

**EARLY CHILDHOOD CONSULTATION PARTNERSHIP:
RESULTS ACROSS THREE STATEWIDE RANDOM-CONTROLLED EVALUATIONS**

FINAL REPORT WITH EXECUTIVE SUMMARY

Walter S. Gilliam

December 2014

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**Early Childhood Consultation Partnership:
Results across Three Statewide Random-Controlled Evaluations**

EXECUTIVE SUMMARY

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The Early Childhood Consultation Partnership (ECCP) was created in 2002 as Connecticut's statewide early childhood mental health consultation system, a program funded by the Connecticut Department of Children and Families that provides early childhood mental health consultants to offer assistance and coaching to early education and child care providers wherever a request has been made. The program is freely available to all early education and child care providers, both public- and private-funded, throughout the entire state of Connecticut.

The ECCP service model is 12 weeks long, with 4 to 6 hours of classroom-based consultation per week provided by one of several supervised masters-level consultant supported by ECCP, plus a week-16 follow-up visit. The intervention is manualized and menu-driven based on individualized needs of teachers and classrooms. ECCP provides both classroom-specific consultation (focusing on improving teacher-child and teacher-teacher interactions, classroom behavior management, and overall program quality, including teacher and director supports) and child-specific consultation (focusing on improving teacher classroom behavioral and social-emotional strategies, parent partnerships, and community service referrals for specific children). A process evaluation of ECCP, conducted during the programs first year of operation, indicated good fidelity to the program's goals in both child- and classroom-specific services, as well as high levels of teacher satisfaction.

ECCP COSTS AND COMPARISONS TO ALTERNATIVES

ECCP has grown in budget, numbers of classrooms and children served, and scope, since its creation in October 2002. During FY 2003 (program year 1), ECCP served 128 children and 72 classrooms, with a total budget of \$605,886. During FY 2014 (program year 12), ECCP served 395 children and 217 classrooms, with a total budget of \$2,270,475. Total costs per service hour were computed for fiscal years 2007 through 2014, during which time these unit costs decreased from \$284 per hour to a much more efficient \$190 per hour. Child-specific services cost about \$2,000 per child, far less than other prevalent responses to challenging classroom behaviors initiated by schools, such as special education placement and grade retention.

METHODS

The impact of ECCP was evaluated in three statewide random-controlled trial (RCT) evaluations – two RCT evaluations in preschool centers (Evaluations 1 and 2) and one small-sample pilot RCT in infant/toddler centers (Evaluation 3). Evaluation 1 was conducted during FY 2005 and FY 2006 and Evaluations 2 and 3 were conducted during FY 2009 and FY 2010. Sample sizes for the three evaluations consisted of classrooms receiving classroom-specific services, as well as children receiving child-specific services (Evaluation 1: 43 treatment and 42 control classes, 75 treatment and 69 control children; Evaluation 2: 44 treatment and 44 control classes, 73 treatment and 76 control children; Evaluation 3: 17 treatment and 18 control classes, 15

treatment and 17 control children). Additionally, in Evaluations 2 and 3, effects of ECCP were evaluated for randomly-selected peers who were not the recipients of child-specific services (Evaluation 2: 85 treatment and 88 control peers; Evaluation 3: 26 treatment and 31 control peers). Although early childhood mental health consultation systems exist in several states across the nation, currently ECCP is the only one to have been evaluated in rigorous random-controlled evaluations.

RESULTS

Classroom quality. Across all three evaluations, no statistically significant impacts were found for any measure of classroom quality or teacher-child interactions obtained by objective condition-blind raters. Overall, the 3-month version of ECCP appears to be too brief to create changes in teacher behaviors that can be detected by outside objective raters that are condition-blinded.

Target Child Behaviors. Results of teacher ratings of target children's challenging behaviors showed significant impacts for both evaluations of preschoolers, but not for the small-sample pilot evaluation of toddlers in infant/toddler programs. In both Evaluations 1 and 2, teachers rated preschoolers receiving ECCP as less hyperactive and oppositional and less likely to engage in other challenging classroom behaviors. In Evaluation 3, effect sizes were suggestive of decreased hyperactivity for toddlers, but the sample size was too small to detect this as statistically significant. Although these positive findings were present based on teacher ratings, no significant differences were noted by objective raters who were blinded as to treatment or control condition. Also, ECCP resulted in greater levels of home-school collaboration and family involvement for both preschoolers (Evaluation 2) and toddlers (Evaluation 3) receiving child-specific services.

Random peer behaviors. In Evaluation 3, randomly-selected toddlers who were not the focus of ECCP child-specific services were rated by teachers as more socially competent and possessing greater resiliency skills. Also, effect sizes suggested decreased behavior problems for randomly-selected toddlers in ECCP treatment classes, but the sample size was too small to detect this as a statistically significant finding. This finding was not present for randomly-selected preschoolers in Evaluation 2.

CONCLUSIONS AND RECOMMENDATIONS

As measured by the most rigorous methods possible, ECCP is a highly successful and impactful intervention for improving child behavioral outcomes and improving family involvement in early care and education programs. Additionally, ECCP's costs are modest in comparison to common school-based alternative responses to classroom behavioral challenges, such as special education placement and grade retention. Although existing research does not support the effectiveness of either special education placement (especially self-contained services) and grade retention, both carry a significantly higher per-child cost than ECCP – about \$12,575 for special education and \$14,425 for grade retention, compared to about \$2,000 for ECCP. Five recommendations are offered.

First, ECCP should continue to be offered to all early care and education programs within Connecticut. Positive findings were noted across a variety of program types and age groups, supporting ECCP's currently wide availability within Connecticut.

Second, any potential changes to ECCP's structure and process should be avoided or undertaken with great care. Results of these three random-controlled evaluations indicate that ECCP is highly effective in its current state of operation. ECCP's strength of evidence for effectiveness is unique among early childhood mental health consultation systems across the nation and among all support programs within Connecticut.

Third, Connecticut should consider conducting or funding a needs study to determine the true need for ECCP services across the state. ECCP is currently a *responsive* intervention. A needs study using anticipated rates (as opposed to referral rates) of challenging behaviors could yield a more accurate number of the programs for which ECCP could be beneficial, as well as indicate program types and geographic areas where ECCP is being underutilized.

Fourth, Connecticut should consider implementing a statewide system of universal screening for mental health needs among children in early care and education settings and creating a statewide referral system for ECCP, in order to encourage greater utilization of ECCP services and better identify children with internalizing behaviors (extreme anxiety, sadness, shyness, etc.) who currently are not being provided ECCP services due to a lack referrals.

Fifth, any future studies of the effectiveness of ECCP should augment, rather than replicate, the findings from the three evaluations presented here. Any future effectiveness studies should focus on either (a) exploring ECCP's effects in infant/toddler programs with large enough sample sizes to detect non-trivial effects, (b) examining the effects of ECCP on classroom quality and teacher-child interactions during the more intensive center-wide services offered by ECCP, or (c) contrasting ECCP's effectiveness in different levels of duration and intensity to better understand the dosage of ECCP needed to maximize impacts or create further cost efficiencies to the already highly effective ECCP model.

**Early Childhood Consultation Partnership:
Results across Three Statewide Random-Controlled Evaluations**

FINAL REPORT

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Early childhood mental health consultation (ECMHC) is now viewed as an effective means for reducing the challenging behaviors that often lead to expulsions from preschool programs. Preschool teachers who report access to a professional who can provide classroom-based supports regarding challenging behaviors report significantly fewer preschool expulsions as compared to teachers who report having no such support (Gilliam, 2005, 2008). More specifically, in this nation-wide survey of state-funded prekindergarten teachers, respondents were asked to rate their access to classroom-based mental health consultation for access to either a psychologist/psychiatrist or a social worker. For teachers reporting no access to a psychologist/psychiatrist, 14.3% reported at least one expulsion in the past year, as opposed to 10.3% for teachers reporting on-call access and 8.0% for regular classroom visits. For teachers reporting no access to a social worker, 13.5% reported at least one expulsion in the past year, as opposed to 11.1% for teachers reporting on-call access and 8.4% for regular classroom visits. Expressed as the rate of expulsions per 1,000 students enrolled, no access to a psychologist/psychiatrist was 10.76, on-call access was 6.17, and regular visits was 5.68. Similarly, the rate of expulsions per 1,000 enrolled students was 8.56 for no access to a social worker, 6.55 for on-call access, and 6.29 for regular visits. Unfortunately, relatively few teachers reported access to such supports. However, the number of states and localities funding ECMHC has increased significantly in recent years, with at least nine states providing some level of public support for these programs.

As of this current report, evaluations of the effectiveness of ECMHC have been conducted in at least seven states, including the District of Columbia, using a variety of measures and methodologies (Hepburn, Perry, Shivers, & Gilliam, 2013). Positive effects for ECMHC include reductions in children's challenging behaviors, improvements in children's pro-social behaviors, reduced expulsions, improvements in teachers' efficacy and confidence, improved teacher skills, reduced teacher job stress and turnover, improved teacher-child interactions, and improved classroom climate. However, across these seven evaluations from around the nation, Connecticut's Early Childhood Consultation Partnership (ECCP) program is the only ECMHC system that has been evaluated in rigorous random-controlled evaluations.

The purpose of this report is to present results all previous evaluations of ECCP, including an early process evaluation and three different statewide random-controlled trial (RCT) evaluations, as well as comparative cost data. Findings and data presented in this report span the entire existence of ECCP, from Program Year 1 (FY 2003) through Program Year 12 (FY 2014). All three RCT evaluations were statewide random-controlled studies of the effectiveness of ECCP on classroom and child variables. Data for Study 1 were collected 2004-2006 and focused on the effectiveness of ECCP on preschool-age (3-5 years old) children in preschool settings. Data for Studies 2 and 3 were collected 2008-2010, with Study 2 focusing on effects on preschoolers and

preschool settings and Study 3 focusing on effects on toddlers (2-year olds) in infant-toddler settings (0-2 years old).

DESCRIPTION OF ECCP

ECCP was created in 2002 as Connecticut's statewide early childhood mental health consultation (ECMHC) system, a program funded by the Connecticut Department of Children and Families that provides early childhood mental health consultants to offer assistance and coaching to early education and child care providers wherever a request has been made. The program is freely available to all early education and child care providers, both public- and private-funded, throughout the entire state of Connecticut.

Typically, services are requested by child care center directors or staff, where there are either behavioral or social-emotional concerns for individual children or classroom-wide behavioral management challenges. The consultation focuses on the overall social-emotional atmosphere within the classroom, also addressing both behavioral concerns for individual children and classroom-wide behavioral management challenges.

The ECCP service model is 12 weeks long, with 4 to 6 hours of classroom-based consultation per week provided by one of several supervised masters-level consultant supported by ECCP, plus a week-16 follow-up visit. The intervention is manualized and menu-driven based on individualized needs of teachers and classrooms. In addition to providing teacher training on various behavioral and social-emotional topics, the consultation has two main areas of focus:

- **classroom-specific consultation**, focusing on improving teacher-child and teacher-teacher interactions, classroom behavior management, and overall program quality, including teacher and director supports, and
- **child-specific consultation**, focusing on improving teacher classroom behavioral and social-emotional strategies, parent partnerships, and community service referrals for specific children.

ECCP Goals and Program Development

The goal of ECCP is to serve as a promotion, prevention and early intervention program for children birth to five; providing support, networking, and training opportunities in the areas of social and emotional health in early childhood, at family, community, and statewide levels. ECCP's service model was based on extant ECMHC literature (Donahue, Falk et al. 2000, Knitzer 2000, Knitzer 2001, Powell, Fixsen et al. 2003), systems theory, and principals found in various published curricula and measures (e.g., *Creative Curriculum for Preschool*, *Devereux Early Childhood Assessment Program*, and *Starting Small: Teaching Tolerance in Preschool and the Early Grades*). Programmatic materials (including an overview of the resources used in the development of ECCP; consultant orientation, training, and supervision plans; referral and service guidelines; details on programmatic components and assessment measures; and instructions for using the centralized data collection system) are housed at the centralized

program management office that administers the program.¹ The manual is provided to each ECCP consultant and revised annually to reflect any program improvement changes.

ECCP Referral Process

The site referral process for ECCP is typically informal and comes from the ECCP consultants' active membership in various early childhood collaborative committees, advisory board memberships, community agencies, and other community-based groups, such as regional child care director meetings. Referrals for ECCP services are accepted from early education and child care centers serving children birth to five-years old, as well as parents or guardians of children exhibiting challenging behaviors. On average, about a quarter to a fifth of all ECCP referrals are from sites serving infants and toddlers, with the remainder mostly serving preschoolers (ages 3- to 5-years).

Typically, a site director or teacher calls the ECCP consultant assigned to their area directly to request services after hearing about the program in the community or through one of the local collaboratives with which ECCP participates. Referral sources can include parents, center directors or other administrators, and teachers. About two thirds of the referrals for the evaluation come from directors or other administrators. (There were no parent referrals for the study sites during the evaluation detailed in this report.) ECCP consultants are assigned based on the geographical area of the referred centers.

ECCP Service Components

Classroom-specific consultation. Once a site referral is accepted, the consultation process begins with a meeting including the consultant assigned to the referred site, the site director or other administrator, and the classroom teacher(s). During the meeting, the ECCP consultant reviews the ECCP consultation agreement, gathers demographic information about the center and classroom, and gains additional information related to the request for consultation. This meeting is followed by a classroom observation, upon which the consultant bases a standardized classroom assessment, such as the *Classroom Assessment Scoring System (CLASS)* or in past years the *Early Childhood Environmental Rating Scale—Revised (ECERS-R)* or the *Infant/Toddler Environment Rating Scale (ITERS)*. The consultant then meets with the teacher(s) again for an Action Plan Development Meeting to gather additional information related to the teacher's strengths, specific areas of concern, and goals for the consultation. During the Action Plan Development Meeting, the ECCP consultant begins to introduce the teachers(s) to consultation delivery strategies by offering examples, demonstrations, and explanations to frame the role of the ECMHC and ready the teacher(s) for the consultation process. The ECCP consultant, then, enters all collected data into the centralized data collection system and produces a computer generated *Core Classroom Action Plan*, including a summary of classroom/teacher strengths, goals and objectives. The consultant then conducts a classroom team meeting to review and revise the plan with the teacher and program director or other administrator.

¹ For more information, contact ECCP Program Manager Elizabeth Bicio, LCSW, at Advanced Behavioral Health (Phone: 860-704-6198; Email: ebicio@abhct.com). Ms. Bicio is responsible for the coordination and supervision of consultation services, the provision of training modules and initiatives, collaborating with mental health providers and community agencies; and other activities surrounding the overall oversight and management of the program.

Based on the program model, the consultant then spends 4 to 6 hours per week with each classroom/teacher during the remaining eight weeks of regular consultation, providing technical assistance and assisting in the overall implementation of the action plan. Typically, 1 hour per week is spent in a team meeting with the teaching staff in the classroom during quiet moments (e.g., nap time) and 3 to 5 hours per week in the classroom working with the teaching staff in a variety of formats which often include concurrent work with 1 to 2 identified children receiving child-specific services (described below) provided within the classroom services and center-wide staff training on social-emotional topics. The exact amount of time spent in the classroom varies by teacher need, classroom structure, available resources, and consultant availability. Directors or other administrators are encouraged to participate in this process, though this level of participation varies and is at the discretion of the individual administrators. The core services are concluded on the last support visit by the ECCP consultant. Within one month of this last support visit, a post-service CLASS evaluation is conducted and follow-up team meeting is held with the site's teacher(s) and administrator(s) to review service outcomes and bring the service to a formal conclusion. In total, the ECCP consultant provides the consultation service across a 4-month period.

On-going monthly mental health consultation groups held regionally by each ECCP consultant are also made available to all staff at participating sites, and a one-time training session is provided for each participating site by that site's ECCP consultant, who has been trained through a statewide professional development system to deliver specific social-emotional development trainings. These training sessions consist of a 90-minute workshop on a topic chosen by each site. More than 30 topic choices are offered, and ECCP consultants assist teachers in their topic selection. Example topics included *Verbal Environment: Talking to Children in Supportive Ways*; and *Proactive Approaches to Behavior Management*.

Child-specific consultation. Typically, about two-thirds of teachers in ECCP referred classrooms identify one to two children for child-specific consultation, with about a third of the teachers identifying no specific children. Target children are identified either prior to referral or with the ECCP consultant in the initial team meeting process, and parents of these children are offered the child-specific services. Although parents/caregivers may decline the child-specific consultation, behavioral challenges can still be addressed globally within the context of the classroom-specific consultation described above. Parents/caregivers who agree to the child-specific services actively engage in the consultation process through a series of team meetings. During the initial meeting, the teacher(s), administrator, and family learn more about the consultation process, and the ECCP consultant obtains informed written consent for services.

Once parent/caregiver consent is obtained, child-specific information is collected through demographic and referral information forms, informal conversations with the child's parents/caregivers and teacher, and the use of a variety of standardized parent- and teacher-rated measures of child social-emotional functioning and behavior. During this initial meeting, the ECCP consultant makes arrangements to conduct informal and structured observations in the classroom and in the home environment. Computer-generated *Child Action Plans* are then created for each target child, including a section on observed strengths, as well as areas of concern and consultative goals identified through collaboration among the consultant, teachers, and parents/caregivers. The consultant then conducts another meeting with parents, teachers, and

directors to review and revise the *Child Action Plan*, to discuss classroom strategies for dealing with identified behavioral challenges, and to provide community-based resources and referrals for the child and family as needed. The ECCP consultant works with the family and center staff to arrange up to two consultation support visits that may consist of both family and center staff to help the family and staff implement the consultation plan. Support visits may be in the home with the family, in the school or child care center with the teaching staff, or both in the home and the school or child care center. The consultation service ends on the last support visit, and follow-up meetings are held one month from the end date, during which the ECCP consultant coordinates with the parent(s), teacher(s), and center director(s) one last time to review and edit the service plan as needed. The ECCP consultant then conducts 6-month follow-up telephone calls to the family and to the center.

ECCP Consultants

Consultant credentials and prior experience. ECCP services are delivered by several consultants. Although the service is managed by a centralized program management organization, each of these consultants are employed individually by various subcontracted community-based agencies across Connecticut. All consultants hold at least a Master's degree in a human services related field, mainly in psychology or social work. Although ECCP consultants are not required to be licensed mental health providers, most hold or are eligible for clinical professional licenses in areas such as counseling, marriage and family therapy, or clinical social work. About half have had prior experience working in clinical mental health settings, about a third have worked in some capacity with mental health in early care facilities, and the remainder have some amount of experience in the field of early childhood education. Nearly all of the consultants have worked with children under the age of six years, and about two-thirds have worked in education or child care settings prior to becoming an ECCP consultant.

Consultant recruitment. The centralized management organization overseeing ECCP recruits the consultants through their employing agencies (e.g., child guidance and mental health clinics). One main advertisement was distributed to subcontracting agencies in various communities around the state. Each of the consultants are employed by a subcontracted community agency. Each agency has its own geographic service area within Connecticut, as an aggregate covering the entire state.

Consultant training in ECCP. Consultants receive a variety of training lessons, organized into thirteen training units (the field of child care, family day care, and family-friend-and-neighbor care; assessing quality care; child mental health; health promotion; children with special needs; abuse and neglect; adult learning; adult resiliency; consultation; team building; partnering with systems; and community planning). All consultants receive specific training on the ECCP service model and the administration of all ECCP measures. Additional specific training topics include early childhood mental health consultation, multidisciplinary consultation, abuse/neglect petition filing, computer training, maintaining confidentiality and federal regulations, helping young children cope with trauma, managing aggression in the classroom, personal safety, cultural competency, managing aggression in the classroom, and attachment. Community-based content experts provide these specific trainings.

Consultant supervision. Consultants are provided regular clinical, reflective and administrative supervision through three means: (a) ECCP group supervision, (b) ECCP individual supervision, and (c) agency-based supervision. The ECCP program manager provides the ECCP group and individual clinical supervision, whereas clinical supervisors at the consultants' employing community-based agencies provide the agency-based supervision, as well as additional clinical supervision to augment the supervision provided through ECCP. The ECCP program manager is a Licensed Clinical Social Worker (LCSW), with a master's degree in social work and a bachelor's degree in special education specializing in social-emotional disorders. At the time of the evaluations described in this report, the program manager had a total of 15 to 20 years of experience in mental health services, over half of which were spent working in some capacity with young children from birth to five years old in both clinic- and school-based settings. The program manager was supervised by a licensed psychologist with over 20 to 25 years of clinical and management experience. All of the agency-based supervisors were licensed clinical mental health professionals.

ECCP group supervision is provided bi-weekly with each session being 2½ to 3 hours in length. These meetings include all ECCP consultants, are located at a centralized location, and focus on clinician-initiated case reviews for all ECCP consultations and provide ample opportunity for peer-to-peer learning, group supervision regarding the consultation work, and refreshers on all ECCP trainings previously discussed. *ECCP individual supervision* meetings are conducted with each consultant on a monthly basis, or more frequently as needed, and typically last for 2 hours each session. The purpose of the individual supervision is to provide an opportunity for individualized reflective and clinical supervision and to review case data management, as well as to monitor individual consultant productivity and generate ideas with regard to the needs and direction of the ECCP program on the whole. *Agency-based supervision* is also provided to each ECCP consultant by clinical supervisors at each consultant's host agency. The frequency of this supervision varies by agency, ranging from weekly to monthly.

ECCP COSTS AND COMPARISONS TO ALTERNATIVES

To document the cost of ECCP services, data are reported for each of ECCP's twelve years of complete program operation from its creation in October 2002 reflecting fiscal years 2003 through 2014. Basic information regarding budget allocations and numbers of classrooms and children served are provided, allowing the calculation of estimated per-hour costs and per-child costs of ECCP services to be calculated. These estimated costs are later compared to common education responses to challenging classroom behaviors to provide points of comparison for ECCP costs as compared to common alternative interventions.

ECCP Budget Allocations and Unit Costs

Table 1 indicates the total allocated budget for ECCP, as well as the number of children and classrooms served by ECCP for each fiscal year since it began operation in October 2002.² During the first year of ECCP's operation, figures are for a 9-month period (October 2002 through June 2003), whereas all subsequent years are for 12-month periods. As seen in Table 1, the monthly prorated budget amount increased following FY 2002, holding relatively steady from FY 2003 through FY 2006. During FY 2007 (the year of the release of the first random-

² Cost and service data for ECCP were provided by ECCP Program Manager Elizabeth Bicio, LCSW, at Advanced Behavioral Health.

controlled evaluation of ECCP; Gilliam, 2007), the total annual budget increased significantly, with ECCP also significantly increasing the scope of its home-based component of work with parents. The budget increased again in FY 2008, roughly holding steady after that time. Budget allocations were mostly provided through the Connecticut Department of Children and Families, with an additional \$100,000 annual provided through the Connecticut Department of Education during each FY 2008 through FY 2011.

Table 1.

ECCP Total Budget, Numbers of Children and Classrooms Served and Costs per Service Hour by Program and Fiscal Year

| Program Year | FY | Budget | Children Served | Classrooms Served | Cost per Service Hour |
|--------------|------|-------------|-----------------|-------------------|-----------------------|
| 1 | 2003 | \$605,886 | 128 | 72 | -- |
| 2 | 2004 | \$975,542 | 198 | 111 | -- |
| 3 | 2005 | \$905,474 | 181 | 91 | -- |
| 4 | 2006 | \$943,010 | 206 | 89 | -- |
| 5 | 2007 | \$1,585,360 | 212 | 94 | \$284 |
| 6 | 2008 | \$2,347,995 | 304 | 161 | \$244 |
| 7 | 2009 | \$2,347,995 | 369 | 183 | \$228 |
| 8 | 2010 | \$2,347,995 | 375 | 191 | \$223 |
| 9 | 2011 | \$2,347,995 | 393 | 220 | \$200 |
| 10 | 2012 | \$2,247,995 | 473 | 252 | \$166 |
| 11 | 2013 | \$2,270,475 | 417 | 202 | \$194 |
| 12 | 2014 | \$2,270,475 | 395 | 217 | \$190 |

Based on the actual expensed costs of providing ECCP (which were somewhat lower than the allocated budget in each FY) and the amount of service hours provided by ECCP, a mean cost per service hour was computed for each fiscal year from FY 2007 (when service hour data were provided) to present by dividing for each fiscal year the actual expensed costs by the total number of service hours provided (see Table 1). Note that these costs per service hours reflect the total costs of operation (e.g., consultant time, mileage, supervision, staff training, administrative costs, etc.), and therefore may not be analogous to billable hour costs for therapeutic services that do not include these overheads. Although FY 2012's costs per service hour appear highly efficient, there appeared to be unusual events that may have been contributory, such as unusually low numbers of both new staff and staff on maternity leave during FY 2012, as well as a sharp increase in the numbers of children and classrooms served. This was also the year following the discontinuance of supportive funding from the Connecticut Department of Education. Overall, however, costs per service hour generally declined steadily

from FY 2007 through FY 2014, suggesting increasing cost efficiencies in ECCP service delivery.

Within the ECCP model, children receiving child-specific services (one or two children per serviced classroom) received 10 hours each direct ECCP – apart from services provided through classroom-specific services. Therefore, the cost per service hour data reported in Table 1 multiplied by ten indicates the typical cost per child receiving child-specific services (e.g., \$1,900 per child during FY 2014).

Comparison of ECCP costs to Alternative Responses to Challenging Classroom Behaviors

For the purposes of cost comparison, these cost figures for ECCP can be compared to two common responses to challenging behaviors in schools – (a) special education placement for children with challenging behaviors and (b) grade retention. (Comparison to costs for outpatient psychotherapy are complicated due to the open-ended nature regarding the number of psychotherapy sessions a child may actually receive during the course of treatment, making total billable costs difficult to estimate.)

Classroom behavior problems are common precipitants of both referral for special education and grade retention. Teachers are significantly more likely to refer a child with learning challenges for special education services, if the child also shows significant classroom behavioral challenges (Koot & Verhulst, 1992; Soodak & Podell, 1993). Similarly, classroom behavior problems appear to be a significant cause for grade retention among American students, particularly minority students (Byrd & Weitzman, 1994; Nagin, Pagani, Tremblay, & Vitaro, 2003; Rodney, Crafter, Rodney, & Mupier, 1999).

Although special education placement and grade retention are frequent responses to challenging classroom behaviors, research suggests that neither are effective at improving behaviors. Using data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), a large-sample, nationally-representative study, special education was found to have no significant or consistent impact on children's externalizing or internalizing behavior problems (Morgan, Frisco, Farkas, & Hibel, 2008). However, it should be noted that special education services provided within a fully-inclusive model, similar to how ECCP services are provided, have been associated with reduced problem behaviors (Wiener & Tardif, 2004). Furthermore, grade retention has been shown to be an ineffective intervention for reducing challenging classroom behaviors in students, with results of meta-analyses indicating that it is more often associated with a worsening of behaviors (Jimerson, 2001; Pagani, Tremblay, Vitaro, Boulerice, & McDuff, 2001). Therefore, because neither special education nor grade retention are effective responses to challenging classroom behaviors, any positive impacts for ECCP could be appraised to be more cost-effective than either of these two common school-based responses.

Because data on the Connecticut costs of special education, grade retention and ECCP were available for FY 2011, data from this fiscal year was used to compare the costs of all three. During FY 2011, Connecticut school districts spent \$1.715 billion on special education services within Connecticut, equating to about \$27,000 annually per student receiving special education (Connecticut General Assembly, 2013). The annual per student cost of regular education in Connecticut during FY 2011 was reported to be \$14,425. Therefore, the *added* (above the costs

of regular education alone) cost of providing special education in Connecticut during FY 2011 was about \$12,575 per student per year. Connecticut K-12 students are guaranteed at least 900 hours of direct instruction provided across 180 days of schooling per year (Education Commission of the States, 2011). Therefore, dividing the per student *added* estimated cost of providing special education by 900 hours of direct instruction indicates that the *added* estimated costs of providing special education is about \$13.97 per student per hour. Similarly, the per student cost of grade retention is equal to the annual per student cost of regular education – \$14,425 annually or \$16.03 per instructional hour.

During FY 2011, ECCP's typical cost per child receiving child-specific services was \$2,000, with hourly costs equally \$200. When compared to the above *added* costs of special education and grade retention, ECCP is a much lower cost per child given the number of hours necessary. In other words, although the hourly per child costs of ECCP is much higher than the hourly *added* cost of either special education or grade retention, the FY 2011 per child total costs were much lower for ECCP (\$2,000 per child) than for either special education placement (about \$12,575 per child) or grade retention (\$14,425). Therefore, special education placement and grade retention are about 6 to 7 times the per child cost of ECCP services.

ECCP PROCESS AND SATISFACTION EVALUATION

A process evaluation of ECCP implementation and global teacher ECCP satisfaction was conducted during ECCP's Program Year 1 (FY 2003; Fink et al., 2003). Although program maturity can increase the likelihood of documenting positive effects, process evaluations early in a program's development can be effective for improving program fidelity and locating problem areas to be addressed as the program matures to a point where an outcome evaluation is warranted (Gilliam & Leiter, 2003).

Fink et al.'s process evaluation results indicated reasonably good fidelity to the ECCP project goals in terms of range of classroom services delivered and completed and the characteristics of the targeted service population (i.e., children with aggressive behaviors that have been targeted currently or in the past for individualized services, such as special education). However, the number of children provided child-specific intervention was far less than anticipated (45% of the anticipated amount of child services across the classrooms enrolled in intensive, core and child-specific treatments).

A teacher survey conducted specifically for the Fink et al. evaluation was used to assess teacher global satisfaction with the program and feelings about the potential impact of ECCP. Many teachers reported perceiving improvements in the classroom and children. Most teachers (57%) reported "great improvement" in the quality of their classroom environments, activities and interactions. Noticeably smaller proportions reported "great improvement" in staff resilience (41%) and partnerships with families (43%). For child behavior, 81% reported "modest" to "great" improvement in the target children, and 78% reported this level of improvement in the class on the whole. Also, 76% reported improvement in their ability to identify children in need of mental health referral, and 88% reported feeling that ECCP reduces the likelihood of suspensions or expulsions. Most teachers reported feeling sustained benefits from ECCP one to five months after services. More than 80% of teachers reported using the ECCP Classroom

Action Plans one to five months after ECCP had concluded its classroom services, with 70% reporting using the goals at least twice per week and 16% using the goals at least once per week.

Although the overall findings for the FY 2003 process evaluation of ECCP implementation were positive, several limitations reduced their utility as an indicator of true program effectiveness. First, the response rate for a descriptive study was relatively low (44%), and the resulting small sample size ($n = 39$) reduced the faith one reasonably can place in these descriptive findings. Second, with neither (a) a no-treatment control or comparison group nor (b) a pretest of conditions before ECCP, it was impossible to know whether similar findings would have been noted even without ECCP. Third, the use of homemade measures of child behavior with global rating options (e.g., “modest improvement,” “great improvement,” etc.) and unknown reliability and validity were difficult to interpret. Nonetheless, this process and satisfaction evaluation was helpful in documenting general fidelity to service goals and encouraging hope in ECCP effectiveness, as well as guiding implementation improvement in subsequent program years.

THREE STATEWIDE EVALUATIONS OF ECCP EFFECTS

In order to better evaluate the effectiveness of ECCP, three statewide evaluations were conducted during full statewide implementation. Each of the three evaluations employed simple random selection at the classroom level to assign classrooms where ECCP services were being requested into either a treatment (immediate treatment provided) or control (placed on a waitlist for treatment until after posttest data were collected) condition. However, in the first random-controlled evaluation, a cross-over design was employed, where the control classrooms in the first year (first cohort) of the evaluation became the treatment classrooms in the second year (second cohort) of the evaluation. Because no statistically significant differences in effects were noted between cohorts, results of the first evaluation will be presented as a single random-controlled evaluation.

EVALUATION METHODS

Selection and Assignment Timeline and Inclusion and Exclusion Criteria

All three evaluations employed a two-cohort recruitment and assignment strategy. Evaluation 1 was conducted 2005-2007, with cohort 1 being recruited and assigned to treatment or control conditions during the 2004-2005 academic year, and cohort 2 being recruited and assigned during the 2005-2006 academic year. The focus of Evaluation 1 was the effects of ECCP on preschool children (3-4 years old) in preschool settings. For more details on the methods and results of Evaluation 1, please see Gilliam (2007). (See Table 2.)

Table 2.

Timeframes for Evaluations

| Evaluation | Years Conducted | ECCP Program Years Studied | Cohort 1 | Cohort 2 | Child Ages Studied |
|------------|-----------------|----------------------------|----------|----------|--------------------|
| 1 | 2005-2007 | 3 & 4 | FY 2005 | FY 2006 | Preschoolers |
| 2 | 2008-2012 | 7 & 8 | FY 2009 | FY 2010 | Preschoolers |
| 3 | 2008-2012 | 7 & 8 | FY 2009 | FY 2010 | Infants/Toddlers |

Evaluation 2 was a replication of Evaluation 1 but with revised measures and improved methodology. Evaluation 2 was conducted 2008-2012, with cohort 1 recruited and assigned

during the 2008-2009 academic year and cohort 2 being recruited and assigned during the 2009-2010 academic year. Like Evaluation 1, this evaluation focused on preschool children in preschool settings.

Evaluation 3 was conducted concurrently to Evaluation 2. However, the focus of Evaluation 3 was on the effects of ECCP on toddlers (2 years old) in infant/toddler (0-2 year olds) settings. Because of the limited sample size in Evaluation 3 (as described later), this study should be considered a pilot study into the effects of ECCP in infant/toddler settings.

For all three evaluations, study inclusion criteria were that (a) the program must have a regularly meeting classroom-based component, and (b) the classroom must serve children predominately in the three- to five-year old age range (or in the birth to three-year old range, for evaluation 3), although children younger or older may also be served. The only exclusion criterion was that the classrooms must not be located at a building-level site that had received ECCP services in the past. In order to ensure that all classrooms wanting ECCP services received them, the study was conducted when a modest ECCP waitlist had developed – treatment classrooms received the services immediately, while control classrooms were placed on a waitlist and received ECCP services within about three to four months.

For all three evaluations, programs and classes were recruited through the normal ECCP channels and through fliers describing the evaluation study. The evaluators randomized classes to treatment and control conditions. For treatment classes, all pretest measures were collected within two weeks of the beginning of the intervention, and all posttest measures were collected within two weeks after the final ECCP consultation session. For control classes, pretest and posttest sessions were on a similar schedule equating the amount of time between pretest and posttest to that of the treatment group.

Sample Sizes

For each evaluation, all classes requesting ECCP services during the evaluation time periods that satisfied the study inclusion and exclusion criteria were randomized to either immediate treatment or waitlisted control conditions.

For Evaluations 1 and 2, at the pretest interval for both cohorts, teachers were instructed to identify the two children (hereafter referred to as the *target children*) in their classrooms whose behaviors concerned them most, even if the teacher identified no such children to the ECCP consultant and even if ECCP services were not being directed toward these children. For Evaluation 3, only one target child was identified, due to the much smaller number of children in infant/toddler rooms. For Evaluations 2 and 3, teachers also were requested to select two *random peers* from the classroom. These were children who had not been already identified as a target child. The random peers were selected using random number generation from the remaining children in the teacher's room after the target child or children had been excluded from the list. Only target children and random peers for whom both pretest and posttest data were collected were included in analyses. In Evaluation 3, target children and random peers were 2-years old because of the child measures being used in the evaluation. See Table 3 for sample sizes for all random-controlled evaluations.

Sample Descriptions

Across the three evaluations, most classrooms were located in child care centers. In the two evaluations focusing on preschool settings there were also a few Head Start centers and public-school-based prekindergarten centers. In the infant/toddler center evaluation, all classrooms were located in child care centers. (See Table 4.) Across the two preschool evaluations, most teachers held at least a bachelor's degree (63% for Evaluation 1 and 57% for Evaluation 2), but only 20% of teachers in the infant/toddler centers held at least a bachelor's degree. Class sizes for the two preschool evaluations averaged just under 17 children, and just over 9 for the infant/toddler evaluation. Across all three evaluations, target children (the children identified by the teacher as being the most responsible for promoting the referral for ECCP services or the most in need of behavioral assistance) were overwhelmingly male (73%, 79% and 72%, respectively) and usually White (56%, 74% and 67%, respectively).

Table 3.
Sample Sizes

| | Classes | Target Children | Random Peers |
|--------------------------------------|---------|-----------------|--------------|
| Evaluation 1 (Preschool) | | | |
| Treatment | 43 | 75 | -- |
| Control | 42 | 69 | -- |
| Total | 85 | 144 | -- |
| Evaluation 2 (Preschool) | | | |
| Treatment | 44 | 73 | 85 |
| Control | 44 | 76 | 88 |
| Total | 88 | 149 | 173 |
| Evaluation 3 (Infant/Toddler) | | | |
| Treatment | 17 | 15 | 26 |
| Control | 18 | 17 | 31 |
| Total | 35 | 32 | 57 |

Table 4.
Sample Characteristics

| | Evaluation 1 (Preschool) | Evaluation 2 (Preschool) | Evaluation 3 (Infant/Toddler) |
|-----------------------------|-----------------------------|-----------------------------|----------------------------------|
| Child Care | 82% | 86% | 100% |
| Head Start | 13% | 6% | 0% |
| Public Schools | 5% | 8% | 0% |
| Teacher with a BA+ | 63% | 57% | 20% |
| Class Size | $M = 16.9$ | $M = 16.8$ | $M = 9.2$ |
| TC Male | 73% | 79% | 72% |
| TC Female | 27% | 21% | 28% |
| TC White | 56% | 74% | 67% |
| TC Black | 14% | 4% | 22% |
| TC Latino | 20% | 14% | 0% |
| TC Other/Multiracial | 10% | 8% | 11% |

Note. TC = Target Children.

Measures

Evaluation measures were collected to assess outcomes for the overall quality of the early education and care environment, child behavior problems in target children and random peers, and the quantity and quality of home-school collaboration. (See Table 5.) Different measures were used for each of these outcome domains depending on the evaluation. Classroom quality measures were only collected at posttest. Child measures for both target children and random peers were collected at both pretest and posttest, with the exception of the observational time sampling data, which were only collected at posttest. Home-school communication measures were completed only at posttest. All measures used in the present evaluation and report are described below.

Table 5.
Measures Used in Each Evaluation and Timing of Each

| MEASURES | Evaluation 1 (Preschool) | | Evaluation 2 (Preschool) | | Evaluation 3 (Infant/Toddler) | |
|----------------------------------|-----------------------------|----------|-----------------------------|----------|----------------------------------|----------|
| | Pretest | Posttest | Pretest | Posttest | Pretest | Posttest |
| Classroom Quality | | | | | | |
| ECERS-R | | X | | | | |
| Arnett CIS | | X | | | | |
| CLASS | | | | X | | X |
| Target Child Behavior | | | | | | |
| CTRS | X | X | X | X | | |
| SSRS | X | X | X | X | | |
| ITSEA | | | | | | X |
| Time Sampling | | | | X | | X |
| Random Peers Behavior | | | | | | |
| SSRS | | | X | X | | |
| BITSEA | | | | | | X |
| Home-School Communication | | | | | | |
| FIQ | | | | X | | X |

The ECERS-R (Harms, Clifford et al. 1998) is a well-known, standardized measure of the overall quality of child care environments. It is the most widely used instrument of its kind, and has been utilized extensively for both program evaluation and improvement. The ECERS-R has sound psychometric properties of reliability and validity as a measure of classroom quality with implications for child outcomes. The ECERS-R consists of 470 individual indicators of quality that contribute to 43 specific items located in 7 quality domains. The domains include (1) Space and Furnishings, (2) Personal Care Routines, (3) Language-Reasoning, (4) Activities, (5) Interaction, (6) Program Structure, and (7) Parents and Staff. Each item is scored on a seven-point anchored scale (1 = Inadequate; 3 = Minimal; 5 = Good; 7 = Excellent). Items within domains are averaged to yield a similarly interpreted score for each domain and for the total ECERS-R. Complete administration of the ECERS-R requires a well-trained rater and about 4 hours of classroom observation, followed by about 45 minutes of teacher interview.

The CIS (Arnett 1989) is another well-known instrument that measures quality of child care. Unlike the ECERS-R, which measures a wide variety of issues associated with child care quality,

the CIS focuses exclusively on the quality of the interactions between the teacher(s) and children. The CIS consists of 26 items that measure four aspects of interaction: the frequency and quality of *positive interactions* and the degrees to which teachers are *not overly detached* from the children, *not overly permissive*, or *not overly punitive*. (The *not overly permissive* factor was omitted from the current evaluation, as this factor has been shown to be weak in validity and is commonly omitted in studies.) Each item is scored on a four-point scale and averaged to yield domain scores. Domain averages were transformed so that a high score always corresponded to a positive rating (e.g., high degrees of positive interactions, teachers not being too punitive, etc.).

The CLASS (Pianta et al., 2008) is a measure of classroom quality that is used extensively in early education settings across the US, especially Head Start centers. Due to the focus of the ECCP services, two domains of the CLASS were used in these evaluations – Emotional Support and Classroom Organization. Emotional Support is comprised of four subscales (Positive Climate, Negative Climate, Teacher Sensitivity, and Regard for Student Perspective). Classroom Organization is comprised of three subscales (Behavior Management, Productivity, and Instructional Learning Formats). Each Subscale is rated on a 7-point scale, with higher values corresponding to more positive ratings, with the exception of Negative Climate. Each subscale is the mean of three separate observations. Domain scores are the means of each domain's subscales, with Negative Climate being reverse scored prior to averaging.

Behavior measures for target children and random peers. Measures of child behavior problems for the two identified target children in each class in Evaluations 1 and 2 (preschool) were the Conners' Teacher Rating Scale – Revised Long Form (Conners 1997) and the Social Skills Rating System (Gresham and Elliot 1990). In Evaluation 3 (infant/toddler), the ITSEA and BITSEA (ITSEA, BITSEA; Carter & Briggs-Gowan, 2006) were used for target children. All four of these measures have been used extensively in studies of behavior problems in the age groups in which they were used in these evaluations, and they are all reliable and valid measures of preschool teacher and child care worker ratings. All four measures were completed by the target children's lead classroom teacher.

For Evaluation 1, the CTRS was calculated to yield five factor scores, plus two additional composite scores and a total score. These scales included (a) Oppositional Behaviors, (b) Hyperactivity, and (c) a composite factor of Restless-Impulsive Behaviors and Emotional Lability. All CTRS scores were norm-referenced and expressed as T-scores ($M = 50$; $SD = 10$), where scores of 35-64 are considered typical, 65-69 are considered at-risk, and 70 and above are considered severe. Because results of Evaluation 1 indicated that target children demonstrated externalizing, but not internalizing challenging behaviors, only the externalizing scales of the CTRS were used in Evaluation 2. In Evaluation 2, scores were reported and analyzed as raw score totals for each scale, with scores reported for Oppositional, Hyperactivity, and Total Behavior Problems.

The SSRS measures both behavior problems as well as social skills. In Evaluation 1, the SSRS was used for target children, and in Evaluation 2, the SSRS was used with both target children and random peers. In Evaluation 1, social skills were reported in three domains (Cooperation, Assertion, and Self-Control), as well as a Total Social Skills score. Scores for the three domains are reported as raw score sums, with items scored on a three-point Likert scale ranging from 0 to

2. The Total Social Skills score was reported as a norm-referenced standard score ($M = 100$; $SD = 15$). Also, behavior problems were reported in two domains (Externalizing Problems and Internalizing Problems), as well as a Total Behavior Problems score. Scores for the two domains are reported as raw score sums, with items scored on a three-point Likert scale ranging from 0 to 2. The Total Behavior Problems score was reported as a norm-referenced standard score ($M = 100$; $SD = 15$). For Evaluation 2, only the three behavior problem scores were analyzed (Externalizing Problems, Internalizing Problems, and Total Behavior Problems), and all were reported and analyzed as item raw score sums. Externalizing Problems has 6 items, Internalizing Problems has 4 items, and Total Behavior Problems has 10 items, with all items ranging from 0 to 2.

In Evaluation 3, the ITSEA was used for target children and the briefer BITSEA was used for random peers. All items on the ITSEA and BITSEA are scored on a 3-point Likert scale, ranging from 1 to 3. For the ITSEA, four scores were reported: Activity/Impulsivity (6 items), Aggression/Defiance (12 items), Peer Aggression (6 items), and Total Behavior Problems (24 items). All scores are reported as item sums. For the BITSEA, two scores are reported: Problem Total (31 items, a measure of behavior problems across a variety of symptom types) and Competence Total (11 items, a measure of positive and prosocial behaviors).

In Evaluations 2 and 3, a Time Sampling Technique (TST) was designed and implemented specifically for these evaluations. The purpose of the TST was to measure the frequency of challenging behaviors of target children exhibited in the classroom based on the ratings of independent raters and not the teachers. The advantage would be to have an outcome measure that was based on a rater who was blinded to whether or not the children and classroom had participated yet in the ECCP services. Condition-blinded raters (research assistants) were trained to reliability prior to data collection. Three challenging behaviors were measured for each target child in Evaluations 2 and 3: Relational Aggression (RA), Oppositionality (Opp), and Disruptive Behavior (DB). RA was measured during a free play activity (either indoor or outdoor) and was defined as being any verbal or nonverbal behavior from the target child that either (a) excluded others from play or encouraged others to exclude a child or (b) threatened to exclude or ignore a child. Opp and DB were both measured during indoor structured activities. Opp was defined as including defiance or refusal to follow adult directions, arguing with adults, and temper outbursts in response to adult directives. DB was defined as including behaviors that are not necessarily in response to adult directions, but are either impulsive, show difficulty sustaining attention or waiting turn, disturb other children, or display an emotional or behavioral outburst. All three outcomes (RA, Opp, and DB) were rated across a total of 30 10-second segments (10 seconds observing followed by 10 second not observing was one segment). Scores for each of the three outcomes were the total number of 10-second segments in which the behavior was observed. Therefore, potential scores for each outcome ranged from 0 to 30.

Home-school communication. In Evaluations 2 and 3, the quantity and quality of home-school communication between the program and the families of target children were measured using the Family Involvement Questionnaire (FIQ; Fantuzzo, Tighe & Childs, 2000). The FIQ is a survey measure completed by the lead teacher consisting of 11 items, each rated on a 4-point Likert scale, where 1 = Rarely and 4 = Always. Cronbach's alpha is reported by the authors as .81. Examples of items include the following: (a) *the parent talks to the teacher about how the child*

gets along with his/her classmates at school, (b) the parent talks to the child's teacher about the child's accomplishments, and (c) the parent talks with the child's teacher about personal or family matters. Scores for the FIQ are reported as means for the 11 items, yielding a total score ranging from 1 (low family involvement) to 4 (high family involvement).

ANALYSES

For measures only administered during posttest, simple ANOVA or one-tailed independent sample *t*-tests were used for analyses. For all other measures (where data were collected at both pretest and posttest intervals), ANCOVA was used to control for baseline (pretest) differences. Standardized measures of effect (Cohen's *d*) are provided for all analyses. For posttest-only analyses, Cohen's *d* was computed by subtracting the treatment group posttest mean by the control group posttest mean and dividing the difference by the pooled standard deviation. For analyses that included pretest scores, Cohen's *d* was computed by subtracting the covariance adjusted treatment group posttest mean by the covariance adjusted control group pretest mean and dividing the difference by the pooled covariance adjusted standard deviation (Cortina and Nouri 2000). The direction of effect size is reversed for scales where a decrease in score is associated with a desired result. By convention, Cohen's *d* effect sizes were interpreted as trivial (below 0.20), small (0.20 to 0.49), moderate (0.50 to 0.79), or large (0.80 and above; (Cohen 1988).

RESULTS OF EVALUATIONS

Results are presented below, organized by evaluation (Evaluations 1, 2, and 3). For each evaluation, classroom quality outcomes will be presented first, followed by target child outcomes, and finally outcomes for random peers.

EVALUATION 1 [PRESCHOOL]

Classroom quality outcomes. Classrooms referred for ECCP services appear similar in overall quality to the general population of state-funded prekindergarten classes in Connecticut. As presented in Table 6, overall classroom quality as measured by the ECERS-R for the treatment and control groups at posttest was similar to ECERS-R scores previously reported for Connecticut state-funded prekindergarten programs in south-central Connecticut ($M = 5.09$, $SD = 1.13$; (Gilliam 2000).

Table 6
Evaluation 1 Posttest Differences on ECERS-R

| | ECCP ($n = 43$) | | Control ($n = 42$) | | <i>F</i> | <i>d</i> |
|----------------------|-------------------|-------------|----------------------|-------------|-------------|-------------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | |
| Space/Furnishings | 5.24 | 0.94 | 4.91 | 1.00 | 2.39 | 0.34 |
| Personal Care | 4.65 | 1.10 | 4.54 | 1.16 | 0.20 | 0.10 |
| Language/Reasoning | 5.14 | 1.20 | 5.10 | 1.24 | 0.02 | 0.03 |
| Activities | 4.92 | 1.02 | 4.70 | 1.00 | 1.00 | 0.22 |
| Interactions | 5.04 | 1.36 | 5.18 | 1.42 | 0.19 | -0.10 |
| Program Structure | 5.50 | 1.26 | 5.53 | 1.27 | 0.01 | -0.02 |
| Parents/Staff | 4.87 | 0.94 | 5.27 | 1.03 | 3.35 | -0.41 |
| ECERS-R Total | 5.02 | 0.78 | 4.96 | 0.85 | 0.12 | 0.07 |

* $p < .05$, ** $p < .01$, *** $p < .001$.

No statistically significant treatment-control posttest differences were found for the ECERS-R total score or for any of the seven domains of quality measured by the ECERS-R (see Table 6). Similarly, no statistically significant treatment-control posttest differences were found for the three teacher-child interaction scales from the CIS measuring amount of positive interactions, degree of teacher detachedness, or degree of teacher punitiveness (see Table 7). Furthermore, with the exception of three domains of the ECERS-R (Space/Furnishings, Activities, and Parent/Staff), all effect sizes were in the trivial range by Cohen's convention.

Table 7
Evaluation 1 Posttest Differences on CIS

| | ECCP (<i>n</i> = 43) | | Control (<i>n</i> = 41) | | <i>F</i> | <i>d</i> |
|-----------------------|-----------------------|-----------|--------------------------|-----------|----------|----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | |
| Positive Interactions | 2.94 | 0.43 | 2.97 | 0.46 | 0.09 | -0.07 |
| Not Overly Detached | 2.03 | 0.31 | 2.00 | 0.28 | 0.30 | 0.10 |
| Not Overly Punitive | 1.41 | 0.38 | 1.40 | 0.31 | 0.03 | 0.03 |

* $p < .05$, ** $p < .01$, *** $p < .001$.

Target child outcomes. Results of the CTRS were used to measure the impact of ECCP on target children's behavior problems. As shown in Table 8, ECCP treatment preschoolers had significantly lower ratings of Total Behavior Problems ($p < .05$) and on all three measures of externalizing or acting-out behaviors (Oppositional ($p < .01$), Hyperactivity ($p < .01$), and Restless/Impulsive ($p < .05$)). Effect sizes were in the moderate range for Oppositional ($d = 0.57$) and Hyperactivity ($d = 0.51$), and in the small range for Restless/Impulsive ($d = 0.34$) and Total Behavior Problems ($d = 0.41$). Furthermore, across all of the externalizing domains, mean scores for ECCP treatment target children decreased from severe (≥ 70) or at-risk (≥ 65) at pretest to subclinical ranges (< 65) by posttest. However, no significant differences were observed on ratings of internalizing behaviors (Anxious/Shy and Perfectionism), where mean pretest scores were within normal limits. For this reason, subsequent ECCP evaluations focused on externalizing behaviors and not internalizing behaviors.

Table 8
Evaluation 1 Differences on CTRS

| | Treatment (<i>n</i> = 75) | | Control (<i>n</i> = 69) | | <i>F</i> | <i>d</i> |
|---------------|----------------------------|-----------|--------------------------|-----------|----------|----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | |
| Oppositional | | | | | | |
| Pretest | 72.37 | 16.46 | 70.77 | 15.35 | | |
| Posttest | 63.33 | 15.67 | 68.17 | 14.86 | 10.96 ** | 0.57 |
| Hyperactivity | | | | | | |
| Pretest | 68.79 | 13.33 | 66.03 | 12.47 | | |
| Posttest | 63.04 | 14.28 | 65.52 | 12.18 | 8.92 ** | 0.51 |
| Anxious-Shy | | | | | | |
| Pretest | 60.38 | 12.80 | 59.07 | 12.29 | | |
| Posttest | 57.67 | 12.00 | 57.72 | 11.43 | 0.37 | 0.10 |

Table continues.

| | | | | | | |
|-------------------------|--------------|--------------|--------------|--------------|---------------|-------------|
| Perfectionism | | | | | | |
| Pretest | 57.25 | 14.40 | 60.44 | 15.47 | | |
| Posttest | 54.56 | 13.64 | 59.76 | 15.47 | 2.88 | 0.29 |
| Social Problems | | | | | | |
| Pretest | 67.18 | 15.74 | 65.55 | 15.32 | | |
| Posttest | 66.25 | 18.11 | 63.44 | 14.76 | 0.61 | -0.13 |
| <i>Table continues.</i> | | | | | | |
| Restless-Impulsive | | | | | | |
| Pretest | 66.62 | 13.93 | 65.79 | 12.90 | | |
| Posttest | 61.93 | 13.99 | 64.16 | 11.61 | 4.10 * | 0.34 |
| Emotional Lability | | | | | | |
| Pretest | 68.41 | 17.77 | 67.13 | 16.26 | | |
| Posttest | 62.41 | 15.63 | 63.84 | 14.82 | 1.61 | 0.22 |
| Total | | | | | | |
| Pretest | 69.71 | 15.08 | 68.40 | 12.90 | | |
| Posttest | 63.92 | 15.38 | 66.46 | 11.76 | 5.77 * | 0.41 |

* $p < .05$, ** $p < .01$, *** $p < .001$.

Results of SSRS were used to evaluate the impact of ECCP on target children's social skills and less severe behavior problems. As shown in Table 9 and consistent with CTRS findings, a statistically significant positive impact of non-trivial size was found on Externalizing Behaviors ($p < .05$; $d = 0.39$), as well as on Total Behavior Problems ($p < .05$; $d = 0.42$). Also similar to CTRS findings, no significant differences were found for internalizing behaviors. Furthermore, no significant differences were found for Total Social Skills or any of the component domains, with effect sizes typically in the trivial range.

Table 9
Evaluation 1 Differences on SSRS

| | Treatment ($n = 75$) | | Control ($n = 69$) | | <i>F</i> | <i>d</i> |
|----------------------------|------------------------|--------------|----------------------|--------------|-------------|--------------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | |
| Cooperation | | | | | | |
| Pretest | 10.10 | 3.23 | 10.01 | 3.82 | | |
| Posttest | 10.96 | 2.78 | 10.87 | 3.25 | 0.01 | 0.02 |
| Assertion | | | | | | |
| Pretest | 8.18 | 3.85 | 7.99 | 4.34 | | |
| Posttest | 9.13 | 3.62 | 9.46 | 3.53 | 0.81 | -0.15 |
| Self-Control | | | | | | |
| Pretest | 7.51 | 3.36 | 7.67 | 3.90 | | |
| Posttest | 9.11 | 3.68 | 9.01 | 3.84 | 0.12 | 0.06 |
| Total Social Skills | | | | | | |
| Pretest | 83.51 | 12.07 | 83.55 | 14.62 | | |
| Posttest | 88.00 | 12.14 | 88.70 | 12.39 | 0.16 | -0.07 |
| Externalizing Prob | | | | | | |
| Pretest | 7.32 | 3.33 | 7.44 | 2.90 | | |
| Posttest | 5.67 | 3.50 | 6.65 | 2.95 | 5.28 * | 0.39 |

Table continues.

| | | | | | | |
|----------------------------|---------------|--------------|---------------|--------------|---------------|-------------|
| Internalizing Prob | | | | | | |
| Pretest | 2.17 | 1.94 | 1.81 | 1.70 | | |
| Posttest | 1.63 | 1.67 | 1.75 | 1.81 | 1.82 | 0.23 |
| Total Behavior Prob | | | | | | |
| Pretest | 116.35 | 12.45 | 115.25 | 11.06 | | |
| Posttest | 109.51 | 14.19 | 112.87 | 11.50 | 6.25 * | 0.42 |

* $p < .05$, ** $p < .01$, *** $p < .001$.

EVALUATION 2 [PRESCHOOL]

Classroom quality outcomes. Following the lack of significant findings for classroom quality in Evaluation 1, three hypotheses were advanced: (a) perhaps the ECERS-R is too global of a measure of classroom quality (the ECERS-R has many items and domains that are not the typical focus of early childhood mental health consultation) to detect changes; (b) perhaps the ECCP intervention is too brief (3 months) to create changes in teacher behaviors that can be detected by outside objective raters that are condition-blinded; and (c) perhaps ECCP is not effective at impacting teacher behaviors in a way that can be detected in classroom quality measures, despite ECCP's impact on child behaviors. To test these hypotheses, the ECERS-R was replaced with the CLASS, a newer measure of classroom quality that focuses more specifically on teacher-child interactions and domains that may more likely be associated with the focus of early childhood mental health consultation programs.

As shown in Table 10, no significant differences were found for either of the two measured domains of the CLASS or for any of the seven measured subdomains, with all effect sizes registering well within the trivial range. Due to the lack of significant findings on the ECERS-R and CIS in Evaluation 1 and the CLASS in Evaluation 2, the first hypothesis above seems unlikely, suggesting that ECCP may not be effective at impacting classroom quality measures collected by objective and condition-blinded raters or the ECCP intervention may be too brief to appreciate such impacts.

Table 10

Evaluation 2 Differences on CLASS Domains

| | ECCP ($n = 43$) | | Control ($n = 43$) | | t | d |
|---------------------------|-------------------|-------------|----------------------|-------------|--------------|--------------|
| | M | SD | M | SD | | |
| Positive Climate | 5.74 | 0.84 | 5.62 | 0.83 | -0.62 | 0.14 |
| Negative Climate | 1.19 | 0.39 | 1.23 | 0.44 | 0.48 | 0.10 |
| Teacher Sensitivity | 5.18 | 0.91 | 5.24 | 0.82 | 0.35 | -0.07 |
| Regard for Stud. Per. | 5.13 | 0.85 | 5.14 | 1.00 | 0.04 | -0.01 |
| Emotional Support | 5.72 | 0.61 | 5.69 | 0.65 | -0.15 | 0.05 |
| Behavior Manage | 4.79 | 0.96 | 4.93 | 0.94 | 0.66 | -0.15 |
| Productivity | 4.99 | 0.90 | 5.07 | 0.96 | 0.37 | -0.09 |
| Instuct. Learning For. | 4.62 | 1.02 | 4.78 | 1.01 | 0.71 | -0.16 |
| Classroom Organiz. | 4.80 | 0.79 | 4.92 | 0.87 | 0.68 | -0.14 |

* $p < .05$, ** $p < .01$, *** $p < .001$.

Target child outcomes. Table 11 presents findings for target children on both the CTRS and SSRS. Replicating findings from Evaluation 1, significant differences in favor ECCP treatment target children were found on all externalizing scales of both the CTRS and SSRS.

On the CTRS, significant impacts in favor of ECCP were found for Oppositionality ($p < .05$; $d = 0.39$), Hyperactivity ($p < .001$; $d = 0.57$), and Total Behavior Problems ($p < .001$; $d = 0.63$). On the SSRS, significant positive impacts were found for Externalizing Behaviors ($p < .05$; $d = 0.41$) and Total Behavior Problems ($p < .05$; $d = 0.42$), but not for the Internalizing Behaviors scale.

Table 11
Evaluation 2 Differences on CTRS & SSRS (TARGET CHILDREN)

| | Treatment ($n = 72$) | | Control ($n = 66$) | | <i>F</i> | <i>d</i> |
|--------------------------|------------------------|--------------|----------------------|--------------|-----------------|-------------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | |
| CTRS Oppositional | | | | | | |
| Pretest | 6.98 | 3.87 | 6.65 | 3.79 | | |
| Posttest | 5.40 | 3.76 | 6.53 | 3.66 | 6.05* | 0.39 |
| CTRS Hyperactive | | | | | | |
| Pretest | 8.88 | 4.64 | 7.75 | 4.66 | | |
| Posttest | 6.25 | 4.38 | 7.78 | 4.82 | 13.28*** | 0.57 |
| CTRS TOTAL | | | | | | |
| Pretest | 23.08 | 10.35 | 20.65 | 9.25 | | |
| Posttest | 17.16 | 9.65 | 20.52 | 10.12 | 11.61*** | 0.63 |
| SSRS External | | | | | | |
| Pretest | 7.39 | 3.31 | 6.73 | 3.26 | | |
| Posttest | 5.81 | 3.34 | 6.48 | 3.47 | 5.01* | 0.41 |
| SSRS Internal | | | | | | |
| Pretest | 1.46 | 1.72 | 1.74 | 2.04 | | |
| Posttest | 1.32 | 1.62 | 1.89 | 2.04 | 2.55 | 0.14 |
| SSRS Total | | | | | | |
| Pretest | 8.86 | 4.14 | 8.47 | 3.82 | | |
| Posttest | 7.17 | 4.29 | 8.38 | 4.11 | 5.44* | 0.42 |

* $p < .05$, ** $p < .01$, *** $p < .001$.

Time sampling techniques (TST) for measuring child behavior impacts indicated no statistically significant differences between groups (see Table 12). At posttest, no statistically significant differences were observed for the three TST measures (Relational Aggression, Oppositional, and Disruptive Behaviors), and all measured effect sizes were in the trivial range. It should also be noted, however, that mean scores for these measures were all very low in the possible range (0-30) and standard deviations were much larger than means, indicating an appreciable amount of positive skew to the distributions. Therefore, the lack of significant findings on TST measures may have been due to a lack of sensitivity in the measures.

However, a statistically significant positive impact was noted for the Family Involvement Questionnaire (FIQ) as a measure of home-school communication for families of target children ($p < .05$; $d = 0.31$; see Table 12). This finding indicates that at posttest ECCP participant families

were engaging in a higher level of communication with teachers relative to control families, with a small but non-trivial effect size by Cohen's conventions.

Random peer outcomes. Impacts for children in the classrooms other than the target children were estimated by using the SSRS with randomly-selected peer children. Across the three SSRS measures (Externalizing Behaviors, Internalizing Behaviors, and Total Behavior Problems), no statistically significant between-group differences were observed, and all effect sizes were well within the trivial range, approaching zero (see Table 13). In short, no evidence was found to support an ECCP effect on non-target child peers in preschool-age classrooms.

Table 12
Evaluation 2 Differences on Time Sampling & Family Involvement (TARGET CHILDREN)

| | Treatment (n = 72) | | Control (n = 66) | | F | d |
|--------------------------------|--------------------|------|------------------|------|-------|-------|
| | M | SD | M | SD | | |
| Relational Aggress Posttest | 0.52 | 1.22 | 0.43 | 0.91 | 0.24 | -0.08 |
| Oppositional Posttest | 0.52 | 1.27 | 0.53 | 1.09 | 0.00 | 0.01 |
| Disruptive Posttest | 2.03 | 2.92 | 1.61 | 2.35 | 0.95 | -.016 |
| Family Involvement Posttest | 2.45 | 0.80 | 2.21 | 0.77 | 3.29* | 0.31 |

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 13
Evaluation 2 Differences on SSRS (RANDOM PEERS)

| | Treatment (n = 69) | | Control (n = 65) | | F | d |
|-------------------------------------|--------------------|-------------|------------------|-------------|-------------|-------------|
| | M | SD | M | SD | | |
| SSRS External Pretest | 2.90 | 2.83 | 2.95 | 3.15 | | |
| Posttest | 3.06 | 3.20 | 3.10 | 3.29 | 0.00 | -0.00 |
| SSRS Internal Pretest | 1.13 | 1.43 | 0.86 | 1.38 | | |
| Posttest | 1.17 | 1.63 | 1.00 | 1.45 | 0.02 | 0.09 |
| SSRS Total Pretest | 4.03 | 3.61 | 3.81 | 3.95 | | |
| Posttest | 4.24 | 4.24 | 4.11 | 3.95 | 0.01 | 0.02 |

* $p < .05$, ** $p < .01$, *** $p < .001$.

EVALUATION 3 [INFANT/TODDLER]

Classroom quality outcomes. As shown in Table 14, no significant differences were found for either of the two measured domains of the CLASS or for any of the seven measured subdomains, with all effect sizes registering well within the trivial range with the sole exception of Negative Climate, which registered a small effect size favoring the control group. Overall, the findings on the CLASS measure in the infant/toddler pilot evaluation replicated the null findings in the larger sample size preschool evaluation (Evaluation 2).

Target child outcomes. Table 15 shows results of the ITSEA for target children in infant/toddler programs. Across all three measured and reported domains and the total score, no statistically significant between-group differences were observed. However, for the Activity/Impulsivity domain, the effect size ($d = 0.38$) was non-trivial and favored the ECCP treatment group. This suggests that the small sample size for this pilot evaluation in infant/toddler programs may have been underpowered to detect non-trivial effects. Therefore, a study with a larger sample size could yield positive findings, if these effect sizes were to replicate.

Table 14
Evaluation 3 Differences on CLASS Domains

| | ECCP ($n = 17$) | | Control ($n = 18$) | | t | d |
|---------------------------|-------------------|-------------|----------------------|-------------|--------------|--------------|
| | M | SD | M | SD | | |
| Positive Climate | 5.67 | 0.78 | 5.56 | 0.86 | -0.40 | 0.13 |
| Negative Climate | 1.22 | 0.54 | 1.11 | 0.34 | -0.69 | -0.25 |
| Teacher Sensitivity | 5.41 | 0.89 | 5.28 | 0.89 | -0.44 | 0.15 |
| Regard for Stud. Per. | 5.20 | 0.86 | 5.09 | 0.85 | -0.36 | 0.13 |
| Emotional Support | 5.76 | 0.68 | 5.70 | 0.64 | -0.27 | 0.09 |
| Behavior Manage | 5.04 | 0.88 | 5.13 | 0.92 | 0.30 | -0.10 |
| Productivity | 4.96 | 0.96 | 5.11 | 0.93 | 0.47 | -0.16 |
| Instuct. Learning For. | 4.33 | 1.37 | 4.19 | 1.02 | -0.36 | 0.12 |
| Classroom Organiz. | 4.78 | 0.86 | 4.81 | 0.69 | 0.12 | -0.04 |

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 15
Evaluation 3 Differences on ITSEA (TARGET CHILDREN)

| | Treatment ($n = 14$) | | Control ($n = 17$) | | t | d |
|----------------------|------------------------|--------------|----------------------|-------------|-------------|-------------|
| | M | SD | M | SD | | |
| Activity/Impulsivity | | | | | | |
| Posttest | 11.43 | 2.68 | 12.29 | 1.96 | 1.04 | 0.38 |
| Aggressive/Defiant | | | | | | |
| Posttest | 19.53 | 5.67 | 20.35 | 3.10 | 0.51 | 0.19 |
| Peer Aggression | | | | | | |
| Posttest | 10.29 | 3.58 | 9.76 | 3.03 | -0.44 | -0.16 |
| Total | | | | | | |
| Posttest | 41.24 | 10.86 | 42.41 | 6.32 | 0.37 | 0.14 |

* $p < .05$, ** $p < .01$, *** $p < .001$.

Time sampling techniques (TST) for measuring child behavior impacts indicated no statistically significant differences between groups (see Table 16). At posttest, no statistically significant differences were observed for the three TST measures (Relational Aggression, Oppositional, and Disruptive Behaviors). However, effect sizes were negative and in the moderate range for both Relational Aggression and Oppositional. If these effects were to replicate with a larger sample size, it is possible that a statistically significant negative effect would be detected. As was the case, however, with Evaluation 2, it should also be noted that mean scores for these measures were all very low in the possible range (0-30) and standard deviations were much larger than

means, indicating an appreciable amount of positive skew to the distributions. Therefore, the lack of significant findings on TST measures may have been due to a lack of sensitivity in the measures, and spuriousness is possible due to single cases skewing results.

As was the case in Evaluation 2, a statistically significant positive impact was noted for the Family Involvement Questionnaire (FIQ) as a measure of home-school communication for families of target children ($p < .05$; $d = 0.74$; see Table 16). This finding indicates that at posttest ECCP participant families were engaging in a higher level of communication with teachers relative to control families, with a moderate effect size by Cohen's conventions.

Table 16
Evaluation 3 Differences on Time Sampling & Family Involvement (TARGET CHILDREN)

| | Treatment ($n = 15$) | | Control ($n = 14$) | | t | d |
|--------------------------------|------------------------|------|----------------------|------|--------|-------|
| | M | SD | M | SD | | |
| Relational Aggress Posttest | 0.93 | 1.39 | 0.38 | 0.96 | -1.20 | -0.47 |
| Oppositional Posttest | 0.93 | 1.71 | 0.46 | 0.66 | -0.93 | -0.39 |
| Disruptive Posttest | 1.07 | 1.53 | 1.92 | 3.04 | 0.96 | 0.38 |
| Family Involvement Posttest | 2.67 | 0.91 | 2.04 | 0.79 | -2.05* | 0.74 |

* $p < .05$, ** $p < .01$, *** $p < .001$.

Random peer outcomes. Impacts for children in the classrooms other than the target children were estimated by using the BITSEA with randomly-selected peer children (see Table 17). No statistically significant between-group differences were found on the Problem Total of the BITSEA. However, on the Competence Total, a measure of prosocial and resiliency skills, a statistically significant positive effect of moderate size was observed ($p < .05$; $d = 0.55$).

Table 17
Evaluation 3 Differences on BITSEA (RANDOM PEERS)

| | Treatment ($n = 27$) | | Control ($n = 31$) | | t | d |
|------------------------------|------------------------|------|----------------------|------|--------|------|
| | M | SD | M | SD | | |
| Problem Total Posttest | 1.27 | 0.21 | 1.35 | 0.24 | 1.31 | 0.35 |
| Competence Total Posttest | 2.56 | 0.38 | 2.35 | 0.38 | -2.02* | 0.55 |

* $p < .05$, ** $p < .01$, *** $p < .001$.

SUMMARY OF FINDINGS ACROSS ALL THREE EVALUATIONS

The impact of the Early Childhood Consultation Partnership (ECCP), Connecticut's early childhood mental health consultation system, was evaluated in three statewide random-controlled trial (RCT) evaluations – two RCT evaluations in preschool centers (Evaluations 1 and 2) and one pilot RCT in infant/toddler centers (Evaluation 3).

Classroom quality. Across all three evaluations, no statistically significant impacts were found for any measure of classroom quality or teacher-child interactions obtained by objective condition-blind raters using the ECERS-R, Arnett CIS, and CLASS. Effect sizes typically were in the trivial range, with a few instances in the small range, by Cohen's convention. Based on these replicated findings across several classroom quality measures, it appears likely that ECCP does not produce a meaningful impact on classroom measures as rated by objective raters who are blind to whether the program had received ECCP services. An alternative hypothesis is that perhaps the 3-month version of ECCP is simply too brief to create changes in teacher behaviors that can be detected by outside objective raters that are condition-blinded. It is possible that the program intensive version of ECCP would produce measurable impacts in this domain, but the current evaluations were not designed to measure ECCP's longer and more intensive version.

Target Child Behaviors. Results of teacher ratings of target children's challenging behaviors showed significant impacts for both evaluations of preschoolers, but not for the small-sample pilot evaluation of toddlers in infant/toddler programs. Positive effects for preschoolers were limited to externalizing (or acting-out) behaviors, as no statistically significant impacts were found on internalizing measures. However, the impacts for both evaluations of preschoolers (Evaluations 1 and 2) indicated statistically significant impacts on all externalizing scales for both the CTRS and the SSRS. Statistically significant effects were most robust for teacher ratings of hyperactivity, where the effect sizes were moderate in both Evaluation 1 ($d = 0.51, p < .01$) and Evaluation 2 ($d = 0.57, p < .001$). Oppositionality was also rated as a significant positive effect in both evaluations ($d = 0.57, p < .01$; and $d = 0.39, p < .05$, respectively), as well as total behavior problems ($d = 0.41, p < .05$; and $d = 0.63, p < .001$, respectively) and lower-grade externalizing problems on the SSRS ($d = 0.39, p < .05$; and $d = 0.41, p < .05$, respectively). The magnitude and robustness of these effects are noteworthy and indicate strong and consistent positive effects for ECCP at reducing teacher-rated externalizing problems in target preschoolers.

For the target children in infant/toddler programs, a non-trivial positive effect size ($d = 0.38$) was noted for the Activity/Impulsivity domain (analogous to the Hyperactivity domain for preschoolers), but the small sample size in the infant/toddler pilot evaluation (Evaluation 3) was underpowered to detect this as being statistically significant. Therefore, a study with a larger sample size could yield positive findings, if these effect sizes were to replicate.

In terms of the time sampling technique (TST) using objective, condition-blind raters, no statistically significant differences were found for either preschoolers (Evaluation 2) or toddlers (Evaluation 3), and effect sizes were either trivial (preschoolers) or inconclusively multidirectional (toddlers). However, it should be noted that mean scores for these measures were all very low in the possible range (0-30) and standard deviations were much larger than means, indicating an appreciable amount of positive skew to the distributions. Therefore, the lack of significant findings on TST measures may have been due to a lack of sensitivity in the measures, and spuriousness is possible due to single cases skewing results. Overall, the TST measures do not seem to have been an adequate measure of behaviors, possibly due to the sampled time frame (10-minute total observation periods) being too short to sample a sufficient amount of challenging behaviors in classroom settings.

Random peer behaviors. The effects of ECCP on children in the classrooms other than the target children were assessed in Evaluations 2 and 3. A positive impact was noted in the infant/toddler programs, but not the preschool programs. In the preschool programs, no statistically significant effects were observed for either externalizing or internalizing behaviors, and effect sizes were all in the trivial range approximating zero. In the infant/toddler programs, however, a statistically significant positive effect of moderate size was observed in terms of peer children's social competence and resiliency skills ($d = 0.55$, $p < .05$). Furthermore, a non-trivial effect size for problem behaviors was noted ($d = 0.35$), but the sample size for this pilot evaluation was not sufficient to detect this as being statistically significant.

Home-school communication and family involvement. The degree of communication between teachers and parents of target children was evaluated for both preschoolers (Evaluation 2) and toddlers (Evaluation 3). Statistically significant ($p < .05$ for both) positive effects were observed for ECCP for both preschoolers and toddlers. By Cohen's conventions, effects were small for preschoolers ($d = 0.31$), but moderate and approaching large for toddlers ($d = 0.74$). Overall, these findings indicate that at posttest ECCP participant families were engaging in a higher level of communication with teachers relative to control families and demonstrate a robust positive effect for ECCP across age groups.

OVERALL IMPRESSIONS FROM THE THREE OUTCOME EVALUATIONS

Results of the three separate evaluations indicate that ECCP has a significant and robust positive effect on reducing teacher-rated challenging behaviors in target preschoolers, particularly in terms of hyperactivity, oppositionality, and overall externalizing behaviors. Although statistically significant effects were not found for toddlers in infant/toddler programs, results of the small-sample pilot evaluation are encouraging for ECCP impacts in reducing teacher-rated overactivity and impulsivity in toddlers. Although these behavioral improvements were not observed by objective condition-blind raters, reducing teacher ratings of the frequency and severity of challenging behaviors remains an important outcome because it is teachers, not outside raters, who make recommendations for expulsions and suspensions of services.

A second important and robust positive impact of ECCP is improving home-school communication and family involvement. Statistically significant positive impacts were found for both preschoolers and toddlers, and the magnitude of effects for toddlers was impressive. Family involvement has been shown in numerous studies to be an important element of resiliency and highly predictive of later behavioral and academic outcomes.

Additionally, ECCP shows a positive impact on the other non-target children in infant/toddler programs who may have benefited indirectly from the teacher receiving supports through ECCP. In the infant/toddler programs, providers rated the non-target toddlers as exhibiting significantly greater social competence and resiliency skills. It is also possible that with a larger sample size these statistically significant findings could have extended to reduced behavior problems for the toddlers, as well.

The lack of any statistically significant findings or promising effect sizes for classroom quality and teacher-child interactions in any of the evaluations suggests that ECCP does not produce a meaningful impact on classroom measures as rated by objective raters who are blind to whether

the program had received ECCP services. It is possible that the 3-month version of ECCP studied in these three evaluations is simply too brief to create changes in teacher behaviors that can be detected by outside objective raters. It is possible that a longer or more intensive versions of ECCP could produce measurable impacts in this domain.

CONCLUSIONS AND RECOMMENDATIONS

The positive impacts for ECCP noted in the three random-controlled evaluations presented here include reductions in preschool target child behavior problems, improvements in social competence in toddler peers who were not actively targeted by the intervention, and improved home-school communication and family involvement in both toddlers and preschoolers. These positive impacts were observed using the most rigorous methods possible of random-controlled evaluation and most of the findings above were replicated across multiple evaluations and time points. Furthermore, these positive impacts were observed following a relatively brief, but intensive, three-month ECCP intervention. As measured by the most rigorous methods possible, ECCP is a highly successful and impactful intervention for improving child behavioral outcomes and improving family involvement in early care and education programs.

Additionally, ECCP's costs are modest in comparison to alternative responses to classroom behavioral challenges. Special education placement and grade retention are common school responses to challenging classroom behaviors. Although existing research do not support the effectiveness of either special education placement (especially self-contained services) and grade retention, both carry a significantly higher per-child cost than ECCP – about \$12,575 for special education and \$14,425 for grade retention, compared to \$2,000 for ECCP.

Based on the overall results of these evaluations of ECCP, five recommendations are offered.

First, ECCP should continue to be offered to all early care and education programs within Connecticut. Positive findings were noted across a variety of program types and age groups, supporting ECCP's currently wide availability within Connecticut.

Second, as a clearly effective intervention for many children and families, any potential changes to ECCP's structure and process should be avoided or undertaken with great care. Results of these three random-controlled evaluations indicate that ECCP is highly effective in its current state of operation. In addition to being the only statewide system of early childhood mental health consultation to have undergone successful random-controlled evaluations, this author is also unaware of any other educational, medical or social program within the state of Connecticut to have been evaluated in a statewide random-controlled evaluation during statewide implementation. As such, ECCP's evidence of effectiveness appears to be unique among early childhood mental health consultation systems across the nation and among all support programs within Connecticut.

Third, Connecticut should consider conducting or funding a needs study to determine the true need for ECCP services across the state. ECCP is currently a *responsive* intervention. As such, ECCP relies on program directors and teachers actively requesting ECCP services in order to receive them. Counts of active requests for services likely underestimate the true need for ECCP services, as these counts would not include programs that would likely benefit from ECCP but

would not actively request the service be provided to them. A needs study using anticipated rates of challenging behaviors could yield a more accurate number of the programs for which ECCP could be beneficial, as well as indicate program types and geographic areas where ECCP is being underutilized.

Fourth, Connecticut should consider implementing a statewide system of universal screening for mental health needs among children in early care and education settings and creating a statewide referral system for ECCP. Based on data from these evaluations, children with internalizing behaviors (extreme anxiety, sadness, shyness, etc.) are not typical prompts for referral for ECCP services. As such, children with internalizing behaviors are not being provided adequate access to ECCP supports in their programs. A statewide system of universal screening and referral regarding behavioral and mental health issues should target the identification of children with both externalizing and internalizing challenges.

Fifth, any future studies of the effectiveness of ECCP should augment, rather than replicate, the findings from the three evaluations presented here. ECCP's effectiveness at reducing challenging externalizing behaviors with preschoolers has now been replicated in two evaluations. Likewise, ECCP's lack of significant positive effects on classroom quality and teacher-child interactions has also been replicated. Any future effectiveness studies should focus on either exploring ECCP's effects in infant/toddler programs with large enough sample sizes to detect non-trivial effects or examining the effects of ECCP on classroom quality and teacher-child interactions during the more intensive center-wide services offered by ECCP, where multiple classrooms nested within centers are provided classroom-specific services during a 9-month center-wide intervention. Also, studies where the duration and intensity of ECCP are purposely varied could generate a better understanding of the ideal dosage of ECCP needed to maximize impacts or create further cost efficiencies to the already highly effective ECCP model.

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