



Self-Regulation Training Approaches and Resources to Improve Staff Capacity for Implementing Healthy Marriage Programs for Youth **FINAL REPORT**

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SELF-REGULATION TRAINING APPROACHES AND RESOURCES TO IMPROVE STAFF CAPACITY FOR IMPLEMENTING HEALTHY MARRIAGE PROGRAMS FOR YOUTH (SARHM): FINAL REPORT

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The project team for Self-Regulation Training Approaches and Resources to Improve Staff Capacity for Implementing Healthy Marriage Programs for Youth (SARHM) included the following individuals:

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A panel of experts consulted on the project framework, development of co-regulation strategies and measures, and data analysis for the Self-Regulation Training Approaches and Resources to Improve Staff Capacity for Implementing Healthy Marriage Programs for Youth (SARHM) project. We would like to thank the following members of the expert working group for their important insights and feedback.

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The views expressed in this publication do not necessarily reflect the views of these members.

OVERVIEW

The relationships that adults like educators, youth program facilitators, and coaches form with youth and young adults can have a profound impact on youths' lives. When adults provide non-judgmental support, create safe environments, and model and coach life skills, they can promote youth self-regulation development. **Self-regulation** refers to the ways in which people coordinate thoughts, feeling, and behaviors to reach their goals; it includes skills like impulse control, managing stress and anger, decision-making, and problem-solving. Self-regulation is linked to success in many areas including relationships, education, and emotional well-being (Murray et al 2016). This process of supporting youth self-regulation is called **co-regulation**.

In this report, we describe how researchers in prevention science and public health partnered with practitioners who deliver youth healthy marriage and relationship education (HMRE) programs to translate the concept of co-regulation into action. The partnership resulted in a set of strategies and capacity building resources, grounded in brain science, that can be intentionally layered onto pre-existing youth program models. The application of a co-regulation framework to youth service delivery provides a promising new approach to supporting youth development and strengthening program implementation and outcomes.

Primary research questions

The **Self-Regulation Training Approaches and Resources to Improve Staff Capacity for Implementing Healthy Marriage Programs for Youth (SARHM)** project had three primary research questions:

1. What key elements of co-regulation strategies can program facilitators apply to support youth self-regulation development?
2. What capacity building supports (e.g., training, coaching, observational tools, measures) do program facilitators need to integrate co-regulation in their practice?
3. Are co-regulation strategies feasible to implement in youth HMRE programs?

Purpose

SARHM is a formative research project to develop and test the integration of co-regulation approaches in two youth-serving HMRE programs. It is funded by the Office of Family Assistance (OFA) and overseen by the Office of Planning, Research, and Evaluation (OPRE). SARHM focused on youth and young adults aged 14 to 24 because this is a time of rapid brain change and development. It also is a time of many transitions, risks, and opportunities.

However, there are few resources to guide youth-serving practitioners in supporting youth self-regulation development.

Adult support is critical for helping young people make healthy decisions, engage in prosocial behaviors, and prepare for the future (Rosanbalm and Murray 2017). The goal of this report is to share strategies and resources for practitioners and researchers interested in enhancing adult-youth co-regulation in real-world settings to promote youth self-regulation and boost program implementation and effects. Strategies include effective use of praise, steps to foster a welcoming environment, tailored noticing or mindfulness exercises, tips for using breath to enhance focus, steps for successful skills coaching, and approaches for staff to reduce stress and achieve goals.

Key findings and highlights

The SARHM team found that:

- Incorporating co-regulation into HMRE programs took time and investment. Educators reported benefiting from ongoing coaching and reinforcement to provide co-regulation support and implement the strategies as intended.
- Educators reported that with practice, the co-regulation strategies improved youth engagement and reduced disruptions, such as youth talking over one another or using cell phones during the session.
- Successful integration of a co-regulation framework into HMRE programs required a partnership between researchers and practitioners that combined the wisdom and input of key stakeholders in the field.

Educators described the main result of the partnership—more important than the success or viability of any one strategy—was an overall shift in mindset. Educators reported a greater understanding of the importance of self-regulation in youth development, the significant role that educators play in promoting youths' self-regulation, and the types of interpersonal and environmental strategies they could implement to amplify the impact of their program.

Methods

The SARHM project occurred in three phases:

- **Phase 1** – We conducted a review of the scientific literature and youth-serving HMRE programs and curricula. Informed by the review, we developed an initial menu of co-regulation strategies and capacity building resources.
- **Phase 2** – We partnered with two youth-serving HMRE programs: a program serving a population in suburban high schools and a community-based organization serving young adults who were formerly in foster care. Each site selected strategies that best fit their organizational culture and context. We worked with these partners and consulted with

experts to further develop the training, strategies, capacity building supports, and design of the pilot for each site.

- **Phase 3** – We conducted formative rapid cycle evaluations (RCE) to pilot test and further refine co-regulation strategies and capacity building resources. During the RCEs, we collected data from administrators, program facilitators, trained observers, and youth about the implementation of co-regulation strategies. Together with the sites, we conducted a total of three learning cycles per site in which we analyzed feedback, refined the strategies, and tested them again. We then analyzed data from surveys, focus groups, site visits, and observations to assess the feasibility and acceptability of integrating co-regulation into pre-existing youth HMRE programs.

Recommendations

Next steps for developing and testing co-regulation strategies include:

- **Formative research and development.** This includes (1) additional development and refinement of strategies in different settings and with diverse populations; (2) more descriptive research on program dynamics relating to educator-youth relationships, peer interactions and norms, and adult self-regulation; and (3) a greater emphasis on coaching, training, and technical assistance for youth-serving programs.
- **Efficacy testing and effectiveness evaluation.** Once strategies and implementation supports are refined, their efficacy can be tested. Efficacy tests should focus on implementation indicators such as engagement and program completion and program outcomes including self-regulation, relationship skills, and well-being.

Glossary

Self-regulation: The act of managing thoughts and feelings to enable goal-directed behavior.

Co-regulation: The supportive process between an adult and a young person that promotes self-regulation. Co-regulation integrates three key types of support: (1) providing warm, responsive relationships; (2) helping youth find and create supportive environments; and (3) coaching and modeling self-regulation skills.

SARHM: Self-Regulation Training Approaches and Resources to Improve Staff Capacity for Implementing Healthy Marriage Programs for Youth

HMRE: Healthy Marriage and Relationship Education

Formative RCE: Short, iterative pilot testing of a strategy in a contained practice setting to collect timely and actionable feedback to strengthen the strategy design and implementation prior to scaling.

EXECUTIVE SUMMARY

As youth grow through adolescence and young adulthood, they assert their individuality by taking important and increasingly independent steps to separate themselves from their parents and caregivers (Petersen 1988; Steinberg and Morris 2001). These actions can move youth closer to or further away from achieving their long-term goals for education, employment, health, and relationship success. Youth need support to process emotions, cope with stress, and for *self-regulation*—managing thoughts and feelings to achieve goals and make healthy decisions in the moment and for the future. Caring adults such as parents, guardians, teachers, and coaches support the development of self-regulation skills from infancy through young adulthood through a process called *co-regulation*. Co-regulation happens when adults provide three kinds of support to youth: warm, responsive relationships; supportive environments structured to enhance safety; and self-regulation skills instruction, coaching, and modeling (Rosanbalm and Murray 2017). To provide co-regulation, adults must pay attention to their own capacity for self-regulation and take steps to nurture it (Rosanbalm and Murray 2017; Shonkoff 2012).

The Self-Regulation Training Approaches and Resources to Improve Staff Capacity for Implementing Healthy Marriage Programs for Youth (SARHM) project aimed to bring more focus to self-regulation development in programs for youth. SARHM was sponsored by the Administration for Children and Families (ACF) through a partnership between the Office of Family Assistance (OFA) and the Office of Planning, Research, and Evaluation (OPRE); it was conducted by Public Strategies and Mathematica. Specifically, SARHM's aim was to build on developmental psychology and prevention research on the adult role in youth self-regulation development to create resources for educators in Healthy Marriage and Relationship Education (HMRE) programs for youth (defined as ages 14 to 24).

The goal of youth-serving HMRE programs is to help program participants develop skills to form and maintain healthy relationships and avoid unhealthy ones. Typically providing services in a multisession group workshop, youth-serving HMRE programs cover topics such as how to foster healthy romantic relationships and friendships, make healthy decisions, resolve conflict, and avoid negative situations (Scott et al. 2017).

WHAT ARE THE OPPORTUNITIES TO PROMOTE SELF-REGULATION IN YOUTH PROGRAMS?

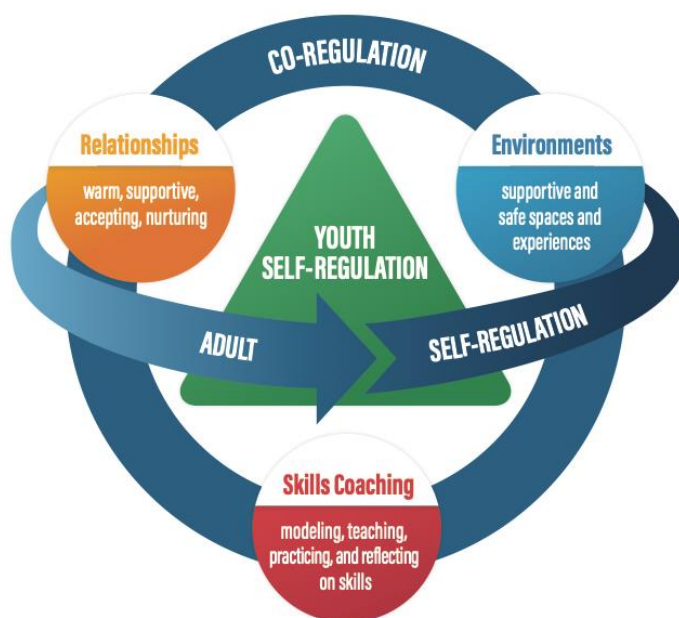
The vast majority of interventions for adolescents and young adults that could influence youth self-regulation outcomes—such as curricula related to leadership, empowerment, conflict resolution, and life skills—focus solely on skills instruction (Murray et al. 2016a). They usually do not incorporate adult co-regulation and do not fully reflect the neuroscience about how self-regulation develops (Murray et al. 2015; Eckert et al. 2015; Portnow et al. 2015; Shaffer and Obradović 2017). For example, interventions rarely address the training or support needs of the

adults charged with carrying them out, or the important role of adult self-regulation skill-modeling in participant skill acquisition. Furthermore, staff working in human services programs often deal with a high level of secondary trauma and may face adversity and stress in their own lives as well, enhancing the need for their own self-regulation support. These adults may need their own support and training in order to provide effective co-regulation support to youth (Rosanbalm and Murray 2017).

Integrating a co-regulation framework into school- and community-based HMRE programs for youth can potentially improve the quality of these programs and enhance their ability to foster youth self-regulation. The content of HMRE curricula provides opportunities to learn and practice self-regulation in real-life situations. Further, the components of self-regulation are critical for healthy and stable relationships. To fill in knowledge and practice gaps about how adults can support youth self-regulation development in existing HMRE programs, SARHM created co-regulation training and strategies for HMRE educators that could be used regardless of the curriculum or program setting. Developing strategies for interacting with youth and structuring the environment, rather than a new curriculum, supports broader application of co-regulation to other youth programs and settings beyond HMRE programs (Murray and Rosanbalm 2017b).

A theoretical model guided the translation of co-regulation into practical facilitation strategies for use in HMRE programs (Figure ES.1). In the center of the model, youth self-regulation is represented by a triangle, to connote cognitive, emotion, and behavior regulation. Encircling youth self-regulation are the three domains of co-regulation support—relationships, environments, and skills coaching—working together simultaneously. Adult self-regulation is pictured as an encompassing arrow, influencing the quality of co-regulation support and youth self-regulation development.

Figure ES.1. SARHM co-regulation theoretical model



HOW DID THE SARHM TEAM DEVELOP CO-REGULATION STRATEGIES FOR HMRE EDUCATORS?

The SARHM team partnered with two youth-serving HMRE programs to conduct formative rapid-cycle evaluations (RCEs) of co-regulation strategies: Children’s Harbor, in Pembroke Pines, Florida, and More Than Conquerors, Inc. (MTCI), outside Atlanta, Georgia (Table I.1). These two programs served different target populations and operated in different contexts, reflecting a diversity of youth-serving HMRE grantees. Both programs used popular HMRE curricula for their group workshops.

In a formative RCE, researchers and practitioners develop and pilot test a prototype of a new strategy on a small scale to generate feedback for improving its design and implementation (McCay et al. 2017). Through several iterative “learning cycles,” research and practice partners work together to implement the strategy, collect and analyze feedback on how well it worked, refine the strategy, and test it again. The SARHM team adapted the *Learn, Innovate, Improve* (LI₂) framework—a series of replicable, evidence-informed program improvement activities, supported by collaboration between practitioners and researchers—to co-create and refine a set of co-regulation strategies (Derr et al. 2017).

SARHM's main activities aligned with the phases of the LI₂ framework:

- **Learn.** The SARHM team reviewed literature on co-regulation and commonly used HMRE curricula and interviewed HMRE program staff about the services they provided while assessing their interest in adopting and testing a co-regulation framework.
- **Innovate.** The SARHM team developed an initial menu of co-regulation strategies. Then, the SARHM team worked collaboratively with Children's Harbor and MTCI to select and adapt strategies from the menu to fit each program's unique context and develop detailed implementation plans and training guides.
- **Improve.** Through three iterative learning cycles, Children's Harbor and MTCI piloted the co-regulation strategies, provided feedback, and worked with the SARHM team to refine the strategies.

The results of formative RCEs lay the groundwork for further testing, refinement, and evaluation of the strategies. In the short term, the results can provide guidance for programs and practitioners about strategies that may improve the capacity of staff to support youth self-regulation. In the longer term, further development and more rigorous evaluation of these strategies can build evidence for the field.

Learn: The SARHM team identified opportunities to integrate co-regulation in youth-serving HMRE programs

Literature review. The SARHM team reviewed literature to identify characteristics theorized to be important in each domain of co-regulation (Appendix A). Relationships should involve personal interactions with youth that are consistently compassionate, affirming, and supportive. Environments are characterized by settings that are safe and structured, offer opportunity for active participation, allow youth to contribute to norm setting, and create a positive program climate. Coaching should model and promote skill practice with the receipt of explicit feedback and opportunities for self-reflection. In addition, adults should model self-regulatory behaviors including emotion management, positive leadership, problem solving, and organizational skills. For caring adults to effectively coach and model, it is imperative that they be aware of and monitor their own self-regulation.

Review of HMRE curricula. We reviewed four commonly used HMRE curricula and one new (not yet used by HMRE programs) curriculum focused on self-regulation. These curricula touched on self-regulation skills but often did not provide instruction on basic aspects of self-regulation such as identifying and expressing feelings or opportunities to practice the skills with adult support. All of the curricula we reviewed covered at least one construct from each of the three self-regulation domains (emotion, cognitive, and behavior regulation). However, content tended to instruct youth to use a skill without specifying steps for how to use it, or without providing opportunities for practice and reflection. Emotion regulation was the least commonly addressed domain of self-regulation. The only co-regulation domain mentioned in the educator materials was warm and responsive relationships. Mentions were typically limited to general statements encouraging positive adult-youth relationships.

Interviews with HRME program staff. We interviewed staff at six ACF-funded HMRE programs. Across different contexts, ACF-funded HMRE programs touched on topics related to self-regulation, such as communication, decision making, problem solving, identifying life goals, and understanding healthy relationships. Programs reported including some content and staff training on topics related to self-regulation, but they did not make self- or co-regulation an explicit focus of training or observation. HMRE program staff expressed an interest in learning more about self-regulation and co-regulation, particularly to help them assist youth who admit to participating in risky behaviors and to manage their own stress and avoid burnout.

Innovate: The SARHM team collaborated with two HMRE programs to develop co-regulation strategies

Based on findings from the literature, the SARHM team developed a preliminary set of 23 co-regulation strategies that covered all three domains of co-regulation support (warm and responsive relationships, structuring the environment, and skills coaching) and incorporated self-care and support for program educators' self-regulation (Appendix B). Through on-site strategic planning meetings, Children's Harbor and MTCI managers, supervisors, and educators picked strategies from the set of 23 that they thought would fit well with their programs and address the needs of the youth they served. This resulted in 14 selected strategies, plus knowledge development, to be refined through the pilot.

Children's Harbor and MTCI selected a similar set of strategies but tailored them to their own contexts (Table ES.1). For example, both programs piloted positive praise strategies. Children's Harbor piloted a strategy in case management meetings that involved written notes that included the young person's name, praise for a specific behavior, recognition of the young person's effort, and the value of the young person's behavior to the program or community. MTCI piloted verbal praise in the group workshop that included the young person's name and praise for a specific behavior. The SARHM team provided two half-days of training to educators in both programs before the first learning cycle of the formative RCE.

Table ES.1. Strategies selected for the formative RCE

Strategy	Description
Workplace strategies for adult self-regulation	
Knowledge Development	Staff (educators, supervisors, and program managers) receive training on self-regulation, co-regulation, and youth development.
Environmental Scan	Educators complete a worksheet on the workplace environment, prompting them to notice and change stressors and barriers to productivity and focus.

Strategy	Description
Rest and Return	Staff establish an area in the workplace where they can take a break from experiencing intense emotions and take a physical or mental rest; staff can also take breaks, if needed, while working with youth in the community.
Positive Praise Notes	Educators exchange four-part positive praise notes (name + specific behavior + praise effort not natural ability + share value to the program or community).
Take Note	Educators practice mindfulness or “noticing” exercises in a group in the workplace or individually.
Take Note, Tag It, Tune In (T3)	Educators pause to notice sensations in the body, identify and write associated feelings, and use pre-identified strategies to “tune” or manage intense emotions if needed.
Personal goal setting	Educators complete a worksheet on small, achievable goals; identify action steps; encourage use of a “support buddy”; and discuss progress toward individual goals as a team.
Co-regulation prompts in supervision	Supervisor selects a self-regulation champion, uses tools for growth mindset in the workplace, and uses targeted questions in meetings to enhance reflection and intention to co-regulate.
Skills coaching for youth	
Bookending	Educator ends the group sessions with a prompt to practice or plan for use of a self-regulation skill from the curriculum; subsequently, educator begins group sessions or individual meetings with a prompt to reflect on use of strategies since the last group or meeting.
Breath to Refocus	Educator coaches youth to use deep breaths to regain focus during transitions or times of intense emotion and models the exercise for the youth.
Take Note	Youth practice brief mindfulness or “noticing” exercises in the group sessions or individually.
Warm, responsive relationships between educators and youth	
Welcoming strategies	Youth complete preferences worksheet on how they want educators to interact with them; educators greet each youth personally at each workshop and check in, one on one, with 1–2 youth during or after each class.
Positive Praise	In group sessions, two-part verbal praise (name + specific effort/behavior); in case management, four-part written praise (name + specific behavior + praise effort not natural ability + share value to the program or community).
Collaboratively structure the environment for youth	
Group Agreement	Educators solicit values/behaviors from youth, define them, and obtain visible agreement. Educators reference these values and allow youth to shift them as needed. Educators model and reinforce values and behaviors.
Rest and Return	Youth have permission to take a break if they are experiencing intense emotions and need a physical or mental rest; youth commit to returning when they feel better.

Improve: Children’s Harbor and MTCL conducted formative RCEs

The formative RCEs that Children’s Harbor and MTCL conducted consisted of three iterative learning cycles. In each cycle, educators piloted the co-regulation strategies and provided feedback on them. At the end of each cycle, the SARHM team analyzed feedback and other data collected, met with program staff to present the results and refine the strategies, retrained educators on the strategies as needed, and developed an approach for the subsequent learning cycle.

Each program’s structure influenced the design of its formative RCE. Children’s Harbor conducted three sequential four-week cycles over the summer of 2018. MTCL completed one cycle in the fall semester of the 2018–2019 school year and two in the spring. For the spring semester, the SARHM team divided the staff into two groups to pilot variations on the strategies simultaneously. The variations were designed for classes of different lengths and number of meetings per week. Eight educators at each program participated in the formative RCEs.

The SARHM team adapted existing measures and created new measures to establish a set of tools to assess educator knowledge gains after initial training, strategy use, and educator and youth feedback on the strategies. The measures included self-assessments for educators to rate their knowledge of self- and co-regulation and their use of co-regulation strategies during workshop sessions; a workshop session observation form; a youth questionnaire; and interview and focus group protocols. Appendix C provides additional detail about development of measures for the formative RCE.

Educators reported an increase in their own self-regulation skills and comfort with co-regulation strategies

Educators reported feeling more comfortable with co-regulation strategies over time and more confident using them in their personal lives and in the group workshops, despite initial discomfort. Primarily, adjustments made at the end of each learning cycle focused on strengthening implementation, such as providing more specific guidance for how and when a strategy should be used. Findings are as follows:

- **Educators reported that strategies encouraging warm and responsive relationships made them more conscious of what they were already doing.** Several educators told the SARHM team that they already did things like welcome youth when they entered a workshop space and provide positive praise, (although their procedures differed somewhat from the SARHM strategies). These strategies felt natural to them, and they told the SARHM team that learning about and trying the strategies helped them be more conscious about their actions and think about why the actions were important. They also reported a deeper understanding of how to apply co-regulation. For example, educators practiced Welcoming to focus on personally greeting every youth in the workshops. Before educators started focusing on intentionally greeting everyone, educators realized they may have missed greeting some youth because they were also focused on workshop preparation or speaking with someone else.

- **Coaching self-regulation skills helped educators shift their mindset and focus on modeling.** At first, educators saw some strategies, like Breath to Refocus, as a classroom management tool to get the group to calm down. After the initial learning cycles, the SARHM team provided retraining, visual cues, and more explicit direction about why and when to use the strategies. These additional supports helped educators understand that they were helping youth practice strategies they could use themselves to refocus when a situation became stressful or overwhelming. The educators reported that they began to see themselves as coaches instead of just teachers of a curriculum. According to the educators, this affected how they viewed and related to the youth in their program.
- **Specificity, reinforcement, and buy-in were essential for strategies to collaboratively structure a supportive environment.** Because program sessions took place in high school classrooms or a community agency, educators could make few changes to the program environment. Other programs that shared the space sometimes disrupted the environment by interrupting the group workshops. For the Group Agreement strategy, educators led youth through an exercise to identify and define a set of specific values youth felt would create a safe learning environment, then invited youth to adjust the values until they could all agree to uphold them. However, school staff often remained in the room to manage student behavior during HMRE workshops, and these staff typically did not honor the values that the group set. For example, staff often attempted to enforce school discipline policies while the educators were facilitating workshops. Educators also struggled to establish buy-in for the values, perhaps because the values tended to be nonspecific (“respect one another”) or mirrored the content and language of preexisting school rules (“no cell phones”), which may have indicated they were not truly youth-developed. Over time, educators in the two programs experimented with different ways to get youth buy-in for the values and practiced getting youth to be specific about values that were important for them to feel safe and secure in the group workshop.

WHAT DID THE SARHM TEAM LEARN ABOUT INTEGRATING CO-REGULATION STRATEGIES INTO HMRE PROGRAMMING?

The formative RCEs demonstrated that integrating co-regulation strategies into HMRE programming was feasible, and that the program staff found the strategies useful. Educators reported that the co-regulation strategies improved youth engagement. Educator feedback, however, suggests that some strategies were more comfortable to implement than others. In particular, educators reported having difficulty with strategies aimed at structuring a safe and supportive environment and addressing emotion regulation.

Incorporating the co-regulation strategies into the programs’ practices took time and investment. Program educators and supervisors had to remain open-minded and willing to try something

new, even if the strategy didn't connect with youth or feel natural right away. Educators reported valuing the reflection, troubleshooting, and problem-solving involved in the debrief sessions between learning cycles. Additionally, they needed ongoing support, coaching, and reinforcement to implement the strategies as intended.

The SARHM team's approach to conducting the formative RCE mirrored the co-regulation framework that educators used with youth. The SARHM team sought to establish warm, responsive relationships with the program staff, engaging them as co-creative partners in developing and refining the co-regulation strategies. The SARHM team structured a safe environment in which program staff felt comfortable trying out the strategies and felt empowered to provide feedback on them, good or bad, through the iterative nature and fast pace of the formative evaluation. Program staff reported benefitting from ongoing coaching throughout the formative RCE that prompted them to reflect on the use of the strategies, deepen their understanding of co-regulation and their influence on youth self-regulation development, and develop ownership of the strategies.

The main result of the SARHM team's approach—more important than the success or viability of any one strategy—was that educators reported an overall shift in their mindset, toward understanding their role as adults in supporting youth self-regulation development through warmth and responsiveness, modeling and coaching skills, and structuring the environment to promote safety and focused learning.

WHAT'S NEXT FOR BUILDING THE CO-REGULATION CAPACITY OF HMRE STAFF?

The SARHM study represents a critical first step to translate rigorous research and theory about self-regulation and adult co-regulation into actionable strategies for educators facilitating youth development programs. Adolescence provides a particularly salient time for self-regulation interventions in HMRE programs because rapid brain changes support the enactment of skills necessary for healthy peer and romantic relationships. The findings from the formative RCEs provide a strong foundation for additional development of co-regulation strategies and, eventually, evaluation of their efficacy and effectiveness. Possible next steps include formative research to develop and refine additional approaches to enhancing co-regulation, as well as assessing their efficacy and effectiveness.

Formative research and development

Formative evaluation can support the continued refinement and enhancement of the strategies developed for SARHM.

- **SARHM identified more potential strategies than could be piloted in the formative RCEs.** Additionally, some of the strategies programs selected—particularly ones aimed at creating a safe and supportive environment—were challenging to pilot.

- **Focus areas for the development of new strategies include supporting adult self-regulation and fostering emotion regulation.** Emotion regulation is an important component of healthy relationships, and skills such as conflict management and decision making—both impacted by emotion—are cornerstones of HMRE curricula.
- **More research needs to be done to understand the interactions of educators and youth in the program environment and to support additional ways to promote co-regulation.** In addition, more research is needed to understand the role of adult self-regulation in co-regulation and how youth perceive and talk about self-regulation.
- **A more robust training and coaching plan is needed to support implementation of the co-regulation strategies.** The SARHM team delivered two half-days of training at the beginning of the formative RCEs and re-trainings between learning cycles. Program staff indicated that more intensive and more frequent training would be beneficial. As with developing the co-regulation strategies, practitioners and researchers could collaborate to develop more systematic training options.

Efficacy testing and effectiveness evaluation

Once strategies and implementation supports are refined, their efficacy can be tested in a larger group of programs.

- **Strategies could be rolled out in a random sample of programs.** Outcomes in randomly-selected programs could be compared to outcomes in other youth-serving programs or of a matched comparison group of programs that share similar characteristics and serves a similar population as the programs implementing the strategies.
- **Small-scale efficacy assessments should focus initially on implementation outcomes, youth engagement, and other youth outcomes.** Qualitative impressions from the formative RCEs indicated that the co-regulation strategies showed promise for improving implementation factors such as educators' ability to deliver the intended curriculum, educator-youth relationships, youth attendance and participation in program activities, program completion, and engagement during the group sessions.
- **A rigorous effectiveness evaluation of a package of strategies could be conducted if the efficacy assessments show promise.** A cluster-randomized controlled trial with random assignment at the program level would compare programs with and without the use of co-regulation strategies alongside the curriculum and other program services. Another approach to assessing the impact of co-regulation strategies is to recruit a program delivering a large number of group sessions, and randomly assign classes within schools.
- **Support future research with continued development of co-regulation measures.** The results of pilot tests of the co-regulation measures the SARHM team developed

indicated that while the programs perceived the measures as useful overall, some aspects of the measures are not reliable and need further refinement.

Future planned SARHM publications will share tools, resources, products, and findings from other aspects of the study. This report summarizes the activities involved in developing and pilot testing co-regulation strategies through two formative RCEs with two youth-serving HMRE programs funded by ACF and shares lessons learned and implications for HMRE programming. Upcoming SARHM tools and resources can support the future development of co-regulation strategies. They include a brief for HMRE practitioners on building staff co-regulation skills, a brief on using observational measures in HMRE programs, a journal article on the feasibility of using a co-regulation model to improve the delivery of HMRE programs, and a toolkit and training materials for educators and program leaders interested in using co-regulation strategies in their programs.

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CHAPTER I. INTRODUCTION

Adolescence is a developmental period when youth begin in earnest to explore the life possibilities that lay before them. As youth move from adolescence to young adulthood, they assert their individuality, taking important and increasingly independent steps to separate themselves from their parents or caregivers (Petersen 1988; Steinberg and Morris 2001). These actions can move youth closer to or further away from achieving their long-term goals for education, employment, health, and relationship success. Society often expects youth to act as if they were adults. Sometimes, this means holding youth accountable for making mature choices that require strong emotional, behavioral, and cognitive regulation—the core components of self-regulation (Murray et al. 2019; Murray and Rosanbalm 2017a; Murray et al. 2015) (Figure I.1).

Neuroscience research shows that adolescent brains are still developing and that brain development continues into the third decade of life (Steinberg 2008). Areas of the brain that support self-regulation mature later than areas that control reward-seeking behavior and the processing of social cues and emotions (Casey et al. 2008; Luciana 2010; Spear 2000). This sequence of brain development helps youth learn to take risks that help them grow and learn new things, but it means that youth can also experience intense emotions that are difficult to manage alone. This can put youth at risk of feeling overwhelmed or of making decisions that favor short-term gain over long-term benefits, especially in the context of peer groups. At this stage of development, youth need support to process emotions, cope with stress, and make healthy decisions for their future.

Figure I.1

Understanding self-regulation

- Self-regulation is the act of managing thoughts and feelings to enable goal-directed behavior. It includes three interrelated domains:
 - **Cognitive regulation** includes planning, working memory, and adaptability, as well as perspective taking or considering alternatives.
 - **Emotion regulation** includes managing strong or unpleasant feelings and experiencing compassion and empathy.
 - **Behavior regulation** enables one to delay gratification, be consistent, set and achieve goals, and control impulses.

Adapted from Murray et al. (2016).

Youth develop self-regulation skills over time. Prolonged stress, traumatic experiences and environments, or a lack of supportive relationships can inhibit self-regulation development. However, the brain can repair and forge connections that foster self-regulation development when positive experiences replace negative ones (National Scientific Council on the Developing Child 2014; Romeo and McEwen 2007; Dahl 2004). Sustained positive experiences with caring adults are essential for forming brain connections, and positive experiences may buffer the effects of adverse childhood experiences (National Scientific Council on the Developing Child 2014).

Caring adults—such as parents, guardians, teachers, and coaches—support the development of self-regulation skills from infancy through young adulthood through a process called *co-regulation* (Figure I.2). Co-regulation happens when adults provide three kinds of support to youth: warm, responsive relationships; supportive environments structured to enhance safety; and self-regulation skills instruction, coaching, and modeling (Rosanbalm and Murray 2017). Through day-to-day interactions characterized by co-regulation, adults promote the development of self-regulation by helping children and youth practice their skills in understanding, expressing, and regulating thoughts, behaviors, and emotions in age-appropriate ways (Biglan et al. 2012; Murray et al. 2019; Sbarra and Hazan 2008). When adults provide co-regulation support, youth develop priorities that lead to healthy choices and long-term goal achievement, such as college graduation, career fulfillment, and secure romantic relationships (Grolnick and Farkas 2002; Moffitt et al. 2011; Rosanbalm and Murray 2017). To provide co-regulation, adults must also pay attention to their own capacity for self-regulation and take steps to nurture and model it (Rosanbalm and Murray 2017; Shonkoff 2012).

Figure I.2 Understanding co-regulation

Co-regulation is the supportive process between caring adults and youth that fosters self-regulation development. Theoretical literature suggests that parents, guardians, teachers, and coaches may improve the development of youth self-regulation by providing the three kinds of age-appropriate support.

- Building warm, responsive relationships by displaying care and affection, recognizing and responding to needs, and providing support in times of stress.
- Structuring the environment by buffering against conditions that make self-regulation difficult, creating consistency and predictability, and ensuring physical and emotional safety.
- Coaching self-regulation skills by modeling how to manage thoughts, feelings, and behavior, teaching strategies to cope with intense emotion, and creating opportunities for practice, reflection, and ongoing support.

Adapted from Rosanbalm and Murray (2017).

The nature of co-regulation varies by age and developmental stage (Rosanbalm and Murray 2017). During two key periods of rapid brain growth and self-regulation development—early childhood and adolescence—co-regulation may be especially important. In early childhood, adults are almost entirely responsible for children’s environments. Adults feed children when they are hungry, soothe them when they are upset, and provide more constant co-regulation support. Youth between the ages of 14 and 24 do not need constant support and supervision, but they need adults to support and coach them through emotional, stressful, or dangerous situations (Rosanbalm and Murray 2017). Effective co-regulation by a supportive adult can promote self-regulation enactment and allows youth to feel secure enough to practice new skills and learn from mistakes on the road to achieving their goals.

INCREASING HMRE STAFF CAPACITY FOR CO-REGULATION

Integrating a co-regulation framework into school- and community-based healthy marriage and relationship education (HMRE) programs for youth can potentially improve the quality of these programs and enhance their ability to support youth self-regulation (Figure 1.3). The content of HMRE curricula—how to encourage healthy romantic relationships and friendships, make healthy decisions, and avoid negative situations—provides opportunities to learn and practice self-regulation in real-life situations. Further, the components of self-regulation are critical for healthy and stable relationships. While some commonly used HMRE curricula cover skills that reflect the components of self-regulation, these curricula could benefit from more deliberate inclusion of self-regulation skills content, as well as enhanced training for staff that includes supporting youth self-regulation through co-regulation strategies.

Figure I.3

ACF’s Healthy Marriage and Relationship Education Grant Program

ACF funds organizations across the country, including a National Resource Center for Healthy Marriage and Relationship Education, to provide comprehensive healthy relationship and marriage education (HMRE) services, as well as job and career advancement activities to advance economic stability and overall improved family well-being. The Healthy Marriage and Responsible Fatherhood (HMRF) initiative, the umbrella initiative under which HMRE programs are housed, is a \$150 million discretionary grant program originally authorized under the Deficit Reduction Act of 2005 and reauthorized under the Claims Resolution Act of 2010. The Healthy Marriage and Relationship Education Grant Program (HMRE), New Pathways for Fathers and Families (New Pathways), and Responsible Fatherhood Opportunities for Reentry and Mobility (ReFORM) are part of HHS’ community-based efforts to promote strong, healthy family formation and maintenance, responsible fatherhood and parenting, and reentry opportunities for fathers returning from incarceration.

In a comprehensive literature review of approaches that support self-regulation development from early childhood through adulthood, interventions targeting adolescence were less prevalent than those for younger children, despite evidence that the brain matures and self-regulation skills develop into the mid to late twenties (Murray et al. 2016). Only about 10 percent of the interventions focused on high school youth and only about 6 percent focused on young adults (defined as ages 18-25). The review included interventions that not only explicitly targeted self-regulation, but also interventions that could influence self-regulation outcomes, such as curricula targeting leadership, empowerment, conflict resolution, and life skills (Murray et al. 2016). HMRE programs were not included in this review.

The high school and young adult self-regulation interventions identified in the review did not incorporate adult co-regulation and did not fully reflect the neuroscience of how self-regulation develops. Self-regulation develops through warm interactions in nurturing environments where adults coach youth to use self-regulation skills (Murray et al. 2015; Eckert et al. 2015; Portnow et al. 2015; Shaffer and Obradović 2017). For example, interventions rarely address the support needs of the adults charged with carrying them out, or the important role of adult self-regulation skill-modeling in participant skill acquisition. Staff working in human services programs often deal with a high level of secondary trauma and may face adversity and stress in their own lives as well. These adults may need their own support and training in order to provide effective co-regulation support to youth (Rosanbalm and Murray 2017).

In 2017, the Office of Planning, Research, and Evaluation (OPRE) within the Administration for Children and Families (ACF), Department of Health and Human Services, contracted with Public Strategies and its partner, Mathematica, to conduct the Self-Regulation Training Approaches and Resources to Improve Staff Capacity for Implementing Healthy Marriage Programs for Youth (SARHM) project. SARHM's purpose is to begin filling knowledge and practice gaps about how adults can support youth self-regulation development in existing HMRE programs (Figure I.4). SARHM aims to leverage findings from Murray and colleagues' work to bring more focus to self-regulation development in youth-serving HMRE programs, and to develop alternative strategies to didactic self-regulation skills instruction. Specifically, SARHM builds on developmental psychology and prevention research on the adult role in youth self-regulation development to create resources for educators in HMRE programs, including co-regulation training and strategies to help educators develop their own self-regulation.

Figure I.4

Self-Regulation Training Approaches and Resources to Improve Staff Capacity for Implementing Healthy Marriage Programs for Youth (SARHM)

SARHM aimed to increase the capacity of HMRE program staff to use co-regulation strategies in their programs with the potential to promote youth self-regulation development. To achieve this goal, the project carried out four main activities:

- A literature and curriculum review to synthesize targeted self- and co-regulation literature to inform development of co-regulation strategies.
- A measures scan to identify best practices and existing measures for assessing self-regulation, co-regulation, and the classroom environment.
- A formative rapid-cycle evaluation to develop and test co-regulation training approaches and strategies for HMRE practitioners with potential to improve young people's self-regulation.
- A measures pilot to develop, adapt, and test measures of co-regulation in HMRE programs for youth.

The resources developed under SARHM are intended for use by HMRE educators in programs serving youth ages 14 to 24, regardless of the curriculum they teach or the program setting. Educators often have more control over their classroom environment and their interactions with youth than with the curricula their schools and programs adopt. Developing co-regulation strategies, rather than a new curriculum, supports broader application to other youth programs and settings (Murray and Rosanbalm 2017b).

Adopting a co-regulation approach to program delivery has the potential to improve the implementation fidelity of HMRE and other programs for youth. Fidelity to a curriculum includes delivery of the intended content, as well as service dosage, quality of delivery, and participant engagement (Carroll et al. 2007). Programs often monitor the fidelity of their programming by focusing on adherence to the curriculum—in other words, delivery of the prescribed curricular content in a given amount of time (Berkel et al. 2011). Implementing co-regulation strategies may support other important dimensions of fidelity—such as dosage, quality, and youth engagement—by creating the conditions in which youth can better engage with and benefit from curriculum content, which in turn may improve program outcomes (Carroll et al. 2007). Co-regulation strategies could also improve other factors related to implementation, such as organizational culture and program climate. For example, strategies to improve adults' self-regulation may affect job satisfaction, helping educators feel supported and open to trying new approaches to deliver HMRE content.

FORMATIVE RAPID-CYCLE EVALUATION: A PARTICIPATORY METHOD FOR DEVELOPING CO-REGULATION STRATEGIES

The SARHM team partnered with two youth-serving HMRE programs to conduct formative rapid-cycle evaluations (RCEs) of co-regulation strategies: Children’s Harbor, in Pembroke Pines, Florida, and More Than Conquerors, Inc. (MTCI), outside Atlanta, Georgia (Table I.1). These two programs used popular HMRE curricula for youth in the age ranges they served.

In a formative RCE, researchers and practitioners develop and pilot test a prototype of a new strategy or innovative solution to a problem on a small scale to generate feedback for improving its design and implementation. Through several iterative “learning cycles,” research and practice partners work together to implement the strategy, collect and analyze feedback on how well it worked, refine the strategy, and test it again. The SARHM team adapted the *Learn, Innovate, Improve* (LI₂) framework—a series of replicable, evidence-informed program improvement activities, supported by collaboration between practitioners and researchers—to co-create and refine a set of co-regulation strategies (Figure I.4). This framework was developed by Mathematica in collaboration with OPRE and was informed by the Harvard Center on the Developing Child’s translational science model (Derr et al. 2017). LI₂ was developed to translate research and evidence into practical program strategies, especially in the context of designing innovative approaches to improving outcomes for children and youth facing adversity. In the *Learn* phase, programs clarify their goals and identify problems they need to solve. Programs define potential solutions in the *Innovate* phase, then prototype and refine them in a series of learning cycles during the *Improve* phase.

Table I.1. SARHM’s program partners

Program Characteristics	Children’s Harbor	More Than Conquerors, Inc. (MTCI)
Location	Pembroke Pines, Florida	Conyers, Georgia
Primary program setting	Community	Traditional high school
Population	17- to 23-year-old youth aging out of foster care	Primarily Latino and African American 9th-graders (14-15 years old)
HMRE curriculum	<i>Love Notes</i>	<i>Relationship Smarts Plus 3.0</i>
Services in formative RCE	Monthly group workshop, and individual case management and financial coaching sessions	Weekly group workshops during regular health and physical education classes

In SARHM, the activities of the formative RCEs aligned with the phases of the LI₂ framework.

Learn. We reviewed literature on co-regulation and commonly used HMRE curricula and conducted telephone interviews with and site visits to youth-serving HMRE programs to learn about the services they provided and assess their interest in adopting and testing a co-regulation framework. We also conducted planning workshops with program staff to learn more about the youth that Children’s Harbor and MTCI served, and the challenges in self-regulation capacity that educators and program staff observed.

Innovate. Based on findings from the literature and curriculum reviews, findings from program staff interviews, and input from an expert panel of researchers, practitioners, and curriculum developers, we created an initial menu of co-regulation strategies. Then, we worked collaboratively with Children’s Harbor and MTCI to select and adapt co-regulation strategies to fit each program’s unique context, and develop detailed implementation plans and training guides.

Improve. Through three iterative learning cycles, Children’s Harbor and MTCI pilot tested the co-regulation strategies during program activities, provided feedback, and refined the strategies.

Collaboration with staff in both programs was central to developing and refining the co-regulation strategies. Using formative RCEs (Figure I.5), we helped program staff infuse co-regulation into everything they did, from service delivery to staff support. We listened to the educators’ needs and interests and worked with them to develop and adapt strategies to fit their programs and their populations. Program staff at all levels had the opportunity to share their needs and goals related to self- and co-regulation, and they were active participants in selecting and tailoring co-regulation strategies for their sites.

The formative RCEs lay the groundwork for further testing, refinement, and evaluation of the strategies. In the short term, the results can provide guidance for programs and practitioners about strategies that may improve the staff capacity to support youth self-regulation. In the longer term, further development and more rigorous evaluation of these strategies can build evidence for the field.

Figure I.4. Learn, Innovate, Improve

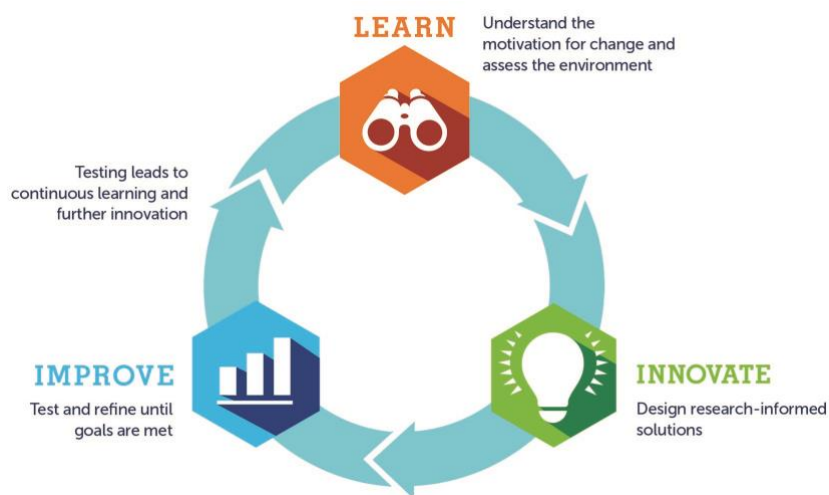


Figure I.5

Formative rapid-cycle evaluations at Children's Harbor and MTCI

Each of the two programs participating in SARHM, Children's Harbor and MTCI, conducted formative RCEs with three learning cycles to test and refine co-regulation strategies. Between each cycle, we explicitly used staff feedback in jointly adapting strategies, recognizing the expertise they developed through years of serving adolescents. The formative RCE also focused on building program capacity to integrate co-regulation strategies and enhance program effectiveness.

Children's Harbor: Children's Harbor completed three sequential learning cycles in July, August, and September 2018. Each sequential learning cycle was four weeks long, to align with the program's monthly schedule of group workshops and individual case management sessions.

MTCI: MTCI completed its first eight-week learning cycle during the fall 2018 school semester, followed by two simultaneous eight-week cycles during the spring 2019 school semester. The simultaneous cycles pilot tested variations in co-regulation strategies in different classroom settings and with different groups of educators. The second and third learning cycles concluded with a four-day, intensive overnight camp for youth during their spring break.

A GUIDE TO THE ORGANIZATION OF THE REPORT

In this report, we describe a collaborative process undertaken by the SARHM team, two HMRE programs for youth, and ACF to integrate co-regulation strategies into existing youth programming. We also describe the process used to develop, implement, prototype, and refine the strategies, as well as the strategies themselves. Other organizations can use this process to strengthen program models and implementation to prepare for a summative evaluation.

Chapter II describes site selection. **Chapter III** describes findings from a targeted review of literature on self- and co-regulation, the foundational work used to develop the co-regulation strategies that were tested. **Chapter IV** describes findings from a review of commonly used HMRE curricula for youth and select HMRE programs for youth funded by ACF's Office of Family Assistance, to identify opportunities to integrate co-regulation strategies into programming. **Chapter V** describes the process we used to further develop and select training approaches and strategies. **Chapter VI** summarizes preparations for the formative RCE, including our plan to measure self- and co-regulation and structure the learning cycles. **Chapter VII** shares key insights about the training approaches and strategies, based on the findings of the formative RCE and insights about the process of conducting a formative RCE. **Chapter VIII** suggests next steps for future research and evaluation to continue to enhance our understanding to improve adolescent self-regulation skills through co-regulation.

CHAPTER II. SELECTING YOUTH-SERVING HMRE PROGRAMS FOR THE FORMATIVE RCE

HMRE programs for youth offer services in both school- and community-based settings. Most programs deliver programming to youth in regular high school classes, such as health or family and consumer sciences. Some programs serve special populations, such as youth who are homeless or in residential treatment settings, and deliver programming in community-based locations. Across school- and community-based programs, educators deliver programming primarily in a group setting, using relationship education curricula developed for youth. In most programs, curriculum developers or master trainers train the educators to deliver the curriculum. Some programs, especially those operating in community-based settings, also provide individual case management to youth. In this chapter, we describe the process and criteria we used to select two youth HMRE programs for participation in the formative RCE, as well as an overview of the selected programs.

Figure II.1
Selection criteria

- **Program setting:** One school-based and one community-based program
- **Capacity:** At least four program educators available to participate at each site and a manager or supervisor dedicated to driving the formative RCE and being the point of contact
- **Age of youth:** One program served youth ages 14 to 18; the other served youth ages 17 to 23
- **Target population:** One universal program and one targeted program
- **Implementation:** The programs did not have any significant implementation challenges
- **Interest:** The programs were interested in learning about co-regulation and participating in the formative RCE

We selected programs with the capacity to participate in a formative RCE that included program features typical of other HMRE programs serving youth. To begin the site selection process, the SARHM team reviewed information on all 46 HMRE programs funded by ACF's Office of Family Assistance (OFA) in the 2015–2020 grant period and identified 31 programs serving youth ages 14 to 24. Our review included continuing grant applications, interviews conducted by technical assistance providers, and technical assistance records. We documented each program's setting, target population, curricula, staffing plan, program schedule, program context, service

delivery approaches, and evaluation activities. We used this information to select candidate programs for the formative RCE. Later in the project, we used this information to align the initial co-regulation strategies to the selected programs' contexts and operations.

In order for results to apply broadly, we sought to select HMRE programs for the formative RCE that had program features and target populations similar to typical HMRE programs (Figure II.1). We also sought programs with the capacity to participate in the formative RCE (e.g., where enough available educators were on staff to test and provide feedback on the co-regulation strategies during each learning cycle).

Using these criteria, along with recommendations from federal program specialists at OFA, we selected eight candidate programs to consider for participation in the formative RCE. Of these, we interviewed six program directors interested in SARHM to learn about (1) their program model, staffing, and implementation plans; (2) the extent to which their program addressed self-regulation concepts and skills; and (3) their interest in and capacity to participate in the formative RCE (Table II.1). All program directors expressed interest in self- and co-regulation but varied in their capacity to participate in the RCE. Some, for example, could not commit program staff to work with us to oversee the formative RCE. In addition, some programs were already engaged in other training efforts such as training educators on adolescent development or motivational interviewing, or integrating mindfulness exercises into programming.

Table II.1. HMRE programs selected for phone interviews

Grantee name	Location	Setting	Youth ages and characteristics	Curriculum used	Case management
Auburn University	Auburn, Alabama	School	14–18; traditional high school population	RS+; Love Notes	No
Bethany Christian Services	Grand Rapids, Michigan	Community	14–24; homeless youth and youth aging out of foster care	Teen Outreach Program; Love and Logic	Yes
Children's Aid Society	Clearfield, Pennsylvania	School and community	14–24; at-risk population	RS+	Not reported
Children's Harbor	Pembroke Pines, Florida	Community	17–23; youth aging out of foster care	Love Notes	Yes
Family Resources, Inc.	Clearwater, Florida	School and community	14–18; at-risk population	Love Notes	No
Illinois State University	Normal, Illinois	School	15–24; low-income population	Love Notes	Yes
More Than Conquerors, Inc.	Conyers, Georgia	School	14–18; traditional high school population	RS+	Limited

Strong Families Strong Wyoming	Cheyenne, Wyoming	School and community	14–18; traditional high school, out-of- school youth, and alternative school populations	Connections; Love Notes; RS+	Yes
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Note: RS+ = Relationship Smarts PLUS 3.0. Two programs, Children’s Aid Society and Family Resources, Inc., did not participate in telephone interviews.

In consultation with ACF, we selected three programs for site visits. The purpose of the site visits was to assess the programs’ feasibility for inclusion in the RCE and to learn more about their program context, target population, and program operations. During the visits, we explored the program setting, assessed service delivery schedules and their alignment with the RCE timeline, observed workshop sessions, and talked with educators and staff about the self-regulation challenges faced by their participants. We also met with program leaders to review implementation documents, organizational charts, and curricula, and to discuss their capacity to support the formative RCE. Important considerations for the feasibility of a formative RCE, presented in Table II.2, include a service delivery schedule that could accommodate three iterative learning cycles, sufficient time for educators to practice the strategies and provide meaningful feedback, and program capacity to host training and assist with data collection.

Table II.2. Feasibility considerations for the formative RCE

Consideration	Description
Service delivery schedule	The HMRE workshop schedule could accommodate three learning cycles of four to eight weeks, with time between cycles to debrief and retrain if needed.
Frequency of service delivery	Educators could provide services frequently enough to test the strategies and provide feedback in each learning cycle.
Educators’ capacity	Educators would not have other responsibilities that could interfere with providing feedback on the strategies at least weekly.
Ability to collect data from youth	Program could assist with recruiting youth to participate in focus groups and help obtain parental consent for youth younger than age 18.
Coordination capacity	Program leaders could regularly observe educators, communicate with the SARHM team, and provide feedback.
Staff training logistics	The program would have the capacity to host a two-day training on co-regulation strategies before launching the first learning cycle.

FORMATIVE RCE SITES

Children’s Harbor and More Than Conquerors, Inc. (MTCI) agreed to participate in the formative RCE. These programs served different target populations, used different curricula, and operated in different contexts, reflecting the diversity of youth-serving HMRE grantees (Table II.3). For example, Children’s Harbor operated in a community setting, and MTCI provided workshops in a traditional high school setting. Children’s Harbor served a targeted population of youth 17 to

23 years old who were aging out of foster care, and MTCI served a general high school population of primarily 9th-grade students. Both programs used popular HMRE curricula for their group workshops—Children’s Harbor used Love Notes, intended for older youth, whereas MTCI used Relationship PLUS Smarts 3.0, which was developed for 13- to 18-year-olds. Our team consulted with OFA and determined that both programs had the capacity to support a formative RCE, including the ability for educators to provide regular feedback and for program leaders to observe classes, as well as the ability to bring together staff for a two-day training.

Table II.3. Characteristics of the HMRE programs selected for the formative RCE

Program characteristics	Children’s Harbor	More Than Conquerors, Inc. (MTCI)
Primary program setting	Community-based	School-based
Target population	Youth ages 17–23 aging out of foster care	9th-grade high school students
Group workshop characteristics	Foster care service office and community room at an apartment complex for youth aging out of foster care in Broward County, Florida	9th-grade health classes at four suburban Atlanta, Georgia high schools ^b
Group workshop frequency and length	Monthly for 2.5 hours	Weekly 90- or twice weekly 50-minute classes, depending on the school
Curriculum^a	Love Notes (Pearson 2016)	Relationships Smarts PLUS 3.0 (Pearson 2013)
Other services	Monthly case management meetings and twice-monthly financial coaching sessions at youths’ homes	None
Program duration	One year	One school semester
Number of educators	Five educators and two financial coaches	Eight educators
Educator characteristics	All women; nearly all Black or Latino; former foster care workers	Six men and two women; nearly all Black or Latino; former or current youth leaders
Years agency has provided HMRE program services	3 years	13 years

^a Both curricula are distributed by the Dibble Institute and cover positive youth development, healthy relationships, dating violence, pregnancy prevention, and life skills. Thirteen 2015–2020 OFA grantees report using Love Notes, developed for youth ages 15 to 24. Nine current grantees report using Relationship Smarts PLUS 3.0, developed for youth ages 13 to 18.

^b During the 2018–19 school year, MTCI added a four-day, overnight camp for youth that took place during their spring break when school was not in session. This was not initially part of our plans for the formative RCE, but we ended up including it. More information is in Chapter VI.

CHAPTER III. REVIEWING THE LITERATURE TO DEVELOP CO-REGULATION STRATEGIES

The framework adapted for SARHM, LI₂, has three phases: *Learn*, to understand and diagnose challenges within a program environment; *Innovate*, to develop evidence-informed strategies to address challenges; and *Improve*, to prototype and refine the solutions using a formative RCE. As part of the *Learn* phase, the SARHM team conducted a thorough knowledge assessment to set the stage for the development of co-regulation strategies tailored to the context of youth-serving HMRE programs. Our assessment included a review of three sources to identify key characteristics and opportunities for applying self-regulation and co-regulation theory to practice. The sources were (1) literature focused on youth self-regulation and adult co-regulation, (2) content of commonly used HMRE curricula for youth, and (3) characteristics and practices of current youth-serving HMRE programs. This knowledge assessment served as the foundation for developing a set of co-regulation strategies in the *Innovate* phase. In this chapter, we present the process and key findings of our literature review. In the next chapter, we summarize the results of our assessment of youth-serving HMRE curricula and programs.

REVIEW OF ACF REPORTS ON SELF-REGULATION, POSITIVE YOUTH DEVELOPMENT, AND HMRE

The first step of our knowledge development involved close examination of several ACF publications focused on self-regulation, positive youth development, and youth HMRE programming, including the following:

- Reports and briefs from OPRE's Self-Regulation and Toxic Stress Series (Murray et al. 2015; Hamoudi et al. 2015; Murray et al. 2016a; Murray et al. 2016b; Rosanbalm and Murray 2017)
- OPRE's Youth Education and Relationship Services (YEARS) project describing organizations providing youth HMRE services between 2011-2015 (Scott et al. 2017)
- Studies of academic and job readiness interventions, including OPRE's Goal-Oriented Adult Learning in Self-Sufficiency (GOALS) project (Cavadel et al. 2017) and Evaluation of Employment Coaching for TANF and Related Populations (Kautz and Moore 2018)
- Publications listed in the Office of Adolescent Health's Positive Connections with Supportive People research review (Office of Adolescent Health 2016), the Family and Youth Services Bureau's Positive Youth Development resources (Bowers et al. 2014; Futch Ehrlich et al. 2016; Burrus et al. 2012; Ben-Eliyahu et al. 2014), and 4-H's Thriving Model for Youth Development Programs (Arnold 2018).

Figure III.1

Select youth self-regulation and adult co-regulation skills that align with HMRE programming

Youth self-regulation skills

- **Emotion regulation:** labeling, expressing, and managing feelings; tolerating distress and self-calming; mindfulness, empathy and compassion, and cognitive reframing
- **Cognitive regulation:** setting and committing to goals; problem solving, decision making, perspective taking, and cognitive flexibility
- **Behavior regulation:** delaying gratification, healthy behavioral coping, conflict resolution, prosocial and compassionate communication, persistence in the face of strong emotions

Adult co-regulation skills

Warm, responsive relationships

- Respond with warmth and empathy; avoiding harsh, judgmental, or shaming remarks
- Validate and offer support during times of intense emotion and stress
- Share perspectives; allow youth to make decisions and experience natural consequences
- Show and encourage compassion for self and others
- Maintain unconditional positive regard and promote a healthy sense of belonging
- Communicate respect and interest in the lives of individual youth

Structuring the environment

- Engineer peer and group norms and interactions that promote safety and a positive climate in which mistakes are a natural part of learning
- Ensure physical and emotional safety
- Provide and maintain clear rules, boundaries, and reasonable consequences to incentivize good choices
- Monitor and limit opportunities for risk taking, offer anticipatory guidance
- Provide space and time for calming down in times of conflict, stress, or strong emotions
- Provide environmental prompts to reinforce skill use

Coaching and modeling self-regulation skills

- First teach and model self-regulation skills, then reinforce and scaffold skill use, providing opportunities for practice, planning, and reflection
- Coach labeling and awareness of emotions
- Teach strategies to tolerate and manage stress and calm down
- Encourage help-seeking behavior among participants when they are in danger or overwhelmed
- Support longer-term goal setting, self-monitoring of progress, and persistence
- Practice interpersonal communication skills for healthy relationships
- Coach problem solving for complex situations, including in-the-moment decision making and anticipating challenging and problem solving in advance
- Encourage decision making that aligns with and supports goals and promotes health and well-being

Adapted from Murray et al. (2015); Rosanbalm and Murray (2017).

As we reviewed ACF publications, we identified key constructs to guide the next phase of literature reviews. These subsequent reviews, used to develop co-regulation strategies, included a broader literature review on the application of co-regulation, as well as a review of HMRE curricula and programs. In particular, we used two conceptual models found in ACF's Self-Regulation and Toxic Stress Series to guide our approach: the self-regulation model developed by Murray and colleagues (2015) and a co-regulation model developed by Rosanbalm and Murray (2017). In reviewing the models, we considered the various kinds of self-regulation skills youth develop over time and the skills adults can use to provide co-regulation support that meet youths' needs based on youths' developmental stage and personal experiences. These considerations, combined with the team's knowledge of HMRE programming informed our selection of the self- and co-regulation skills most relevant to HMRE programming to focus our review (Figure III.1). The two main concepts of the theoretical models (youth self-regulation and adult co-regulation) and their components (emotion, cognitive, and behavior regulation and warm, responsive relationships, supportive environments, and skills coaching) became the framework that guided the rest of our reviews during the *Learn* phase.

EXPANDED LITERATURE REVIEW STRATEGIES

The goal of the literature search was to identify practical, evidence-based or evidence-informed strategies that mapped to one or more components of co-regulation and could be adapted for use with 14- to 24-year-olds in HMRE programs. We also reviewed literature to support the development and testing of training approaches for staff, such as articles about instructional design best practices, self-regulation measures, and practitioner resources. Our initial search of literature databases returned only a handful of relevant results; as a result, we broadened our search criteria and sources.

An initial database search gathered recently published articles about approaches to supporting youth self-regulation. The authors of ACF's Self-Regulation and Toxic Stress series conducted a comprehensive review of articles on self-regulation interventions for youth ages 14 to 24, published through 2013. Using search terms derived from the review included in the series, we searched the PsycINFO database¹ for articles published between 2013 and 2017 that described interventions, programs, prevention strategies, curricula, or training. The search revealed more than 7,000 articles, which we culled by applying a major subject heading of *self-regulation*.² This initial search returned 121 citations. As a first screen, we reviewed the titles of the articles for relevance. Only a small handful discussed concepts or approaches related to co-regulation.

Because there were so few citations, we expanded our initial search by adding a database, new search terms, and search methods. The second search was conducted in the

¹ PsycINFO is a comprehensive library of peer-reviewed journals in the behavioral and social sciences fields.

² Major subject headings are standardized terms applied by an indexer in some literature databases to categorize articles covering similar topics.

ERIC database³ and included a new set of terms to describe adults who support youth self-regulation (such as parents, teachers, coaches, and mentors). To this list of citations, we applied the major subject heading of *emotion regulation*, along with *self-regulation* in PsycINFO.⁴ This search produced 150 citations; as with the first search, however, few appeared to be relevant to the aims of our review.

Along with the database search, we used three additional search strategies. We asked our expert panel to nominate additional articles. We used a technique known as “citation harvesting” to identify relevant articles that had cited either key reports from our list of foundational literature or highly relevant articles. And, we used snowballing to identify relevant publications from the reference lists of particularly useful articles. Relevant works published before 2013 were included if they were referenced in a paper published after 2013. Finally, we searched the Substance Abuse and Mental Health Services Administration’s (SAMHSA) National Registry of Evidence-Based Programs and Practices, a resource of evidence-based interventions for prevention and treatment programs that includes HMRE programs, for practices related to self-regulation and emotion regulation.

Ultimately, 71 full-text articles were relevant for full-text review. First, we screened out articles that were not written in English, that focused on interventions for youth diagnosed with developmental delays or autism spectrum disorder, and that required a clinical degree to deliver. We also excluded articles if the setting, context, population, or strategy described was not relevant for SARHM (for example, we screened out a study evaluating the impact of a computerized nutrition education intervention for adults). We did not limit our full-text review to interventions, as there were only a handful of relevant co-regulation interventions found, so qualitative and theoretical papers were included. This left us with 202 articles. We then excluded articles that did not relate to at least one domain of co-regulation or best practices for designing training approaches, which left us with 71 articles for full review. Additional details about our literature search strategy and criteria, including specific search terms and screening results, are provided in Appendix A.

CONSIDERATIONS FOR CO-REGULATION STRATEGIES

The themes that emerged from our review build on the solid theoretical and empirical foundation in the self-regulation literature and advance the translation and application of that science into relationship education programming for youth. While most of the papers in our review did not use the term co-regulation, the articles described strategies for supporting youth self-regulation that related to at least one of the three co-regulation domains, although few covered all three domains. Warm and responsive relationships was the most frequently discussed domain (38 articles), followed by coaching and modeling self-regulation skills (31 articles) and structuring

³ ERIC is a federally sponsored online library of literature related to education research.

⁴ ERIC does not index major subject headings.

the environment (28 articles). Only thirteen articles covered all three domains. The themes that emerged are described in the sections below. First, we discuss the three domains of co-regulation. Adult self-regulation is discussed separately, because the importance of its role in co-regulation emerged as a key literature review finding. Figure III.2 summarizes the themes from the literature review, grouped by co-regulation domain.

Warm and responsive relationships

Compassionate, collaborative, and nonjudgmental adult–youth relationships—including those with nonparental adults—establish the foundation for self-regulation skills coaching, enhance youth motivation, and promote self-regulation development. Most publications noted the important link between adult–youth relationship quality and outcomes related to self-regulation, such as academic performance, reduced aggression and violence, and school climate. Several sources noted that, especially for youth facing adversity, important nonparental adults are a major source of co-regulatory support, often providing more warmth and nonjudgmental advice than parents and peers and mediating the impact of self-regulation interventions (Beam et al. 2002; Chen et al. 2003; Torrente et al. 2015).

This theme suggests the importance of ensuring educators are aware of the impact of their relationship with youth on youth outcomes.

Figure III.2

**Summary of themes from the literature review,
grouped by co-regulation domain**

Adult–youth warm and responsive relationships:

- Compassionate, collaborative, and nonjudgmental adult–youth relationships—including those with nonparental adults—establish the foundation for self-regulation skills coaching, enhance youth motivation, and promote self-regulation development.
- When adults provide meaningful praise, one-on-one attention, and opportunities for fun, and actively collaborate with youth to control the environment, youth experience warmth, acceptance, mutual respect, and responsiveness in their relationships with adults.

Structuring the environment:

- Having a positive relationship with an adult contributes to youths' sense of a supportive, nurturing environment. A classroom climate that encourages warm, responsive relationships between youth and adults enhances self-regulation. The environment is made up of tangible and intangible properties, both of which may influence self-regulation.
- Youth benefit from thinking about ways their environment can be structured to provide support and reduce risk.

Coaching and modeling self-regulation skills coaching:

- Youth benefit from explicit coaching support from caring adults through modeling, practicing, planning, observation, and reflection to scaffold—or support—their self-regulation enactment.

Adult self-regulation:

- Strategies to enhance adult self-regulation offer a promising approach for youth self-regulation development.
- The self-regulation enactment of youth not only influences their relationships, it also influences the self-regulation enactment of the adults, peers, and romantic partners in their lives.
- A variety of strategies enhance adult self-regulation, including personal self-care practices, a supportive work environment, positive professional and personal relationships, and self-regulation knowledge development.

When adults provide meaningful praise, one-on-one attention, and opportunities for fun, and actively collaborate with youth to control the environment, youth experience warmth, acceptance, mutual respect, and responsiveness in their relationships with adults. When adult–youth relationships are characterized by a sense of connection and reciprocal learning, youth demonstrate reduced emotional symptoms and problem behaviors (Smith and Bradshaw 2017; Zeldin et al. 2013). Relationships that support self-regulation involve actions that youth interpret as demonstrations of respect, meaningful praise, positive control, responsiveness to youth needs and preferences, youth expression, and youth autonomy (Gillespie 2015; Lichtinger and Leichtentritt 2016; O'Donovan 2015; Smith and Bradshaw 2017; Torrente et al. 2015; Zeldin et al. 2014). One article noted the prevalence of micro-aggressions—indirect, subtle, or unintentional discrimination—by educators in community college classrooms and their negative impact on student learning, regulation, and climate for youth ages 18 to 25, suggesting the potential benefit of strategies to enhance compassionate and empathetic relationships and positive interactions (Suárez-Orozco et al. 2015). For parents, high quality relationships often involved arranging fun and engaging activities with their teens. This was a factor in increasing executive functioning in a population with a high juvenile crime rate (Ralph and Sanders 2003), suggesting the potential for other important adults (such as teachers and coaches) to enhance executive functioning through playful activities with teens. Adults that had a positive influence on youth self-regulation development demonstrated acceptance, warmth, and responsiveness through positive reinforcement of desired behaviors; educator knowledge of students' lives outside school (stressors, relationships, contexts); nonjudgmental acceptance, trust, and mutual respect; explicit classroom norms and expectations; and a sense of collaboration.

This theme suggests strategies targeting accepting, warm, and responsive behaviors may be promising for promoting co-regulation between educators and youth.

Structuring the environment

Having a positive relationship with an adult contributes to the sense of a supportive, nurturing environment for youth (Torrente et al. 2015). A classroom climate that encourages warm, responsive relationships between youth and adults enhances self-regulation. Biglan (2012) describes nurturing environments as those that minimize toxic social, biological, and socioeconomic conditions; teach, promote, and reinforce prosocial behavior; monitor and limit opportunities for problem behavior; and promote mindful psychological flexibility. He suggests that nurturing environments are a force to combat mental, emotional, and behavioral disorders. Brackett (2011) found that when the classroom environment is emotionally supportive, and youth perceive a positive relationship with their teachers, youth misconduct decreases. Steinberg (2007) and others have described the influence of environment and peer relationships on risk taking. Young people's sense of safety (both emotional and physical) contributes to their ability to tolerate stress, practice self-regulation skills, and use their cognitive control center for healthy decision making. Context, both relational and physical, influences self-regulation enactment, and self-regulation enactment influences context (Farley and Kim-Spoon 2014).

This theme suggests strategies to promote positive peer-to-peer and educator–youth dynamics may, in turn, influence youths’ sense of emotional safety, their self-regulation, and the classroom climate.

The environment is made up of tangible and intangible characteristics, both of which influence self-regulation. In our review, descriptions of the environment included both tangible, physical characteristics (for example, classroom configuration) and intangible characteristics (for example, a sense of emotional and physical safety), both of which influenced self-regulation enactment. Tangible environmental factors that promoted positive outcomes included posters and wallet-sized cards reinforcing skills or cuing practice of concepts (Ford and Blaustein 2013), arranging the classroom so that students can see each other (Mazza et al. 2016), and posting the class routine and referencing it regularly (Kohler-Evans and Barnes 2015). Intangible environmental factors included group norm-setting combined with accountability reinforcements (Smith and Bradshaw 2017); avoiding negative interactions and enhancing positive interactions during class; working in teams toward a shared goal; active, diverse learning environments that promote prosocial behaviors (Lichtinger and Leichtentritt 2016; O’Donovan 2015); and using a trauma-informed approach to facilitation to improve youths’ sense of safety, which in turn enhances learning (Embry and Biglan 2008; Ford and Blaustein 2013). Positive school climate influences self-regulation, which can affect other youth outcomes such as decreased absenteeism for older youth and decreased anxiety and depression for all youth (Hendron and Kearney 2016; Smith and Bradshaw 2017).

This theme suggests strategies for structuring the environment to promote self-regulation should influence the physical space in which programs are offered, as well as the social norms and perceptions of youth about how supportive the environment feels to them.

Youth benefit from thinking about ways their environment can be structured to provide support and reduce risk. Using anticipatory guidance and collaborative problem solving can help youth prepare for and respond to situations in their social or environmental contexts that support healthy decision making (Jensen and Nutt 2015; Lichtinger and Leichtentritt 2016). For example, if youth express a goal about learning communication skills in a workshop, they can be prompted to consider barriers to learning the skill (such as cell phone use) and develop context-based solutions to achieve their goal (such as storing phones in a box for class). These concepts lie at the intersection of environmental structuring and skills coaching, but we include them here because they relate to how youth make decisions about their contexts.

This theme suggests educators have an important role in helping youth identify and create supportive and productive environments. Strategies to influence the environment should involve educators prompting youth to consider their goals for that context, and seeking youth input to find supportive solutions.

Coaching and modeling self-regulation skills

Youth benefit from explicit coaching support from caring adults through modeling, practicing, planning, observation, and reflection to scaffold⁵ their self-regulation enactment. Because our targeted search did not identify any literature on co-regulation interventions, we reviewed recent theoretical, qualitative, and conceptual articles discussing the ways adults can support youth self-regulation through coaching, modeling, and reinforcing skills (for example, by promoting self-reflection and self-monitoring, and by offering opportunities for practice and experiential learning). Self-regulation-related skills coaching has been studied in academic, athletic, social, therapeutic, and home contexts. This research suggests that adult support and coaching of self-regulation skills is an important lever for skill enactment (DiGiacomo and Chen 2016; Osher et al. 2016). However, simply telling a youth to use a self-regulation strategy, such as “express your feelings,” is unlikely to enhance that person’s ability to understand, communicate, and regulate emotion. From a developmental perspective, skills enactment becomes increasingly complex in adolescence and young adulthood and builds on prior skill mastery (Biglan et al. 2012; Haydon and Kendall-Taylor 2015). Yet, as Murray and colleagues (2016) found, a limited number of interventions for middle school students promote positive emotion regulation outcomes.

This theme suggests important gaps exist in the explicit teaching and coaching of self-regulation skills for this age group, particularly related to emotion regulation. Strategies should seek to fill that gap.

In addition to the process of skills coaching, the literature review focused on the kinds of evidence-based or promising skills that HMRE educators could coach. In addition to integrating the components of the skills coaching process, these specific skills should be considered when developing strategies, with adaptations for the context and youth being served.

- **Mindfulness and breathing techniques** can influence youth self-regulation enactment in terms of acceptance, self-efficacy, distress tolerance, and emotion regulation (Cavadel et al. 2017; Kohler 2015; Metz et al. 2013; Smith and Bradshaw 2017; Zenner et al. 2014).
- **Active, hands-on practice**, such as role plays, implementation intention (defining a concrete plan to take action to achieve a goal), and peer discussion have demonstrated impacts on self-regulation enactment beyond knowledge acquisition (Cavadel et al. 2017; Collins and Durand-Bush 2014, Mazza et al. 2016). For example, Collins and Durand-Bush (2014) identified forethought, performance strategies (such as letting go of mistakes), and self-reflection among the key strategies that coaches used to help athletes strengthen self-regulation.
- **Goal-setting** that includes specific components known to improve outcomes can be used to influence self-regulation enactment. For example, monitoring and self-reflection

⁵ Scaffolding is when an adult or more capable peer assists an adolescent in handling a challenge that is slightly more advanced than the skills they have mastered.

are often included as critical factors in goal-setting practices that support commitment over time (Nicol and MacFarlane-Dick 2006), an outcome of importance both to program engagement and to healthy relationships. Research indicates that self-regulation interventions to improve academic performance (sometimes called “self-regulated learning”) are most effective if they include explicit training in monitoring and self-reflection (DiGiacomo and Chen 2016; Ralph and Sanders 2003; van Genugten 2017). Adult monitoring of youth behavior in varied environments is linked to better self-regulation (van Genugten 2017).

- **Evidence-based kernels** have demonstrated the power to reliably affect key self-regulation related behaviors in youth (Embry and Biglan 2008; Gottesman 2016). Evidence-based kernels are fundamental units of behavioral influence composed of indivisible and discrete procedures that produce reliable and consistent outcomes. Such strategies include verbal or written specific praise, positive practice, public commitment, and pleasant greetings. These kernels are often the basis of effective social-emotional learning and parenting interventions (Embry and Biglan 2008).

Overall, our review suggests that the three co-regulation domains converge to enhance self-regulation. Although most of the articles we reviewed described strategies in only one of the co-regulation domains, taken together, article findings influenced our thinking on how the three domains of co-regulation might interact to support youth self-regulation. For example, collaboratively structuring the environment can foster warm and responsive relationships between adults and youth. That environment is enhanced, in turn, by these positive relationships. A supportive and safe environment enables youth to feel comfortable practicing self-regulation skills, a key component of skills coaching. Skills coaching can likewise reinforce a warm and responsive relationship when adults provide meaningful praise for youth self-regulation enactment and are nonjudgmental, modeling self-regulation themselves.

This theme suggests sites would benefit from trying multiple strategies that target different domains of co-regulation at the same time for maximum impact.

THE ROLE OF ADULT SELF-REGULATION FOR CO-REGULATION

Although adult self-regulation was not pictured as a construct in the co-regulation theoretical model used to guide our review, the literature identifies the importance of adult self-regulation for the provision of co-regulation support. For example, key considerations noted in Rosanbalm and Murray’s 2017 co-regulation practice brief include delivering interventions with demonstrated effects on parental self-regulation and identifying ways to support staff in their own self-regulation capacity. Our review validated these recommendations, revealing important subtleties about the connection between adult and youth self-regulation; suggested that support for adult self-regulation should be prioritized when working to improve staff co-regulation capacity; and identified promising approaches to consider in the development of strategies.

Strategies to enhance adult self-regulation offer a promising approach for youth self-regulation development. The literature connects positive youth behavior outcomes in the classroom to educator ability to remain regulated amid students who are not. In addition to a healthy classroom climate, self-regulation of parents and caregivers is described as foundational to reinforcing youth self-regulation enactment (Eckert et al. 2015; Gillespie 2015; Komro et al. 2011; Portnow et al. 2015; Shaffer and Obradović 2017).

This theme suggests workplace strategies targeting staff self-regulation may be important for enhancing co-regulation capacity.

Youth self-regulation enactment influences—and is influenced by—the self-regulation enactment of the adults, peers, and romantic partners in their lives. Self-regulation is described as reciprocal, or influencing the quality of adult, peer, and romantic relationships while also being influenced by the relationship quality. In adolescence, relationship quality and context (with adults, peers, and romantic partners) can promote self-regulation just as self-regulation enactment can promote higher quality relationships. Evidence suggests that the mutual influence of self-regulation enactment extends to peer and romantic relationships as well (Berg et al. 2017; Farley and Kim-Spoon 2014).

This theme suggests it is important to develop strategies that address both youth and adult self-regulation.

A variety of strategies enhance adult self-regulation. Examples include personal self-care practices, a supportive work environment, positive professional and personal relationships, and self-regulation knowledge development.

- **Mindfulness** is described as both an effective precursor to self-regulation and a component of self-regulation. It promotes self-compassion and self-acceptance, which, when used by adults, increases nonjudgmental and compassionate interactions between adults and youth (DiGiacomo and Chen 2016; Gillespie 2015; Lichtinger and Leichtentritt 2016; Mazza et al. 2016; Portnow et al. 2015). Encouraging staff to practice mindfulness or “noticing” exercises designed to raise awareness of the self and one’s surroundings may enhance their self-regulation.
- **Organizational support** (including positive climate and relationships, resources, structure, perceived support, and leadership) also can promote educator self-regulation enactment and improves student support, classroom environment, and educator-student relationship quality (Ford and Blaustein 2013; Lichtinger and Leichtentritt 2016; Osher et al. 2016; Shaffer 2017).
- **Knowledge development** can enhance youth self-regulation support. Educators who had an expanded view of their role were more likely to guide students in emotional development (Jacobs and Struyf 2015). Shaffer and Obradović (2017) recommend that parents proactively consider conditions under which adult self-regulation can be challenged (for example, transitions) to enable the development of personalized prevention approaches. Lichtinger and Leichtentritt (2016) note that when educators

work with high-risk youth, application of a self-regulation framework may change educators' views of themselves and their students by enhancing self-efficacy, expanding their view of their teaching role, promoting a student–educator partnership, elevating educators' status in their schools, and increasing self-regulation in their personal lives.

This theme suggests the kinds of training and strategies to target in order to enhance staff self-regulation and co-regulation capacity. For example, strategies that encourage positive interactions among staff and increase their sense of support may enhance HMRE educator self-regulation. Anticipatory guidance on responding positively to challenging classroom situations can be embedded into educator training. In addition, staff can be trained on the importance of their role for influencing youth self-regulation development.

A NEW CONCEPTUAL FRAMEWORK TO GUIDE STRATEGY DEVELOPMENT

Based on insights from the literature review about the relationship between co-regulation domains, their collective influence on youth self-regulation, and the importance of adult self-regulation for providing co-regulation and modeling for youth, we developed a theoretical model of co-regulation to guide strategy development (Figure III.3). This model merges existing models of self-regulation (Murray et al. 2019) and co-regulation (Rosanbalm and Murray 2017a) to depict the relationship between self-regulation and co-regulation and emphasizes the importance of adult self-regulation in the provision of co-regulation support. In the center of the model, youth self-regulation is represented by a triangle, to connote cognitive, emotion, and behavior regulation. Encircling youth self-regulation are the three domains of co-regulation support—relationships, environments, and skills coaching—working together simultaneously. Adult self-regulation is pictured as an encompassing arrow, influencing the quality of co-regulation support and youth self-regulation development. Figure III.4 summarizes how key qualities found in the literature map to each co-regulation construct plus adult self-regulation, providing a road map for developing strategies to test in HMRE programs.

Figure III.3. SARHM co-regulation theoretical model

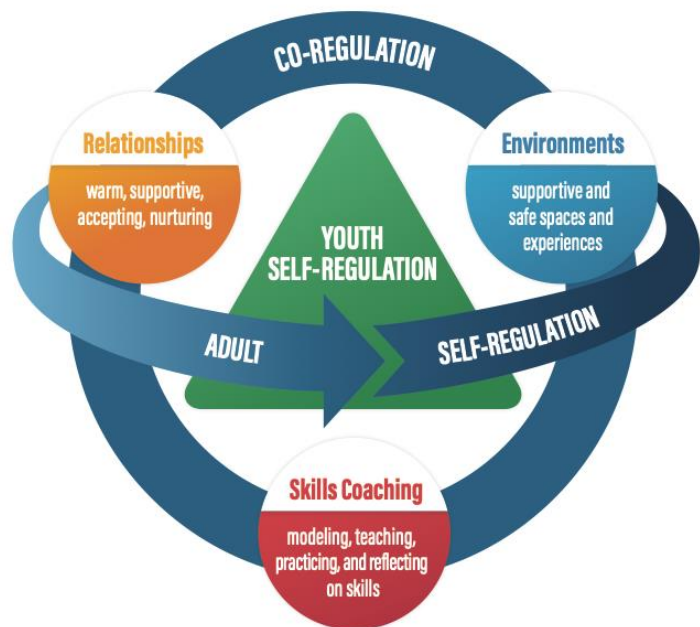


Figure III.4

Summary of literature review

In the absence of an existing body of interventions targeting co-regulation to build on, the literature review identified qualities that are important for interventions to foster within each of the three domains of co-regulation.

- Relationships should involve personal interactions with youth that are consistently compassionate, affirming, and supportive.
- Environments are characterized by settings that are safe and structured, offer opportunity for active participation, and allow youth to contribute to norm setting and program climate.
- Skills coaching should promote skill practice with the receipt of explicit feedback and opportunities for self-reflection.

In addition, adults should model self-regulatory behaviors including emotion management, positive leadership, problem solving, and organizational skills. For caring adults to effectively coach and model, it is imperative that they be aware of and monitor their own self-regulation. The strategies developed for testing in HMRE programs (see Table V.1) integrate and build upon themes from the literature review and are rooted in the co-regulation theoretical model (Figure III.3) that emerged from the review.

CHAPTER IV. ASSESSING SELF-REGULATION CONTENT IN HMRE CURRICULA AND PROGRAMS TO IDENTIFY OPPORTUNITIES TO INTEGRATE CO-REGULATION STRATEGIES

The second goal of the *Learn* phase knowledge development activities was to understand the extent to which HMRE curricula and programs for youth addressed self-regulation skills and concepts and provided co-regulation guidance for educators. The co-regulation theoretical model (Figure III.3) provided the framework to guide this review. In this chapter, we present the key findings of a review of popular HMRE curricula for youth and a scan of ACF-funded youth-serving HMRE programs.

HMRE CURRICULA TOUCHED ON SELF-REGULATION CONSTRUCTS

We reviewed the most current versions of four youth HMRE curricula most commonly used by ACF grantees to assess the extent to which they included self-regulation concepts and provided explicit co-regulation guidance for educators in training materials and guides (Table IV.1). We also reviewed a fifth curriculum, Mind Matters (Curtis and Stolzenbach 2017), because it was being distributed by the leading purveyor of youth HMRE curricula and focused explicitly on self-regulation. At the time of the review in early 2018, Mind Matters had just been published, and therefore was not being used by any HMRE programs for youth. During the review, we extracted information on the three domains of self-regulation (cognitive, emotion, and behavior regulation) and co-regulation (relationships, environment, and skills coaching, plus adult self-regulation) and their key constructs (the components listed in the definitions of each domain), as well as information about implementation factors such as recommended dosage, target audience, setting and group size, educator training requirements, and topics of each lesson.

Table IV.1. HMRE curricula included in the curriculum review

Curriculum	Target age	Number of HMRE programs using curriculum
Love Notes (Pearson 2016)	15–24	13
Relationship Smarts PLUS 3.0 (RS+) (Pearson 2013)	13–18	9
Connections: Dating and Emotions (Kamper 2004)	14–17	4
Healthy Choices, Healthy Relationships (HCHR) (Kamper 2004)	13–18	3
Mind Matters (Curtis and Stolzenbach 2017)	12–25	0

Source: FastTRAC, a custom web-based platform developed by Public Strategies to provide real-time information management and individualized training and technical assistance (TTA) for grantees, and outcome data reporting for OFA.

Note: Programs include OFA HMRE grantees funded for the 2015–2020 grant period.

While the foundational role of self-regulation in promoting positive outcomes has been reported in the literature for decades, the translation of this science into interventions and practice has been limited across disciplines. The *Self-Regulation and Toxic Stress Series* by Murray and colleagues further prioritized the work of integrating self-regulation science into federal human service programming for ACF beginning in 2015. Therefore, it is not surprising that none of the curricula reviewed covered all the key self-regulation constructs identified in the literature as being closely aligned with HMRE programming (see Figure III.1). Emotion regulation was the least commonly addressed domain, except in *Mind Matters*. Moreover, curricula did not address foundational steps involved in emotion regulation skills (such as noticing how the body feels in the presence of emotions and how to label feelings) when discussing this domain.

All the curricula covered at least one construct from each of the three self-regulation domains and multiple constructs of cognitive regulation. However, content tended to instruct youth to use a skill without specifying steps for how to do so or providing opportunities for practice and reflection. For example, some curricula provided advice to “be sure to get good sleep” as a self-care strategy that supports self-regulation but did not describe the conditions that encourage good sleep or provide time to plan for or reflect on what prevents healthy sleep habits.

Three constructs were covered by all the curricula: decision making, perspective taking (cognitive regulation), and cooperative and compassionate communication (behavior regulation). Three of the four curricula included information about goal setting and commitment (cognitive regulation). For example, the concept that we are better off if we “decide” rather than “slide” in life events and situations is prevalent in HMRE curricula based on PREP, such as those developed by Scott Stanley, Howard Markman, and Galena Rhoades. Although this is an important concept, there is an opportunity to broaden youth understanding of how to practice and use self-regulation strategies to reduce “slides” in the future.

HMRE CURRICULA DID NOT ADDRESS CO-REGULATION

The only domain of co-regulation mentioned in the four commonly used HMRE curricula was warm and responsive relationships. Coverage of co-regulation was typically limited to general statements encouraging positive adult-youth relationships (Table IV.2). For example, Love Notes and Relationship Smarts PLUS 3.0 contained exercises for youth to complete with adults at home but did not discuss the relationship between the youth and educator. The introductory material to the Connections curriculum instructed educators to develop a supportive relationship with youth but did not provide any strategies or processes for doing so. Healthy Choices, Healthy Relationships did not cover any of the domains of co-regulation. Finally, none of the commonly used curricula addressed educator self-regulation or the importance of one's self-care for providing support and education to youth.

Table IV.2. HMRE coverage of co-regulation domains

Domain	LN	RS+	C	HCHR	MM
Coaching, modeling, and reinforcing self-regulation skills					✓
Warm, responsive relationships	✓	✓	✓		✓
Structuring the environment					✓
Adult self-regulation					✓

LN = Love Notes; RS+ = Relationship Smarts PLUS 3.0; C = Connections; HCHR = Healthy Choices, Healthy Relationships; MM = Mind Matters.

LIMITED EMPHASIS ON SELF-REGULATION DEVELOPMENT

We conducted an HMRE program review to learn about how programs integrated information about self-regulation into the services, if at all, and to examine program contexts to understand opportunities for pilot testing strategies to support co-regulation. First, we reviewed documents and other information for all ACF-funded youth-serving HMRE programs in FastTRAC, a management information system developed by Public Strategies to support technical assistance for ACF's HMRE grant program. Second, as described in Chapter II, we examined eight programs under consideration for participation in the formative RCE in more depth.

Youth-serving HMRE programs were small, operated in school and community settings, and tended to engage disadvantaged populations

Thirty-one of the 46 ACF-funded HMRE programs served youth. Fourteen programs exclusively served youth in high school settings. Eleven exclusively served youth in community-based settings. Six programs served youth in both school and community settings. Programs in school settings served 14- to 18-year-old youth, whereas community-based programs worked with youth from a broader age range (14 to 24). Most programs were small, and about half employed fewer than three educators.

Some programs sought to engage youth experiencing hardship, such as youth who were homeless, refugees, in foster care, or involved with the criminal justice system. School-based programs tended to serve a broader population of youth, although some schools pulled from lower-income areas where students experienced greater socioeconomic disadvantage. Programs primarily provided relationship education in group-based workshops offered in schools or community agencies; some also covered financial and employment topics. Some programs, typically those in community settings, also offered case management.

Across different contexts, ACF-funded youth-serving HMRE programs touched on communication, decision making, problem solving, identifying life goals, and understanding healthy relationships. Frequently, programs reported difficulty covering all curriculum content in the time available for workshops.

The programs selected for phone interviews represented a diversity of youth-serving HMRE programs in terms of setting, youth characteristics, and services. Six programs operated in a school setting, and five operated in a community setting; three programs operated in both. Most program settings were in shared locations like schools and community centers, meaning programs had limited control over their workshop environment. Three programs served a traditional high school population, but almost all of the programs served disadvantaged populations. They used popular HMRE curricula for youth, with all but one using Love Notes (five programs), Relationship Smarts PLUS 3.0 (four programs), and/or Connections (one program). Five of the eight programs reported providing case management to supplement group workshops, but with at least two programs, case management was provided irregularly or only to some students. For example, MTCI only provided case management when an identified issue could not be handled by a school guidance counselor.

Programs reported that they covered topics related to self-regulation, but did not make self- or co-regulation an explicit focus of programming

Leaders and staff in six youth HMRE programs⁶ varied in their knowledge of self-regulation, with some identifying it as a new concept and others sharing examples of curriculum, staff trainings, or program practices related to self-regulation. Examples typically included self-regulation skill-

⁶ Two programs listed in Table II.1, Children's Aid Society and Family Resources, Inc., did not participate in telephone interviews.

building content on decision making and conflict management in group workshops. None of the sites provided training on self-regulation skills coaching, self-regulation skills, or co-regulation, but several programs trained staff on trauma-informed care, which can positively affect classroom climate and student regulation, and mindfulness, which can improve self-regulation and reduce stress. Two programs trained staff in motivational interviewing, a clinical practice designed to motivate participants to change their behaviors using empathy, listening, and reflection. One site trained staff on brain development.

Program leaders reported that internal program monitoring emphasized adherence to the curriculum and facilitation skills. For example, program staff used observation tools, such as curriculum adherence checklists and forms to record the observer's impressions of the educator's content delivery, to record whether educators covered the expected lessons, the educator's energy and enthusiasm, time management, and participant engagement. Program leaders did not describe measuring educator behaviors related to relationships or skills coaching or the program environment.

Program leaders expressed interest in learning more about self- and co-regulation

The HMRE program leaders we spoke to expressed an interest in learning more about self-regulation and co-regulation, though some also thought that their programs already addressed self-regulation sufficiently. Program staff identified a number of specific challenges in service delivery that could be improved through a co-regulation approach. For instance, program staff expressed interest in skills that would help balance the need to steer youth toward healthy choices while remaining nonjudgmental and supportive when youth admitted to participating in risky behaviors. Several reported wanting more tools to engage youth who were disengaged or did not participate in the workshop and to manage others who were disruptive. Others noted that HMRE workshops often dealt with heavy and emotionally charged topics, and that staff needed supports to handle them in class, as well as to manage their own stress levels and avoid burnout. All could see the potential benefit of a self- and co-regulation framework for enhancing program and participant outcomes.

CHAPTER V. DEVELOPING A MENU OF CO-REGULATION STRATEGIES AND TRAINING APPROACHES

The second phase of the LI₂ framework is *Innovate*. In this phase, programs and researchers work together to design evidence-informed, innovative strategies to improve their services. For the *Innovate* phase, the SARHM team used findings from the literature, curriculum, and program reviews to develop an initial set of co-regulation strategies and a training outline. We collaborated with Children’s Harbor and MTCI to select a subset of strategies to pilot test in the formative RCEs. We also obtained input from them on how to adapt the strategies to their context and target population of youth.⁷ In addition, we obtained valuable feedback on the strategies and training outline from our expert panel. In this chapter, we describe the process for developing co-regulation strategies and the training approach used in the formative RCEs.

HOW KNOWLEDGE DEVELOPMENT ACTIVITIES INFORMED THE CO-REGULATION STRATEGIES

To develop the initial set of co-regulation strategies and the training outline, we compared the strategies and conditions recommended in the literature to the gaps noted in the curriculum review. We also used programs’ descriptions of their implementation contexts and enrolled youth, as well as the SARHM team’s knowledge of HMRE programs for youth, to assess how the strategies could be implemented in HMRE programs. For example, the literature identified mindfulness, or “noticing exercises,” as an evidence-based strategy for reducing negative emotions for both program staff and youth. None of the HMRE curricula for youth we reviewed integrated mindfulness. Therefore, we included brief mindfulness exercises on our list of potential strategies to pilot test.

Based on findings from the literature, we aimed to develop a set of co-regulation strategies that covered all three domains (warm relationships, environmental supports, and skills coaching) and incorporated self-care and support for program educators’ self-regulation (Appendix Table B.1). Therefore, we included a set of 23 strategies: 4 workplace strategies to support program educators and 19 co-regulation strategies for use in classroom-based group sessions and, in some cases, individual case management meetings with youth. For example, workplace strategies included goal setting and self-reflection, noticing or mindfulness-based exercises, and supervision practices that integrated self- and co-regulation approaches. Co-regulation

⁷ A practitioner guide, *Building Staff Co-Regulation to Support Healthy Relationships in Youth*, (Frei, 2020) and a Co-Regulation in Practice Series (Frei, 2020) will support HMRE program leaders to select and adapt co-regulation strategies for their programs.

strategies included coaching on using slow, deep breaths (“Breath to Refocus”), welcoming practices to foster warm relationships, and physical room setup to structure the environment. We also designed strategies to be integrated into whatever HMRE curriculum the program chose to use, without requiring curriculum revisions or restructuring programming. This flexibility allowed programs to test strategies in different settings, including in-person coaching meetings and workshops.

HOW CHILDREN’S HARBOR AND MTCI SELECTED AND REFINED STRATEGIES

To refine the menu, the SARHM team held one-day strategic planning meetings with key staff at Children’s Harbor and MTCI, including managers, supervisors, and educators. The SARHM team members leading each strategic planning meeting included one researcher with content expertise in co-regulation training strategies and one researcher with methodological expertise in conducting formative RCEs.

The goals of the strategic planning meetings were to (1) educate program staff about the science behind self-regulation and co-regulation, (2) identify staff and youth needs and goals related to the development of self-regulation, (3) collaboratively identify a set of strategies to address those needs, and (4) generate program buy-in and investment in the formative RCE. We also introduced a set of guiding principles, shaped in collaboration with our expert panel for our work together on the formative RCEs (Figure V.1). The guiding principles included statements about the ongoing development of self-regulation in adolescence and the important role adults play in it, as well as values related to the collaborative and participatory generation, testing, and refinement of approaches to support self-regulation skill building. The strategic planning meetings supported staff readiness to pilot test strategies and conduct formative RCEs by motivating program staff, bringing all levels of program staff together in a spirit of innovation, and building their specific knowledge about self-regulation and co-regulation (Scaccia et al. 2015).

The strategic planning meeting was structured to first develop program staff’s knowledge about self-regulation, co-regulation, and youth development and have them apply and practice their newly gained knowledge, before moving toward selecting strategies and developing concrete plans for implementation (Figure V.2). Reviewing the program’s curriculum to identify lessons

Figure V.1

Guiding principles for the formative RCEs

- All people, including youth, have the potential to develop self-regulation skills.
- Adolescence and young adulthood are important times for developing self-regulation.
- Adults play an important role in helping youth build self-regulation skills.
- Trying out training approaches and improving them based on staff feedback is the best way to develop strategies that are useful to programs.
- All SARHM stakeholders are experts who contribute important perspectives on the strategies.

and modules that discussed self-regulation concepts and skills—as well as opportunities within the curriculum to deepen those discussions—tested staff members’ understanding and helped them recognize how a more intentional focus on supporting youth self-regulation could enhance their current approach.

Figure V.2 Strategic planning meeting agenda

- Welcome, introduction, and guiding principles
- Laying a foundation: self-regulation and co-regulation
- Supporting self-regulation through HMRE programming: opportunities and challenges
 - Curriculum review
 - Brainstorming: youth challenges with self-regulation
- Building a road map for change
 - Goals and desired outcomes
 - Review and prioritize menu of strategies
 - “How might we...?” Preparing the road map for change
- Preparing for the formative RCE
- Closing reflections

Building off the curriculum review, we asked staff to share challenges that youth in their program faced related to self-regulation. For example, some youth faced challenges with time management, conflict with peers, stress, and social media. Then we asked staff to set goals in order to identify targets for change in their own behavior and the behavior of enrolled youth. Next, staff identified outcomes they would like to influence by participating in SARHM. This activity helped to move staff from looking backward at gaps in their programs to looking forward to opportunities to strengthen their programs. The goals, targets, and outcomes formed the basis for their “road map for change,” a document developed to guide the formative RCE, the rapid prototyping process that the programs would use to test and refine the co-regulation strategies (Figure V.1).

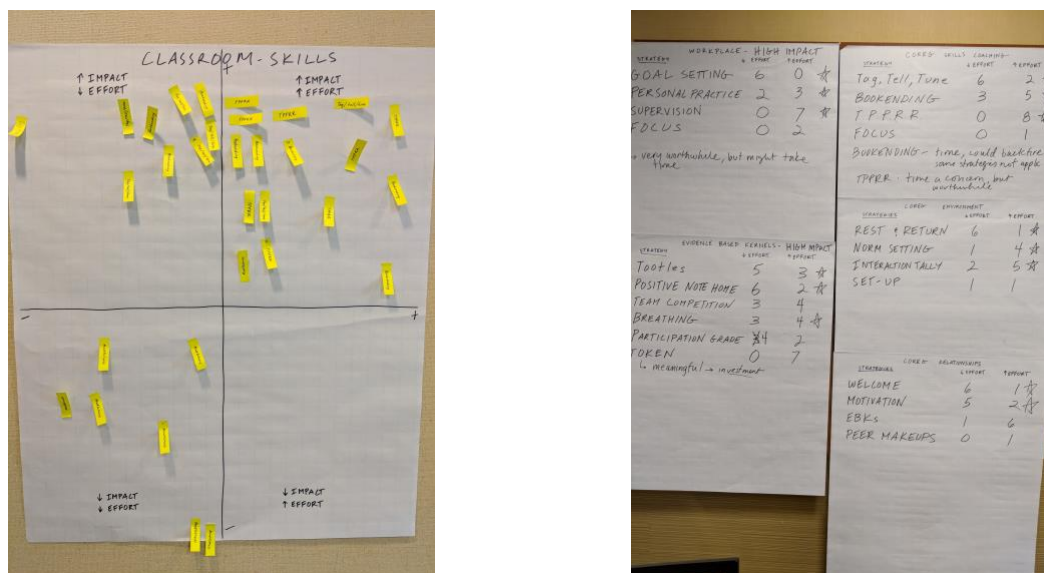
Next, we introduced the menu of co-regulation strategies. As we discussed each strategy, we asked staff to consider what it would look like and feel like to use the strategy. For example, we completed an exercise with the staff to help them practice mindfulness and notice their surroundings. Discussions about the strategies centered on how they could be used to address the challenges the educators observed and lead to the outcomes they wanted to achieve, and potential moderators or roadblocks to smooth implementation.

Staff also completed a prioritization activity called an Impact-to-Effort Matrix (Figure V.3). In this activity, staff individually ranked each strategy according to its impact—the perceived benefit it would have for youth self-regulation—and effort, or the feasibility of being able to implement it.⁸ Staff individually classified strategies into one of four quadrants on a graph:

- **Quick wins:** low-effort, high-impact strategies that should be a program’s highest priority
- **Can-dos:** low-effort, low-impact strategies that programs can easily implement but that might not make a big difference
- **Strategic priorities:** high-effort, high-impact strategies that could be long-term goals
- **Luxuries:** high-effort, low-impact strategies that should be a program’s lowest priority

This activity served as a springboard for additional group discussion about which strategies to select. We narrowed the menu to include only the strategies that at least one staff person thought would be high impact. At both programs, staff thought that few, if any, strategies would be low impact, but some were not relevant or applicable to their context. For example, MTCI staff did not think classroom setup would be possible because they were unable to change the classroom configurations in the schools. Because Children’s Harbor is a community program and did not operate in a school, a class grade based on participation and engagement was not relevant.

Figure V.3. Sample Impact-to-Effort Matrix and item selection



⁸ The Impact-to-Effort matrix is similar to importance-performance analysis, developed by Martilla and James (1977) as a marketing tool to prioritize areas for program improvement. Importance Performance Analysis has been applied in a number of public organization settings, such as higher education research (Ting et al. 2019), cooperative extensions (Warner and Chaudhary 2019), and hospitals (Mohebifar et al. 2016).

The discussion also changed staff perceptions of how some strategies would benefit youth. At Children's Harbor, staff interest in the welcoming strategies grew over the course of the discussion. Initially, MTCI staff felt that they did a good job of welcoming youth into their classroom. They also already used a system called the "Five Finger Contract" to set group behavior expectations and allow youth to signal when they needed an emotional break. However, MTCI staff felt it would be meaningful to tweak existing practices to incorporate subtle variations from what they were already doing and focus more intentionally on how to enhance co-regulation.

Staff at both programs identified concrete implementation challenges for specific strategies. Some challenges led programs to decide not to implement a strategy, whereas others led staff to suggest a modification. For example, MTCI decided against the team competition strategy because staff felt it was too time intensive. Children's Harbor staff felt strongly that emotion labeling would be powerful for youth but expressed hesitation because youth would need support to label emotions; they expressed concern that this would be overly burdensome for educators who were not trained therapists. To address those concerns, Children's Harbor staff identified potential solutions, including using the strategy among educators first to increase their comfort with it and using the strategy with youth only in one-on-one sessions at first. Youth would thus have the opportunity to experience the power of labeling emotions, and educators would be interacting with youth they knew well.

Staff selected strategies that covered all three co-regulation domains and adult self-regulation

MTCI and Children's Harbor selected a similar set of strategies but tailored them to their own contexts (see Table V.1 for a list of the strategies). After the strategic planning meetings, we narrowed the list of selections to a more manageable package of strategies. For example, at Children's Harbor, we narrowed supervision strategies to an "Environmental Scan." In this strategy, staff completed an inventory of their workspace to identify ways that it could better support self-regulation. Staff also completed the welcoming worksheet that youth completed as part of the Welcoming strategy. "Take Note, Tag It, Tune In," or "T3," was based on the "Tag It, Tell It, Tune It" strategy introduced in the strategic planning meeting, but it was adapted so staff did not have to tell anyone the emotions they were feeling.

The programs differed in their approach to workplace strategies to address adult self-regulation. MTCI staff were interested in supporting their own self-regulation skills and self-care routines and chose two strategies: personal goal setting and focusing on supervision strategies including intentional discussion prompts about self- and co-regulation in supervision and staff meetings. Children's Harbor staff selected workplace strategies that would mirror what they were modeling with youth in the workshop, in order to build their own comfort and familiarity with the strategies. Both programs included knowledge development as a workplace strategy to acknowledge that the training they received could also affect self- and co-regulation.

Table V.1. Strategies selected for formative RCE, by program partner

Strategy	Description	Children's Harbor	MTCI
Workplace strategies for adult self-regulation			
Knowledge Development	Staff receive training on self-regulation, co-regulation, and adolescent development.	✓	✓
Environmental Scan	Educators complete a worksheet on the workplace environment, prompting them to notice and change stressors and barriers to productivity and focus.	✓	
Rest and Return	Staff establish an area in the workplace where they can take a break from experiencing intense emotions and take a physical or mental rest; staff can also take breaks, if needed, while working with youth in the community.	✓	
Positive Praise Notes	Educators exchange four-part positive praise notes (name + specific behavior + praise effort not natural ability + share value to the program or community).	✓	
Take Note	Educators practice mindfulness or “noticing” exercises in a group in the workplace or individually.	✓	
Take Note, Tag It, Tune In (T3)	Educators pause to notice sensations in the body, identify and write associated feelings, and use pre-identified strategies to “tune” or manage intense emotions if needed.	✓	
Personal Goal Setting	Educators complete a worksheet on small, achievable goals; identify action steps; encourage use of a “support buddy”; and discuss progress toward individual goals as a team.		✓
Co-regulation Prompts in Supervision	Supervisor selects a self-regulation champion, uses tools for growth mindset in the workplace, and uses targeted questions in meetings to enhance reflection and intention to co-regulate.		✓
Skills coaching for youth			
Bookending	Educator ends the group sessions with a prompt to practice or plan for use of a self-regulation skill from the curriculum; subsequently, educator begins group sessions or individual meetings with a prompt to reflect on use of strategies since the last group or meeting.		✓
Breath to Refocus	Educator coaches youth to use deep breaths to regain focus during transitions or times of intense emotion and models the exercise for the youth.	✓	✓
Take Note	Youth practice brief mindfulness or “noticing” exercises in the group sessions or individually.	✓	

Strategy	Description	Children's Harbor	MTCI
Warm, responsive relationships between educators and youth			
Welcoming Strategies	Youth complete preferences worksheet on how they want educators to interact with them; educators greet each youth personally at each workshop and check in, one on one, with 1–2 youth during or after each class.	✓	✓
Positive Praise	In group sessions, two-part verbal praise (name + specific effort/behavior); in case management, four-part written praise (name + specific behavior + praise effort not natural ability + share value to the program or community).	✓	✓
Collaboratively structure the environment for youth			
Group Agreement	Educators solicit values/behaviors from youth, define them, and obtain visual agreement. Educators reference these values and allow youth to shift them as needed. Educators model and reinforce values and behaviors.	✓	✓
Rest and Return	Youth have permission to take a break if they are experiencing intense emotions and need a physical or mental rest; youth commit to returning when they feel better.	✓	✓

Programs identified potential challenges that could interfere with implementation

MTCI's potential challenges tended to focus on elements of the school environment beyond the program's control. These included classroom disruptions such as assemblies, fire drills, and announcements that interrupted the flow of lessons, as well as variations in the teaching styles of health teachers who hosted the program in their classes. For example, some health teachers were active participants in classroom management when MTCI educators were facilitating lessons. These health teachers influenced the classroom environment.

Children's Harbor focused on challenges within the organization that they could affect. For example, the program supervisor was new and still adjusting to her role. Staff also highlighted the need to protect against change fatigue and burnout.

Staff at both programs identified key youth factors: MTCI staff highlighted the complex social environment students had to navigate, including social media, cyberbullying, and violence in the school and community. Children's Harbor staff noted that youths' long histories with the foster care system had made them distrustful of many adults and authority figures. At both programs, staff were most concerned about burnout. Identifying these potential challenges at the outset helped anticipate roadblocks and tailor strategies.

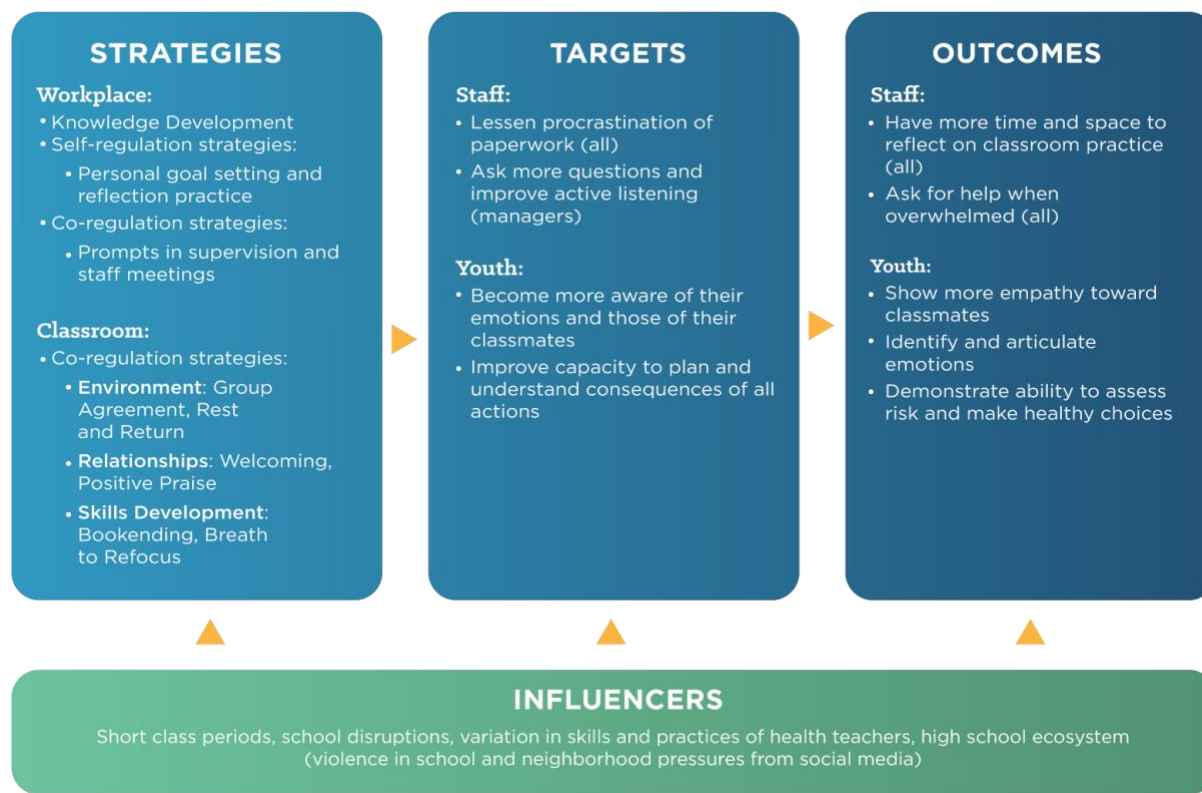
Programs developed road maps for change to guide their formative RCEs

The strategic planning meeting culminated in the development of a road map for change (Figures V.4 and V.5). The road map specifies the strategies a program will test; the targets or expected changes in behavior; the outcomes that the program wants to achieve; and potential challenges, or contextual factors that could support or inhibit implementation of the strategies (McCay et al. 2017). Like a logic model, the road map lays out a causal pathway between the strategies and outcomes. Unlike a logic model, the road map focuses on a discrete set of strategies or innovations, rather than articulating the logic behind an entire program.

Figure V.4. Initial road map for change: Children's Harbor



Figure V.5. Initial road map for change: MTCI



PREPARATIONS FOR THE FORMATIVE RCE

In a final step before beginning the formative RCEs, the expert panel provided guidance on developing the co-regulation strategies, designing the training for educators, and specifying the optimal sequencing of strategies.⁹ Experts recommended beginning with workplace strategies as a foundation for using the strategies with youth. The panel advised prioritizing exercises that help youth notice emotions, but it cautioned against asking youth to disclose those emotions in a group setting, out of concern for the potential lack of emotional safety and trust evident in some classroom environments. Experts stressed the importance of equipping staff with strategies to use if the exercises reminded students of past trauma or students responded negatively to heightened emotions. The panel also provided advice about how to develop strong welcoming practices and group norms. Finally, the experts cautioned that the school or community contexts in which the strategies were implemented would likely have a significant influence on how well they appeared to work. For example, if the school climate was not supportive or HMRE staff did not have control over the physical environment, it may seem as if strategies were not successful. The advice to pay close attention to context fit well with the

⁹ For a list of experts serving on the project's technical working group, please see page iii.

intent of the formative RCE to refine and strengthen implementation of the strategies rather than assess their effectiveness.

TRAINING FOR HMRE EDUCATORS

Training happened before the beginning of the first learning cycle of the formative RCE. On the first half-day, educators learned about self- and co-regulation, adolescent development, and the changes occurring in the brain during adolescence. Some staff had received elements of the training at the earlier strategic planning meeting, but most had not. During this training, staff participated in activities, discussion, and a curriculum crosswalk to integrate the information into their personal and professional experience. On the second half-day, staff engaged in hands-on learning to prepare them to implement the strategies. For example, they learned the steps of the Welcoming strategy and practiced how they would greet each youth at the beginning of a workshop. They also exchanged four-part Positive Praise notes.

In addition, each educator received a written training manual, strategy modules, and several visual prompts to support their use of the strategies. For example, we created a graphic on the steps of self-regulation skills coaching to highlight the importance of modeling skills, listening to youth, and reinforcing use of skills, as well as the importance of supporting youth to practice, observe, and reflect on their use of self-regulation skills (Figure V.6).

Figure V.6. Self-regulation skills coaching graphic



CHAPTER VI. PILOT TESTING AND REFINING THE CO-REGULATION STRATEGIES

The third stage of L12 is *Improve*, in which programs and researchers work together to pilot test and refine the strategies they developed in the *Innovate* phase. As part of the *Improve* phase, we collaborated with Children’s Harbor and MTCI to conduct formative RCEs that included three learning cycles. During each cycle, educators pilot tested the co-regulation strategies and provided feedback on them. At the end of each cycle, we analyzed feedback and other data collected, met with program staff to present the results and refine the strategies, retrained educators on the strategies as needed, and developed an approach for the subsequent learning cycle. Each program’s structure influenced the design of its formative RCE. The project timeline required these cycles to be completed between June 2018 and May 2019. The same researchers who led the strategic planning meetings described in Chapter V designed and conducted the formative RCEs. In addition to the two researchers who had content and methodological expertise, respectively, a site coordinator rounded out the three-person teams who conducted the formative RCEs. The coordinator assisted with data collection.

In preparation for the formative RCE, the SARHM team adapted existing measures and created new measures to establish a set of tools to assess educator knowledge of self- and co-regulation and their use of the co-regulation strategies, and to collect feedback from educators and youth. As a basis for this work, the SARHM team conducted a review of existing measures of self- and co-regulation suitable for use in the formative RCE. Appendix B provides additional detail about the results of the measures review and the development of measures for the formative RCE.

In this chapter, we describe the factors that contributed to the research design for Children’s Harbor and MTCI, how we conducted the formative RCEs with the programs, and what we learned about strategies in each co-regulation domain. A summary of how the strategies changed as a result of the formative RCEs is at the end of the chapter (Table VI.4).

KEY PROGRAM FACTORS DROVE THE FORMATIVE RCE DESIGN

We considered key program factors when setting up MTCI's and Children's Harbor's formative RCE (Table VI.1). The design of the formative RCE had four key dimensions:

- **Overall length**, informed by the program schedule, program structure, and workshop frequency
- **Number and length of the learning cycles**, informed by the program schedule
- **Frequency of data collection**, informed by the workshop frequency and program structure
- **Number of participants**, informed by the program size

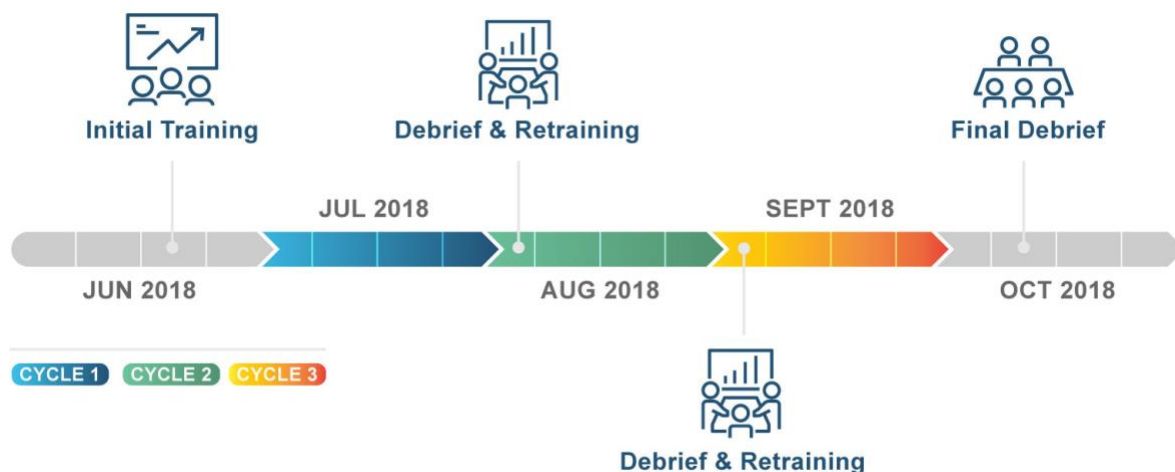
Table VI.1. Summary of formative RCE design at Children's Harbor and MTCI

Characteristic	Children's Harbor	MTCI
Overall length	Three months (July 2018–October 2018)	Nine months over two school semesters (August 2018–April 2019)
Number and length of learning cycles	Three sequential four-week learning cycles	One eight-week learning cycle followed by two simultaneous eight-week learning cycles
Frequency of data collection	On days in which an educator has a workshop session or one-on-one meeting (four to five times per cycle)	Once per week (eight times per cycle)
Number of participants	Eight educators	Eight educators

Children's Harbor's formative RCE had three sequential four-week learning cycles

Children's Harbor had just over three months to conduct a formative RCE. Youth in Children's Harbor program participated as a cohort over 12 months, and the cohort was scheduled to wrap up in October 2018. This was followed by a recruitment period that was long enough for Children's Harbor to enroll a sufficient number of youth for their grant-required randomized controlled local evaluation before starting workshops again. Given these time constraints, we had three sequential four-week learning cycles in July, August, and September 2018 (Figure VI.1). The SARHM team conducted debriefs and refined the strategies during the first week of August and the first week of September. After the third cycle, we held the final debrief in early October.

Figure VI.1. Children's Harbor's formative RCE



Children's Harbor had eight navigators and financial coaches who interacted with youth on a monthly basis. The SARHM team asked all the staff (referred to in this report as "educators") to participate in all learning cycles so they could test strategies in individual and group settings. A rotating team of two educators facilitated four to five workshops each month. One of the workshops was typically a make-up session and was scheduled as needed. All workshops offered during a given month were identical, covering the same lesson. Enrolled youth attended one workshop per month. All educators met with youth on their caseloads for at least one case management meeting per month, usually in youth's homes. A separate team of two financial coaches also met individually with each youth every other month.

We asked educators to complete a session assessment form every day that they had a case management or financial coaching meeting or facilitated a workshop session. The distribution of their interactions was uneven. Some educators facilitated two workshop sessions in a week while others might not have met with any youth on their caseloads in a given week. We wanted the educators to be able to reflect on a small number of interactions when they provided feedback. The frequency of their responses averaged to just over once per week (Table VI.2).

Five other data sources, developed for the SARHM project, provided feedback for the Children's Harbor formative RCE. More information about these data sources is provided in Appendix C.

- **Educator questionnaire:** Before the initial training on youth self-regulation and co-regulation strategies, and at the end of the first learning cycle, educators completed a self-assessment of their knowledge of self-regulation and co-regulation, their own self-regulation skills, their use of co-regulation strategies, and the extent to which the HMRE program climate supported youth self-regulation. The goal of the educator questionnaire was to assess changes in their own knowledge of self- and co-regulation.
- **Semistructured interview:** The SARHM team interviewed educators and program leaders to document their experiences and perspectives about using the co-regulation strategies during program activities. Interviews provided additional detail and context to

support the feedback educators gave on the session assessment forms. Items focused primarily on implementation considerations (such as staff use and comfort with the strategy). The SARHM team conducted these interviews at the end of each cycle. In Cycle 1 and Cycle 3, the SARHM team interviewed educators over the phone. In Cycle 2, the SARHM team interviewed them in person.

- **Youth focus group and questionnaire:** The youth focus group asked youth to reflect on why they enrolled in the program, what the program climate was like, and what skills they had learned to manage their thoughts, feelings, and behaviors. The questionnaire, distributed to youth just before they participated in the focus group, asked youth to rate their impressions of the program and the skills they learned. The SARHM team conducted focus groups at the end of Cycle 3 to assess youth experiences during the full formative RCE.¹⁰
- **Classroom observation:** The classroom observation assessed the program environment, interactions between youth and the educator, and whether the educator provided self-regulation skills coaching. In Cycle 1, the SARHM team conducted observations on-site with the program manager and supervisor to help them become familiar with the observation tool. In Cycles 2 and 3, the program manager and supervisor conducted observations and provided the feedback to the SARHM team.

Table VI.2. Data collection activities and responses at Children’s Harbor

Tool	Cycle 1 (July 2018)	Cycle 2 (August 2018)	Cycle 3 (September 2018)
Session assessment form	25	27	30
Educator questionnaire ¹	16	--	--
Semistructured interview ²	8	8	8
Youth focus group	--	--	16
Youth questionnaire ³	--	--	16
Classroom observation ⁴	9	5	5

¹ Educators completed a self-assessment questionnaire before the beginning of Cycle 1 and at the end of Cycle 1.

² Semistructured interviews were conducted by phone in Cycles 1 and 3, and in person in Cycle 2.

³ The youth questionnaire was administered to the same group of youth participating in the focus group.

⁴ In Cycle 1, SARHM staff and Children’s Harbor managers conducted classroom observations together. In Cycles 2 and 3, Children’s Harbor managers conducted observations.

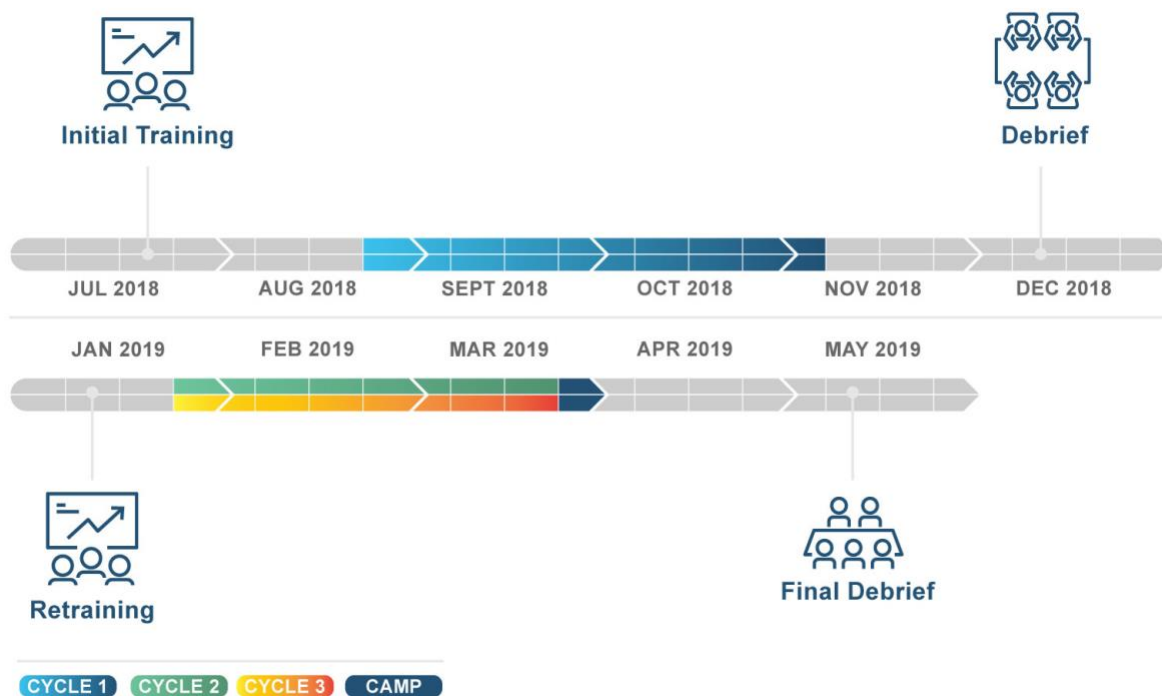
¹⁰ Due to challenges with recruitment and parental consent in the school setting, the SARHM team did not field a focus group at MTCI.

MTCI's formative RCE had a single learning cycle in the fall semester of the 2018–2019 school year, followed by two simultaneous cycles in the spring semester and a culminating camp

The school calendar presented challenges for completing three sequential learning cycles, as Children's Harbor had done. The schools operated on a semester schedule; MTCI delivered services in the schools for 12 weeks each term. Winter break ran from December through mid-January, and summer break from late May through early August. It was therefore not feasible to do two sequential learning cycles within a single semester, because MTCI staff were unavailable to debrief and revise strategies during the middle of a semester. Also, because the project schedule required us to complete the formative RCE by May 2019, we could not conduct one learning cycle per semester for three semesters without running past the project deadline.

As a result, MTCI took a novel approach to completing three learning cycles (Figure VI.2). MTCI completed its first eight-week learning cycle during the fall 2018 school semester, followed by two simultaneous eight-week cycles during the spring 2019 school semester. We debriefed staff about the results of the first cycle at the end of the fall 2018 semester and retrained them on the refined strategies in person in January 2019, before the beginning of the spring 2019 semester. At this training, we separated the staff into an A group (Cycle 2) and a B group (Cycle 3) to pilot test variations on the strategies tested in Cycle 1. Some variations were designed for differences in class length and the number of times per week that educators met with youth. For example, educators teaching 90-minute classes administered the Welcoming worksheet in the first class session, whereas educators teaching 50-minute classes administered it in the second session (Figure VI.2). In this variation, we wanted to ensure educators teaching shorter classes had time to establish a Group Agreement in the first class session. Additionally, we wanted to see whether youth would disclose more helpful information on the worksheet once they had had a class session and got to know the educator and their classmates.

Figure VI.2. MTCI's formative RCE



In early 2019, MTCI decided to host a four-day, intensive overnight camp during spring break, when schools were not in session. During this four-day camp, educators provided the full HMRE curriculum as well as job readiness content. MTCI recruited widely in the Atlanta metro area for the camp, including from schools where it did not regularly provide Relationship Smarts PLUS 3.0. Because the camp was a last-minute addition to the program, there was no time for a formal debrief between the end of the semester classes and the beginning of camp. As a result, we integrated the camp into Cycle 2 and Cycle 3. Together with MTCI staff, we decided on several small adjustments to the strategies to match the camp setting. We also allowed MTCI educators to choose whether they wanted to continue using the same strategies they had used for the spring semester or to adopt the approach of the other group, and then we asked them about their choices. In May 2019, after the end of the camp, we held a debriefing.

MTCI selected eight educators (called “relationship educators” by the program) to participate in the formative RCE. These educators facilitated Relationship Smarts PLUS 3.0 in four high schools in the Atlanta suburbs. There were between 6 and 16 class sections at each school, taking place most commonly during 9th-grade health and nutrition classes. Educators taught at one or two schools and were responsible for between three and eight class sections each. Two schools had class sections that met twice a week for 50 minutes each session (100 minutes total). Two schools had block schedules, in which class sections met once per week for 90 minutes. Educators typically taught classes three to four days per week. MTCI also offered case management, but only to some students on an as-needed basis. Since it was not a regularly scheduled component, we did not include case management in the formative RCE.

We asked educators to complete a weekly session assessment form, in which they reflected on the class sections they had taught that week. Due to their workload in the schools, it was not feasible to ask educators to complete a feedback form for every day that they taught. Table VI.3 summarizes the data collection activities during each learning cycle and the number of responses collected for each instrument.

During the camp, five educators taught two to three workshops per day and participated in other activities, including team sports, dinner, and evening wrap-up discussions. Two of the educators functioned as chaperones who had primary responsibility for running camp activities. They stayed in the dormitories with the youth, facilitated small-group conversations before bedtime, and did not facilitate any classes during the day. One of the educators did not participate in the camp. Other MTCI staff provided support, but because they had not been trained on the strategies, we did not include them in the formative RCE.

The seven educators participating in the camp had evening duties that prevented them from completing a daily feedback form. Instead, we asked the educators to complete one session assessment form at the conclusion of the camp. Given the high-intensity environment, we tailored the camp session assessment form to ask educators to reflect on their own self-care practices.

Three other data sources provided feedback for MTCI's formative RCE. Due to the challenges obtaining parental consent, the SARHM team did not conduct a youth focus group or questionnaire at MTCI.

- **Educator questionnaire:** At MTCI, educators completed the educator questionnaire before the initial training, and again immediately preceding the retraining.
- **Semistructured interview:** The SARHM team conducted semistructured interviews in person in Cycle 1 with all eight educators and the program supervisor. In Cycles 2 and 3, the SARHM team conducted two sets of semistructured interviews by phone. One set took place at the beginning of the cycle because many of the strategies MTCI pilot tested, such as setting the "Group Agreement," happened at the beginning of the semester. The other set took place after the camp, with all eight educators. The final set of interviews covered the remainder of the school semester and the camp.
- **Classroom observations:** The SARHM team conducted observations in Cycle 1 with program leaders, partly to train them on use of the observation tool. In Cycles 2 and 3, these staff completed the observations and sent the feedback to the SARHM team. There were no observations during the camp.

Table VI.3. Data collection activities and responses at MTCT

	Cycle 1	Cycles 2 and 3			
Tool	Fall 2018	Spring 2019 A group (Cycle 2)	Spring 2019 B group (Cycle 3)	Spring 2019 camp	Total from Cycles 2 and 3
Session assessment form	68	35	29	7	71
Educator questionnaire ¹	16	--	--	--	--
Semistructured interview ²	9	4	4	8	16
Classroom observation ³	15	114		--	11

Note: We did not complete focus groups or youth questionnaires at MTCT because of the difficulty in obtaining parental consent for youth in schools.

¹ Educators completed a self-assessment questionnaire before the beginning of Cycle 1 and at the end of Cycle 1.

² Semistructured interviews were conducted in person in fall 2018, and by phone in spring 2019. We conducted two rounds of interviews in spring 2019: once at the beginning of the cycles and once at the end of the camp.

³ In Cycle 1, SARHM staff conducted the observations. In Cycles 2 and 3, MTCT supervisors conducted the observations.

⁴ Classroom observations were de-identified.

HOW THE SARHM TEAM AND PROGRAMS REFINED STRATEGIES AND RETRAINED EDUCATORS

The session assessment form results provided insight into how frequently educators used each co-regulation strategy, how comfortable they were with the strategies, and their assessment of how the youth in the class session responded to the strategy. We then used interview data to add more nuance and depth to our findings and to learn about workplace strategies—such as using targeted questions in meetings to reflect on educator self-regulation and intention to co-regulate, or practicing mindfulness exercises together. When appropriate, we folded in other data collection tools. For example, we used results from the educator questionnaire to examine changes in educators' perceptions of their own self-regulation, as well as their perception of youth's ability to increase their self-regulation skills, after receiving training and using the strategies during Cycle 1. The observation forms served as a useful check of the educators' self-reports on the session assessment forms, educator questionnaire, and responses given during interviews.

At the end of each cycle, we held a webinar to debrief staff on the findings of the RCE cycles. During the debriefing webinar, we presented a summary of the feedback collected during the cycle and asked educators to reflect on how the summary data resonated with their experiences. Afterward, we discussed potential changes educators might make to the co-regulation strategies in the subsequent cycle. In this section, we detail how the programs implemented some strategies, the challenges they encountered, and changes they made in

response. A summary of each strategy and changes made across the learning cycles are provided in Table VI.4 at the end of the chapter.

Educators reported an increase in their own self-regulation skills and comfort with co-regulation strategies

Children’s Harbor staff deliberately selected staff-focused strategies for the formative RCE that mirrored what they pilot tested with youth as a way to improve their own comfort with them. For example, staff were initially asked to practice mindfulness or Take Note exercises when they met for staff meetings, just as youth tried them in workshops. Because of personal variations in comfort with emotion regulation, staff responded better to the Take Note strategy when they could do it individually.

Some of the strategies, such as the steps of emotion regulation in Take Note, Tag It, Tune In—which asked staff to pause to notice sensations in the body, identify, and write associated feelings, and use pre-identified strategies to “tune” or manage intense emotions if needed—were difficult or uncomfortable for some staff. This may have stemmed from a lack of practice tuning in to or labeling feelings, or a lack of supportive resources when feelings were uncomfortable or intense. Although some staff were resistant at first, they became more open to using personal self-regulation strategies when they saw how positively these approaches affected the youth.

The program schedule and other priorities kept MTCTI from fully implementing workplace strategies aimed at improving adult self-regulation, including using co-regulation prompts during supervision meetings and personal goal-setting exercises. In the strategic planning meeting, staff said that some of the strategies would be challenging for them to implement (although they wanted to try), and Cycle 1 proved that to be true. Due to the number of classes educators had, there were no supervision or staff meetings in which to use the strategies. After the first cycle, MTCTI decided to stop trying to implement adult self-regulation strategies. Despite the lack of focus on adult self-regulation strategies at MTCTI, some staff began practicing self-regulation skills on their own. These staff reported that this helped them introduce information in class that improved youth’s openness to the strategies.

Results from the educator questionnaire found improvements in knowledge of youth self-regulation and co-regulation practice at Children’s Harbor. Responses at MTCTI were largely unchanged. This may be because more than a month elapsed between the training and the start of the first cycle of the formative RCE at MTCTI. In the interim, MTCTI educators did not have a chance to practice or reinforce what they learned at the training. After an in-person retraining in January, educators reported feeling much more confident with the strategies, in part because they understood them better. MTCTI educators also reported using calming and self-care strategies and checking in with each other during the camp.

Coaching self-regulation skills helped educators shift their mindset and focus on modeling

Breath to Refocus. Both programs pilot tested the “Breath to Refocus” strategy. This strategy intended to teach youth a skill to calm themselves down and increase their focus and self-awareness when they felt themselves experiencing intense emotion or distraction (Figure VI.3). At the start, however, educators at both programs questioned whether this approach worked. It was evident from how they implemented “the breath” that they initially viewed it as a classroom management tool to get youth to calm down so they could get on with their lesson. For example, if youth were being disruptive, an educator might say, “Calm down, or we’ll have to do the breath.” Some youth tended to laugh this off, and as a result, educators tended to not use the strategy frequently—or even attempt it—during the first cycle.

Retraining at both programs helped educators understand the goal of Breath to Refocus: to model an important self-regulation skill. For example, retraining at Children’s Harbor involved reminding educators about the coaching and skills-modeling elements of the strategy—being aware of one’s own emotions and remaining calm and respectful despite the workshop disruptions, and using consistent language and tone. Finally, at both programs, retraining reinforced the need to include Breath to Refocus as one of the values included in the Group Agreement.

After retraining at MTCI to reinforce educators’ understanding of the goal of Breath to Refocus, educators began introducing it as a skill that they had used personally when they became stressed or felt out of balance. Consequently, the youth’s perspective on Breath to Refocus appeared to change—from something that the educators used to keep youth in line to a practical skill that youth could use when faced with stressful and emotional situations. Educators reported that youth in the classes started to hold each other accountable for upholding their class values, and the need to use Breath to Refocus decreased.

Figure VI.3

Breath to Refocus

On the first day of class, educators introduce Breath to Refocus by making a commitment: When the class gets off track, they will use a respectful and gentle tone to say, “Hey all, can we take a few breaths to refocus?” Educators make a commitment not to yell at youth or make them feel disrespected.

Breath to Refocus is included as one of the values on the Group Agreement.

When youth become dysregulated or disruptive, educators use the same language to coach youth to take a few breaths to refocus, and educators also take a few deep breaths as well, to model the practice.

In Learning Cycle 3 at MTCI, educators used Breath to Refocus intentionally during lessons, such as when transitioning from a high-energy group activity to a lecture or individual activity. Educators asked youth to take a few breaths to refocus their attention on the new task. Before each class session, educators reviewed the lesson agenda and planned when they would use the strategy.

Providing explicit instruction and cues for educators also appeared to improve adoption of Breath to Refocus at both programs. Children’s Harbor put a poster on the wall of the classroom to help educators remember to use the strategy. They put the strategy into their own words: “Let’s all take an inhale ... and an exhale.” At MTCI, just as at Children’s Harbor, some educators became frustrated when telling youth to use the strategy didn’t help to calm youth down. Accordingly, some educators stopped using the strategy. As we revised the strategy for the next cycle, we selected a subset of staff to use Breath to Refocus during transition periods between activities, as opposed to using it in response to undesired behavior. Intentionally planning when educators would use the strategy helped them practice it and become more comfortable with it as a skill, rather than a reprimand, and provided more consistency for youth. Having predetermined times to use the skill resulted in reduced frustration for those who were not comfortable with using the strategy in response to intense emotion. When MTCI began the spring break camp, we gave staff the option to continue using Breath to Refocus during transitions only or to use it when the class became dysregulated. Almost all the educators chose the latter. They told us that their decision came from an increased level of comfort with the strategy. By the end of the formative RCE, it was one of the strategies about which they felt the most positive.

Educators reported that strategies encouraging warm and responsive relationships made them more conscious of what they were already doing

Welcoming strategies. Welcoming strategies had three parts—Sheet, Greet, and Meet—and implementation looked different at Children’s Harbor and MTCI (Figure VI.4). For example, at Children’s Harbor, youth tended to filter into the workshop space up to 20 minutes before the beginning of the workshop was scheduled to start, and between 5 and 15 youth typically attended a workshop session. The Children’s Harbor educators got to the classroom early to greet the youth as they came in and to meet with them by catching up about what they had been doing since the last workshop. To free up educators to greet youth, other staff took responsibility for logistics such as checking in the youth at building security. At MTCI, educators had 30 or more youth in each class section, and all of them entered the class at the same time. This made it unrealistic for educators to have an individual conversation with each youth at the beginning of class. At MTCI, educators greeted youth by posting themselves at the classroom door to acknowledge each youth as they entered with eye contact and a high five or fist bump. Then, throughout the course of the lesson, educators made a point to check in individually (meet) with at least two youth. Educators at MTCI said that welcoming youth was something they already did from inside the classroom, but making it an explicit strategy made them focus purposefully on personally greeting every youth. Before the educators started focusing intentionally on greeting youth, they might have missed someone while preparing the workshop materials or engaging in a conversation with someone else.

Figure VI.4
Welcoming strategy

- **Sheet.** At the beginning of a series, youth complete a form with three prompts designed to increase the youth’s sense of belonging and safety. Educators review the form and use the information to inform their practice.
- **Greet.** Educators provide a personal, warm greeting to every youth as they enter the class. This could involve eye contact, greeting the youth by name, and/or using a friendly gesture like a high five or a fist bump.
- **Meet.** During a workshop or class session, educators find time to connect one on one with one or two youth. Educators should prioritize those who seem quieter or less engaged.

Educators at MTCI told us that the welcoming sheet also made them more conscious about their interactions with youth. The sheet had three prompts designed to increase youth’s sense of belonging and safety (Figure VI.5). Educators asked youth to fill out the sheet at the beginning of the learning cycles. Educators then collected the responses, reviewed them, and used the information to guide their interactions with youth. Initially, MTCI educators did not find the sheet particularly useful for them as educators. Although the class sizes at Children’s Harbor made

reviewing the material manageable, at MTCI, some educators had more than 100 youth across their class sections, and they found it difficult to keep track of the information on the worksheets. They also felt concerned that some responses to the third prompt (“One thing you should not do to me or ask me to do in class...”) may not be genuine and could be attempts by youth to get out of participating in class.

Figure VI.5. Four versions of the welcoming worksheet

VERSION 1 Tested at MTCI Cycle 1 and Children's Harbor Cycle 1 and 2	VERSION 2 Tested at Children's Harbor Cycle 3	VERSION 3 Tested at MTCI Cycle 2	VERSION 4 Tested at MTCI Cycle 3
1. I'd like you to call me...	1. I'd like you to call me in class...	1. I'd like you to call me...	1. I'd like you to call me...
2. Something I'd like you to know about me...	2. Something I'd like you to know about me...	2. Something I'd like you to know about me...	2. Something I'd like you to know about me...
3. One thing you should not do to me or ask me to do in class...	3. One thing you should not do to me or ask me in class...	3. I am most comfortable in class when you do not...	3. In class, I like it when you...

In response to the Cycle 1 feedback, MTCI devised two adaptations to the third prompt for Cycles 2 and 3 (Table VI.4). The Cycle 2 prompt emphasized student comfort, and the Cycle 3 prompt used a positive framing. Educators had the most positive feedback about the Cycle 3 prompt because it enabled them to focus on enhancing the facilitation strategies they used to engage youth, such as telling personal stories and using humor. Youth were not asked which prompt they preferred. Combined with the individual check-ins during class, these strategies made educators feel that they were more intentional in how they chose to facilitate the lesson. While they said that paying attention to youth’s body language was a regular part of their practice, some educators also said that as a result of asking youth to tell them what they needed to feel safe and comfortable, this became more intentional as well. Further, educators found that the information they received from the form was less important than that they asked youth the questions. Educators felt that the fact that they were seeking to learn about the youth in their class differentiated them from other educators in the school, and that was enough to set the stage for warm and positive interactions.

Children’s Harbor also adapted the welcoming worksheet. In Cycle 2, they found that some youth put down a nickname in response to the first prompt but then did not actually want to be called by their nickname in class. The adaptation made the first prompt more specific in its request.

Specificity, reinforcement, and buy-in were essential for strategies to collaboratively structure a supportive environment

Group Agreement. Both programs tested the Group Agreement strategy. In this strategy, educators and youth spent time on the first day of a workshop cycle establishing a collective set of norms or values that the group committed to uphold (Figure VI.6). The process was youth driven, with youth suggesting values for the group. After youth proposed and discussed values, educators added Breath to Refocus and Rest and Return to the list. Rest and Return required two commitments: (1) educators encouraged youth to take a mental break (by either leaving the room or putting their head down) if they needed one (for example, if the subject matter was causing a strong emotional reaction) and (2) youth committed to coming back when they had refocused themselves.

Collective group norms were intended to provide structure, safety, and predictability to the environment while allowing youth to shape that structure. In this key way, the Group Agreement differed from a typical set of classroom rules established by a teacher. Moving from Cycle 1 into Cycle 2, educators at both programs needed reinforcement to increase the level of specificity and reduce subjectivity in the norms and values, and to ensure that they focused on specific behaviors that could be objectively seen. For example, many norms in the first cycle included “respect” or “have maturity,” or tracked closely with school rules such as “no cell phones in class.” In Cycle 2, many values described what respect looked like, such as “don’t talk over each other” and “don’t comment negatively about what someone else says.” Children’s Harbor modified the Group Agreement strategy slightly for Cycles 2 and 3, because the youth were the same in all three cycles. Instead of setting a new agreement at the beginning of Cycles 2 and 3, Children’s Harbor educators reviewed the agreement at the beginning of the workshop session, discussed what each value meant, and asked youth to suggest additions or subtractions.

To remind youth of their agreements, educators at both programs posted the list of norms or values on the classroom wall. Some educators at MTCI were creative in the ways they got the groups to take ownership of their class values, such as by having them illustrate the values (Figure VI.7). However, posting the values ultimately proved infeasible at MTCI. Some classrooms had multiple sets of values posted from the different sections that used the space, leading to confusion; others had no values posted because multiple teachers used the classrooms. MTCI’s workaround, devised for Cycles 2 and 3, was to have youth write the values into their workbooks or staple a handout to the inside cover. Not having the values posted, however, made it harder for the educator to reference them and remind youth of the commitments they’d made to each other. In the camp, MTCI went back to posting the Group Agreement on the wall. By contrast, Children’s Harbor had more control over the classroom environment. Children’s Harbor educators moved from posting one copy of the agreement on the wall to posting multiple copies so that one was in the group’s line of vision at all times.

Youth response to the group agreements appeared to vary. MTCI educators found that their need to remind the youth of the group agreements declined over the course of a learning cycle, and they reported that when youth's actions breached a value, their peers started to speak up. This was especially true in later learning cycles, when the values reflected more specific behaviors. Most of the educators said that they reviewed the agreement at the start of each class session, but fewer had their groups revisit the agreement to add or remove values that they no longer agreed on. In some cases, educators reported proposing additional values to add to the agreement in response to disruptive behaviors, such as cell phone use, although the process of revising the agreement was supposed to be youth driven. At Children's Harbor, educators said that some youth resisted when they referred back to the Group Agreement because the youth found it to be a passive-aggressive way of telling them what to do.

Figure VI.6

Establishing a group agreement

On the first day of class, the educator introduces the concept of the Group Agreement in the first part of the workshop: "We are going to be talking about relationships, and to do so, it is helpful to think about how we relate to each other while we're together. This is how we will create the culture of our group."

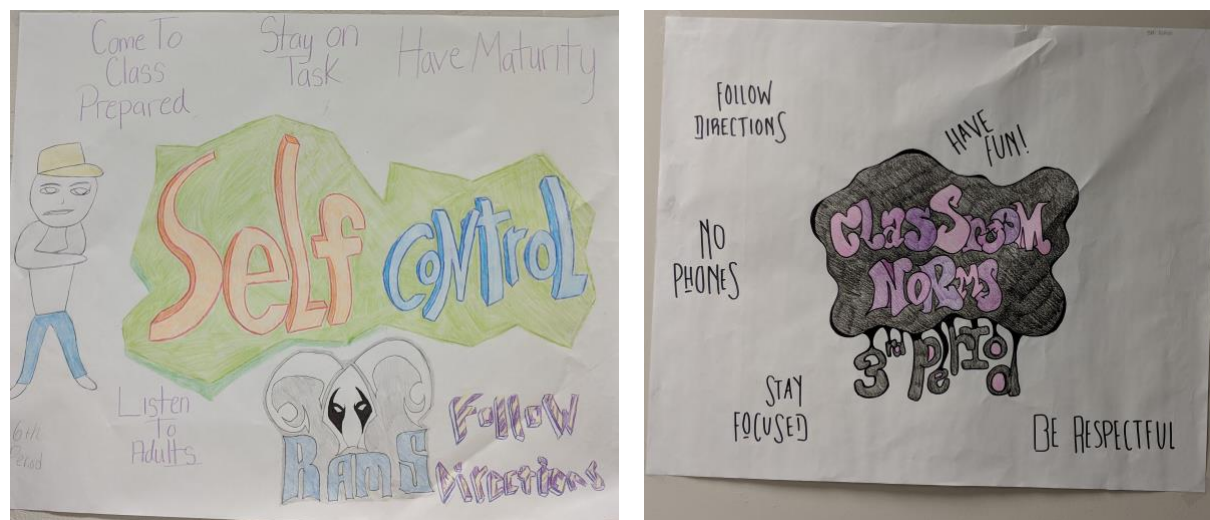
Next, the educator asks the class to discuss the difference between a rule and an agreement. Rules have an enforcer and a follower, and when a rule gets broken, someone gets punished. Agreements are based on commitment from everyone in the class. When an agreement is broken, there's a conversation, not a punishment.

Then, the educator asks the youth to think about what they would like to get out of the workshop, and what has made it hard for them to get what they want out of other group workshops or classes. After that, the educator poses a framing question, asking youth to share values they'd like the group to adopt in order to help the group feel safe and to establish trust.

For each item proposed, the educator asks the group, "Let's get specific: What does [the value] look like when it is happening? What does it sound like? What do we do to show that value?" The educator tries to get multiple people to provide input before moving on to another value.

Once youth have proposed values and the list is complete, the educator suggests two additional commitments to help the group feel safe: Breath to Refocus (see Figure V.3) and Rest and Return. Rest and Return allows youth to take a mental break from content that provokes a strong reaction, and youth commit to returning when they have refocused themselves. Once the list is complete, the educator asks for visible agreement (e.g., by show of hands) that each person agrees with and commits to supporting the values.

Figure VI.7. Examples of group agreements at MTCI



The school environment posed a big challenge for the Group Agreement strategy, because MTCI had limited control over it. Posting the group agreements on the classroom wall was not feasible, but putting the group agreement in youth workbooks created its own set of problems. In Cycle 1, the group agreements tended to mimic school rules, calling into question the extent to which they were really the youth's collective values. Additional coaching from the SARHM team about the way to enact the strategy and how it differs from other ground rule procedures, as well as helping youth get specific about their values in later cycles, helped address this challenge. The buy-in of school staff who were not from the program also remained an issue. Health education teachers often stayed in the classroom to help MTCI educators manage student behavior, but their styles varied and sometimes reinforced a rule-enforcement or punitive dynamic that conflicted with the intent of the group agreement.

Changes to most of the co-regulation strategies focused on strengthening implementation

Table VI.4 summarizes the co-regulation strategies and key lessons and changes that the programs made to the strategies across learning cycles. Primarily, the changes focused on strengthening and refining implementation, such as providing more specific guidance for how and when a strategy should be used.

Table VI.4. Summary of changes to co-regulation strategies

Strategy	Program	Description	Summary of changes
Workplace strategies for adult self-regulation			
Environment Scan	Children's Harbor	Educators complete a worksheet on the workplace environment, prompting them to notice and change stressors and barriers to productivity and focus.	Staff responded positively to the opportunity to suggest ways to make office space more conducive to self-regulation, but the worksheet only needed to be completed once. No changes made after Cycle 1.
Rest and Return	Children's Harbor	Staff establish an area in the workplace where they can take a break from experiencing intense emotions and take a physical or mental rest; staff can also take breaks, if needed, while working with youth in the community.	Designated space in office was not quiet or private enough; staff had limited time to practice because of an office move, and much of their work was outside the office. Strategy combined with Take Note strategy.
Positive Praise Notes	Children's Harbor	Educators exchange four-part positive praise notes (name + specific behavior + praise effort not natural ability + share value to the program or community).	Staff had a strong positive response. Practice continued through all three cycles, with increased focus on providing four-part praise (name, praise for a specific behavior, praise for effort, and how behavior benefits the entire group).
Take Note	Children's Harbor	Educators practice mindfulness or "noticing" exercises in a group in the workplace or individually.	Moved from group to individual practice because some staff were uncomfortable practicing in a group. Allowed staff to choose how to practice mindfulness, such as using a phone app, lying down, or finding a quiet space (such as the Rest and Return space) to focus on inhaling and exhaling.
Take Note, Tag It, Tune In	Children's Harbor	Educators pause to notice sensations in the body, identify and write associated feelings, and use pre-identified strategies to "tune" or manage intense emotions if needed.	Change from daily exercise prompted by text message to using as needed when staff were upset. Staff found reminders intrusive, so they were discontinued.
Personal Goal Setting	MTCI	Educators complete a worksheet on small, achievable goals; identify action steps; encourage use of a "support buddy"; and discuss progress toward individual goals as a team.	Staff completed goal sheets during training, but logistical constraints (e.g., lack of staff meetings) got in the way of follow-up; focus on strategy was discontinued after Cycle 1, though some continued individually.

Strategy	Program	Description	Summary of changes
Co-regulation Prompts in Supervision and Staff Meetings	Both	Supervisor selects a self-regulation champion, uses tools for growth mindset in the workplace, and uses targeted questions in meetings to enhance reflection and intention to co-regulate.	Not implemented at MTCI due to logistical constraints; strategy discontinued after Cycle 1. Children's Harbor began implementing in Cycle 2, but discussions were limited because of an office move and disruption to schedule.
Coaching, modeling, and reinforcing self-regulation skills			
Bookending	MTCI	Educator ends the group sessions with a prompt to practice or a plan to use a self-regulation skill from the curriculum; begins the next group session or individual meeting with a prompt to reflect on use of skills since the last group session or meeting.	Strategy not implemented systematically in Cycle 1 due to time constraints and a need for guidance on which messages to reinforce at the beginning and end of class. In Cycles 2 and 3, created specific prompts for each Relationship Smarts Plus 3.0 lesson; time constraints still posed a challenge some days, and educators reported youth response was limited.
Breath to Refocus	Both	Educator coaches youth to use deep breaths to regain focus during transitions or times of intense emotion and models the exercise for the youth.	Continued practice through all learning cycles, with increased focus on introducing it as a skill, modeling it, and following through on use. In Cycle 3, MTCI educators used Breath to Refocus during transitions between activities in the middle of lessons, to get more practice and comfort with the strategy. Some youth in both programs still resisted the strategy, but educators did observe some increased participation.
Take Note	Children's Harbor	Youth practice brief mindfulness or "noticing" exercises in the group sessions or individually.	In Cycle 1, educators found the recording off-putting, and youth resisted the strategy. For Cycle 2, revised and rerecorded script to make it shorter and use more familiar language. Instructed educators to model the strategy with youth. Further revisions to strategy in Cycle 3 focused on developing a rhythm and music exercise.

Strategy	Program	Description	Summary of changes
Warm, responsive relationships			
Welcoming Strategies	Both	Youth complete preferences worksheet on how they want educators to interact with them; educators greet each youth personally at each workshop; educators check in, one on one, with 1–2 youth during or after each class.	Continued practice through all cycles, with increased focus on checking in with youth during the workshop session. MTCI experimented with changing third prompt on welcoming worksheet; most were satisfied with a positive formulation. Children's Harbor changed first prompt for Cycle 3 because youth did not want to be called by nicknames in class. MTCI experimented with timing of welcoming worksheet (either first or second class session) but found no difference in response.
Positive Praise	Both	In group sessions, staff use two-part verbal praise (name + specific effort or behavior) with youth; in case management, staff use four-part written praise with youth (name + specific behavior + praise effort not natural ability + share value to the program or community).	Continued practice through all learning cycles, with increased focus on making praise specific, personal, and for effort instead of traits. Staff at both programs were most positive about written and verbal praise, and use of specific formula (two- or four-part) started to feel more natural. MTCI staff unable to use written praise because of the perception that a male educator writing a note to a female student would be inappropriate. Children's Harbor found that positive verbal praise sometimes opened up more conversation in one-on-one meetings.
Collaboratively structuring the environment			
Group Agreement	Both	Educator solicits values/behaviors from youth, defines each, and obtains visible agreement. Educators reference values and allow youth to adapt values as needed over time. Educators model and reinforce values and behaviors themselves, along with youth.	Continued practice through all learning cycles, with increased focus on making values specific and keeping the intent on creating a safe environment rather than rule adherence. Persistent challenges to reinforcing Group Agreement in school setting, but educators reported that youth tended to hold themselves accountable to values, particularly as the semester went on. MTCI experimented with requiring youth to sign Group Agreement handout, with mixed results.
Rest and Return	Both	Youth have permission to take a break if they are experiencing intense emotions and need a physical or mental rest; youth commit to returning when they feel better or refocused.	Implementation differed at Children's Harbor and MTCI; youth were prevented from leaving classroom in high schools, so MTCI allowed them to put their heads down to signal they needed a Rest and Return. MTCI educators reported minimal use of strategy. Children's Harbor educators reported that youth used the strategy and upheld the commitment to return to the workshop. Before the formative RCE, educators had challenges with youth leaving the workshop and not returning. After the strategy, they reported a significant decline in this problem.

CHAPTER VII. LESSONS LEARNED ABOUT INTEGRATING CO-REGULATION STRATEGIES INTO HMRE PROGRAMMING

Integrating a co-regulation framework into school and community-based HMRE programs for youth can potentially improve the quality of these programs and enhance their ability to foster youth self-regulation. The content of HMRE curricula—how to foster healthy romantic relationships and friendships, make healthy decisions, and avoid negative situations—provides opportunities for an intentional focus on learning and practicing self-regulation in real-life situations.

Through a collaborative process involving staff from two HMRE programs, ACF, and an expert panel, the SARHM team developed and pilot tested training approaches for integrating co-regulation strategies into existing HMRE programming. In this report, we described existing literature related to co-regulation, the strategies the project developed, and the formative RCE used to pilot test and refine them. In this chapter, we discuss insights gained from this process about the promise of co-regulation strategies, the supports needed to integrate co-regulation strategies into existing programming, and the value of a co-creative partnership between researchers and practitioners.

CO-REGULATION STRATEGIES MAY SUPPORT IMPLEMENTATION AND YOUTH ENGAGEMENT

The SARHM team created training approaches and co-regulation strategies that could be integrated with a range of programs and curricula, rather than a new curriculum module or package of content.

Initially, educators viewed the strategies as add-ons to programming and told us they lacked time to use the strategies or felt the strategies encroached on time needed to deliver the HMRE curriculum. In addition, they found some of the strategies challenging and uncomfortable, in part because these strategies were unfamiliar to both educators and youth. For example, some educators misunderstood the Group Agreement to be a list of classroom rules that educators had to enforce. Some educators would use the threat of “doing the breath” (the Breath to Refocus strategy) as a way of settling the class so that they could get through the lesson. Others resisted using Breath to Refocus because youth took longer to refocus than they did after a reprimand, and perhaps because educators felt uncomfortable with the strategy. Consequently, it was not surprising that educators reported youth laughing off or ignoring some

of the techniques. When learning a new approach, educators may have needed to practice the mechanics of the strategies before they could appreciate the intent and enact the aspects of the strategies that make them vehicles for co-regulation.

Over time, in both programs, educators reported increased use of and comfort with the strategies, as well as increased youth responsiveness from Cycle 1 to Cycle 3. With additional discussion, training, and practice, educators began to understand the nuances of the strategies, seeing them as tools for creating a safe environment and for coaching youth to try self-regulation skills. Instead of viewing the strategies as add-ons that took time away from the curriculum, educators used them to deepen youth engagement. For example, the Group Agreement exercise became a way for educators to start a discussion about what youth felt was important to them in their environment and what they needed to succeed. Educators at both programs reported that youth began taking ownership of the values in the agreement and holding each other accountable for upholding them. Some educators told the SARHM team that they began introducing the Breath to Refocus strategy as a skill that they had used in their personal lives when they became stressed or felt out of balance. When educators tested the strategy in class, they reported modeling it themselves and invited youth to follow along with them. Consequently, the youth's perspective on Breath to Refocus appeared to change—from seeing it as something that the educators used to keep youth in line to seeing it as a practical skill they could use when faced with stressful situations. Over time, educators reported that the need to use Breath to Refocus decreased, and that it was more effective when they needed to use it. Some educators also reported that using the strategy themselves during group sessions helped them stay regulated.

According to educators, the co-regulation strategies showed promise for increasing youth engagement in the HMRE lessons during the group sessions. For example, youth responded well to receiving specific positive praise during the sessions, and some educators felt that use of the Positive Praise strategy increased participation. During focus groups at Children's Harbor, youth reported that the Group Agreement and use of Breath to Refocus helped them interact in a positive way. According to focus group participants, youth talked over each other less and were better able to contribute to group discussions. During the strategic planning meeting, staff at Children's Harbor reported struggling with youth becoming upset during the sessions and walking out. Youth reported that Rest and Return helped them feel respected and trusted. By the end of Cycle 3, youth used Rest and Return to take short breaks, and youth rarely left the sessions without returning.

INTEGRATING CO-REGULATION STRATEGIES TOOK TIME AND ONGOING SUPPORT

The SARHM team partnered with Children's Harbor for 8 months and MTCI for 12 months to develop, pilot test, and refine the co-regulation strategies. We expected to test and refine different strategies in each of the three learning cycles, layering on new strategies and adding complexity as the formative RCE progressed. Instead, we learned that we needed all three learning cycles to refine the initial set of strategies each program selected to pilot test.

A one-time training was not sufficient to support deep understanding of co-regulation or use of the strategies. During the initial training for educators, we provided information on youth self-regulation and brain development and the science of co-regulation. In addition, we provided instruction and opportunities to practice the specific co-regulation strategies to be pilot tested. Educators said that they enjoyed the training but, in hindsight, felt that it alone was not sufficient to help them use the strategies as intended. At MTCL, staff benefited from an in-person retraining before the start of Cycle 2 and Cycle 3. The rapid pace of the formative RCE at Children's Harbor prevented in-person retraining, but we met virtually with educators between cycles and visited the program during each cycle to provide midstream support. We also held check-ins weekly or every other week with managers at both programs to discuss feedback, troubleshoot emerging issues, and strategize about how to support educators in implementing the strategies.

The process of pilot testing, debriefing, refining, coaching, and retraining over time yielded deeper learning and insights about how to use the strategies. In both programs, ongoing coaching for program leaders and educators was essential for helping staff understand how to use the strategies and feel comfortable with them. In debriefs and retraining sessions between cycles, after educators had had a few weeks to try out strategies on their own, we presented the educators' survey and interview responses back to them and asked them to further reflect on the themes that we identified in their responses. We talked through challenges that the educators raised and provided guidance to reinforce their skills and collectively decided on any necessary adaptations to the strategies for the next cycle. Discussions focused on making data-informed decisions about strategy refinements and encouraged staff self-discovery about the strategies' applications. During regular check-in calls, we asked probing questions intended to prompt program managers and supervisors to reflect on the strategies. Our hope was that reflection would deepen their understanding of the strategies and of co-regulation, which would in turn help them support the staff more successfully. For example, we held a series of coaching calls with MTCL's program manager before the beginning of the program's spring break camp to discuss how to implement the strategies during the camp. Following this consultation, the program manager—building on input he received from educators and themes that emerged from our interviews with them—decided to give educators the opportunity to demonstrate their emerging command of the strategies by using their own discretion in how to implement them.

USING THE CO-REGULATION FRAMEWORK WITH PROGRAM STAFF HELPED THEM APPLY IT TO THEIR WORK

The SARHM theoretical model of co-regulation (Figure III.1) depicts adult self-regulation as a critical component of co-regulation. Adults' capacity to manage their thoughts, feelings, and behavior influences their ability to provide support to youth. Educators in HMRE programs for youth can experience stress and even secondary trauma because of the complex challenges that enrolled youth face. Through the formative RCEs, we learned that supporting educators'

self-regulation—and using co-regulation strategies with them during the formative RCE—encouraged learning and supported a reported shift in mindset about how to support youth self-regulation.

Educators were receptive to trying workplace self-regulation strategies but preferred to use them individually, rather than as a group. The strategies initially felt awkward to many educators, but over time the educators became more open to using them as they reported changes they had observed in themselves and in youth behavior. Children’s Harbor staff deliberately selected staff-focused strategies for the formative RCE that mirrored what they pilot tested with youth. For example, in the first learning cycle, educators tried using the Take Note exercise being pilot tested in the group sessions during staff meetings. However, interest in trying the strategy varied, and some educators felt uncomfortable doing the exercises as a group. In later learning cycles, educators practiced Take Note individually, testing alternatives such as pausing to listen to recorded nature sounds or instrumental music. Similarly, some educators found Take Note, Tag It, Tune In (T3) uncomfortable or artificial, perhaps because they were not accustomed to pausing, focusing on emotions, and labeling them. After trying the exercise daily at a time prompted by a text message in the first learning cycle, educators shifted to using the T3 exercise individually when they needed to cope with an intense emotion. Although we did not pilot test staff strategies at MTCL, educators said that modeling self-regulation skills in the group sessions raised their awareness of their own self-regulation in both programs, and some staff reported that they began using the strategies on their own.

Applying the co-regulation framework in our partnership with programs facilitated learning in the formative RCE. In designing the formative RCE, we worked with program staff to select strategies in all three co-regulation domains. This approach helped program staff understand how the strategies can work together to support youth self-regulation. In our work with staff in the strategic planning meetings and the training, coaching, and debriefing sessions, we also sought to implement the co-regulation framework. For example, by listening carefully to staff, praising their efforts, and responding to challenges they faced pilot testing the strategies, we sought to develop warm, responsive relationships with them. During trainings and debriefings, we strove to create a safe and nonjudgmental environment in which educators felt comfortable sharing their difficulties with implementing the strategies and providing us critical feedback about them. Throughout the partnership, we provided coaching and opportunities for practicing the strategies, and worked closely with staff to troubleshoot challenges and refine the strategies as needed.

Over time, pilot testing the strategies facilitated a reported change in mindset, in which program staff began to see the role they played in youth’s capacity to self-regulate. In both programs, staff initially focused on mastering the mechanics of the strategies they were pilot testing. As they became more skilled in using the co-regulation strategies, staff reported that they began to understand the role they could play in supporting youth’s self-regulation during program activities and beyond. For example, during MTCL’s spring break camp, educators reported applying the co-regulation strategies throughout the camp—from the classroom to the dining hall, athletic fields, and dorms—while also prioritizing self-care and their own self-regulation in a high-intensity and stressful situation. Through the co-regulation

framework, the educators began to shift some of the onus of responsibility for self-regulation from the youth to themselves as adults, realizing that they needed to show warmth, model skills, and provide the context in which self-regulation skills can develop.

A CO-CREATIVE PROCESS WAS ESSENTIAL FOR DEVELOPING PRACTICAL AND SUSTAINABLE STRATEGIES

We hypothesized that pilot testing and refining co-regulation strategies would work best if the strategies were tailored closely to individual HMRE programs and youth populations. We used the LI₂ framework because of its emphasis on combining research and practice wisdom and because it involved a series of replicable, systematic steps to understand the program context and tailor approaches to program needs that remained aligned with evidence about self- and co-regulation.

The programs' understanding of the youth they served was critical for tailoring co-regulation strategies to their needs. During strategic planning meetings, program staff identified the challenges their youth faced and used this information to select strategies to pilot test. Throughout the learning cycles, educators' input on how youth might respond to changes in the strategies was critical for refining them. For example, Children's Harbor staff chose to implement Take Note to help youth cope with stress, pilot testing evidence-based mindfulness exercises in the first learning cycle. Because of initial discomfort with leading the exercises, educators asked to use a recording rather than read a script themselves. However, educators felt that the recording was not culturally relevant for the youth—because of the narrator's voice and inflection and the terminology used in the script—and that it was too long. Most youth reacted poorly to the recording and did not engage in the exercises. For Cycle 2, we used this feedback to create a shorter, more relatable script. Members of the research team with a range of sociodemographic backgrounds vetted the script to ensure that it retained fidelity to the evidence-based strategy while also using accessible language, and a new narrator recorded the script. Youth responded much more positively to the new recording. Additional scripts were developed and recorded for Cycle 3.

Engaging program staff at all levels facilitated tailoring and refining the strategies.

Program leaders and educators who provide services directly to youth participated in all stages of the LI₂ process, from strategic planning and strategy selection to pilot testing and refining the strategies. Throughout the learning cycles, we collected feedback from them using multiple methods, including interviews, surveys, and group session observations. Their insights helped us refine the strategies and, in some cases, avoid unintended consequences. The revisions made to the welcoming worksheet, described in Chapter VI, provide such an example. The initial phrasing of the third prompt on the worksheet, "One thing you should not do to me or ask me to do in class is..." led some educators to feel as if they were "walking on eggshells," fearing they might say or do something that a young person had asked them not to do. Based on this feedback, we worked with the educators to come up with two alternate prompts and pilot

tested them with separate groups of educators. These new prompts eliminated the concerns of educators, while retaining the benefit of the worksheet for youth.

SUMMARY OF LESSONS LEARNED

We found that integrating co-regulation strategies into HMRE programming was not only doable, but also that program staff found the strategies useful. Educators reported that the co-regulation strategies improved youth engagement and reduced disruptions, such as youth leaving the classroom. Educator and program feedback suggests, however, that some strategies were easier than others to implement. Programs had limited control over their workshop space and had difficulty piloting strategies aimed at structuring a safe and supportive environment. Emotion regulation was also challenging to address. At one program, educators reported strong discomfort with noticing, labeling, and managing strong emotions. The other program didn't address emotion regulation at all.

Incorporating the co-regulation strategies into the programs' practice took time and investment. Program educators and supervisors needed to be open-minded and willing to try something new, even if it didn't connect with youth or feel natural right away. They reported valuing the reflection, troubleshooting, and problem solving involved in the debrief sessions between learning cycles. Additionally, the educators needed ongoing support, coaching, and reinforcement to implement the strategies. For example, we found that a one-time training was not enough for program educators and supervisors to develop a deep understanding of co-regulation or how to use the strategies.

Our approach to conducting the formative RCE mirrored the co-regulation framework that educators used with youth. This process included establishing warm, responsive relationships with the program staff and engaging them as partners in developing and refining the co-regulation strategies. We structured a safe environment in which program staff felt comfortable trying out the strategies and felt empowered to provide feedback on them—whether positive or negative—through the iterative nature and fast pace of the formative evaluation. Program staff benefited from ongoing coaching throughout the formative RCE, which prompted them to reflect on the use of the strategies, deepen their understanding of co-regulation and their influence on youth self-regulation development, and develop ownership of the strategies. Our coaching happened during regular check-in calls during the learning cycles and in debriefing and retraining sessions between them.

Educators described the main result of the partnership—more important than the success or viability of any one strategy—was an overall shift in mindset. Educators reported a greater understanding of the importance of self-regulation in youth development, the significant role that educators play in promoting youths' self-regulation, and the types of interpersonal and environmental strategies they could implement to amplify the impact of their program.

CHAPTER VIII. NEXT STEPS FOR DEVELOPING AND TESTING CO-REGULATION STRATEGIES

The SARHM study represents a critical first step in translating rigorous research and theory about self-regulation and caregiver co-regulation into actionable strategies that can be implemented by educators facilitating youth development programs. Adolescence provides a particularly salient time for HMRE interventions because rapid brain changes support the enactment of skills necessary for healthy peer and romantic relationships. However, there is a notable gap in interventions for youth that support self-regulation and focus on the caring adults in their lives. This gap is troubling because during adolescence, parental co-regulation typically decreases, the influence of peers and adults outside the family increases, and almost all self-regulation programs designed for youth teach about behavioral skills but do little to ensure that adults coach and youth practice and reflect on these skills (Murray et al. 2016). SARHM sought to address various components of this gap through a literature, curriculum, and program review, development of a conceptual model of adult–youth co-regulation in naturally occurring settings, and creation of co-regulation strategies and measures to assess observable features of co-regulation in action. Using a formative RCE approach, programs then pilot tested theoretically grounded co-regulation strategies based on the knowledge synthesis.

The SARHM team partnered with two HMRE programs for youth to develop, pilot test, and refine an initial set of co-regulation strategies using the L12 framework. In the *Learn* phase, we assessed the knowledge based on self- and co-regulation and youth-serving HMRE programs' challenges and motivations in implementing co-regulation strategies. In the *Innovate* phase, we developed prototypes of co-regulation strategies and collaborated with program partners to refine them. In the *Improve* phase, we pilot tested and further refined them during a series of three learning cycles.

We developed and tested co-regulation strategies for youth in all three domains—warm and responsive relationships, structuring the environment, and skills coaching—as well as workplace strategies for supporting the self-regulation of HMRE program educators. Results of the formative RCE show that it is feasible to integrate co-regulation strategies without changing existing program curricula. Also, the strategies showed promise for supporting program implementation and youth engagement in program activities. In addition, the formative RCEs demonstrated the value of partnerships between research and practitioners to develop and refine the strategies, as well as the type of training and support that program staff need in order to use the strategies as intended.

These findings provide a strong foundation for additional development of co-regulation strategies and, eventually, evaluation of their efficacy and effectiveness. In this chapter, we

describe several next steps that can be taken to build on the lessons learned from SARHM. The recommendations in this chapter describe a sequence of iterative development and testing with a group of youth-serving programs that uses increasingly rigorous methods. Research would begin with developing, refining, and testing strategies on a small scale; it would then move to efficacy testing that makes use of existing administrative data. Finally, it would move to a rigorous effectiveness evaluation, if smaller-scale testing yields positive results.

NEXT STEPS TO DEVELOP AND REFINE A FULL SET OF STRATEGIES

Additional work is needed to develop and refine co-regulation strategies. The SARHM team developed more co-regulation strategies than could be pilot tested (see Appendix B). Also, some of the strategies selected were challenging to implement or not well received by educators or youth. For example, strategies for collaboratively structuring the environment were challenging to implement because both programs delivered workshops in spaces controlled by other organizations. The SARHM team developed several workplace strategies to support staff self-regulation, but these were challenging to pilot test because staff at the sites where pilot testing occurred spent limited time in their workplaces. Similarly, we included strategies aimed at leveraging the role of peers in self-regulation in the initial menu presented to the sites, but neither site selected them for testing and refinement due to the perceived difficulty of implementation. Thus, increased attention is needed on the important role other youth play in co-creating a respectful environment and reinforcing prosocial norms. The influence of peers during adolescence is particularly powerful, especially as many youth create space between themselves and their parents to develop independence and autonomy. Perception of peer norms, expectations, and perceived opinions have been strongly linked to both positive and negative behaviors during adolescence (Gardner and Steinberg 2005). Because relationship contexts (adult–youth, peer–peer, and romantic partner) are thought to influence self-regulation development, and self-regulation enactment is thought to influence relationship quality, priority should be given to developing and testing contextually and developmentally appropriate strategies that leverage the role of peers and romantic partners for self-regulation development as well as healthy relationship development.

In particular, developing strategies that foster staff and youth emotion regulation should be a priority. Emotion regulation is an important component of healthy relationships, and skills such as conflict management and decision making—both impacted by emotion—are cornerstones of HMRE curricula. Yet, of the three self-regulation domains, emotion regulation skill building appeared least often in our review of commonly-used HMRE curricula for youth. Further, the curricula we reviewed presumed participants had mastered certain emotion regulation skills, such as recognizing negative thought patterns and knowing how to label and express feelings. In conversations with program staff, many expressed discomfort with the idea of testing emotion awareness and labeling strategies with youth without trained therapists on hand. Staff at Children’s Harbor hypothesized that it would be useful, and perhaps less risky, to strengthen their own emotion regulation before trying certain strategies with youth. This may be

partly because supervisors recognized the potential benefits of supporting staff emotion regulation, such as handling stress or difficult feelings, as many staff had their own histories of trauma and their work was often intense. Yet, even when testing the strategies as adults, the “noticing” and emotion regulation strategies (Take Note and T3) were particularly uncomfortable and challenging for some program staff. Future research should explore the most promising approaches to building adult and youth emotion regulation skills.

Additional research on how self-regulation development is supported and perceived can also inform the ongoing development of co-regulation strategies. In particular, two avenues for future research are needed:

- **The role of adult self-regulation in co-regulation.** The literature review findings validated the centrality of adult self-regulation for providing optimal co-regulation support and identified important subtleties and promising strategies for enhancing adult self-regulation. Lessons from the formative RCE underlined the importance of adult self-regulation, while surfacing additional questions about how best to support it. Future research and testing can explore these questions, such as whether it is preferable to implement adult self-regulation strategies individually or in a group setting; how teaching, modeling, and coaching youth-focused strategies may enhance adult self-regulation; whether adult self-regulation strategies should focus on managing stress as a first step, rather than identifying a range of emotions; whether adult self-regulation strategies should precede, parallel, or follow implementation of co-regulation strategies; and the relative importance of adult self-regulation skills for youth self-regulation skill development in some domains, such as emotion regulation.
- **How youth perceive self-regulation and the language they use to talk about it.** The activities of SARHM have not explored how youth think about or specifically experience self-regulation, or how they understand the process of building self-regulation skills. A better understanding of how youth describe self-regulation constructs (such as distress tolerance or perspective taking) would contribute to better guidance on strategies. The language used in several strategies, such as Breath to Refocus (which was initially called “Breath to Reset”) changed over the course of the formative RCEs as program staff provided input on what language was likely to resonate with their populations. The Group Agreement strategy would also be enhanced with better guidance about what questions educators could ask youth to elicit values that support self-regulation enactment. Curriculum developers will also benefit from learning how diverse youth talk about self-regulation. Youth perceptions, language, and understanding are likely to vary across demographic groups and populations, and over time, so research on this topic should seek input from a broad range of communities. Youth engagement and voice are widely viewed as important to developing successful programs for adolescents. The U.S. Department of Health and Human Services views the opportunity for youth to engage as “learners, leaders, team members, and workers” as one of five essentials for effective evidence-based programs aimed at improving adolescent health and well-being (U.S. Department of Health and Human Services 2016).

A new set of deeper research–practitioner partnerships can facilitate developing a fuller set of strategies and continuing to refine those developed through SARHM. The development of co-regulation strategies was informed primarily by reviews of literature, curricula, and HMRE program documentation, and we worked with programs to select strategies to pilot test and tailor them. Spending more time with youth-serving programs to learn about their services, the youth they serve, and what causes youth and staff to become dysregulated could enhance the co-creation of prototype strategies tailored to programs' needs in the *Innovate* phase. Partners could also work more intensively on implementing a smaller set of strategies in shorter learning cycles to refine them. SARHM pilot tested five or six strategies simultaneously with the goal of targeting each domain of co-regulation, which made refining strategies with specificity more difficult, and proved challenging for staff.

Several options exist for identifying youth-serving programs to participate in a new round of strategy development, particularly programs seeking to engage youth who have faced adversity. We intentionally selected two sites that varied along different dimensions of ACF-funded HMRE programs. MTCI sought to engage a universal population of youth in a traditional high school setting. Children's Harbor focused on a population of youth aging out of the foster care system with known exposure to trauma in a community-based setting. Both programs served predominantly youth of color, and both programs mostly employed staff of color. The decision to pilot test strategies with two very different programs highlighted how strategies may need to be tailored for different ages, populations, cultural groups, and settings. Additionally, the populations differed in levels of hardship. Exposure to serious adversity during childhood and adolescence may have damaging effects on the developing brain. Co-regulation strategies selected by sites may need to differ in type, strength, or application to accommodate delays or deficits in self-regulation caused by trauma, or to address other issues common among highly stressed youth—such as distrust of adults or feeling unsafe in new environments. The nuances of each program affirm the importance of practitioners and researchers working closely together to select and tailor strategies.

As strategies are further developed and refined, it will be important to consider how to best implement co-regulation in disadvantaged communities where a high proportion of youth may have been exposed to trauma, such as witnessing violence, food insecurity, parental incarceration, victimization, or neglect. This has implications for both the implementation and effectiveness of co-regulation strategies in youth programming. Youth who have been traumatized or who have not yet mastered earlier stages of self-regulation may not respond to co-regulation strategies in the ways that youth with minimal to no adversity exposure respond. This may be especially relevant in communities of color with high poverty and racial segregation (Aber et al. 1997; Johnson et al. 2016); youth in these communities may distrust systems or services, especially if provided by those outside of the community. Further, adults working with youth exposed to adversity may be unaware of the biological impact of trauma on self-regulation development—that the building blocks of compassion and empathy, rooted in self-regulation skills, have been affected by adverse experiences. Adults working with youth who have faced hardship may benefit from defining their role in ways that align with that of a coach, rather than that of a professor, parent, or police officer. As such, the pilot testing of co-regulation strategies

in HMRE or other youth service programs will need to carefully consider how adult support can be implemented in ways that build trust, are culturally sensitive, and reach youth at their own level of self-regulation skill mastery.

Adults' skills are also important to address in programs seeking to engage youth who have faced hardship. Many educators in HMRE programs come from the same communities and match the socio-demographics of the youth they serve. This approach has many advantages, including increased trust and credibility. However, if educators themselves have challenges with the self-regulation skills they are modeling, then the effective execution of co-regulation may be limited. Adults in these programs may need additional coaching and support to help them shift their understanding of their role from policing behavior to supporting youth self-regulation development, while overcoming subliminal biases that reflect a fixed mindset about young people's attitudes, skills, and behaviors.

Working with a larger group of youth-serving programs over a longer period of time than SARHM was able to might provide opportunities for programs to convene periodically as a community of practice and share learning about the strategies they are testing, further enhancing the design process. Such an approach could involve collaboration between youth-serving programs from a range of areas, such as HMRE, adolescent pregnancy prevention programs, and programs serving runaway and homeless youth, to develop, pilot test, and refine strategies. This approach would improve understanding of how well the co-regulation strategies can be adapted for use in types of youth programs beyond HMRE.

NEXT STEPS TO DEVELOP AND PILOT TEST MORE ROBUST TRAINING AND TECHNICAL ASSISTANCE

In preparation for pilot testing the co-regulation strategies, we provided training and resources to each program on self-regulation, co-regulation, and adolescent brain development, as well as instruction on using the strategies. Both programs found the training useful and informative, but they differed in their responses to it. Educators in one program felt that the training provided too much information about brain development and not enough hands-on practice, and they wanted more tip sheets for future reference. Educators in the other program liked the amount of information about brain development but did not use the handouts and tip sheets after the training. Overall, we confirmed that a one-time training was not enough to support use of the strategies. Several educators told us that they would have liked to receive the training in smaller increments over time. Most staff needed ongoing coaching, including opportunities to reflect on their practice and some retraining to become comfortable using the strategies as intended.

More work is needed to develop a more robust training and coaching plan for supporting implementation of the co-regulation strategies. There are several possibilities, such as providing an initial training with ongoing coaching, or providing training on selected topics and strategies in smaller increments over time, with opportunities to practice between training sessions. Several educators told us they would like a phone app with information about self-

and co-regulation, guides on how to implement the strategies, and resources such as recordings of Take Note exercises.

As with developing the co-regulation strategies, researcher–practitioner partnerships could collaborate to develop training options. Researchers could gather information from program staff on the basic design of a training package, create a more refined prototype, and gather additional feedback in an iterative process. Different training packages could be created, such as a printed manual, infographics, phone apps, online training modules, and training videos. Training approaches could also be tested with program partners. For example, different groups of staff or programs could receive different modes of training such as periodic training, one-on-one coaching, or access to app-based resources. Staff knowledge could be assessed at different points in time to measure changes in knowledge of self-regulation, co-regulation, and adolescent development. Such a test would not provide causal inference but could provide guidance for developing an optimal training package.

NEXT STEPS TO ASSESS THE EFFICACY OF CO-REGULATION STRATEGIES

Once strategies have been refined, ACF could take several steps to assess their efficacy for improving implementation and youth engagement, and possibly other youth outcomes. A group of youth-serving programs could be recruited to pilot test strategies and their outcomes could be compared to a matched comparison group of similar programs. When strategies are rolled out, programs pilot testing the strategies would receive training and ongoing technical assistance to ensure they were able to implement them as intended.

Initially, the assessment should focus on implementation outcomes, youth engagement, and other youth outcomes. Qualitative impressions from the formative RCEs indicated that the co-regulation strategies showed promise for improving implementation factors such as educators' ability to deliver the intended curriculum, educator–youth relationships, youth attendance and participation in program activities, program completion, and engagement during the group sessions. Qualitative data collection with program staff is important to understand how implementing the refined strategies affected organizational culture and climate, such as staff perceptions of their work environment, their job satisfaction, and staff openness to implementing the strategies. The workplace strategies directly targeted staff-level implementation factors, whereas other co-regulation strategies asked educators to shift their perspective in how they understood their role as an educator and in how they related to youth. The implementation science literature suggests that factors such as buy-in, receptiveness, and morale are critical to implementation success (Aarons et al. 2011).

Researchers could also explore the possibility of using administrative data or other metrics the programs collect to assess impacts on youth-focused implementation outcomes such as engagement, dosage, and other short-term youth outcomes. For example, program exit surveys could be used to assess youth's perceptions of the program and knowledge gains, as another measure of their engagement in the program.

NEXT STEPS TO CONDUCT A RIGOROUS EFFECTIVENESS EVALUATION OF STRATEGIES

If the co-regulation strategies show promise in initial efficacy assessments, a cluster randomized controlled trial could assess the impact of the co-regulation strategies on youth outcomes. A summative evaluation might randomly assign youth-serving programs to compare outcomes for youth with and without the use of co-regulation strategies alongside regular program services. This type of evaluation could rigorously assess the impact of the co-regulation strategies on implementation outcomes and a range of youth outcomes, such as knowledge of self-regulation skills, attitudes toward dating violence and unplanned pregnancy, and other youth outcomes relevant to the type of program participating in the evaluation (like relationship experiences, educational persistence, or sexual risk behaviors).

Similar evaluations have been conducted to measure the impact of various strategies to improve program implementation. For example, Chinman and colleagues (2016 and 2018) conducted a randomized controlled trial to measure the impact of the Getting to Outcomes (Wandersman et al. 2000) implementation framework for improving implementation of Making Proud Choices, an evidence-based pregnancy prevention curriculum. The study found that Getting to Outcomes improved program implementation and some youth outcomes. The study included a sample of 32 programs implementing Making Proud Choices, including 16 that implemented the curriculum as usual, and 16 that were augmented by Getting to Outcomes. However, studies can be designed to detect impacts with sufficient statistical power with a smaller number of 8 to 10 programs, under certain conditions (Deke 2016).

Another approach to assessing the impact of co-regulation strategies is to recruit a youth-serving program delivering a large number of group sessions, most likely in a high school setting. Classes within schools could be randomly assigned to receive the program's curriculum, the curriculum enhanced with co-regulation strategies, or a control condition. This type of design is currently being used by the Strengthening Relationship Education and Marriage Services (STREAMS) evaluation to assess the effectiveness of a summary and full version of the Relationship Smarts PLUS 3.0 curriculum (Wood et al. 2018). Implementing this type of design would require training and coaching only a portion of a program's educators on the co-regulation strategies. Because implementing the co-regulation framework involves workplace strategies to support educators' self-regulation, limiting exposure to only a portion of program educators may not be feasible.

MEASURES OF CO-REGULATION ARE NEEDED TO SUPPORT TRAINING, TECHNICAL ASSISTANCE, AND EVALUATION

The SARHM team developed a set of data collection instruments to assess educators' knowledge of self- and co-regulation and their use of co-regulation skills, as well as an educator and youth questionnaire and an observation tool to assess educators' use of the co-regulation

strategies. We pilot tested refined versions of the educator knowledge assessment, educator questionnaire, and observation tool with three additional youth-serving HMRE programs to assess their validity and reliability. The pilot results, summarized in Appendix C, indicated some clear next steps; although the programs perceived the measures as useful overall, some aspects of the measures were not reliable and needed further refinement. Insights from the pilot will be shared in a forthcoming brief.

Further developing and field testing of these measures can support implementation and evaluation of the co-regulation strategies. For example, the educator knowledge assessment could be used as a diagnostic tool before training on the co-regulation strategies. The educator questionnaire and observation tool could be used for monitoring use of the strategies and providing feedback to educators during coaching sessions. In the context of an evaluation, these measures can be used to monitor how often educators use the strategies and their fidelity to implementation guidelines. The youth questionnaire could also be used to measure implementation outcomes such as program climate, youth–educator relationships, and youth attitudes about the program.

NEXT STEPS FOR THE SARHM PROJECT

In this report, we summarized the activities involved in developing and pilot testing co-regulation strategies through two formative RCEs with two youth-serving HMRE programs funded by ACF. We have shared lessons learned through the formative RCEs and implications for HMRE programming. In this final chapter, we have proposed future activities that can be undertaken to refine and strengthen co-regulation strategies in HMRE programming. In addition to this report, the SARHM team is developing a series of tools and resources that can support the future development of co-regulation strategies. These include a brief for HMRE practitioners on building staff co-regulation skills, a brief on using observational measures in HMRE programs, a journal article on the feasibility of using a co-regulation model to improve the delivery of HMRE programs, and a toolkit and training materials for educators and program leaders interested in using co-regulation strategies in their programs.

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APPENDIX A. TARGETED LITERATURE REVIEW STRATEGY AND CRITERIA

As part of the *Learn* phase, the SARHM team conducted a knowledge assessment to set the stage for the development of co-regulation strategies tailored to the context of youth-serving HMRE programs. One part of that assessment was a review of literature for key characteristics to consider when developing a set of co-regulation strategies. In this appendix, we present additional details about our literature search terms and screening results, along with the rationale for our approach.

The primary goal for the targeted literature review was to identify practical evidence-based co-regulation strategies that mapped to one or more self- or co-regulation domains and could be adapted for use with 14- to 24-year-olds in the context of HMRE programs. We also reviewed literature to support the development and testing of training approaches for staff, such as articles about best practices for instructional design, self-regulation measures, and practitioner resources.

Using the theoretical models from OPRE's Self-Regulation and Toxic Stress series as the framework for our approach, we indexed published peer-reviewed articles with search terms corresponding to our review goals. We produced four lists of search terms for the review: (1) intervention-related terms; (2) terms relevant to self-regulation across cognitive, emotional, and behavioral domains and a few program-specific terms relevant to self-regulation in adolescents and young adults; (3) terms related to the three domains of co-regulation; and (4) terms relevant to adolescents and young adults ages 14 to 24. These terms are reflected in Table A.1, rows 1–4.

Table A.1: Search terms for targeted literature review

Search	Domain	Terms
1, 2	Interventions	intervention OR program* OR curricul* OR prevention OR training
AND		
1, 2	Self-regulation	self-regulat* OR "executive funct*" OR "effortful control" OR "cognitive flexibility" OR "problem solv*" OR "perspective taking" OR "cognitive reframing" OR dialectics OR "goal-setting" OR "feelings identification" OR "soc* emot*" OR "labeling feelings" OR "emotion regulat*" OR "inhibitory control" OR "delay* gratif*" OR impulsivity OR "impulse control" OR "self-control" OR aggression OR "risk behavior" OR "stress reactivity" OR "trauma informed" OR resilience OR "distress tolerance" OR "tolerat* distress" OR "healthy coping" OR mindfulness OR "life skills" OR "soft skills" OR empathy OR "relationship skills" OR environment OR attention (in article title only) OR grit OR "cognitive regulat*"

Search	Domain	Terms
AND		
1, 2	Co-regulation	co-regulat* OR warm OR responsive OR coach* OR monitor* OR support OR model OR scaffold* OR "structur* the environment" OR "structur* the classroom" OR "creat* safe environment" OR "classroom climate" OR buffer OR "nurtur* peer relationship"
AND		
1, 2	Adolescents and young adults	teen* OR youth* OR adolescen* OR "young adult*" OR "young people" OR "young person*" OR "young woman" OR "young man" OR "young women" OR "young men" OR "high school" OR "secondary school"
AND		
2	Adults who support self-regulation	teacher OR parent OR mentor OR coach OR caregiver

We conducted our initial search in PsycINFO, a comprehensive library of peer-reviewed journals in the behavioral and social sciences fields. When the initial search yielded more than 7,000 publications, we applied major subject headings to narrow results. Major subject headings are standardized terms applied by an indexer in some literature databases to categorize articles covering similar topics. In the first search, we applied the major subject heading “self-regulation.”

This search in PsycINFO returned 121 publications, but only a handful were relevant. Accordingly, we broadened our search criteria and conducted the search again in PsycINFO, adding a set of search terms related to adults who support self-regulation (Row 5, Table A.1). For this second search, we applied two major subject headings: “self-regulation” and “emotion regulation” and searched a second database, the Education Resources Information Center (ERIC). ERIC is a federally sponsored online library of literature related to education research. We did not apply subject headings in ERIC because the database does not have this functionality. This second search returned 150 publications, including some of the articles identified in the first search (Table A.2).

As we screened the titles of the second search, we determined the results of both searches to be limited enough that the following additional searches were added to accomplish our project goals.

- We asked our expert panel to nominate relevant articles;
- We used a technique known as “citation harvesting” to identify relevant articles that had cited either highly relevant articles or key reports from our foundational literature;
- We used snowballing to identify relevant publications from the reference lists of particularly useful articles;
- We searched the Substance Abuse and Mental Health Services Administration’s (SAMHSA) National Registry of Evidence-Based Programs and Practices for practices

related to self-regulation and emotion regulation. This step was added to include any new approaches or interventions that may be used by HMRE practitioners, but that may not have been included in Murray’s review.

Table A.2 lists the search order, source, and number of results for each search in our process. Some publications appeared in more than one search.

Table A.2. Literature review searches

Search	Source	Results (before removing duplicates)
1	PsycINFO	121
2	PsycINFO, ERIC	150
3	Expert recommendations, citation harvesting, and snowballing	307
4	NREPP	3

We combined all the results—more than 500 citations—into a single table and removed duplicates. Next, we screened titles for relevance and excluded citations if they were not written in English, if study participants had been diagnosed with developmental delays or autism spectrum disorder, or if the intervention required a clinical degree to deliver. Citations were also excluded if the setting, context, population, or strategy described was not relevant for SARHM (for example, a study evaluating the impact of a computerized nutrition education intervention on adults). After removing duplicates and screening for relevance, we were left with 202 citations.

Next, we screened the abstracts of the 202 citations using questions to systematically group the articles into relevant topics and identify articles for full-text review (Table A.3). To identify articles that inform the development of contextually appropriate co-regulation strategies (Group A), as well as those that shed light on capacity building approaches for the pilot such as training content, organization of material for staff, and measures, we created screening questions to apply to each of the 202 citations. The screening questions allowed us to limit the articles that would receive a full text review to those most likely to discuss content relevant to strategy development. Some articles contained information relevant to more than one synthesis goal. Table A.3 lists the group to which the article was assigned, the screening questions, the number of articles in each group, and the action taken by reviewers. Groups were not mutually exclusive; articles were assigned to more than one group if the response to more than one screening question was affirmative. Articles that did not meet the screening questions for any group were discarded.

We conducted full-text reviews of all 71 articles in Group A. We conducted full-text reviews for citations in groups B, C, and D only if the abstract indicated that the article was relevant to the project aims. Information from these articles was used to validate findings and inform training

content, design, and strategy development. Articles in Group E were included in a separate measures review (see Appendix C).

Table A.3: Screening questions for full-text review

Group	Screening question	Total citations	Action
A	Does the abstract refer to at least one of the domains of co-regulation—in concept, if not in name (warm, responsive relationship; collaborative structuring of the environment; coaching, modeling, reinforcing skills)?	71	Review full text
B	Does the abstract indicate the article will expand our understanding of how 14- to 24-year-olds develop self-regulation?	45	Review full text if relevant to project aims
C	Is this work important to incorporate as we consider training approach development for HMRE staff? Note: These are not self- or co-regulation approaches as in questions 1 or 2 above, but rather information from other literature that informs our training approaches (e.g., evidence-based kernels, best practices in implementation science or instructional design, etc.).	49	Review full text if relevant to project aims
D	Is this work a relevant evidence-based or promising curriculum or resource for practitioners?	2	Review full text if relevant to project aims
E	Does this work provide information or content about self- and co-regulation measures?	12	Use for measures scan (Appendix C)

Note: Groups are not mutually exclusive.

APPENDIX B. CO-REGULATION STRATEGIES DEVELOPED FOR THE SARHM PROJECT

As a part of the *Innovate* phase, the SARHM team used findings from the literature, curriculum, and program reviews to develop an initial set of co-regulation strategies and a training outline. Specifically, we compared the strategies and conditions recommended in the literature to the gaps noted in the curriculum review. We also used programs' descriptions of their implementation contexts and enrolled youth, as well as the SARHM team's knowledge of HMRE programs for youth, to assess how the strategies could be implemented in HMRE programs.

Based on findings from the literature, we developed a set of co-regulation strategies that covered all three domains (warm relationships, environmental supports, and skills coaching) and incorporated self-care and support for program educators' self-regulation. Therefore, we included a set of 23 strategies: 4 workplace strategies to support program educators and 19 co-regulation strategies for use in classroom-based group sessions and, in some cases, individual case management meetings with youth. To refine the menu, the SARHM team held one-day strategic planning meetings with key staff at Children's Harbor and MTCL, including managers, supervisors, and educators. At these meetings, described in Chapter V, Children's Harbor and MTCL selected 15 of the 23 strategies to pilot test through formative RCEs. A forthcoming guide for practitioners (Frei et al. 2020) will provide detailed steps that program leaders can take to select, tailor, test, and refine co-regulation strategies in their HMRE programs.

Table B.1 lists all 23 strategies contained in the menu presented to Children's Harbor and MTCL at their strategic planning meetings. The table includes the strategy name, a short description of how the strategy should be implemented, and indicates whether MTCL, Children's Harbor, or neither program tested each strategy.

Table B.1. Strategies developed for the SARHM project

		Pilot tested in formative RCE		
Strategy	Description/Intent (for strategies not tested)	Children’s Harbor	MTCI	Neither
Workplace strategies for adult self-regulation				
Knowledge Development	Staff receive training on self-regulation, co-regulation, and adolescent development.	✓	✓	
Environmental Scan	Educators complete a worksheet on the workplace environment, prompting them to	✓		

Strategy	Description/Intent (for strategies not tested)	Pilot tested in formative RCE		
		Children's Harbor	MTCI	Neither
	notice and change stressors and barriers to productivity and focus.			
Rest and Return	Staff establish an area in the workplace where they can take a break from experiencing intense emotions and take a physical or mental rest; staff can also take breaks if needed while working with youth in the community.	✓		
Positive Praise Notes	Educators exchange four-part positive praise notes (name + specific behavior + praise effort not natural ability + share value to the program or community).	✓		
Take Note	Educators practice mindfulness or “noticing” exercises in a group in the workplace or individually.	✓		
Take Note, Tag It, Tune In (T3)	Educators pause to notice sensations in the body, identify and write associated feelings, and use pre-identified strategies to “tune” or manage intense emotions if needed.	✓		
Personal Goal Setting	Educators complete a worksheet on small, achievable goals; identify action steps; encourage use of a “support buddy”; and discuss progress toward individual goals as a team.		✓	
Co-regulation Prompts in Supervision	Supervisor selects a self-regulation champion, uses tools for growth mindset in the workplace, and uses targeted questions in meetings to enhance reflection and intention to co-regulate.		✓	
Skills coaching for youth				
Bookending	Educator ends the group sessions with a prompt to practice or plan for use of a self-regulation skill from the curriculum, and subsequently begins group session or individual meetings with a prompt to reflect on use of strategies since last group or meeting.		✓	
Breath to Refocus	Educator coaches youth to use deep breaths to regain focus during transitions or times of intense emotion, and models the exercise for the youth.	✓	✓	
Take Note	Youth practice brief mindfulness or “noticing” exercises in the group sessions or individually.	✓		
Teach, Practice, Plan, Reflect, Reward (TPPR)	In advance of each lesson, the educator reviews the content for self-regulation skills and asks: “When students engage with the self-regulation skills in this section, are the following			✓

Strategy	Description/Intent (for strategies not tested)	Pilot tested in formative RCE		
		Children's Harbor	MTCI	Neither
	steps happening?" Educator ensures each step occurs for each skill. <i>Teach:</i> Skill teaching (educator), may use stories of personal use of the skill <i>Practice:</i> Skill practice: (student) imaginary or in person ("in vivo") role play using skill, can be done as a group, individually, or in pairs <i>Plan:</i> Goal setting for use of skill (student and teacher together); this includes plans to set up the student's environment to avoid overtaxing self-regulation skills <i>Reflect:</i> Check-in (educator)/reflection on use of skill (student); can be done with verbal check-in or by use of diary or self-reflection sheet <i>Reward:</i> e.g., fun activity, positive peer notes, token, etc.			
Warm, responsive relationships between educators and youth				
Welcoming Strategies	Youth complete preferences worksheet on how they want educators to interact with them; educators greet each youth personally at each workshop and check in, one on one, with 1–2 youth during or after each class.	✓	✓	
Positive Praise	In group sessions, two-part verbal praise (name + specific effort/behavior); in case management, four-part written praise (name + specific behavior + praise effort not natural ability + share value to the program or community).	✓	✓	
Interaction Tally	The educator identifies a person to quietly tally positive comments/interactions and negative interactions (educator and student) via observation. The group is rewarded for a ratio of 20 positives to one negative or better, with an extra reward for no negatives.			✓
Motivation/Interest Assessment	The educator or case manager administers a survey/handout during the first or second class asking the students which of the topics in the curriculum they are most looking forward to learning and why. May include an assessment of self-regulation skills as well. Instructor then receives and reviews student information. Workshop and case management emphasis can be tailored based on the assessment and motivation. Individual feedback can be tailored to preferred topics.			✓

Strategy	Description/Intent (for strategies not tested)	Pilot tested in formative RCE		
		Children's Harbor	MTCI	Neither
Peer "Makeups"	When a student misses class, rather than individual make-ups with the educator or case manager, the educator could assign an engaged student to meet one on one with the student who missed class to go through material. A follow-up meeting (of shorter duration) with the educator or case manager is used to reinforce learning and check that content and objectives were met. Follow with reward for peer who helps student who missed class.			✓
Collaboratively structure the environment for youth				
Group Agreement	Educator solicits values/behaviors from youth, defines them, and obtains visual agreement. Educators reference these values and allow youth to shift values as needed. Educators model and reinforce values and behaviors.	✓	✓	
Rest and Return	Youth have permission to take a break if they are experiencing intense emotions and need a physical or mental rest; youth commit to returning when they feel better.	✓	✓	
Team Competition	Groups compete to practice, plan for, or reflect on self-regulation skills or enactment; can be combined with token lottery.			✓
Mystery Motivator or Token Lottery	Staff give tokens or special incentives for targeted behavior or when a student or group of students enacts self-regulation behaviors or skills use in or outside class or meeting. Tokens can be entered into lottery for reward. Target behaviors might include participants who volunteer to role-play a new skill, or who share a time they tried a skill and how it went, or for entire classes when all group norms are followed.			✓
Participation-based Grade	For situations where a grade is offered for a course, staff weight participation via homework exercises, discussions, peer support, and reflection most heavily.			✓
Arranging the Room or "Set-Up"	The seats (e.g., desks, tables, chairs) are set up so every participant can see every other participant. This may include pods or clusters of chairs, u-shape, circle, etc. For workshops with more small-group activities, pods may be favored; for workshops with more large-group discussions, role play, etc., circle may be favored. Students can arrange chairs when they arrive, and return them when they leave.			✓

APPENDIX C. MEASURING SELF-REGULATION AND CO-REGULATION

As part of the *Innovate* phase, the SARHM team adapted existing measures and created new measures to design a set of tools to assess educator knowledge of self- and co-regulation, use of the co-regulation strategies, and feedback from educators and youth. We used these measures to collect data for the formative RCE, and conducted a separate pilot test of their feasibility and reliability. As a first step, under the *Learn* phase, the team conducted a review of existing measures of self-regulation and co-regulation suitable for use in the formative RCE.

This appendix describes the methods and findings from the measures review. It includes a description of the measures developed for use in the formative RCE and summarizes results from a pilot test of the measures in three other HMRE programs. At the end of the appendix, two summary tables provide detailed descriptions of the self-regulation and co-regulation measures we identified, including the domains and skills they cover, administration details, target population, reliability, use in similar studies, and cost and rules for adaptation.

THE MEASURES REVIEW YIELDED SELF- AND CO-REGULATION MEASURES FOR THE FORMATIVE RCE

We conducted a targeted literature review of existing studies and interventions aimed at promoting adolescents' and young adults' self-regulation skills, as well as published compendia that included measures of self- and co-regulation. Specifically, we reviewed the following sources:

- Studies included in OPRE's Self-Regulation and Toxic Stress Series (Murray et al. 2016a)
- Studies of HMRE programs and outcomes, including OPRE's Healthy Marriage/Relationship Education—Models and Measures (3M) project (Scott et al. 2015) and OPRE's Youth Education and Relationship Services (YEARS) project (Scott et al. 2017)
- Studies of academic and job readiness interventions, including OPRE's Goal-Oriented Adult Learning in Self-Sufficiency (GOALS) project (Cavadel et al. 2017), OPRE's Evaluation of Employment Coaching for TANF and Other Low-Income Populations (Kautz and Moore 2018), and the Middle Grades Longitudinal Study run by the National Center for Education Statistics (Malone et al. 2013)
- Studies on the importance of interpersonal relationships for adolescents, including the Office of Adolescent Health's Positive Connections for Supportive People research review (Office of Adolescent Health 2016)

- Measures compendia on self-regulation, including Child Trends' Youth Development Outcomes Compendia (Hair et al. 2001) and the Forum for Youth Investments' Soft Skills Compendium (Wilson-Ahlstrom et al. 2011)

When we did not find measures of a domain or skill after reviewing these sources, we reached out to other Mathematica and Public Strategies experts and the expert panel to solicit additional recommendations.

Because co-regulation has rarely been studied with adolescents and young adults, we took an additional step to identify co-regulation measures by conducting a literature search in two databases, PsycINFO and ERIC. The parameters for the search were similar to those used for literature review described in Chapter III and Appendix A. The search included terms related to interventions, self- and co-regulation, adolescents and young adults, and adults who may support youth and young adults' development. In order to capture publications that were not included in the Self-Regulation and Toxic Stress Series, we limited the search to documents published between 2013 and 2017. We also captured relevant citations when screening articles for the literature review ("Group E" described on p. 103). Using these strategies, we identified 557 potential measures of adolescent and young adult self-regulation and 38 potential measures of adult co-regulation.

MEASURES REVIEW INCLUSION CRITERIA

We used the following criteria to assess whether the initial set of identified measures were relevant to the project and appropriate for further review:

- **Measures capture one or more of the domains and skills listed in our theoretical model of self-regulation and co-regulation in the context of HMRE programs for youth.** These domains, depicted in Figure III.1, include behavioral, emotional, and cognitive regulation (for self-regulation) and relationships, environment, and skills coaching (for adult co-regulation).
- **Measures are feasible to implement in an HMRE program setting.** HMRE program staff do not typically interact with youth outside of a workshop; we excluded measures that required observations outside of a group workshop.
- **Measures are appropriate for the target population of the project.** Measures could be used with adolescents and young adults ages 14 to 24 or HMRE program educators.

Once we screened measures according to the first three criteria, we assessed the remaining measures on two dimensions:

- **Measures demonstrate psychometric properties that indicate they have adequately captured the construct of interest in prior studies.** For instances where there were multiple measures for similar self-regulation constructs, we rank-ordered and selected the most valid measures. Statistical tests showed that the items in these measures were consistently correlated with each other when answered multiple times. These results, expressed with a Cronbach's alpha (α) score, indicated they were reliably

measuring a single construct. Generally, these measures had an α above .7, which is widely viewed as adequate. We did not perform this step for co-regulation measures because we identified only a small number of measures. However, co-regulation measures with reported psychometric properties also demonstrated adequate reliability.

- **Measures align with the training approaches and skills targeted by the formative RCE.** We selected the measures that were relevant to the strategies that the programs selected to pilot test, as described in Chapter V.

ELEVEN MEASURES OF ADOLESCENT AND YOUNG ADULT SELF-REGULATION MET INCLUSION CRITERIA

Of the 557 self-regulation measures identified in the initial search, we dropped 495 because they did not meet the first three criteria of the scan. Application of the first criterion led to the exclusion of 120 potential measures because they did not measure the skills listed in our theoretical model. Five potential measures were dropped because they were not feasible for use in an HMRE setting. Most of the potential measures, 370, were not appropriate for the target population.

After sorting the remaining 62 potential self-regulation measures by domain and reliability, we selected 11 that had the strongest reliability—in other words, the highest α —and were best aligned with the formative RCE (Appendix Table C.1).

Appendix Table C.1. Crosswalk of recommended self-regulation measures and domains

Measure	Emotion regulation	Cognitive regulation	Behavior regulation
Behavior Rating Inventory of Executive Function—Adult Version (Roth et al. 2005)	✓	✓	✓
Difficulties in Emotional Regulation Scale (Gratz and Roemer 2004)	✓	✓	✓
Interpersonal Reactivity Index (Davis 1980)	✓	✓	
Empathy Scale—Flourishing Children Project (Lippman et al. 2014)	✓		
Mindfulness Attention and Awareness Scale (Brown and Ryan 2003)	✓		
Goal Orientation Scale—Flourishing Children Project (Lippman et al. 2014)		✓	
Social Problem-Solving Inventory—Revised (Wakeling 2007)		✓	

Measure	Emotion regulation	Cognitive regulation	Behavior regulation
Conflict Tactics Scale (Feldman and Gowen 1998)			✓
Delaying Gratification Inventory (Hoerger et al. 2011)			✓
Grit Scale (Duckworth et al. 2007)			✓
Communication Scale—Children, Youth, and Families at Risk (Barkman and Machtmes 2002)			✓

NINE MEASURES OF ADULT CO-REGULATION MEASURES MET INCLUSION CRITERIA

Because our search yielded far fewer measures of co-regulation than self-regulation, we selected measures for further review if they met at least the first, second, and third criteria. Of the 38 potential measures that we identified in our initial search, we dropped 27 because they did not capture the co-regulation skills listed in our theoretical model. Seven measures were not feasible to implement in an HMRE program setting; therefore, we dropped them. Since we identified so few measures of co-regulation, we kept measures if they could be adapted to fit our target population. For example, we reviewed several measures that were designed to assess adolescents' or young adults' interactions with their parents. We opted to include these measures in our review if they contained items that could easily be adapted to assess interactions between youth and HMRE educators. However, we dropped eight more measures because even with minor adaptations, they would not be appropriate for 14- to 24-year-olds or educators. Ultimately, we selected nine measures best suited for the formative RCE (Appendix Table C.2).

Appendix Table C.2. Crosswalk of recommended co-regulation measures and domains

Measure	Warm, responsive relationships	Coaching	Structuring the environment
Youth Program Self-Assessment (Borden 2015)	✓	✓	✓
Delaware School Climate Scale, Teacher/Staff Version (Bear et al. 2016)	✓		✓
ED School Climate Survey, student and teacher versions (U.S. Department of Education 2018)	✓	✓	✓
Classroom Assessment Scoring System—Secondary School Version (Pianta et al. 2012)	✓		✓

Inventory of Parent and Peer Attachment (Armsden and Greenberg 1987)	✓		
Youth–Mentor Relationship Questionnaire (Rhodes et al. 2005)	✓		
Parenting Scale for Adolescents (Irvine et al. 1999)	✓	✓	✓
Socio-Emotional Guidance Questionnaire (Jacobs et al. 2013)		✓	
Teacher Sense of Efficacy Scale (Tshannen-Moran and Hoy 2001)			✓

ED = U.S. Department of Education.

MEASURES ASSESSED EDUCATOR KNOWLEDGE, USE OF STRATEGIES, AND YOUTH PERCEPTIONS

Taken together, the measures we identified cover a range of skills related to youth self-regulation and adult co-regulation. We adapted a subset of the measures to assess the specific knowledge and skills that most closely aligned with the training approaches and resources tested in the formative RCE. Even though many of the measures included in our review reported adequate reliability, few of them have been used with diverse populations of youth or educators in the context of HMRE or other youth development programs. This is especially true of the measures of co-regulation, which were mostly developed for teachers and parents, rather than educators who facilitate youth programs. We also developed new items and measures where none existed to assess important constructs. Specifically, the items and measures created by the SARHM team included a staff interview protocol, a session assessment form, and a group session observation tool.

In total, we incorporated these measures into six data collection instruments that we developed to support the formative RCE. Appendix Table C.3 describes the measures adapted to create each instrument, when the instrument was to be administered, the type of respondents, and the estimated length. Two of the six instruments adapted measures identified in the scan; four were developed by the SARHM team. We administered them on a schedule that aligned with each program’s three planned learning cycles (sequential four-week cycles at Children’s Harbor, and at MTCL, an eight-week cycle followed by two simultaneous eight-week cycles and a four-day intensive camp):

- **Educator questionnaire:** Before and after initial training on youth self-regulation and the co-regulation strategies, educators completed a self-assessment of their knowledge of self-regulation and co-regulation, their own self-regulation skills, their use of co-regulation strategies, and the extent to which the HMRE program climate supported youth self-regulation.

- **Semistructured interview protocol:** At the end of each learning cycle in Children's Harbor and during the second and third cycles in MTCL, we interviewed educators and program leaders to document their experiences and perspectives about using the co-regulation strategies during program activities.
- **Session assessment form:** Educators completed these forms roughly once a week to report frequency and ease of use of the co-regulation strategies during group workshops and individual meetings with youth. Educators also rated their own performance and comfort using the strategies.
- **Group session observation tool:** SARHM team members and trained supervisors used this tool to assess educators' use of co-regulation strategies and youth engagement during group sessions in all three learning cycles. Using time sampling in 15-minute increments, observers documented use of the co-regulation strategies and quality of the workshop session. The observers also documented any disruptions that occurred during the session, including the type and length of the disruption and the educators' response.
- **Youth questionnaire:** Administered to youth who participated in focus groups, this questionnaire obtained information about the youth's knowledge of self-regulation, a self-assessment of skills gained from the program, and youth's perceptions of educators' behaviors and the program climate.
- **Youth focus group protocol:** We developed the youth focus group protocol to gather information about youth's perceptions of their own knowledge and skill gains during the program, including healthy relationship and self-regulation skills. We also asked about their satisfaction with the HMRE program services and their interactions with program educators. Questions were designed to elicit youth feedback about educators' use of co-regulation strategies.

Appendix Table C.3. Data collection instruments for the formative RCE

Instrument	Measures adapted for the tool	Timing of administration	Respondents	Length
Educator questionnaire	Delaware School Climate Scale, Teacher/Staff Version, Goal Orientation Scale—Flourishing Children Project, Socio-Emotional Guidance Questionnaire, Teacher Sense of Efficacy Scale, Parenting Scale for Adolescents, ED School Climate Survey, Youth Program Self-Assessment	Before the initial SARHM training and at the end of the first learning cycle	Educators	15 minutes
Semi-structured interview protocol	Developed by the SARHM team	Children's Harbor completed at the end of second and third cycles, MTCI completed two sets during Cycle 2/3	Educators and program leaders	20 minutes
Session assessment form	Developed by the SARHM team	Children's Harbor completed after each workshop, MTCI completed once per week	Educators	10 minutes
Group session observation tool	Developed by the SARHM team	Completed during workshops	Observers	40–90 minutes, depending on workshop length
Youth questionnaire	Difficulties in Emotional Regulation Scale, Interpersonal Reactivity Index, Conflict Tactics Scale, Goal Orientation Scale—Flourishing Children Project, Inventory of Parent and Peer Attachment, Youth-Mentor Relationship Questionnaire, ED School Climate Survey	During the third cycle, before participating in a focus group (only at Children's Harbor)	Youth	15 minutes
Youth focus group protocol	Developed by the SARHM team	Conducted at the end of the third cycle at Children's Harbor	Youth	60 minutes

ED = U.S. Department of Education.

A PILOT OF CO-REGULATION MEASURES TO ASSESS FEASIBILITY AND RELIABILITY

In addition to the formative RCE, which is the primary focus of Chapters V and VI of this report, we conducted a separate pilot test of co-regulation measures we developed for SARHM. For this measures pilot, we revised three of the formative RCE measures that assess educators' self-regulation and co-regulation skills: the educator questionnaire, the session assessment form, and the group session observation tool. Three youth-serving HMRE programs that did not participate in the formative RCE participated in the pilot of these measures.

The goal of the measures pilot test was to take an initial step in testing the feasibility and reliability of newly developed measures of co-regulation. Although we originally developed the measures as part of the RCE, a key objective of the measures pilot was to broaden the potential use of the co-regulation measures by adapting them for use in HMRE programs, regardless of whether staff had received co-regulation training. By doing so, we were able to assess whether the measures could be valid and reliable indicators of how well educators co-regulate during the HMRE workshops.

The pilot test showed that the co-regulation measures were feasible in an HMRE setting. HMRE program educators and observers perceived the measures as useful, and observers were able to use the group workshop observation measure to document co-regulation behaviors. The results of the pilot also pointed to some future adaptations and areas for exploration. For example, there was variation between how often educators reported using co-regulation supports and how often they were observed engaging in those behaviors. Also, psychometric testing suggested that item-level changes to the educator questionnaire and session assessment form were warranted, and observer feedback suggested changes to the workshop observation form. (Reliability scores for the measures are not publicly available due to Paperwork Reduction Act requirements.) Additional information about the measures pilot will be presented in an upcoming publication (Alamillo et al, 2020).

Appendix Table C.4. Self-Regulation Measures Selected for Further Review

Measure Name and Authors	Domains and Skills	Summary of Measure (Length, Respondent, Purpose, Mode, Subscales)	Target Population	Reliability	Use in Studies with Similar Populations	Cost and Rules for Adaptation
Behavior Rating Inventory of Executive Function—Adult Version (Roth et al. 2005)	Behavior regulation Organization of time and materials Persistence in the face of emotional arousal Emotional regulation Labeling, managing, and expressing feelings Cognitive regulation Cognitive flexibility Executive functioning	75-item, self- or observer-report questionnaire to assess executive function Consists of nine factors: (1) inhibition of impulses, (2) cognitive flexibility in problem solving and shifting between tasks, (3) emotional control, (4) self-monitoring when interacting with others, (5) initiation of new tasks, (6) working memory, (7) planning and organization of time, (8) completing tasks carefully, and (9) organization of materials	Developed for adults (18 and over), but most items are also appropriate for adolescents	Alpha (factors, self-report) = 0.73–0.90 (composite, self-report) = 0.96 Test-retest (factors, self-report) = 0.82–0.92 Test-retest (composite, self-report) = 0.94	Descriptive study of the relationship between young adult executive function and procrastination (Rabin et al. 2011)	\$297.00 for manual and materials for assessing 25 individuals No rules for adaptation
Difficulties in Emotion Regulation Scale (Gratz and Roemer 2004)	Emotional regulation Mindfulness Labeling, expressing, and managing feelings Self-calming strategies Cognitive regulation Executive functioning Behavior regulation Persistence in the face of emotional arousal	36-item self-report questionnaire to assess self-awareness about emotion and self-efficacy in regulating emotion Consists of six factors: (1) non-acceptance of emotional responses, (2) difficulties engaging in goal-directed behavior, (3) impulse control difficulties, (4) lack of emotional awareness, (5) limited access to emotion regulation strategies, and (6) lack of emotional clarity	Developed for adults (18 and over), but most items are also appropriate for adolescents	Alpha (factors, self-report) = 0.80–0.89 Alpha (composite, self-report) = 0.93	Evaluation of acceptance-based emotion regulation intervention (Gratz and Gunderson 2006) Descriptive study on links between emotion regulation and anxiety (Roemer et al. 2009)	Free No rules for adaptation

Measure Name and Authors	Domains and Skills	Summary of Measure (Length, Respondent, Purpose, Mode, Subscales)	Target Population	Reliability	Use in Studies with Similar Populations	Cost and Rules for Adaptation
Interpersonal Reactivity Index (Davis 1980)	Emotional regulation Empathy and compassion Cognitive restructuring /reframing Cognitive regulation Perspective taking	28-item self-report questionnaire to assess empathy Consists of 4 subscales: (1) perspective taking, (2) fantasy, (3) empathetic concern, and (4) personal distress	Appropriate for adults and adolescents	Alpha (factors, self-report) = 0.70–0.84	Evaluation of intervention that teaches empathy (Hatcher et al. 1994)	Free No rules for adaptation
Empathy Scale—Flourishing Children Project (Lippman et al. 2014)	Emotional regulation Empathy and compassion	4-item self-report questionnaire to assess ability to understand what someone else is feeling Consists of a single scale	Developed for adolescents but most items are appropriate for adults	Alpha (composite, self-report) = 0.84	Scan and review of youth measurement tools (Olenik et al. 2013)	Free No rules for adaptation
Mindfulness Attention and Awareness Scale (Brown and Ryan 2003)	Emotional regulation Mindfulness	15-item self-report questionnaire to assess mindfulness Consists of a single scale	Developed for adults (18 and over), but most items are also appropriate for adolescents	Alpha (composite, self-report) = 0.80–0.90 Test-retest (composite, self-report) = 0.81	Evaluation of intervention that provides contemplative training (McGarrigle and Walsh 2011) Evaluation of intervention that teaches mindful parenting (Van der Oord et al. 2012)	Free No rules for adaptation

Measure Name and Authors	Domains and Skills	Summary of Measure (Length, Respondent, Purpose, Mode, Subscales)	Target Population	Reliability	Use in Studies with Similar Populations	Cost and Rules for Adaptation
Goal Orientation Scale—Flourishing Children Project (Lippman et al. 2014)	Cognitive regulation Goal setting (short- and long-term)	7-item self- or parent-report questionnaire to assess motivation and ability to make viable plans and to take action toward achieving them Consists of a single scale	Developed for adolescents, but most items are also appropriate for adults	Alpha (composite, self-report) = 0.88	Scan and review of youth measurement tools (Olenik et al. 2013)	Free No rules for adaptation
Social Problem-Solving Inventory-Revised (Wakeling 2007)	Cognitive regulation Problem solving Decision making	52-item self-report long form or 25-item self-report short form to assess problem-solving skills Consists of five factors: (1) positive problem orientation, (2) negative problem orientation, (3) rational problem solving, (4) impulsivity/carelessness style, and (5) avoidance style	Appropriate for adolescents and adults (13 and older)	Alpha (factor, self-report, short-form) = 0.74–0.85 Test-retest (factor, self-report, short-form) = 0.72–0.79	Psychometric validation for use among young adults (Hawkins et al. 2009) Descriptive study of effects of prenatal conditions on adolescent problem solving (McGee et al. 2009) Evaluation of problem-solving therapy (Bell and D’Zurilla 2009)	\$188.00 for manual and materials for assessing 25 individuals No rules for adaptation
Conflict Tactics Scale (Feldman and Gowen 1998)	Behavior regulation Conflict resolution Healthy behavioral coping Prosocial or cooperative and compassionate communication	29-item self-report questionnaire to assess response to conflict with a romantic partner Consists of six factors: (1) avoidance, (2) compromise, (3) distraction, (4) overt anger, (5) seeking social support, and (6) violence	Appropriate for adolescents and young adults (14–19), although items also appropriate for older adults	Alpha (avoidance, compromise, overt anger, and violence) = 0.67–0.84	STREAMS Evaluation (Wood et al. 2018) Evaluation of intervention to reduce domestic violence (Dunford 2000)	Free No rules for adaptation

Measure Name and Authors	Domains and Skills	Summary of Measure (Length, Respondent, Purpose, Mode, Subscales)	Target Population	Reliability	Use in Studies with Similar Populations	Cost and Rules for Adaptation
Delaying Gratification Inventory (Hoerger et al. 2011)	Behavior regulation Delaying gratification	35-item self-report long form or 10-item self-report short form to assess delay of gratification Consists of five factors of delaying gratification: (1) food, (2) physical, (3) social, (4) money, and (5) achievement	Developed for adults (18 and over), although most items also appropriate for adolescents	Alpha (factors, self-report) = 0.71–0.89 Alpha (composite, self-report, long form) = 0.91 Alpha (composite, self-report, short form) = 0.79	Descriptive study of links between experiential avoidance and delay of gratification (Gerhart et al. 2013) Experimental study of paternal disengagement indicators on sexual decision making (DelPriore and Hill 2013)	Free No rules for adaptation
Grit Scale (Duckworth et al. 2007)	Behavior regulation Persistence in the face of emotional arousal	12-item self-report long form or 8-item self-report short form to assess persistence Consists of two factors: (1) consistency of interest and (2) perseverance of effort	Appropriate for adolescents and adults (13 and older)	Alpha (factors, self-report, long form) = 0.74–0.84 Alpha (composite, self-report, long form) = 0.77–0.85 Alpha (factors, self-report, short form) = 0.60–0.79 Alpha (composite, self-report, short form) = 0.73–0.83	Evaluation of charter schools (Dobbie and Fryer 2015) Descriptive study of relationship between self-control and grit (Duckworth and Gross 2014)	Cost unknown – Free to use for non-commercial purposes, but permission must be granted for commercial use No rules for adaptation

Measure Name and Authors	Domains and Skills	Summary of Measure (Length, Respondent, Purpose, Mode, Subscales)	Target Population	Reliability	Use in Studies with Similar Populations	Cost and Rules for Adaptation
Communication Scale—Children, Youth, and Families at Risk (Barkman and Machtmes 2002)	Behavior regulation Prosocial or cooperative and compassionate communication	23-item self-report questionnaire to assess ability to communicate Consists of a single scale	Developed for adolescents (12–18), but most items are also appropriate for adults	Alpha (composite, self-report) = 0.79	Use in 4-H programs (Duerden et al. 2012)	Free No rules for adaptation

Appendix Table C.5. Co-Regulation Measures Selected for Further Review

Measure Name and Authors	Domains and Skills	Summary of Measure (Length, Respondent, Purpose, Mode, Subscales)	Target Population	Reliability	Use in Studies with Similar Populations	Cost and Rules for Adaptation
Youth Program Self-Assessment (Borden 2015)	Warm, responsive relationships Responding with warmth Coaching self-regulation skills Supporting long-term goal setting Coaching problem-solving and decision-making skills Structuring the environment Engineering positive group norms Creating a safe and positive climate Maintaining clear rules Providing environmental prompts to reinforce skills	24-item, self-report questionnaire for program staff to measure features of successful youth development programs Measures eight program dimensions: (1) physical and psychological safety, (2) appropriate structure, (3) supportive relationships, (4) opportunities to belong, (5) positive social norms, (6) support for efficacy and mattering, (7) opportunities for skill building, and (8) integration of family, school, and community efforts	Programs for adolescents and young adults	Unknown	None	Free No rules for adaptation
Delaware School Climate Survey, student and teacher versions (Bear et al. 2016)	Warm, responsive relationships Responding with warmth Validating and offering support Allowing youth to make decisions Structuring the environment	Consists of seven subscales: (1) teacher-student relations, (2) student relations, (3) teacher-home communication, (4) clarity of expectations, (5) fairness of rules, (6) school safety, (7) schoolwide student engagement	Students and teachers in grades 3–12	Alpha (student version) = .77–.88 Alpha (teacher version) = .88–.91	Measures of Effective Teaching Study (Kane et al. 2012)	Free No rules for adaptation

Measure Name and Authors	Domains and Skills	Summary of Measure (Length, Respondent, Purpose, Mode, Subscales)	Target Population	Reliability	Use in Studies with Similar Populations	Cost and Rules for Adaptation
	Engineering positive peer relationships Maintaining clear rules Providing environmental prompts to reinforce skills					
CLASS–Secondary (Pianta and Hamre 2012)	Warm, responsive relationships Responding with warmth Validating and offering support Allowing youth to make decisions Structuring the environment Engineering positive group norms Maintaining clear rules Monitoring opportunities for risk taking	Observational tool to measure the quality of classroom instruction Trained observers assess 15-minute segments of instruction (either in person or by video); repeat 2–4 times in a single observation Consists of 12 dimensions: (1) positive climate, (2) teacher sensitivity, (3) regard for adolescent perspectives, (4) behavior management, (5) productivity, (6) negative climate, (7) instructional learning formats, (8) content understanding, (9) analysis and inquiry, (10) quality of feedback, (11) instructional dialogue, and (12) student engagement These dimensions fall under 3 domains: (1) emotional support, (2) classroom organization, and (3) instructional support	7th- through 12th-grade classrooms	Inter-rater reliability = .73–.95	Secondary MyTeachingPartner Study (Allen et al. 2011) Measures of Effective Teaching Study (Kane et al. 2012)	Certification on the tool costs several hundred dollars Scoring manual costs \$55

Measure Name and Authors	Domains and Skills	Summary of Measure (Length, Respondent, Purpose, Mode, Subscales)	Target Population	Reliability	Use in Studies with Similar Populations	Cost and Rules for Adaptation
Inventory of Parent and Peer Attachment (Armsden and Greenberg 1987)	Warm, responsive relationships Responding with warmth Validating and offering support Allowing youth to make decisions Encouraging compassion for self and others	53-item, youth self-report questionnaire to assess attachment to parents and peers. For each relationship (parents and peers), three dimensions are assessed: (1) mutual trust, (2) communication, and (3) anger and alienation	Adolescents ages 12–20	Alpha = .87–.92 Test-retest = .86–.93	Evaluation of the Big Brothers, Big Sisters program (Chan et al. 2013) 4-H Positive Youth Development study (Lerner et al. 2005)	Free No rules for adaptation
Socio-Emotional Guidance Questionnaire (Jacobs et al. 2013)	Coaching and modeling skills Teaching strategies to manage distress Encouraging help-seeking behavior Coaching problem solving Coaching labeling and awareness of emotions Encouraging healthy decision making	57-item, teacher self-report questionnaire to assess socioemotional guidance activities in schools Consists of 3 domains: (1) coordination and organization of the school, (2) support of teachers at the school, and (3) guidance by teachers	Teachers in grades 7–12	Alpha = .70–.81	None	Free No rules for adaptation
Teacher Sense of Efficacy Scale (Tshannen-Moran and Hoy 2001)	Structuring the environment Engineering positive peer interactions Creating a safe and positive climate Maintaining clear rules Providing space and time to calm down	24-item, teacher self-report questionnaire to assess teachers' feelings about their ability to manage student behavior in the classroom (short form has 12 items) Consists of three subscales: (1) efficacy for instructional strategies, (2) efficacy	Teachers in preschool through high school	Alpha = .87–.91	Study of longitudinal development of teacher efficacy (Hoy and Spero 2005)	Free No rules for adaptation

Measure Name and Authors	Domains and Skills	Summary of Measure (Length, Respondent, Purpose, Mode, Subscales)	Target Population	Reliability	Use in Studies with Similar Populations	Cost and Rules for Adaptation
	Providing environmental prompts to reinforce skills	for classroom management, and (3) efficacy for student engagement				
Teacher Response Survey (Gottesman 2016)	Warm, responsive relationships Responding with warmth Validating and offering support Allowing youth to make decisions Coaching self-regulation skills Teaching strategies to manage distress Encouraging help-seeking behavior Practicing interpersonal communication skills Structuring the environment Engineering norms to promote a safe, positive climate Maintaining clear rules Monitoring opportunities for risk taking Providing space and time to calm down	Self-report questionnaire for teachers consisting of two vignettes followed by 12 survey items Items assess teachers' probable responses to students' behavior, beliefs about the impact of their responses on students' behavior, and their responsibility to help students learn how to manage their emotions	Teachers in preschool through high school	Unknown	Evaluation of an emotional regulation professional development program (Gottesman 2016)	Free No rules for adaptation

Measure Name and Authors	Domains and Skills	Summary of Measure (Length, Respondent, Purpose, Mode, Subscales)	Target Population	Reliability	Use in Studies with Similar Populations	Cost and Rules for Adaptation
Parenting Scale for Adolescents (Irvine et al. 1999a)	Warm, responsive relationships Avoiding harsh, shaming remarks Encouraging compassion for self and others Coaching self-regulation skills Teaching strategies to manage distress Practicing interpersonal communication skills Structuring the environment Engineering norms to promote a safe, positive climate Maintaining clear rules Monitoring opportunities for risk taking Providing space and time to calm down Providing prompts to reinforce skill use	13-item, self-report scale for parents to measure parents' discipline practices Contains two subscales: (1) overreactivity and (2) laxness	Parents of middle school children	Alpha = .82–.84	Evaluation of the Adolescent Transitions Program (Irvine et al. 1999b)	Free No rules for adaptation



SARHM