

Self-Regulation and Intervention Across Development

9/10/15

Native Children's Research Exchange

Desiree W. Murray, PhD.

Frank Porter Graham Child Development Institute
University of North Carolina, Chapel Hill



CENTER for CHILD and FAMILY POLICY



Acknowledgements

- Katie Rosanbalm
- Christina Christopoulos
- Amar Hamoudi
- **Duke Center for Child and Family Policy**

- Aleta Meyer
- **Administration for Children and Families**

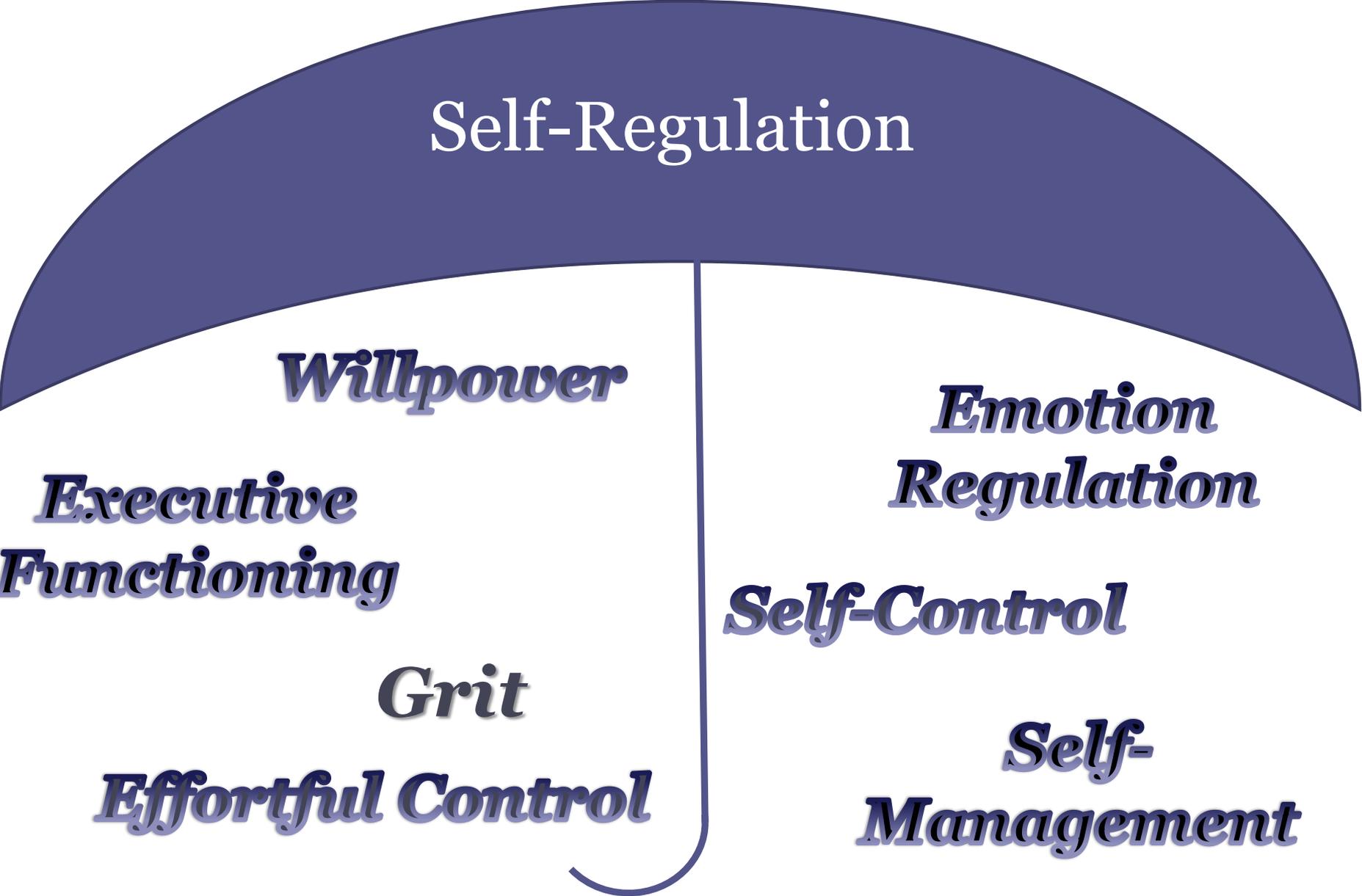
- **Funding** from Office of Planning, Research, and Evaluation (OPRE), ACF

Overview

- Self-Regulation Development in Context
 - 7 principles for understanding developmental and contextual processes
- Comprehensive Intervention Review
 - Approach, Findings, and Future Research
- Implications for Intervention
 - Particular focus on adolescents

Principle 1: Importance of Self-Regulation

- Self-regulation serves as the foundation for wellbeing across a wide range of domains:
 - **Mental, emotional, and physical health, academic achievement, adult employment, and socio-economic success**
- It is also responsive to intervention, making it highly relevant to social policy and human service programs



Self-Regulation

Willpower

*Executive
Functioning*

Grit

Effortful Control

*Emotion
Regulation*

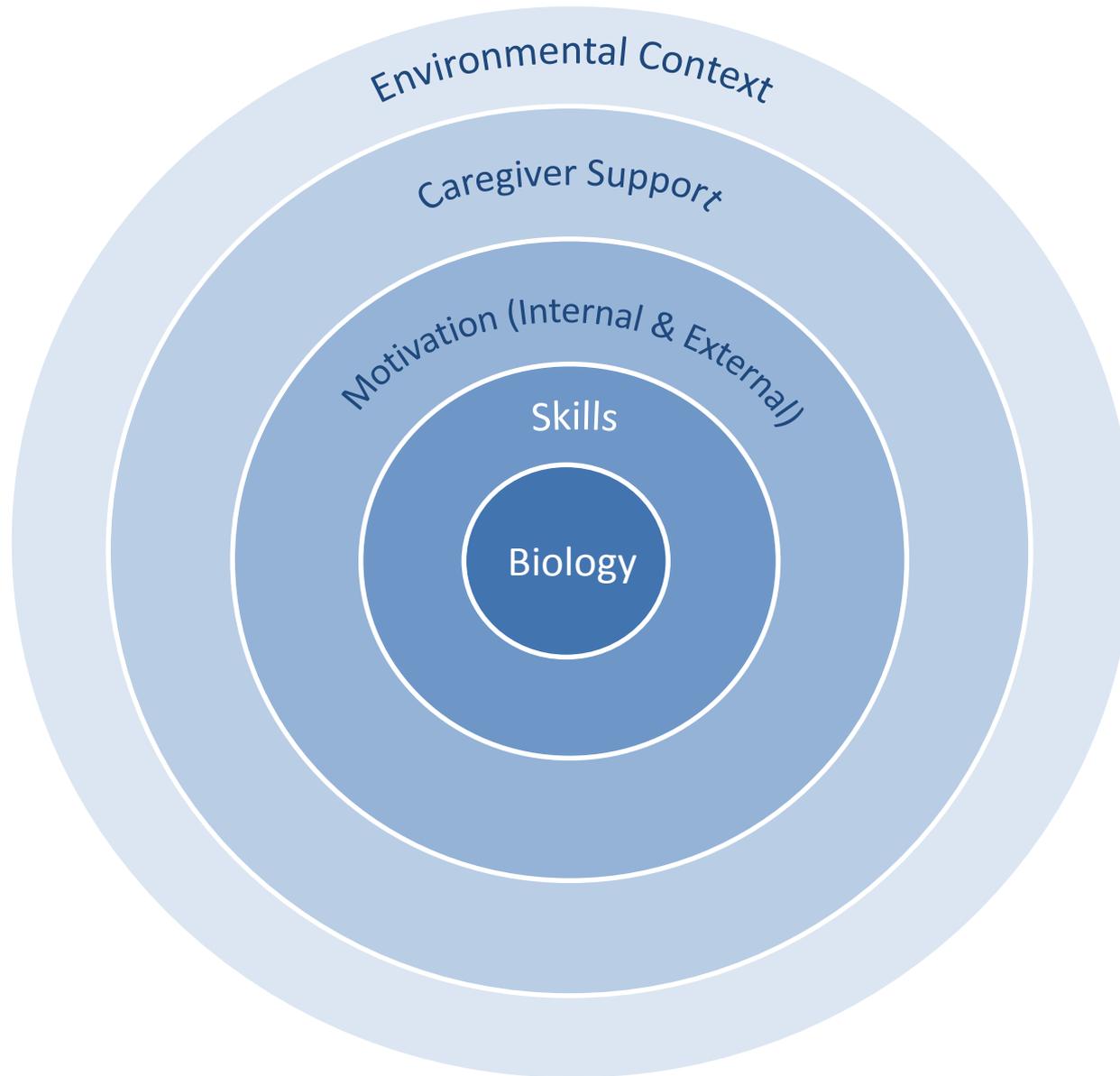
Self-Control

*Self-
Management*

Principle 2: Definition of Self-Regulation

- The act of managing ***cognition*** and ***emotion*** to enable ***goal-directed actions*** such as :
 - **organizing behavior**
 - **controlling impulses**
 - **solving problems constructively**

Principle 3: Self-regulation Enactment is Influenced by a Combination of Internal and External Factors



How does the Environment Influence Self-Regulation Development?

- **Families:** “Buffer” stressors, motivate, teach and “coach” skills, provide primary attachment relationships
- **Teachers:** Relationships with students and positive behavior management support skill development
- **Schools:** Can teach and reinforce skills, or delay skills with bullying, violence, and high teacher turnover/stress
- **Communities:** Provide resources and can set positive norms for healthy child development
 - Peers can also play a role
- **Poverty:** Reduces energy and resources for self-regulation

Indian Sugar Cane Farmers Before and After Harvest



Mullainathan & Shafir, 2013

Principle 4: Self-Regulation can be Strengthened and Taught like Literacy

Characteristics of Both

- Consist of many sub-skills that require developmentally appropriate and targeted instruction over time
- Benefits from multiple supportive contexts
- Develop earlier in consistent and supportive environments
- Can be acquired later with intervention
- Multiple intervention opportunities exist
- Some youth need more specialized instruction and support than others



Self-Regulation Across Development

Younger Children

- Identifying and expressing feelings
- Calming down
- Waiting
- Persisting on challenging tasks
- Identifying a problem, coming up with solutions, and considering consequences
- Thinking about what your friend wants/how she feels
- Organizing time and multi-step tasks

Older Youth

- Accurate identification and appraisal of feelings
- Strategies for managing normative stress
- Waiting for longer periods to achieve goals
- Persisting on complex, long term projects
- Problem-solving to achieve goals
- Self-monitoring goal progress
- Making decisions with good perspective and compassion
- Time management and planning

Self-Regulation during Adolescence

Behavioral

Following rules, delay of gratification, persistence, impulse control, conflict resolution, active coping

Cognitive

- Persisting on complex, long-term projects
- Problem-solving to achieve goals and self-monitoring
- Future goals and perspectives guide behavior
- Making decisions based on reflection and reasoning



Cognitive-
Emotional
Integration



Emotional

- Accurately identifying emotions in self and others
- Managing frustration and distress effectively
 - Self-calming
- Empathy and compassion

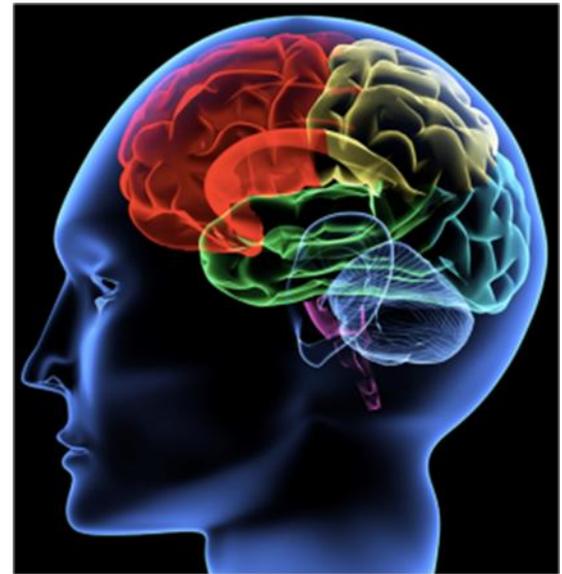
Self-Regulation Difficulties in Adolescence and Young Adulthood

- Poor school performance
- Conflicts with peers and adults
- Depression, anxiety, moodiness
- Aggression, bullying, other antisocial behavior
- **Self-harm and suicidality**
- **Substance use** and other risky behaviors
- Poor health choices and negative health effects



Adolescent Brain

- Overreacts to emotional information and stress
- Arousal and reward-seeking are stronger than cognitive controls
- Needs higher intensity of rewards to feel rewarded
- Executive functioning is under development well into 20's





Self-Regulation Challenges during Adolescence

- School and social environments make it harder for caregivers to control risk situations
- New demands on self-regulation:
 - Face more complex problems and more challenging tasks to complete with less structure and adult guidance
 - Need to prepare for employment, self-sufficiency, healthy adult relationships
- Consequences for self-regulation failures increase

Principle 5: Self-Regulation is dependent on Co-Regulation”



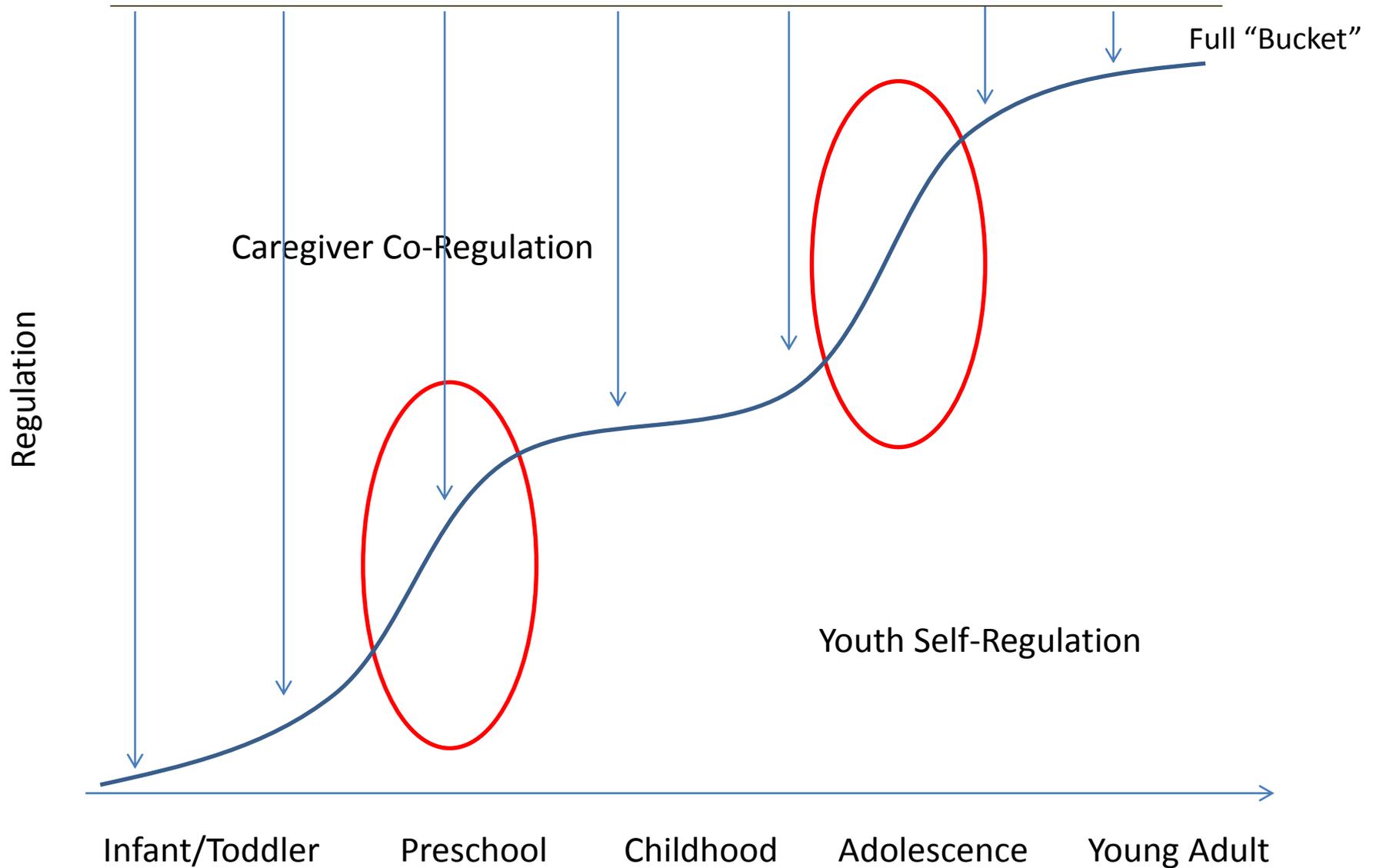
- Interactional process in which a caregiver (e.g., parent, teacher, mentor) provides:
 - ***Warmth, nurturing, and a secure, safe relationship***
 - ***Support, coaching, and modeling that facilitates a child’s ability to understand, express, and modulate their feelings, thoughts, and behavior***

Co-Regulation in Action



- A co-regulating caregiver will
 - **Buffer children from stress and adversity in environment**
 - **Provide a warm, responsive presence in times of distress**
 - **Provide consistent structure and positive discipline**
 - **Teach and model self-regulation skills**
 - **Monitor, prompt, and coach the use of skills**
- Co-regulation capacity is related to caregiver's own abilities to self-regulate

Principle 6: Self-Regulation develops over an extended period of time



Principle 7. Self-Regulation Development can be Disrupted by Stress and Adversity

- Stress is a normal part of development and can serve to teach problem-solving and build coping skills
- Individuals vary in their response to stress based upon their biology and the environment
 - ***BUT, prolonged or pronounced stress that overwhelms a child's skills or support may create toxic effects***
- Toxic stress increases youth's vulnerability to effects of future stressors

Relevance for Tribal Communities

- A focus on self-regulation may build resilience and wellbeing for youth and strengthen communities
- Co-Regulation is consistent with many traditional and indigenous world views of child development and parenting
- Historical trauma and poverty make youth more vulnerable to self-regulation difficulties

Evidence indicates that negative trajectories can be reversed with intervention and improved environmental conditions

How Can Self-Regulation Promote Thriving and Caring Communities?

- Encourages empathy, perspective taking and consideration of others' feelings and needs
- Promotes cooperation and working collaboratively towards shared goals
- Teaches respect for “rules” defined within each culture
- Builds skills for developing healthy intimate relationships
- Supports healthy life choices and future planning

Key Points



- Self-regulation...
 - Serves as the foundation for health & wellbeing
 - Promotes connection and caring for others
 - Is a developmental process
 - Is relationship-based
 - Can be taught like literacy
 - Depends on caregiver co-regulation
 - Can be disrupted by stress and adversity but buffered by caregiving and environmental supports
 - Holds unique challenges and opportunities for adolescents

A Comprehensive Review of Self-Regulation Interventions

Comprehensive Review of Self-Regulation Interventions



To describe interventions being studied to improve self-regulation and evaluate their strength of evidence across development

Examined intervention studies for Birth through Young Adulthood that explicitly:

- Targeted self-regulation development

AND / OR

- Measured self-regulation outcomes in the cognitive or emotional domain

Approaches to Strengthening Self-Regulation



1. Co-Regulation

Warm, responsive caregiving and support, modeling, and scaffolding (from a caregiver)

2. Skills instruction

In cognitive, emotional, or behavioral domains of self-regulation

Goal and Approach



To describe interventions being studied to improve self-regulation and evaluate their strength of evidence across development

Examined intervention studies for Birth through Young Adulthood that explicitly:

- Targeted self-regulation development

AND / OR

- Measured self-regulation outcomes in the cognitive or emotional domain

Methodology

- Categorized 312 studies by
 - Age group of target children
 - Intervention target (child skills vs co-regulation)
 - Implementation characteristics (e.g., duration, location)
 - Child risk level (general pop vs in adversity or at-risk)
- Coded study quality (e.g., design, fidelity)
- Coded effect sizes for each outcome
 - -1 = Negative effect
 - 0 = Null effect
 - 1 = Small effect (Cohen's $d = < .35$)
 - 2 = Medium effect (Cohen's $d = .36-.65$)
 - 3 = Large effect (Cohen's $d = >.65$)

Outcome Categories

Child Core Self-Regulation Domains

- Cognitive
- Emotional
- Behavioral
- Stress
- Motivation
- Mindfulness

Child Functional Domains

- Learning/language
- Delinquent behavior
- Health/life skills
- Interpersonal
- Mental Health

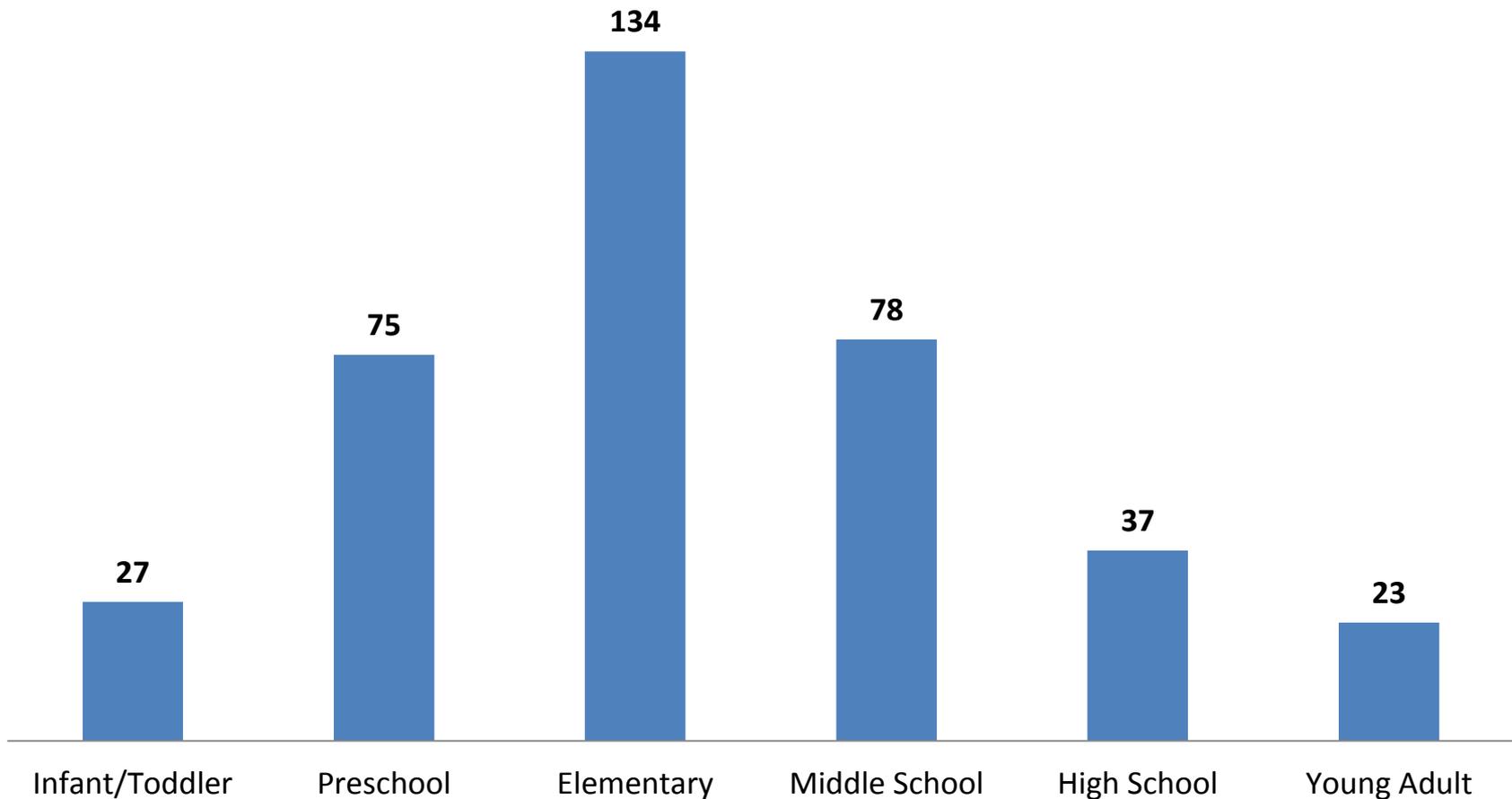
Parent Outcomes

- Skills, attitudes, co-regulation, self-regulation, mental health, stress, support

Teacher Outcomes

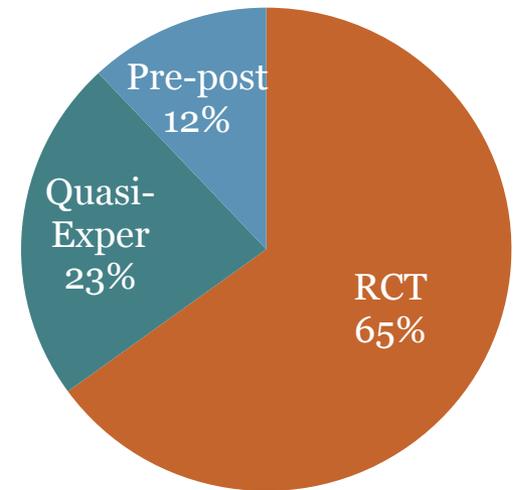
- Skills/classroom climate, attitudes, co-regulation, self-regulation, quality of instruction

Self-Regulation Intervention Studies by Developmental Period



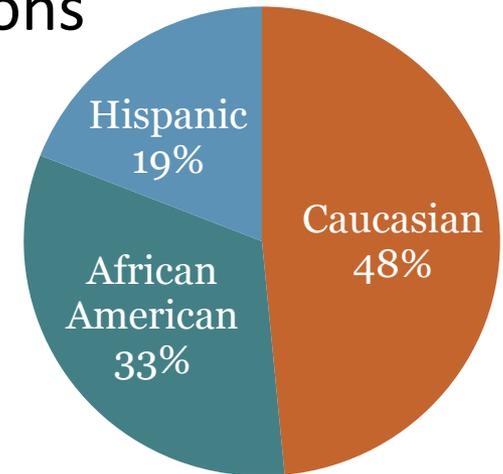
Description of Studies

- Study Design and Settings
 - 2/3rds RCTs
 - 2/3rds conducted in US
- Implementation
 - Majority have at least partial implementation support (except Young Adult studies)
 - Fidelity data reported in only 1/3 of the studies
- Measurement
 - Majority assess children/youth directly (or use self-report)
 - Many use parent/teacher report
 - Some include biological measures like cortisol levels



Sample and Setting Descriptions

- Generally representative of ACF populations
 - Young Adult studies are the exception
- Across studies reporting race/ethnicity:
 - Slightly more than half of participants are African-American or Hispanic
 - BUT this varies across age group (33-61% minority)
- % living in adversity or at-risk declines with age (78% to 17%)
- Large majority of interventions implemented in daycare/school settings (except for oldest and youngest age groups)



Self-Regulation is Responsive to Intervention

- Interventions result in positive and meaningful changes from several different approaches and across a wide range of measures
 - Both **cognitive and emotional regulation** are enhanced (although this varies across ages)
 - Benefits for both **internalizing** (depression/anxiety) and **externalizing** (impulsivity, disruptive behaviors) symptoms
 - **Biological measures** such as salivary cortisol also improve
 - **Benefits extend to other domains** such as language, learning, delinquency, mental health, and interpersonal outcomes

Typical Preventive Interventions for Adolescents

- Conflict Resolution
- Anger coping/management
- Stress Management
- Resiliency Training
- Mind-body Interventions and Mindfulness
- Self-regulated Learning

Note that this does not include clinical interventions focused on self-regulation for youth who require more intensive treatment

Limitations of Adolescent Interventions

- **Tremendous variability in programs**, domains targeted, and effectiveness with highly variable outcomes
 - Suggests need to carefully select programs
- **Many interventions are very broad and diffuse**, which may weaken their impact on specific self-regulation skills
- **Limited focus on emotion regulation**, which is particularly important during the age period but doesn't change much with existing interventions
- **Lack of involvement of parents, teachers, or mentors** in “coaching” youth or providing co-regulation support

Directions for Future Self-Regulation Intervention Research

- Develop and evaluate comprehensive interventions provided across time and settings
 - Assess incremental benefits, role of “booster” interv, and “layered” interv (universal + targeted)
- Evaluate interventions for older adolescents and young adults with more diverse populations (including AIAN) and those living in adversity
- Assess outcomes across a broad range of functioning including stress, motivation, relationships, and job performance
- Develop and evaluate caregiver, mentor, and teacher trainings to support co-regulation for adolescents

Recommendations for Intervention

Comprehensive Intervention Approach for Youth Living in Adversity

1. Provide universal self-regulation supports across development and embedded within settings
2. Work to decrease environmental stressors
3. Provide intensive and targeted skills instruction
4. Provide self-regulation coaching for children and youth demonstrating difficulties
5. Provide co-regulation training to caregivers
6. Support caregivers with their own self-regulation

Build Co-Regulation Supports in Families and Communities

- Provide warm, responsive and consistent caregiving relationships for all children and youth
 - Parents, teachers, and mentors provide the structure, support, and motivation to learn self-regulation skills
- Teach Self-Regulation Skills
 - Model, provide opportunities to learn skills, monitor and reinforce progress, coach on how, when, why to use skills
- Structure the environment
 - Limit risk-taking opportunities, provide positive discipline, and reduce emotional intensity of conflict situations

Provide Self-Regulation Supports in Schools

- Positive school climate sets norms that support self-regulation and fosters respect and collaboration
 - May increase resilience of vulnerable youth in face of stressors
- Schools are an ideal setting for universal interventions
 - Programs can be coordinated across development, targeting skills in a systematic & cohesive way
 - Skills can be taught and reinforced in numerous everyday contexts
 - Shared learning may be esp. important for adolescents
- Teachers and other school staff can be taught to provide co-regulation (not just deliver curricula)

Decrease Environmental Stressors

- Support approaches to creating positive school climate and use of positive discipline policies
- Support safe, consistent caregiving in family environment
- Support poverty-reduction initiatives and other policies with long-term benefits for children, eg., universal preschool
- Support initiatives to increase safety and stability of communities/neighborhoods

Targeted Skills Instruction for Older Youth: Things to Look For

- Goal setting, monitoring, and self-reinforcement
- Planning ahead for challenging decisions
- Problem solving in stressful situation
- Decision-making in risk situations
- Organizing time
- Paying attention in the moment
- Understanding of and attention to emotions
- Accepting or managing distress or difficult emotions
- Compassion for self and others
- Stress management strategies

When Developing New Interventions for Adolescents

- Provide a more intentional and targeted focus on self-regulation
 - Teach skills systematically using theoretical model
 - Provide ongoing scaffolding and support
- Place greater focus on emotion regulation
 - Accepting and managing feelings, and integrating with cognitive regulation
- Include parents, teachers or mentors as self-regulation coaches

Self-Regulation Coaching

Involves setting clear self-regulation goals and providing intentional instruction and skill-support within the context of a warm, responsive relationship

- 1) **Prompt** use of self-regulation skills in specific situations (e.g., taking deep breaths or pausing when upset)
- 2) **Anticipate** self-regulation demands and develop plans to solve anticipated problems
- 3) **Role-play** strategies to support implementation of skills in the moment/situation
- 4) **Monitor** the youth while using skills and provide specific positive feedback on small steps and efforts, or have youth share self-reflections of their implementation soon afterwards
- 5) **Praise and reinforce** the youth for success and teaching them to self-praise efforts
- 6) **Help the youth consider alternative solutions** to problems when efforts are not successful

Mentoring Programs

- Supportive mentoring relationship is necessary but not sufficient
- “Coaching” differs from “mentoring”
 - Involves setting clear self-regulation goals and providing intentional instruction and skill-support
 - Developmentally-relevant skills should be practiced and supported
 - Skill modeling should be explicit, not just being a “role model”
- Consider education and support for “coaches” to self-regulate in order to effectively teach this

Youth Employment

- Self-regulation interventions can support employment success through building skills with:
 - Interpersonal skills
 - Organizing, prioritizing, and managing time
 - Managing stress and supporting positive mental health
- Can fit into non-core job skills or “soft skills” supported through youth employment programs
- Self-regulation coaching can focus on finding, applying for, keeping a job, and becoming self-sufficient

Self-Regulation Support for Caregivers

- Teach personal self-regulation skills :
 - Stress management/coping skills
 - Problem-solving for life stressors
 - Mindfulness to decrease emotional reactivity
- Encourage and reinforce caregivers for:
 - Paying attention to their own feelings in stressful interactions with child/youth; use strategies to stay calm and respond effectively
 - Viewing problem-behaviors of at-risk youth with a trauma-focused lens

Training for Youth Program Staff

- Increase understanding of self-regulation
 - Develops like literacy
 - How stress and adversity interfere
- Train to teach, model, reinforce, and coach skills
- Train to provide co-regulation
 - Positive agency climate and positive discipline
 - Warm, responsive interactions with youth
 - Structure environment to make self-regulation manageable
- Support staff's own self-regulation skills
 - Public kudos
 - Reflective supervision to address parallel process

Summary of Recommendations

- Utilize self-regulation as an intervention framework to target a broad range of goals for wellbeing
- Choose existing interventions carefully
 - Select those with desired outcomes, that match populations of concern, with implementation supports available
- Incorporate approaches that strengthen self-regulation
 - Interventions should build skills intentionally AND provide co-regulation supports
 - Interventions should target both cognitive *and* emotional regulation
 - Interventions at all ages should target caregivers (parents/teachers/coaches)
- Support the capacity of caregivers (including program staff) to provide co-regulation

Resources

- Four Reports posted* or soon to be posted at acf.hhs.gov/programs/opre/resource/
 - *Foundations of Self-Regulation from an Applied Perspective
 - *Findings from Stress and Self-Regulation Literature Review
 - Findings from Self-Regulation Intervention Review
 - Application to ACF Programs
- Appendix of 299 interventions studied and their effects by age group
- Summary brief for adolescents and young adults