Self-Regulation and Intervention Across Development

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Native Children’s Research Exchange

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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

Moffitt et al., 2011; Shonkoff, et al., 2012
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

<table>
<thead>
<tr>
<th>Younger Children</th>
<th>Older Youth</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Identifying and expressing feelings</td>
<td>• Accurate identification and appraisal of feelings</td>
</tr>
<tr>
<td>• Calming down</td>
<td>• Strategies for managing normative stress</td>
</tr>
<tr>
<td>• Waiting</td>
<td>• Waiting for longer periods to achieve goals</td>
</tr>
<tr>
<td>• Persisting on challenging tasks</td>
<td>• Persisting on complex, long term projects</td>
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<tr>
<td>• Identifying a problem, coming up with solutions, and considering consequences</td>
<td>• Problem-solving to achieve goals</td>
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<tr>
<td>• Thinking about what your friend wants/how she feels</td>
<td>• Self-monitoring goal progress</td>
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<tr>
<td>• Organizing time and multi-step tasks</td>
<td>• Making decisions with good perspective and compassion</td>
</tr>
<tr>
<td></td>
<td>• Time management and planning</td>
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</tbody>
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Self-Regulation during Adolescence

**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

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

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

- Infant/Toddler: 27
- Preschool: 75
- Elementary: 134
- Middle School: 78
- High School: 37
- Young Adult: 23
Description of Studies

• Study Design and Settings
  ▫ 2/3rd s RCTs
  ▫ 2/3rd s 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 situations
- 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

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