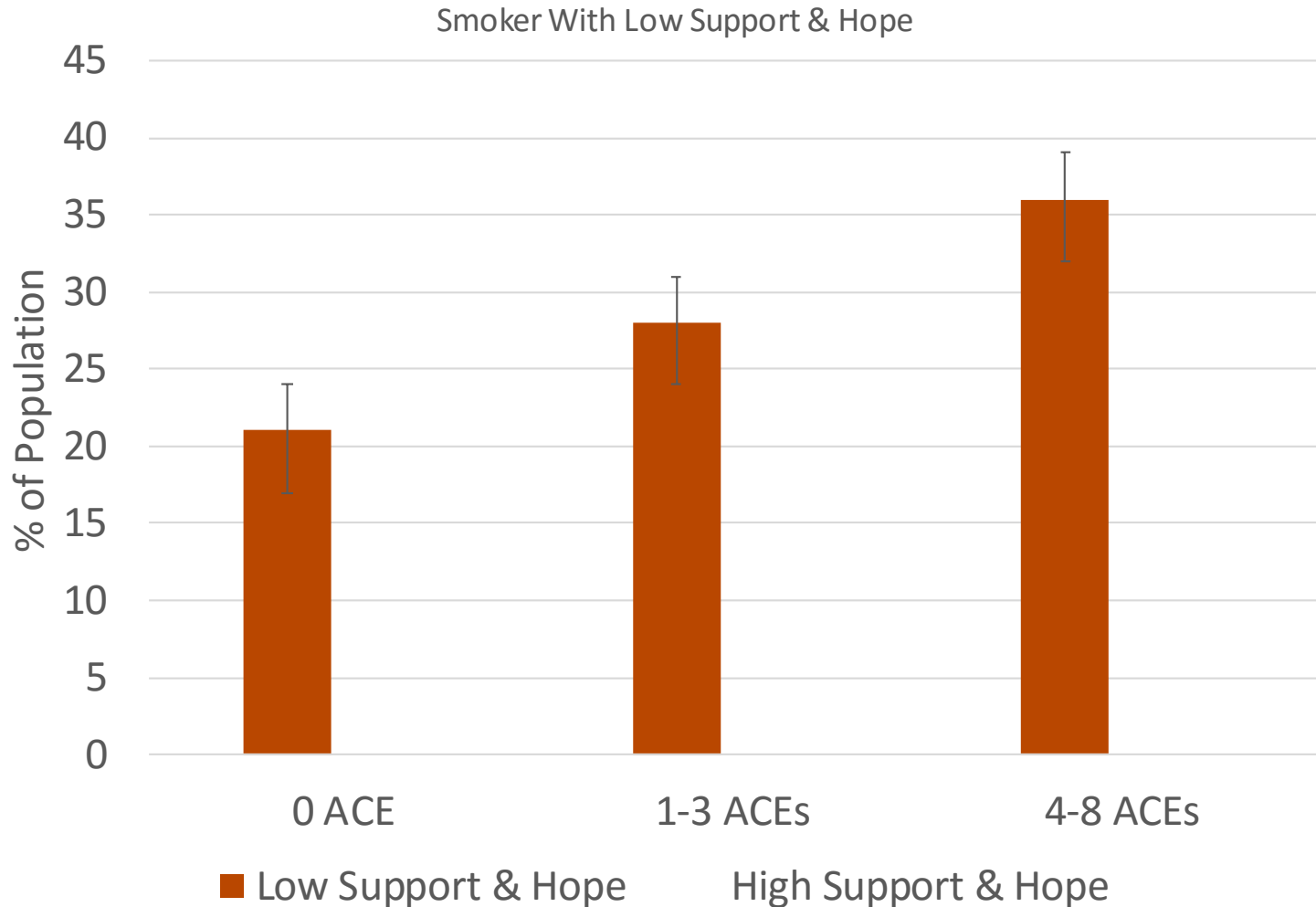


Activity Limitations & Support



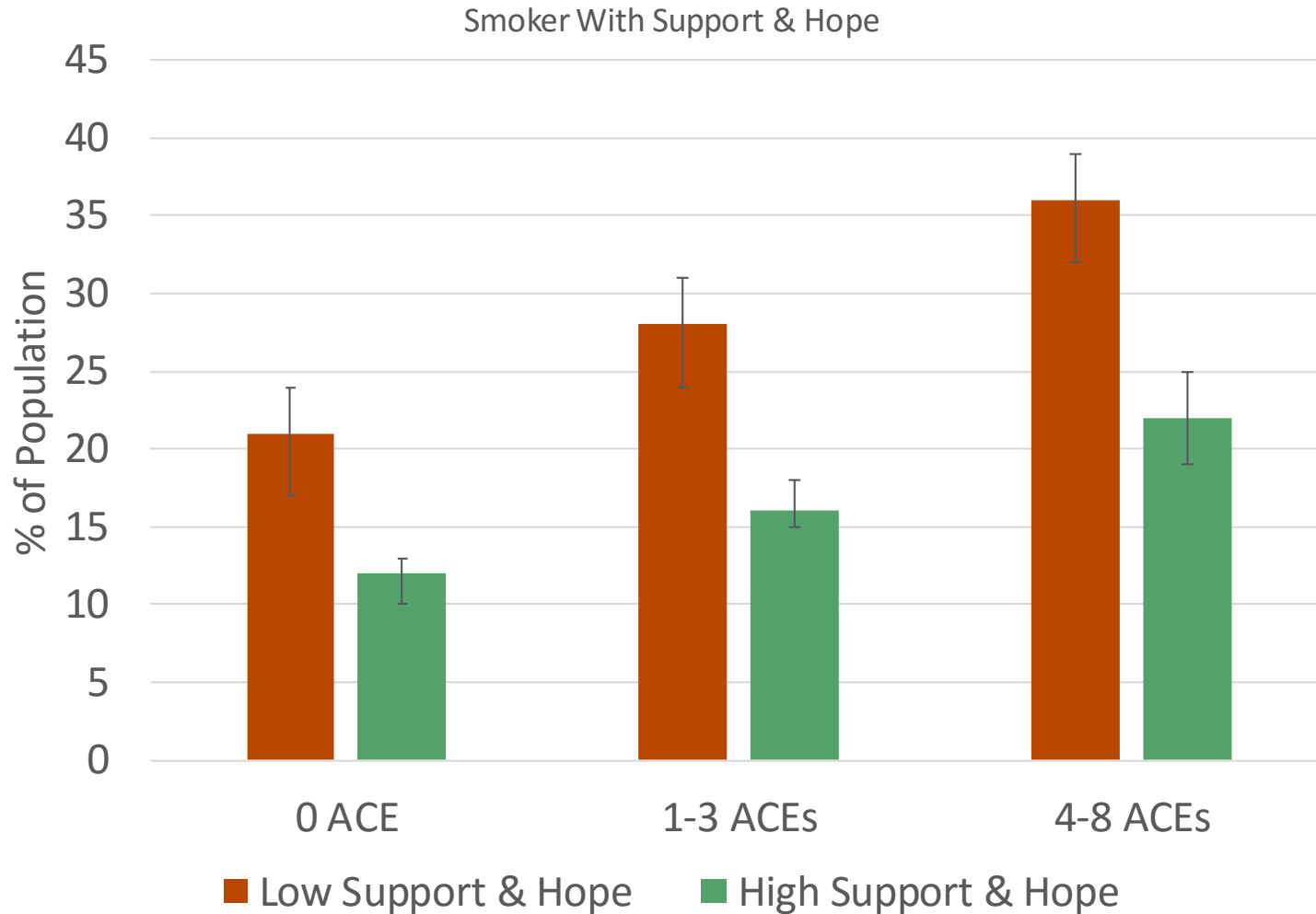


ACEs & Smoking



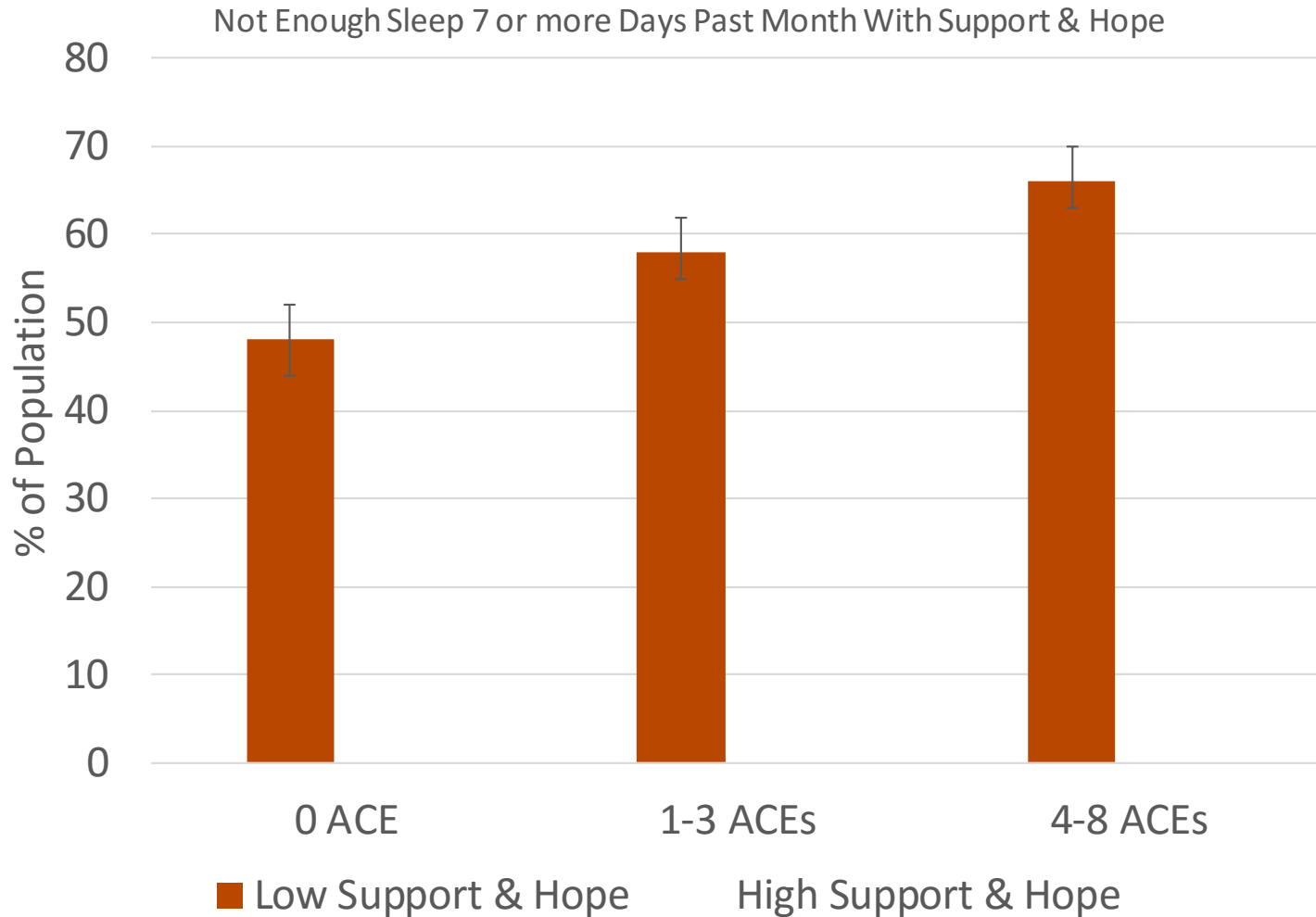


Smoking & Support



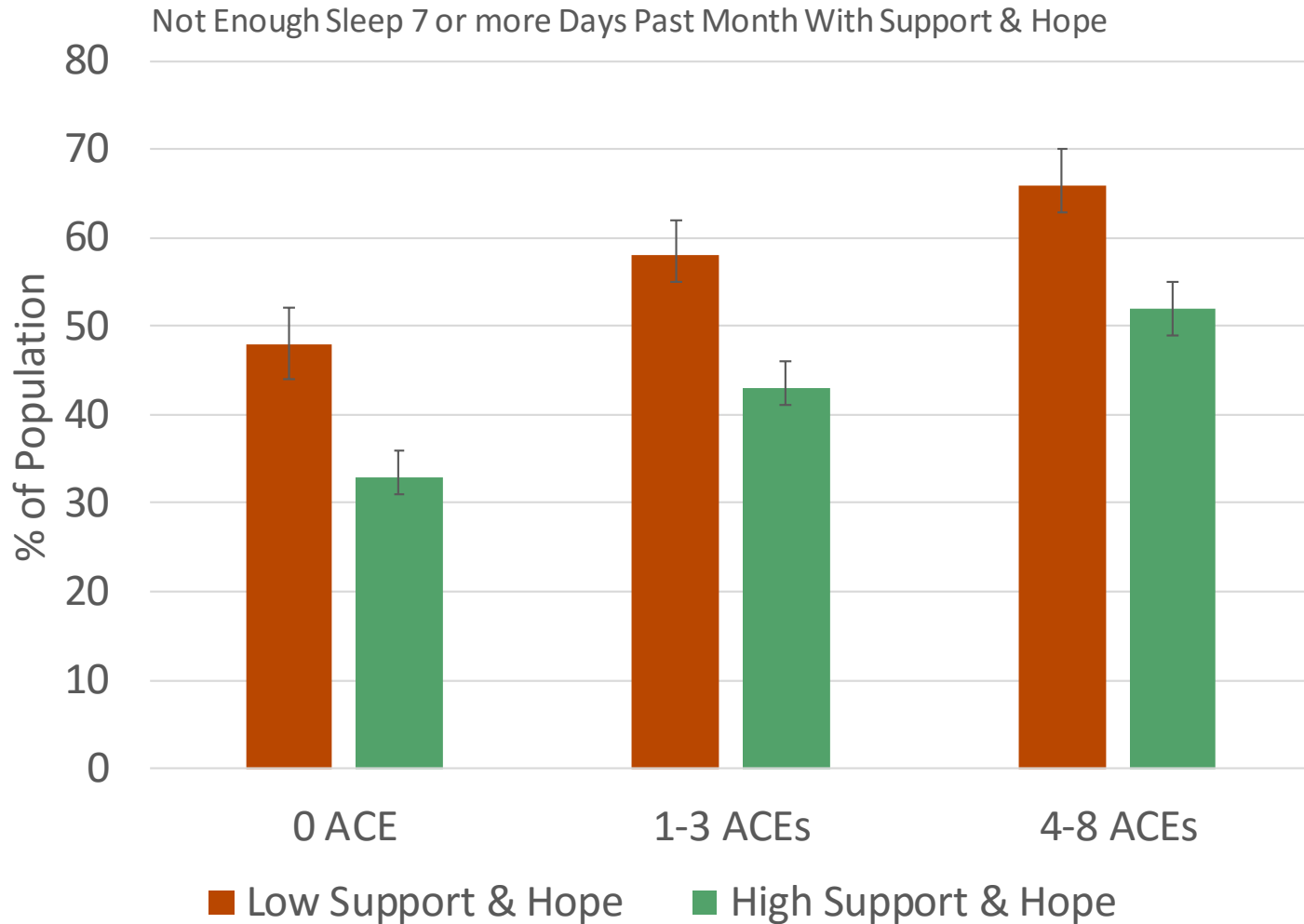


ACEs & Sleep



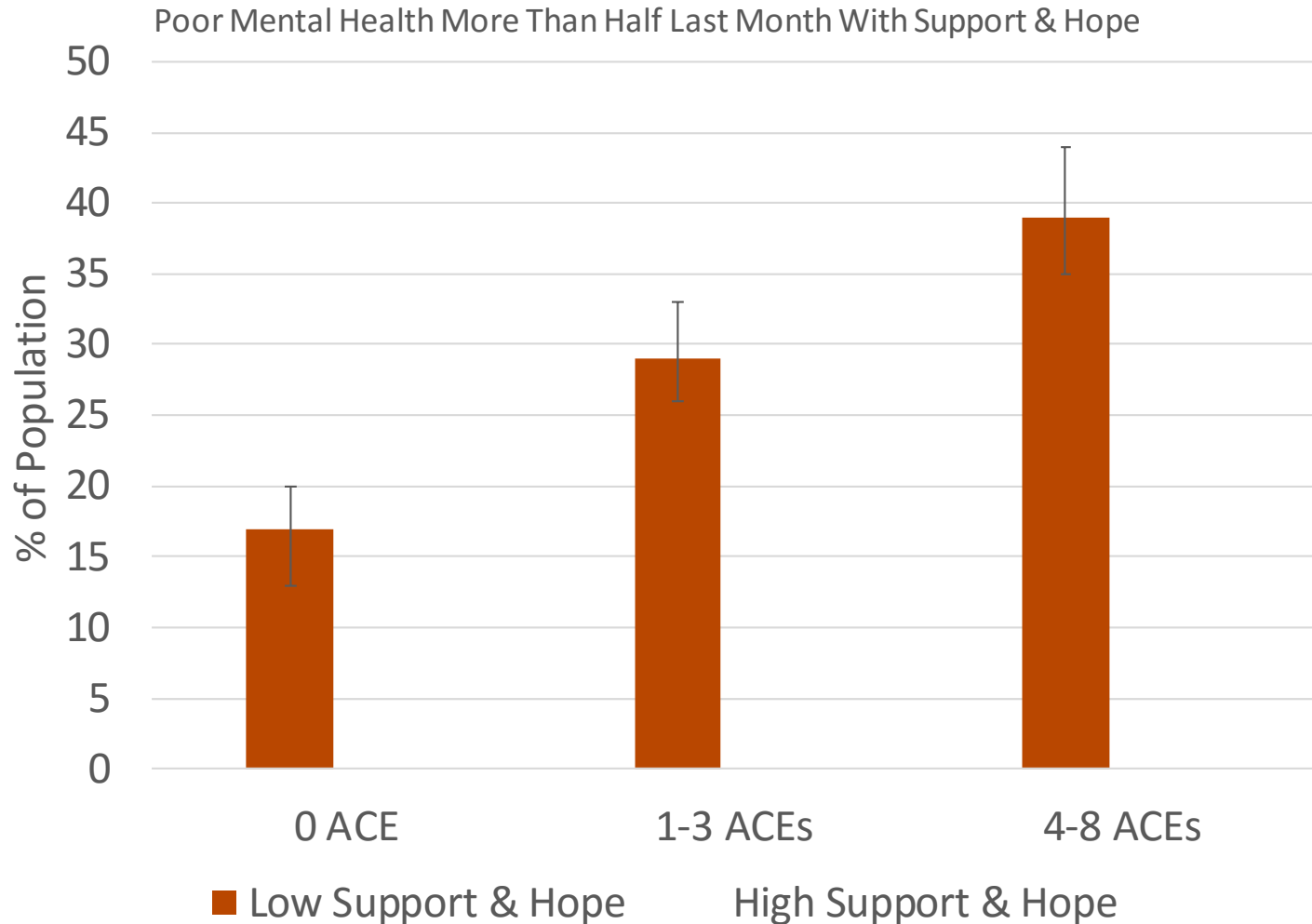


Sleep & Support



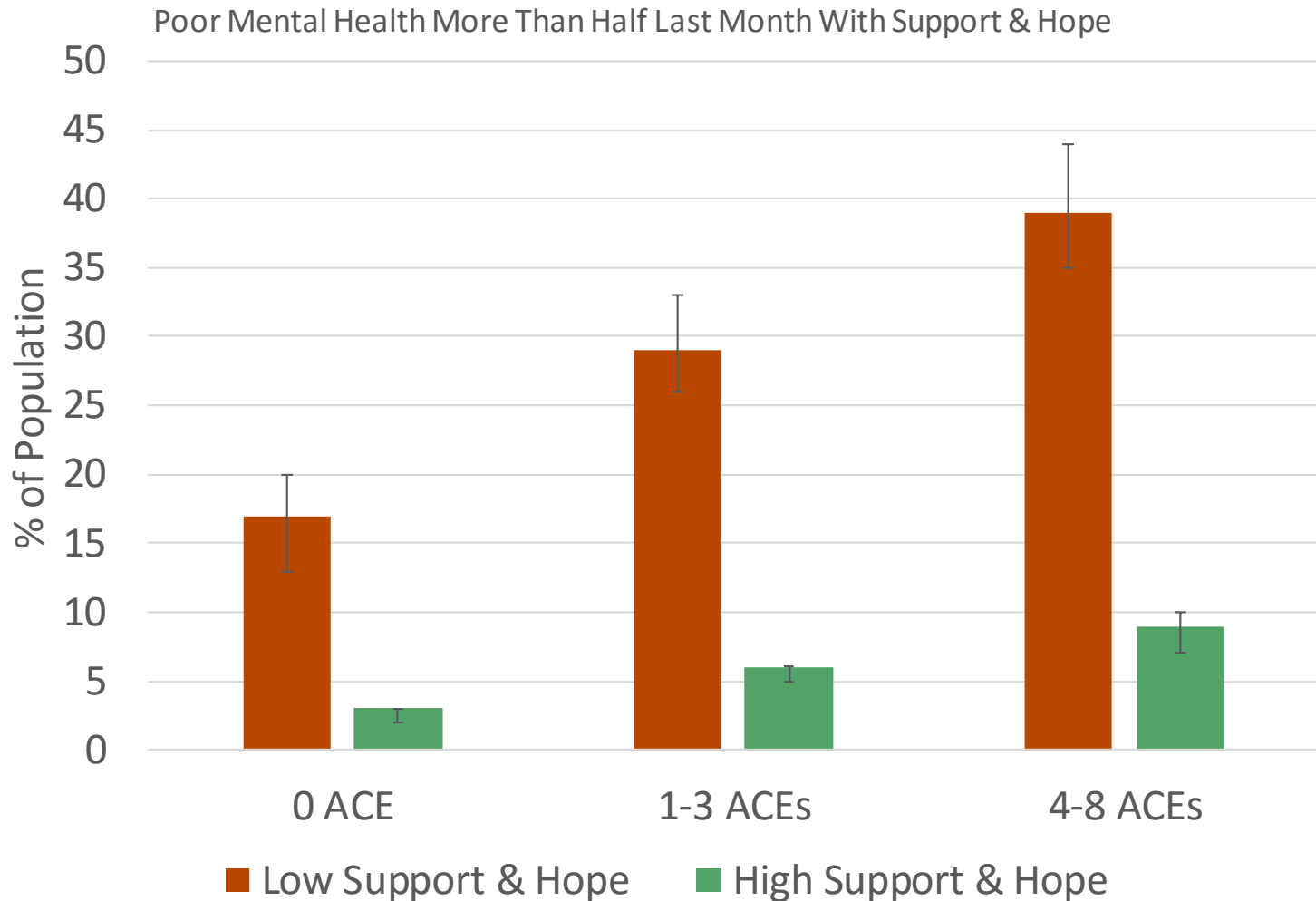


ACEs & Poor Mental Health



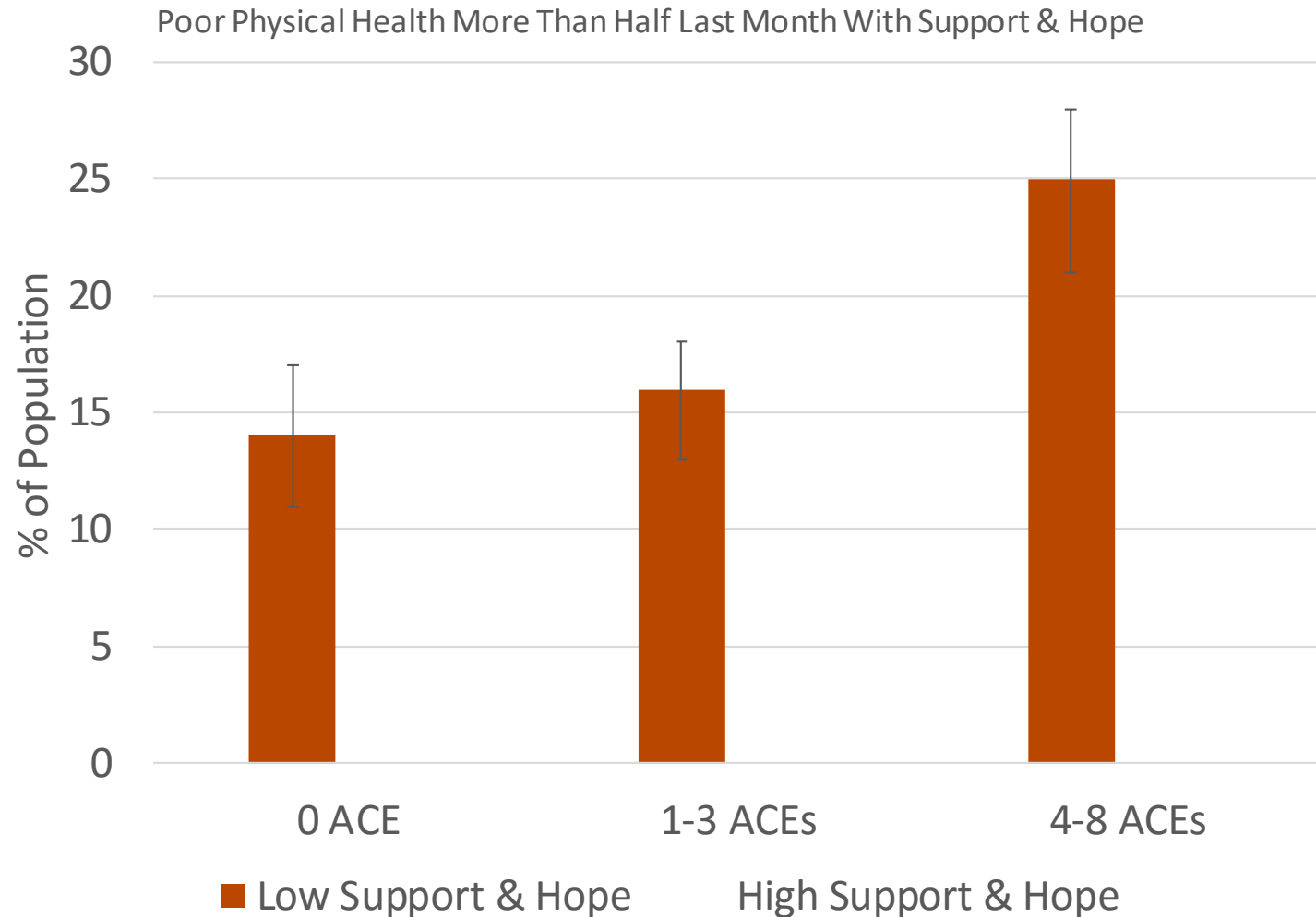


Mental Health & Support



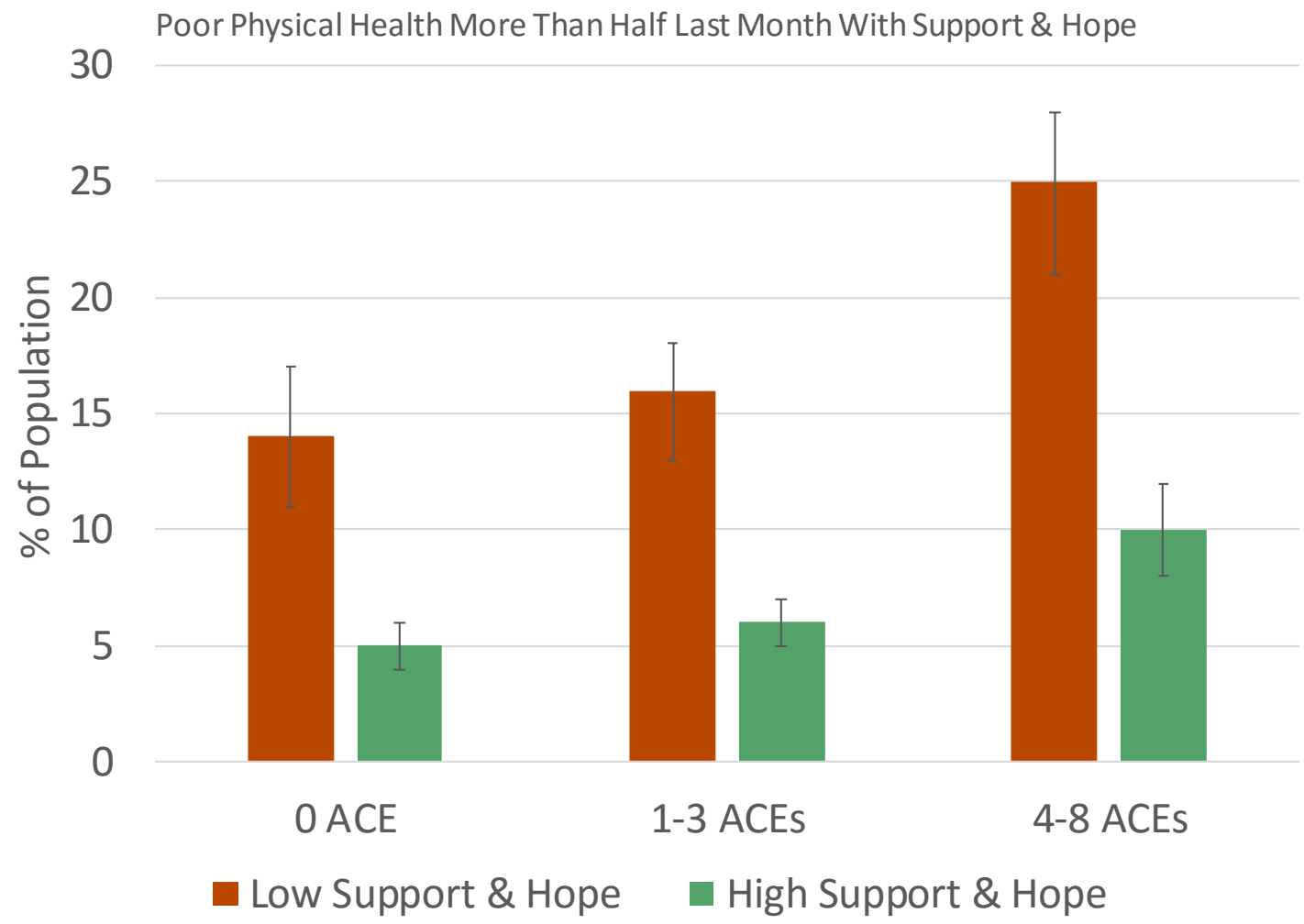


ACEs & Poor Health



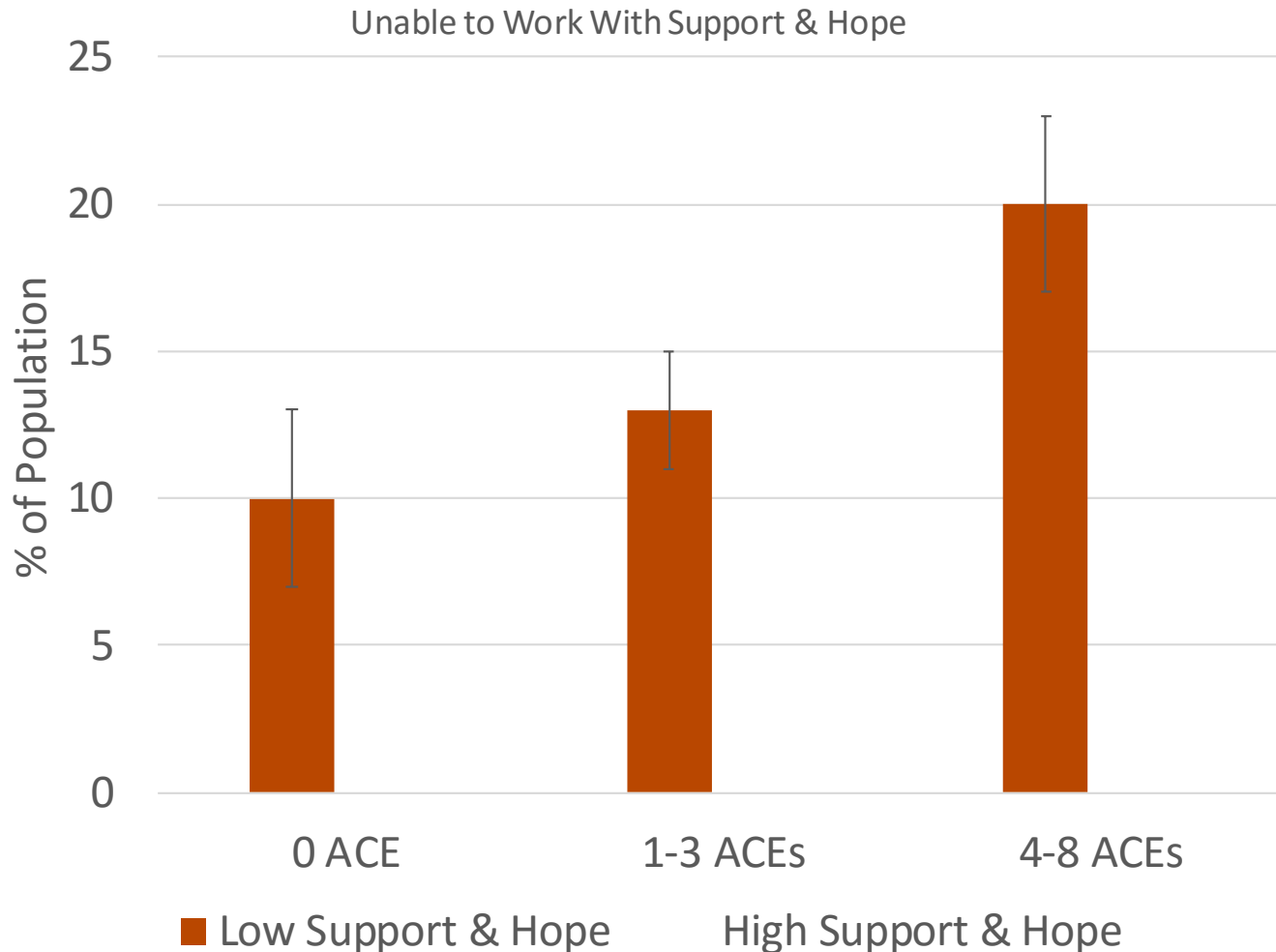


Poor Health & Support



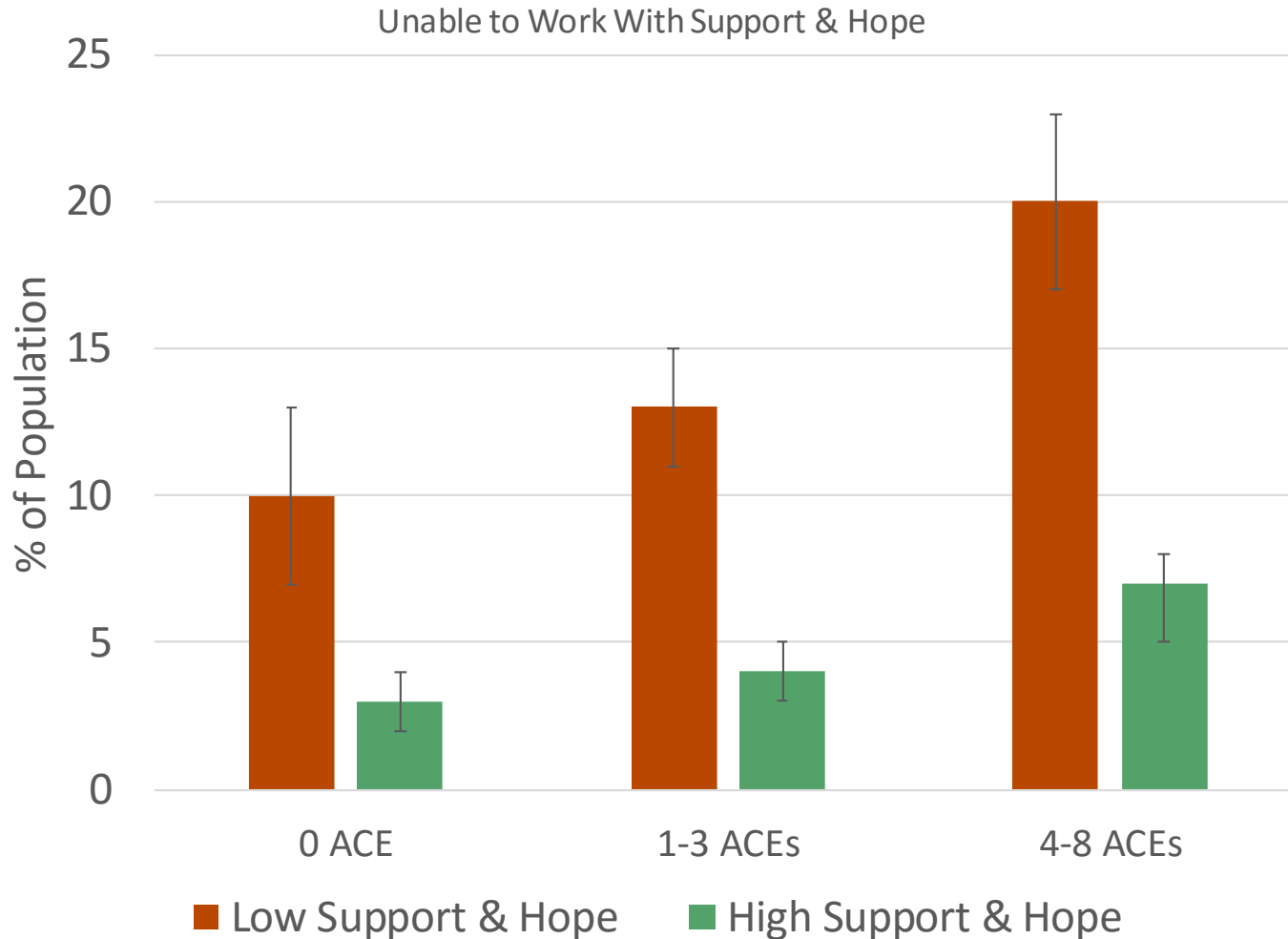


ACEs & Ability to Work





Ability to Work & Support





What Generates Belonging & Support?

Developing ceremonies or rituals

Including others in health-promoting activities

Engaging in multiple family or whole
community/workplace dialogues

Setting up mutual support/helping systems

Creating art, movement, rhythm, music

Effective accommodations

Learning together



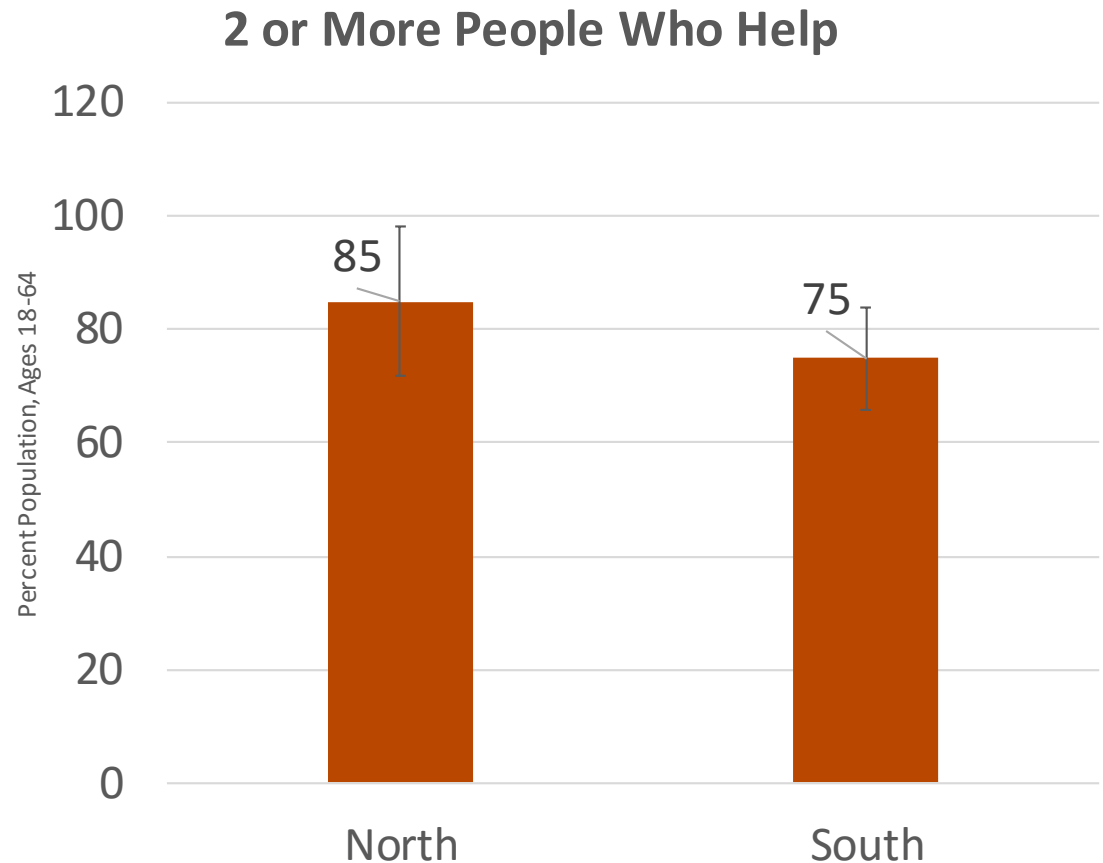
Help

Having two or more people
who give concrete help when
needed



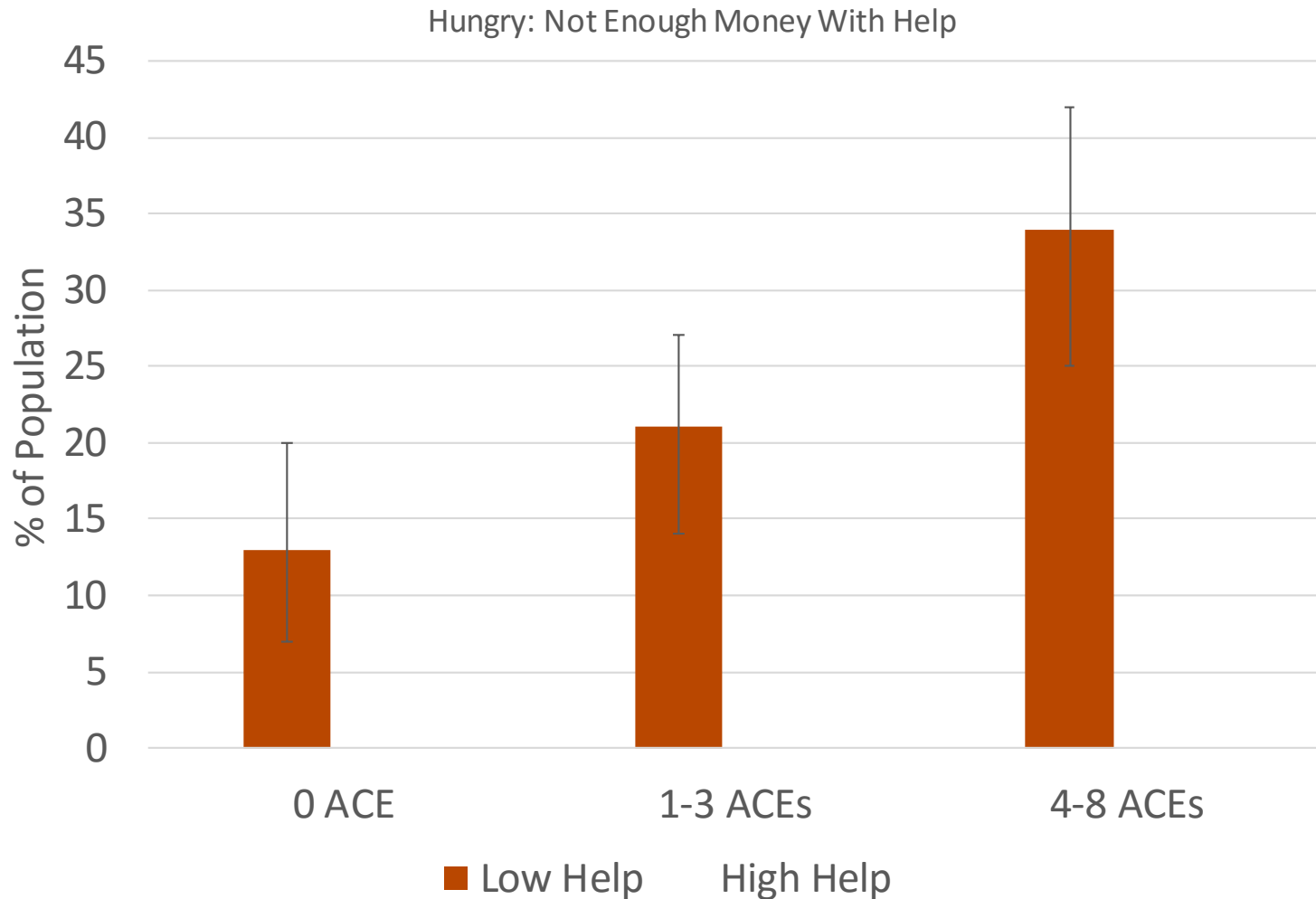
Two or More People Who Help

How many people can you count on for practical help, when you ask?



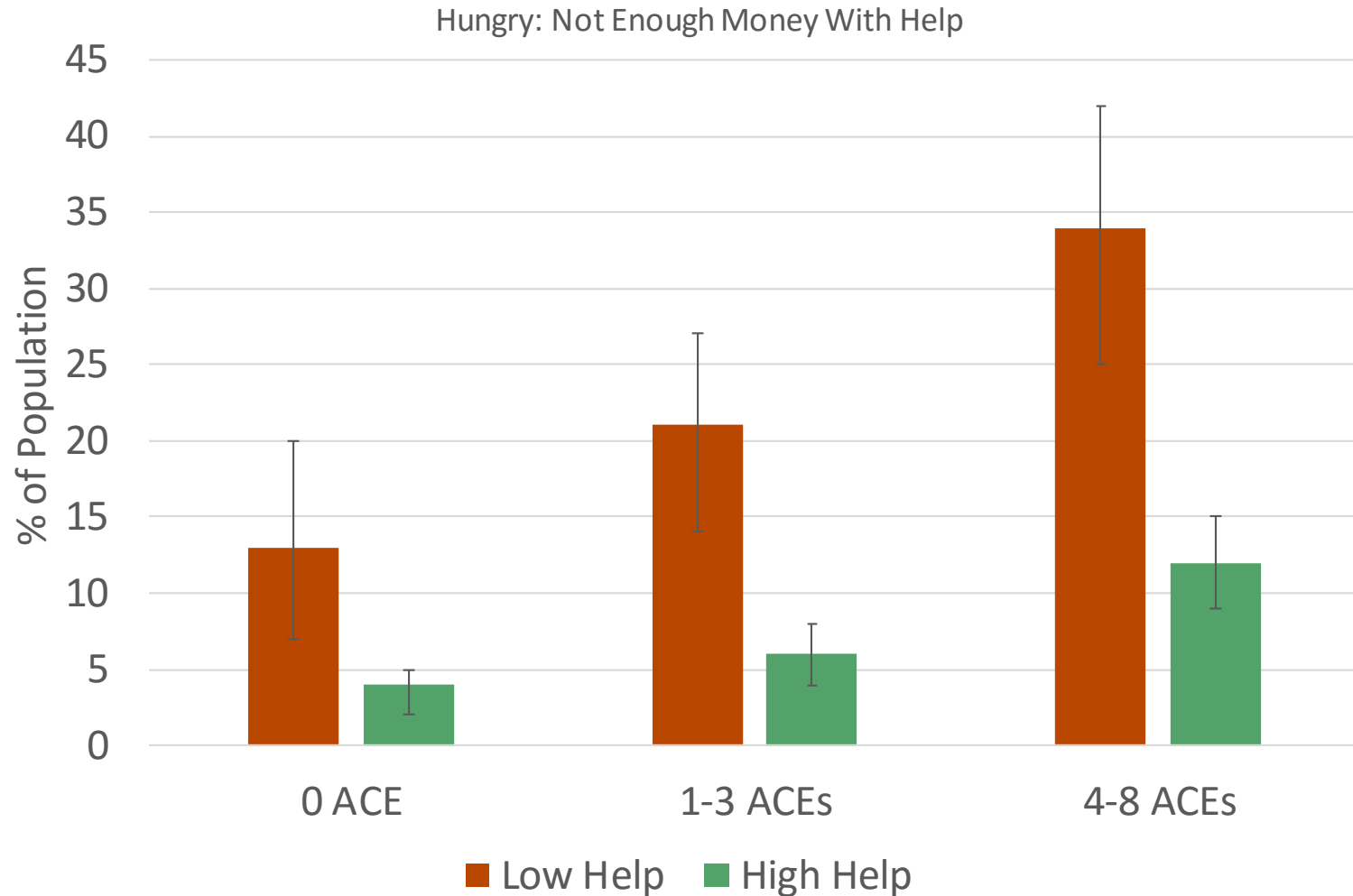


ACEs & Hunger



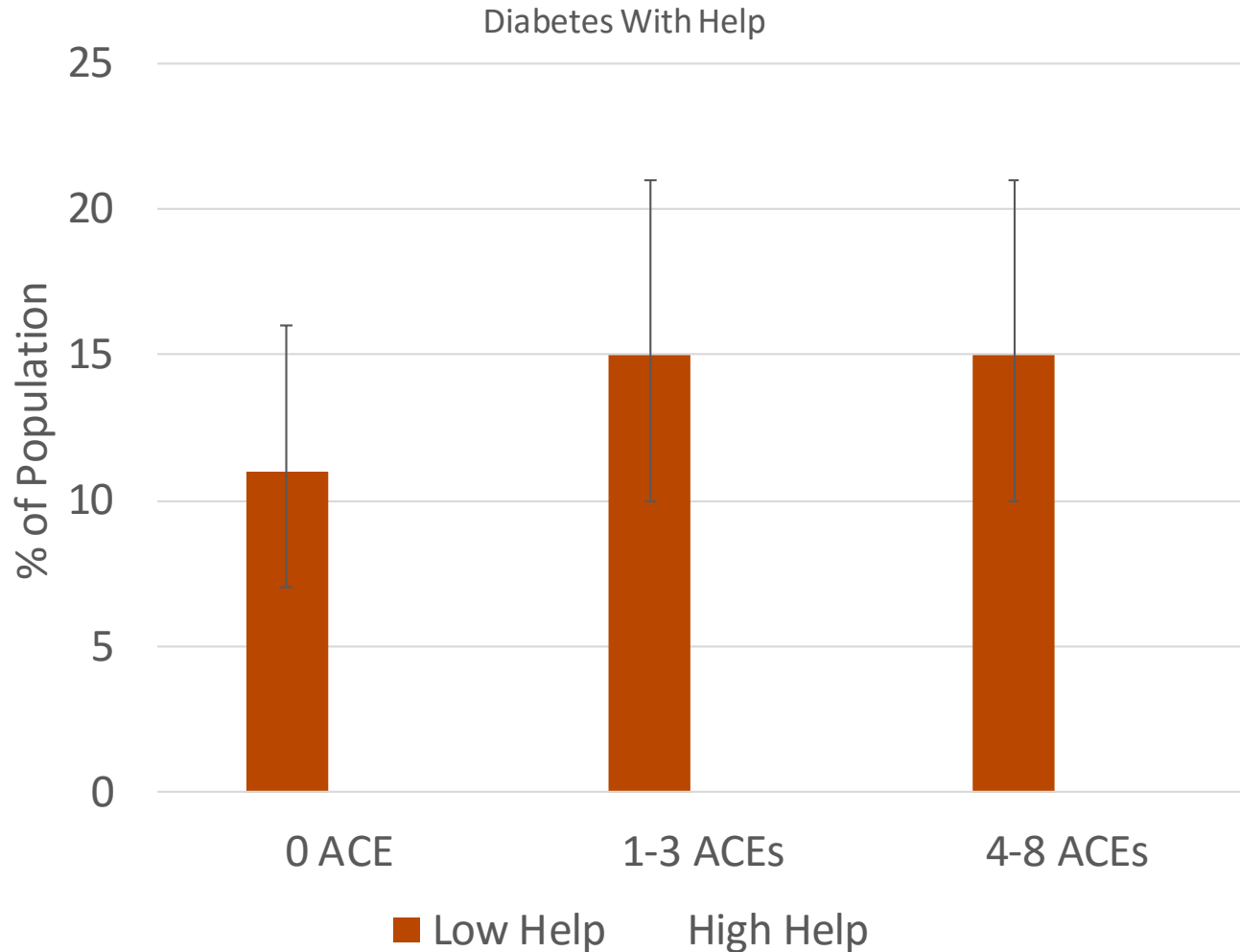


Hunger & Help



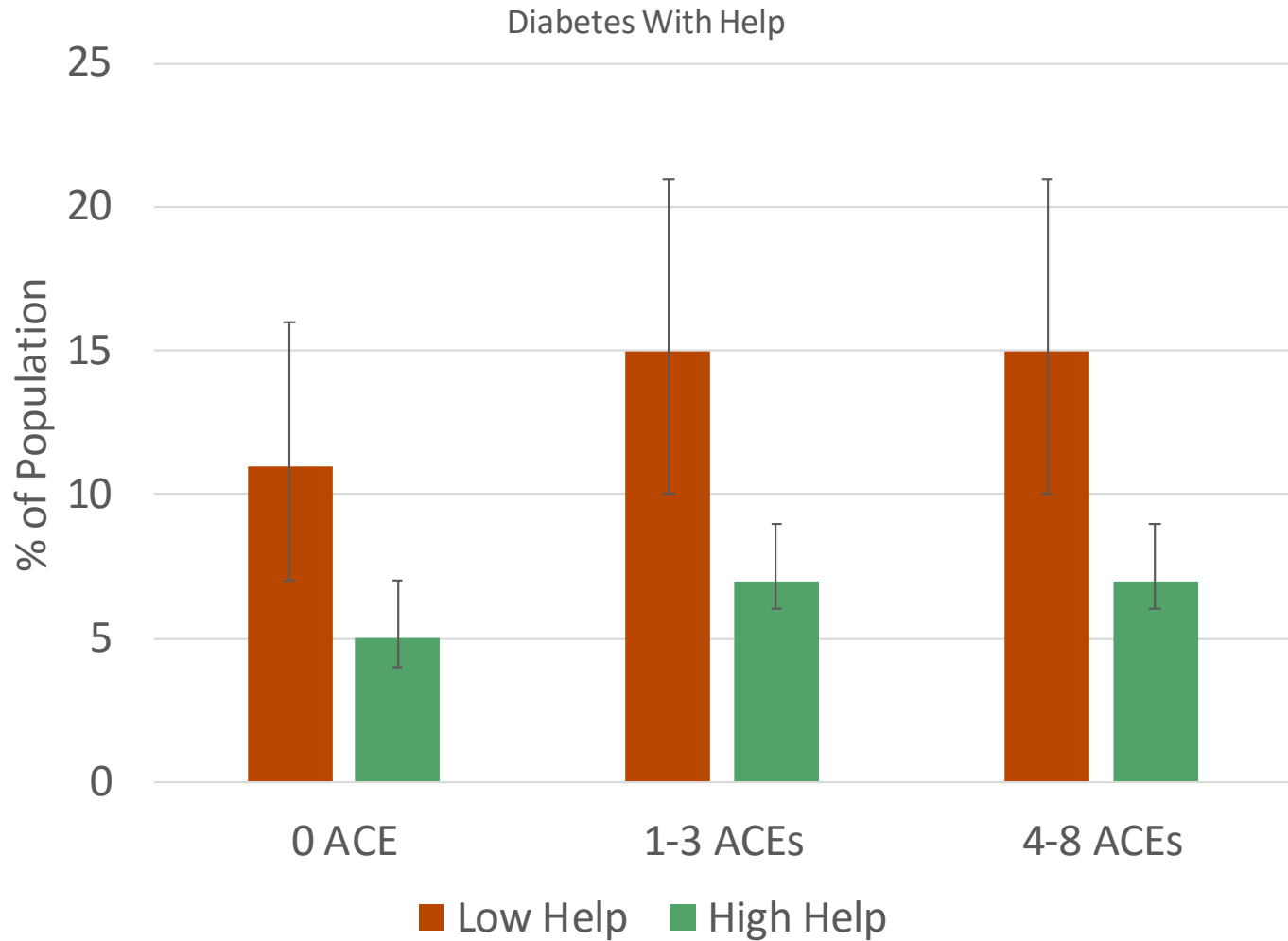


ACEs & Diabetes



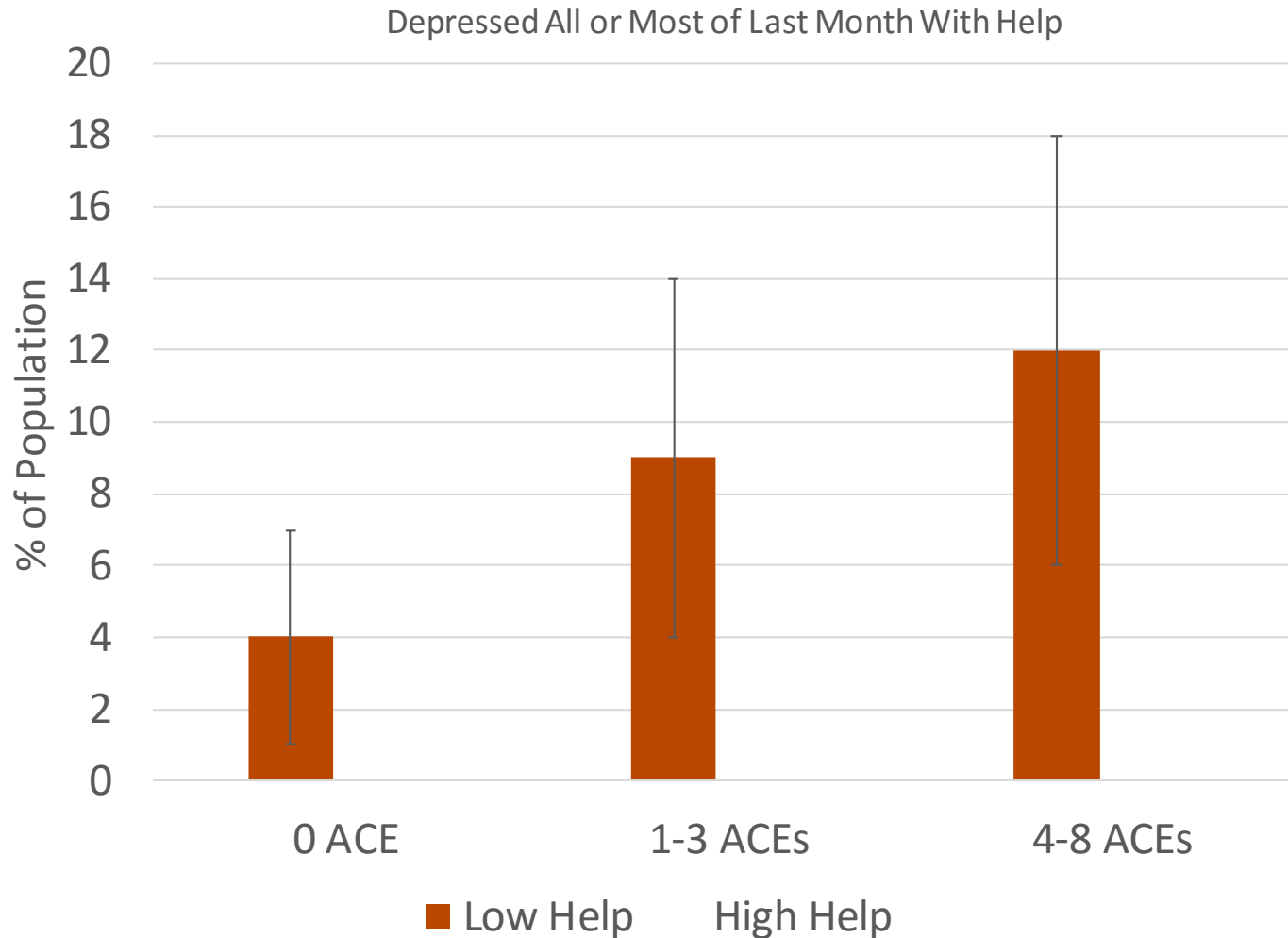


Diabetes & Help



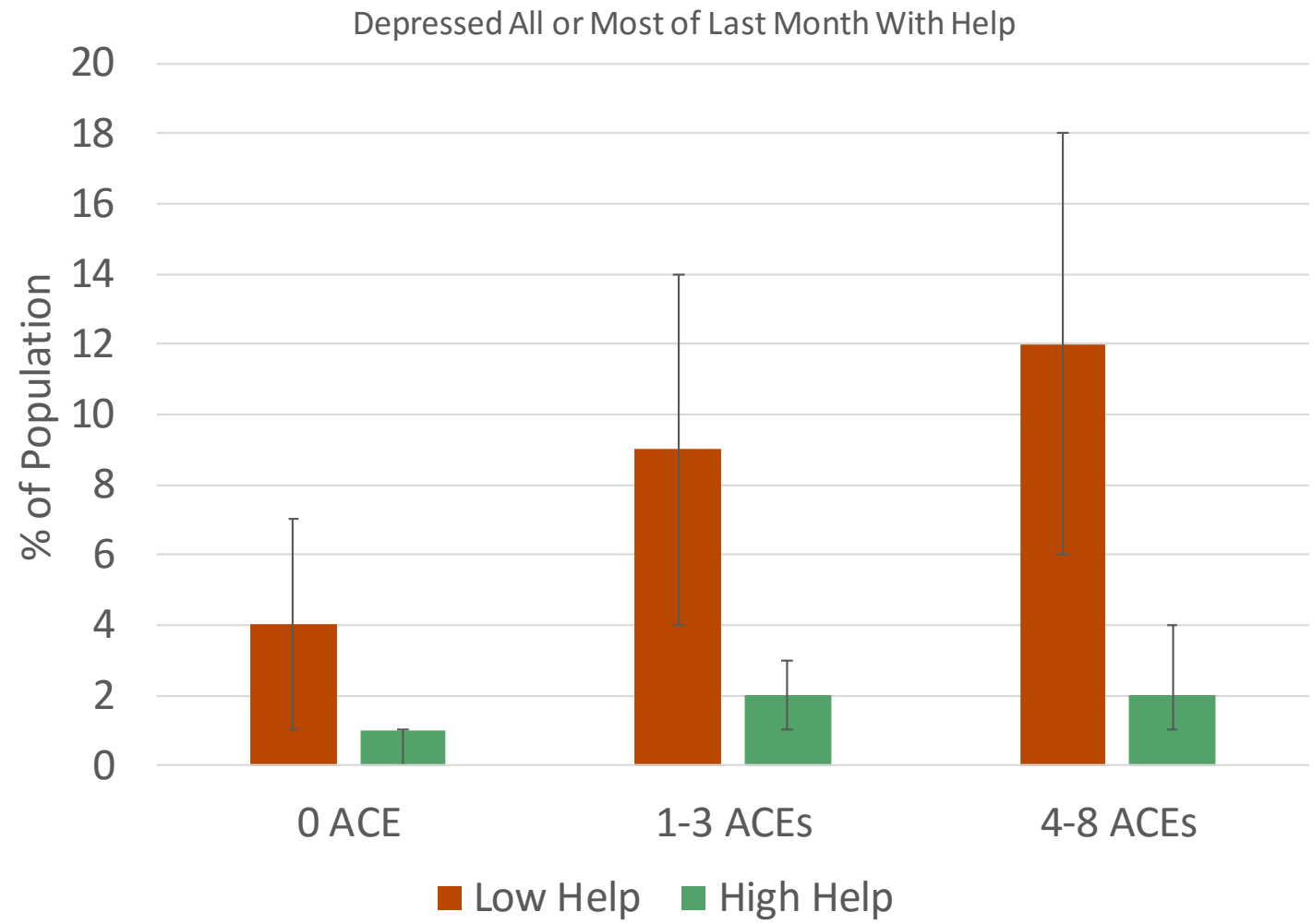


ACEs & Depression



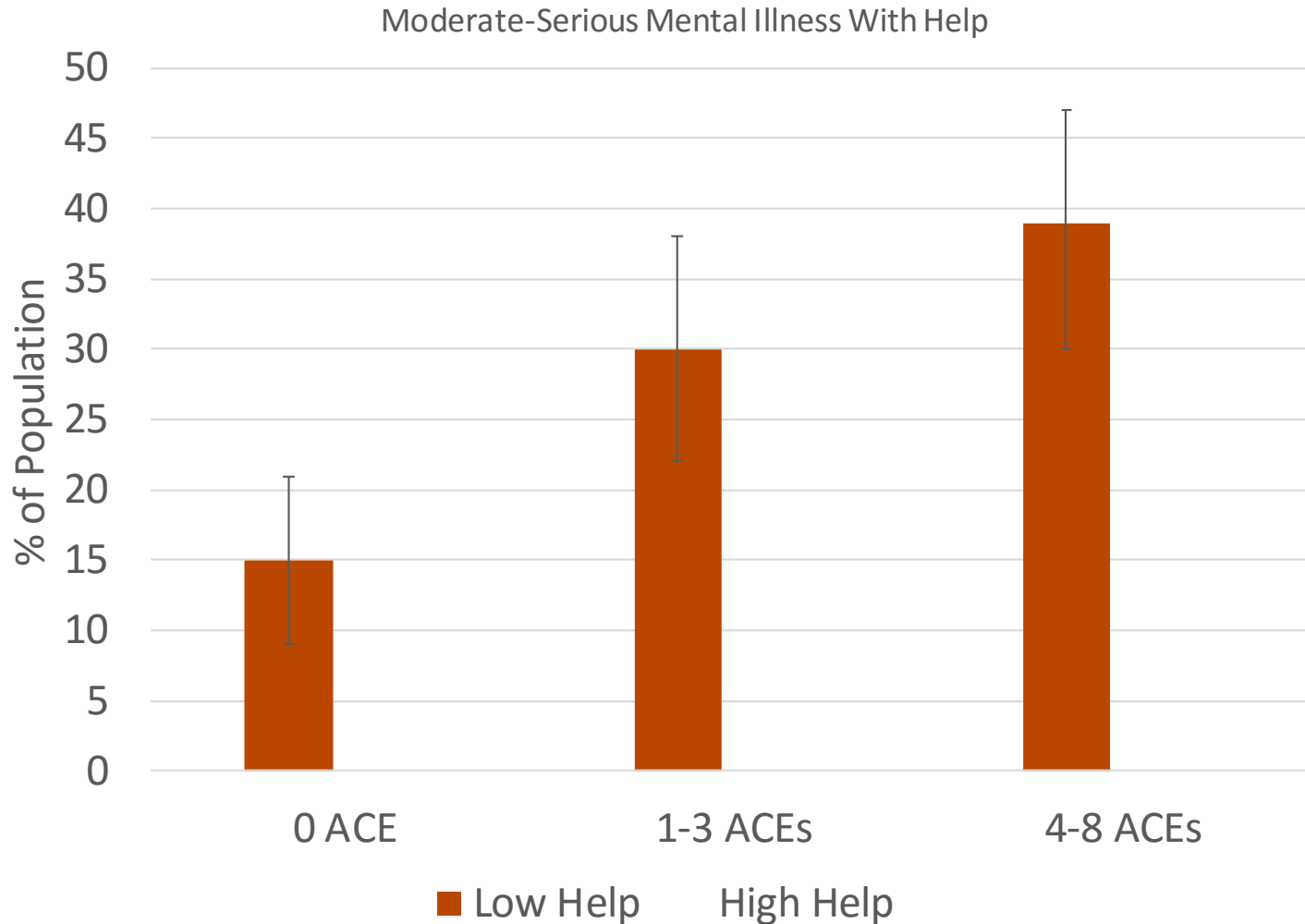


Depression & Help



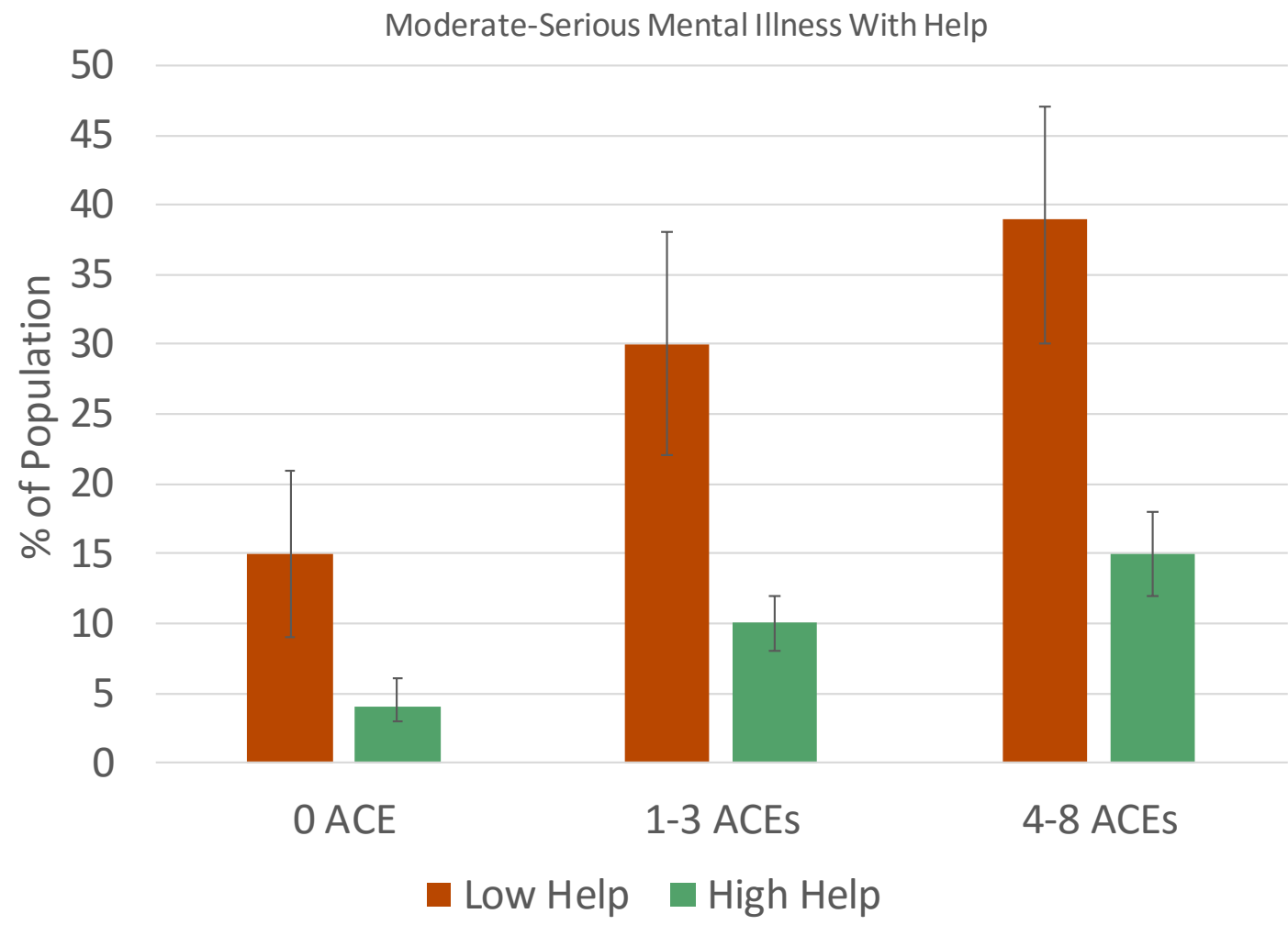


ACEs & Mental Illness Symptoms



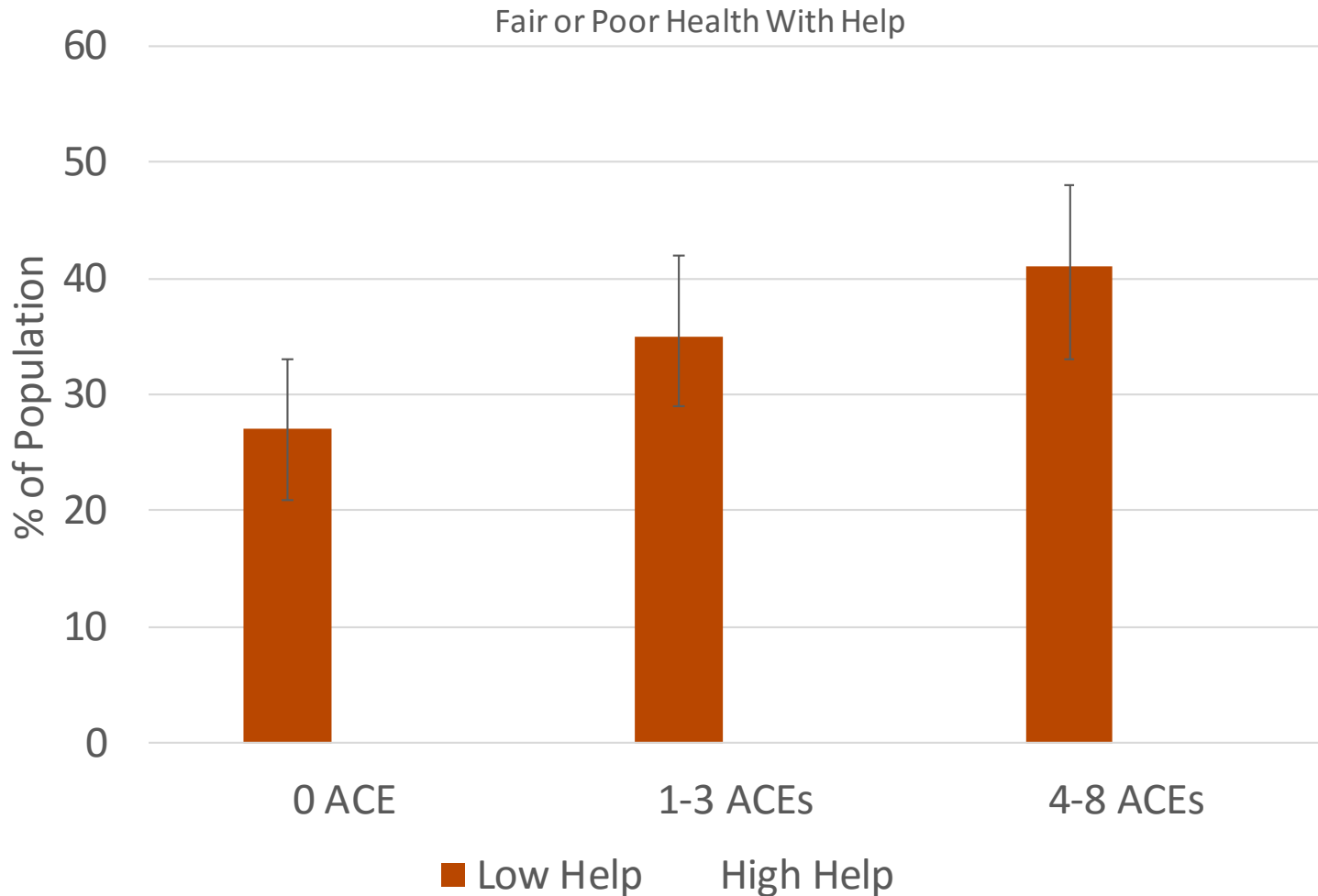


Mental Illness Symptoms & Help



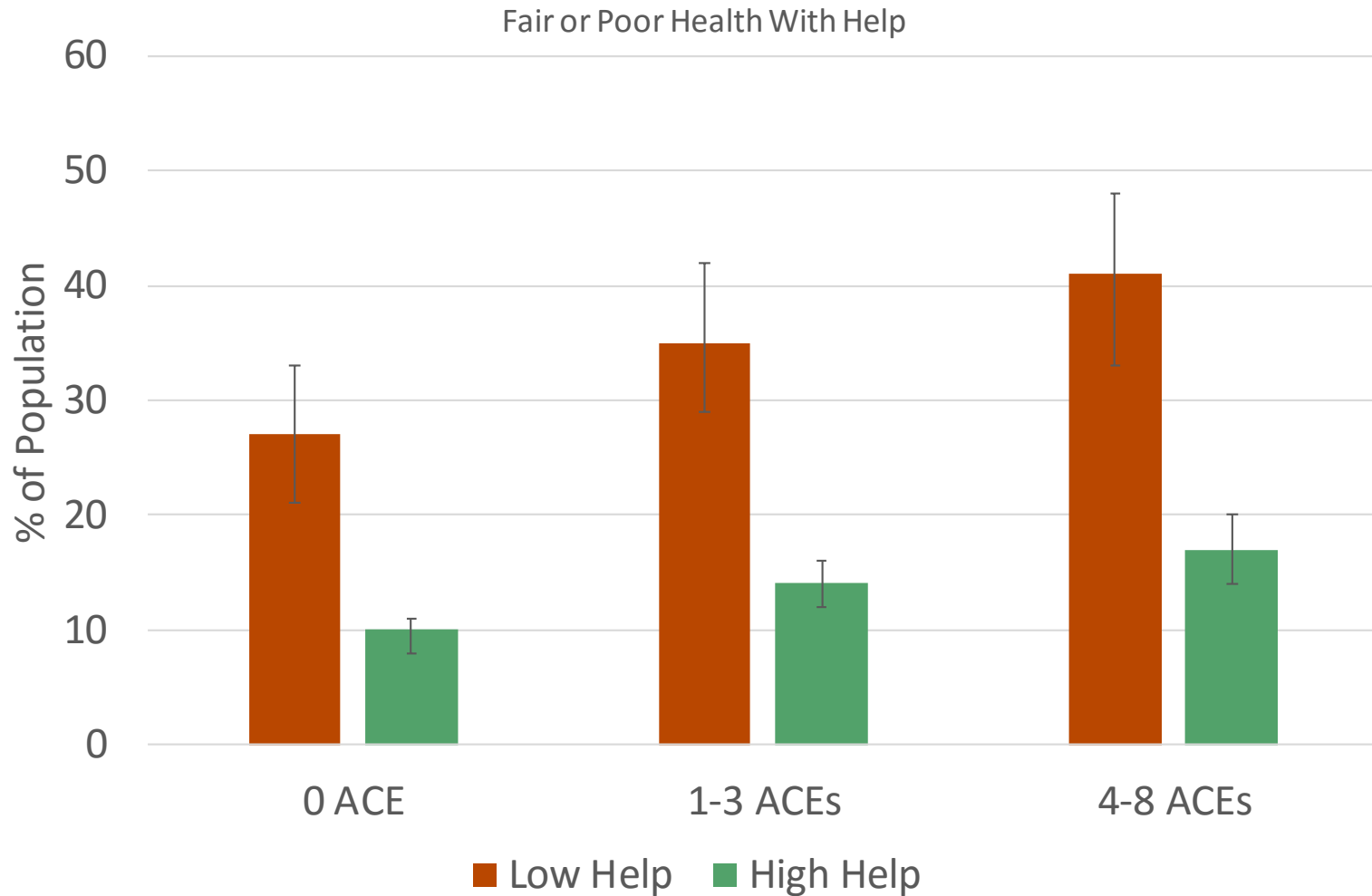


ACEs & Poor Health





Poor Health & Help



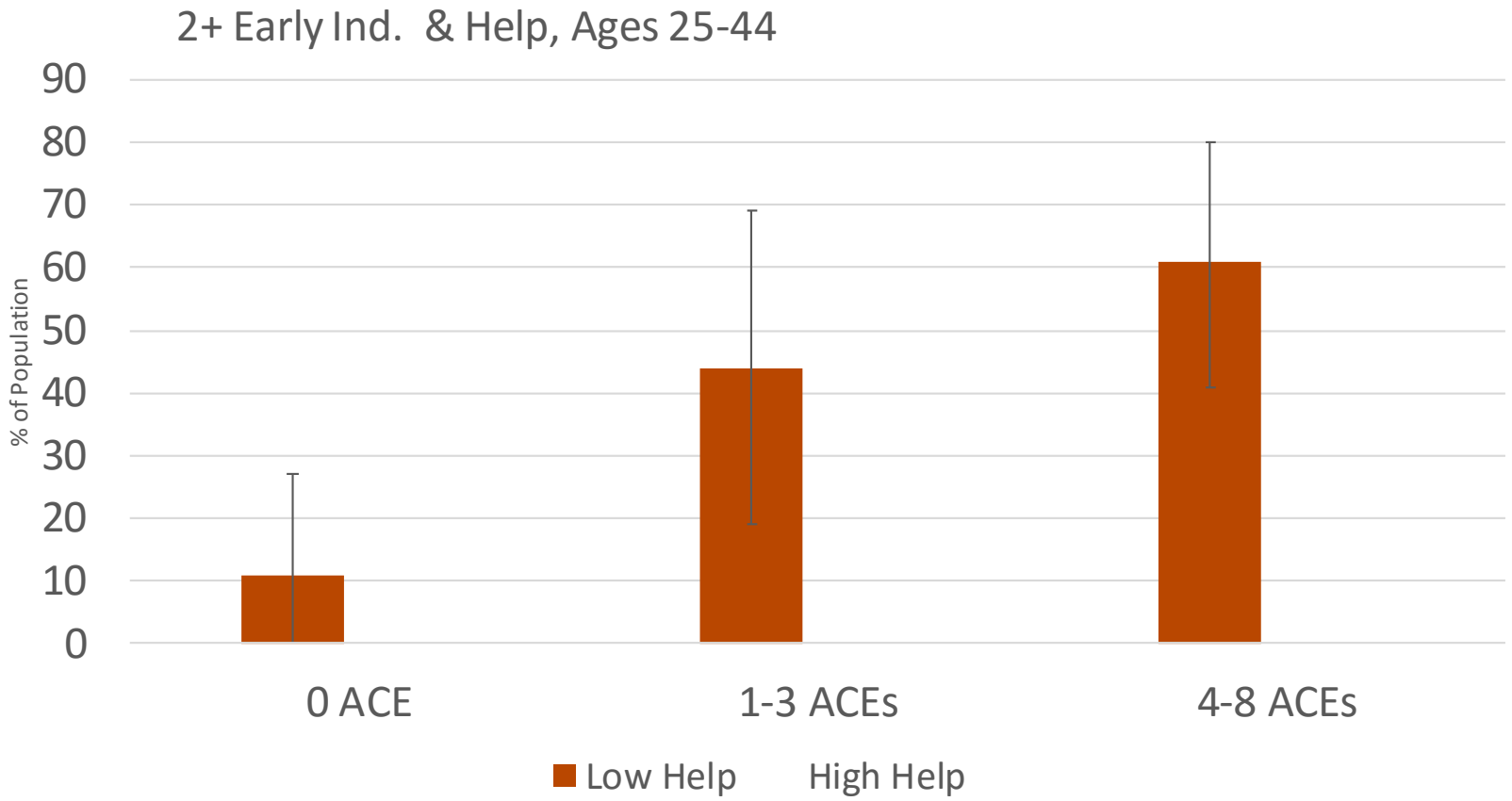


Early Indicators of Health Problems

- Diabetes
- Prediabetes
- High Blood Pressure
- High Cholesterol
- Overweight or Obese

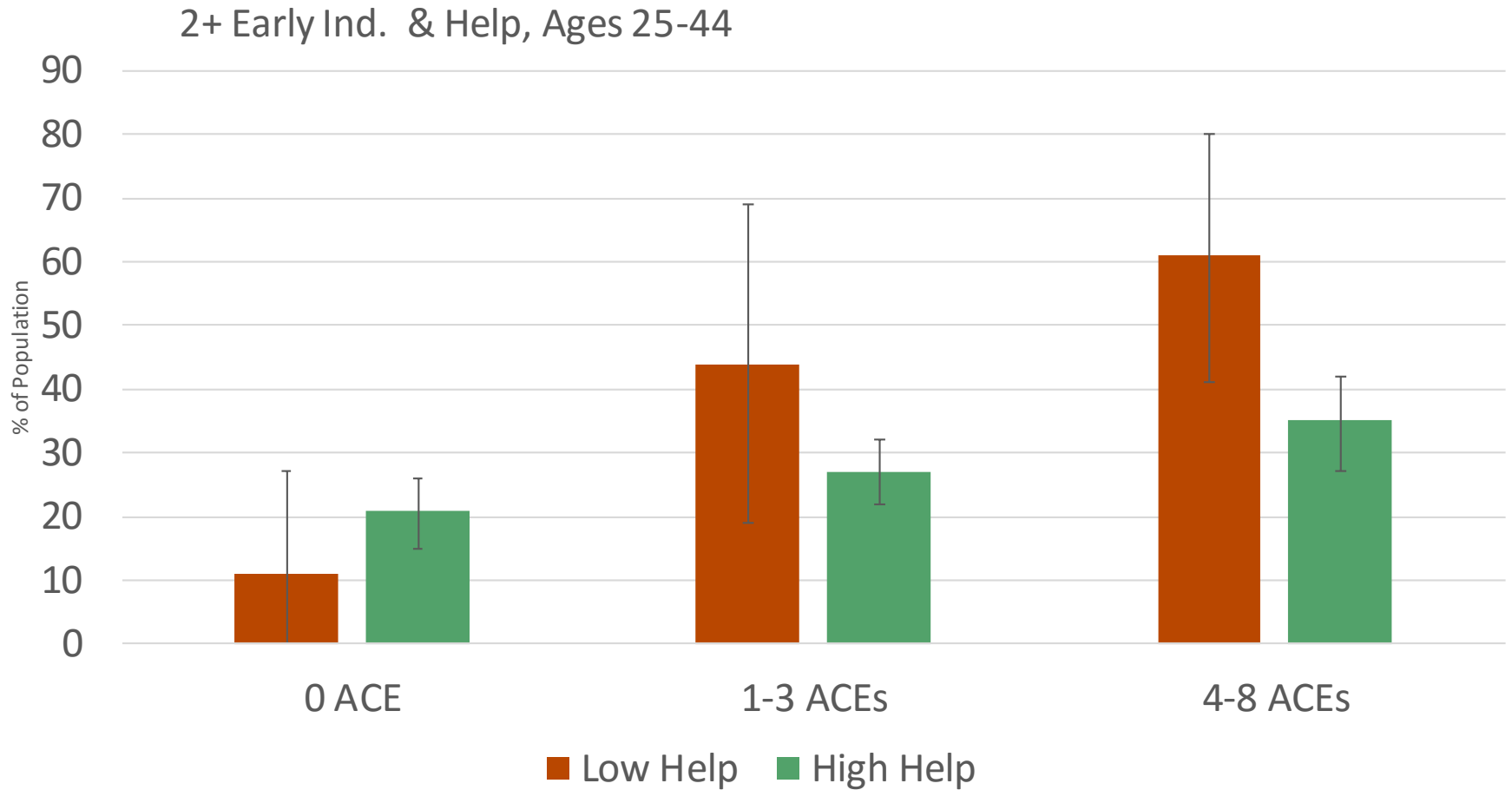


Risk for ≥ 2 Health Problems without Help





Risk for ≥ 2 Health Problems with Help





COMMUNITY,
CULTURE,
SPIRITUALITY

Context Matters

- Faith, hope, meaning
- Engagement with effective orgs – schools, work, pro-social groups
- Network of supports/services & opportunity to help others
- Cultures providing positive standards, expectations, rituals, relationships & supports



Community Resilience

Community Reciprocity: watching out for children, intervening when they are in trouble, and doing favors for one another

Social Bridging: reaching outside one's immediate circle of friends to recruit help for someone inside that circle.



Reciprocity & Bridging

Better Rates:

Obesity

Mental Illness Symptoms

Alcohol Consumption among Women

Physical Activity

Happiness

Worry about Money for Rent

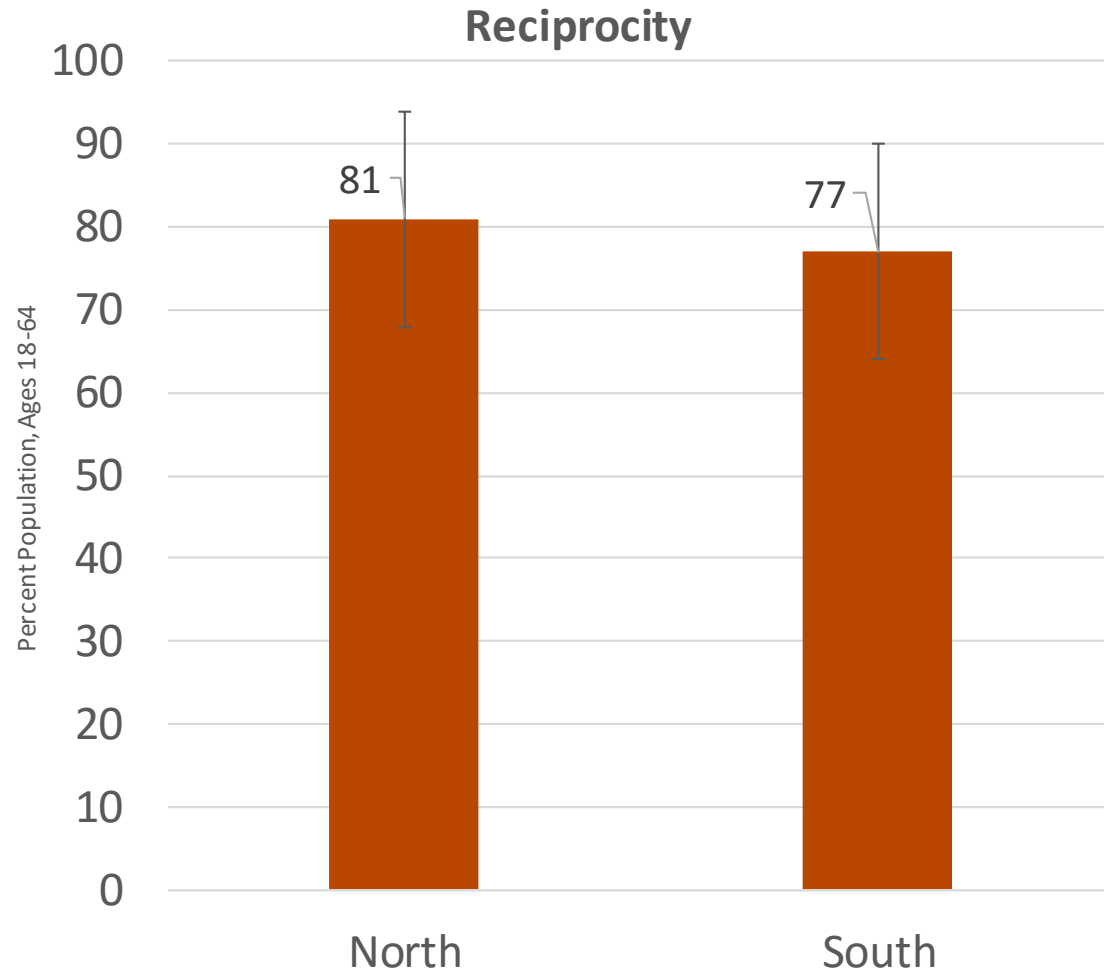
Having A Primary Care Physician

Experiencing Housing Instability

Being Hungry Because of No Money



Reciprocity





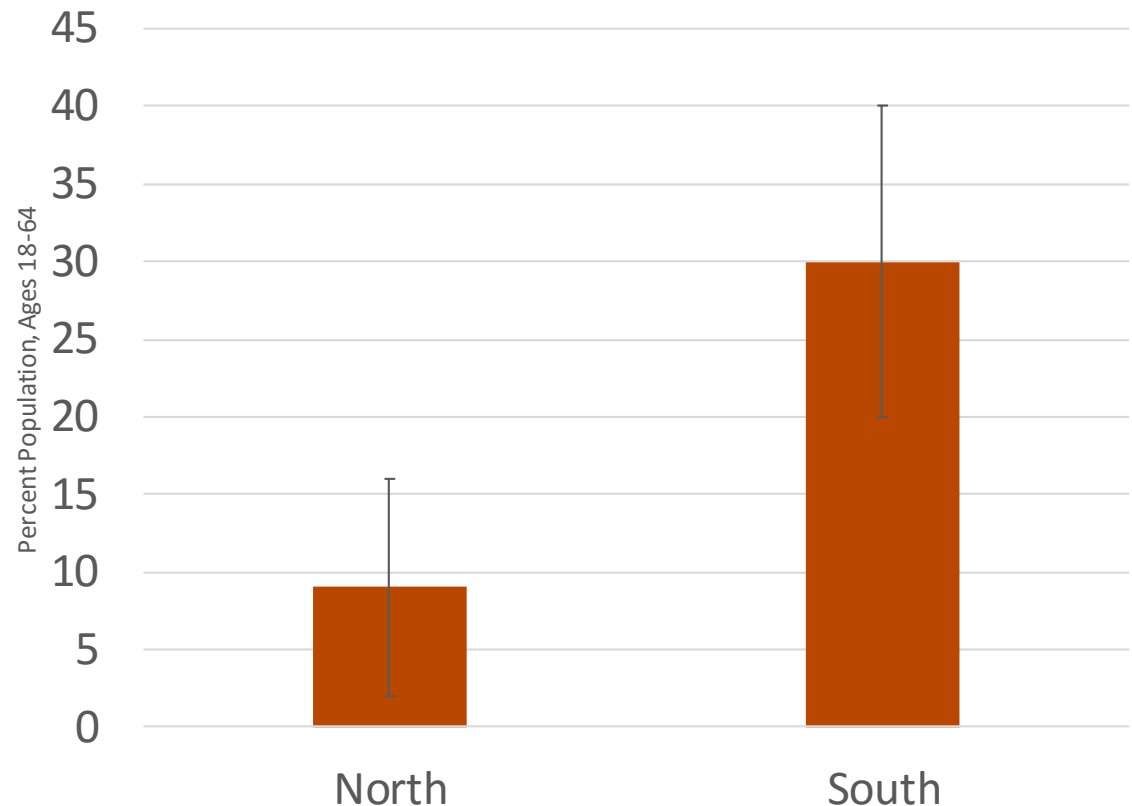
Social Bridging

Think about the people you rely on for help and support.

How common is it for you to reach outside this circle of people to give or receive practical help or social and emotional support?

“Very Common”

Social Bridging is Very Common





Layer Up

1. **Support:** Feeling socially and emotionally supported and hopeful
2. **Help:** Having two or more people who give concrete help when needed
3. **Community Reciprocity:** watching out for children, intervening when they are in trouble, and doing favors for one another
4. **Social Bridging:** reaching outside one's immediate circle of friends to recruit help for someone inside that circle.



Trauma Informed Approach

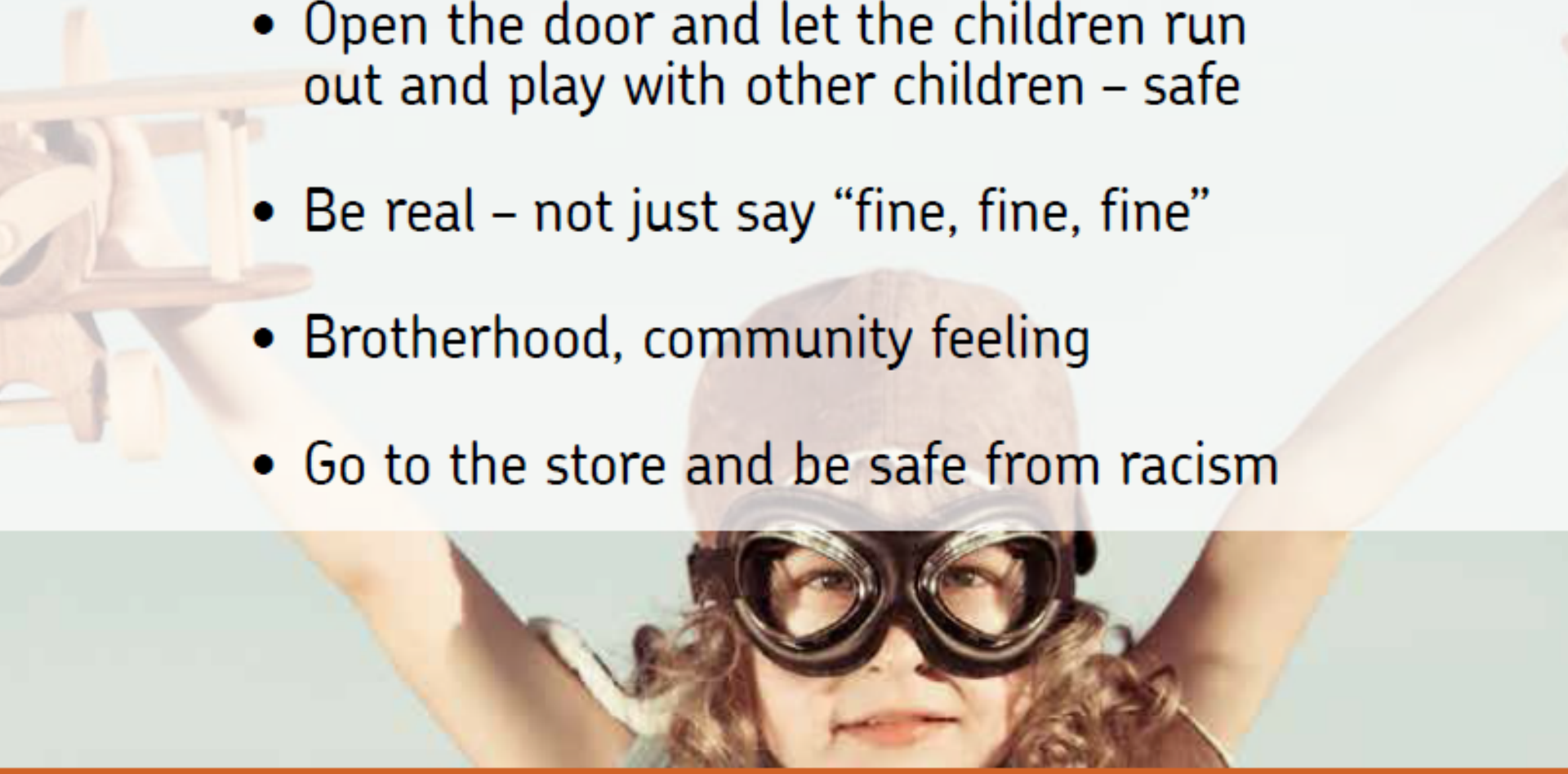
- **Realizing** the prevalence of trauma
- **Recognizing** how it affects all individuals
- **Resisting** re-traumatization
- **Responding** by putting this knowledge into practice

People need to know that their ideas are worthy of action.

Ask about dreams; Ask for story.... Ask, Listen, Affirm, Remember

... From the Congo

- Open the door and let the children run out and play with other children – safe
- Be real – not just say “fine, fine, fine”
- Brotherhood, community feeling
- Go to the store and be safe from racism





foundation for
healthy generations

CREATING ENDURING HEALTH EQUITY

Thank You!

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