A Year of Mental Health Consultation in Early Care and Education Settings: Evaluating Classroom and Child-Level Outcomes

CityMatCH Leadership and MCH Epidemiology Virtual Conference
September 2020

Elleanor Eng, Kristen Pappas, Fatima Kadik
Bureau of Children, Youth, and Families
New York City Department of Health and Mental Hygiene
Agenda

New York City Early Childhood Mental Health Network

Consultation Model

Evaluation

Methods, Results

Conclusion

Overview, Limitations, Next Steps
Early Childhood Mental Health Network
Early Childhood Therapeutic Center (ECTC) Services

Licensed mental health clinics offer 3 linked services:

- **Mental Health Consultation**
  - Capacity building support to staff at early care and education (ECE) sites

- **Mental Health Treatment**
  - To children **birth to five**, their siblings, and parents/caregivers

- **Family Peer Support**
  - Peers integrated into clinics to support parents and caregivers
NYC ECMH Network Model of Consultation

- **Funding:** ThriveNYC (100% City Tax Levy)
- **Consultant:** Master’s level mental health professional with early childhood expertise based in licensed clinics
- **Site:** Subsidized, center-based ECEs
- **Goals:** Partnership agreement and joint goal setting
- **Dosage:** 1 day per week for the duration of the school year (Sept - June)
- **Caseload:** 5 sites, 3 classrooms per site
Definition of Infant/Early Childhood MHC

- A multi-level, preventive intervention
  - that partners mental health professionals with early childhood providers (staff/teachers) and with parents/caregivers
  - to build their capacity to support children’s social and emotional health and development

Three Levels of MHC & Theory of Change

Site/Programmatic (S/P)
- Supports staff in making changes to site’s practices and policies that benefit all children and adults in their setting

Classroom (C)
- Conducts classroom observations and works collaboratively with teachers on strategies to respond to the social emotional needs of children in their classroom; Identifies and addresses attitudes, beliefs, practices and conditions

Child and Family (C/F)
- Helps teachers and parents/caregivers understand and address the individualized needs of children with challenging behaviors

[Diagram showing Consultants’ time is spent mainly on classroom consultation breakdown of consultation hours by type of consultation, September 2016 – June 2019]
# Evaluation of FY2019 (Sep 2018 - June 2019)

<table>
<thead>
<tr>
<th>Evaluation Questions</th>
<th>Measurement Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is MHC associated with improved knowledge/skills in teaching staff?</td>
<td>● Teaching Pyramid Observation Tool Short Form (TPOT-SF) pre/post</td>
</tr>
<tr>
<td>Is MHC associated with improved social-emotional and behavioral outcomes in children?</td>
<td>● Classroom Strengths and Difficulties Questionnaire (C-SDQ) pre/post</td>
</tr>
<tr>
<td></td>
<td>● Devereux Early Childhood Assessment - Clinical (DECA-C) pre/post</td>
</tr>
</tbody>
</table>

- For all measures, the pre/post analysis included a paired samples t-test for significance and Cohen’s d for effect size.
FY2019 Demographics

- 69 Early Care & Education (ECE) Sites
- 207 Classrooms containing 2900 Children for Classroom Level Consultation
  - The average duration of Site & Classroom level consultation services was approx. 8.5 months
  - The range was approx. 6.5 to 10 months
- 138 Children in Child/Family Level Consultation
  - The average duration of Child/Family Level Consultation services was approx 5 months
  - The range was approx. 1 month to 8.5 months
### Greater Proportion of BIPOC Children than NYC as a Whole

<table>
<thead>
<tr>
<th>FY19 ECMH Consultation Child Demographics</th>
<th>Classroom Level (N=2900)</th>
<th>Child/Family Level (N=138)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Female</td>
<td>50.10%</td>
<td>36.90%</td>
</tr>
<tr>
<td>Male</td>
<td>49.90%</td>
<td>63.10%</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>American Indian/ Alaskan Native</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Asian</td>
<td>12.10%</td>
<td>19.05%</td>
</tr>
<tr>
<td>Black/ AA</td>
<td>35.90%</td>
<td>26.98%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>39.30%</td>
<td>47.62%</td>
</tr>
<tr>
<td>Middle Eastern/ N African</td>
<td>4.20%</td>
<td>3.20%</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pac Islander</td>
<td>0.00%</td>
<td>0.79%</td>
</tr>
<tr>
<td>White</td>
<td>1.20%</td>
<td>0.79%</td>
</tr>
<tr>
<td>Bi/Multi Racial</td>
<td>3.60%</td>
<td>1.59%</td>
</tr>
<tr>
<td>Other</td>
<td>0.60%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

- Child gender and race/ethnicity was reported by ECE Lead Teachers from 207 classrooms.
Males were Overrepresented & Females were Underrepresented in C/F Consultation

<table>
<thead>
<tr>
<th>FY19 ECMH Consultation Child Demographics</th>
<th>Classroom Level (N=2900)</th>
<th>Child/Family Level (N=138)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Female</td>
<td>50.10%</td>
<td>36.90%</td>
</tr>
<tr>
<td>Male</td>
<td>49.90%</td>
<td>63.10%</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>American Indian/ Alaskan Native</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Asian</td>
<td>12.10%</td>
<td>19.05%</td>
</tr>
<tr>
<td>Black/ AA</td>
<td>35.90%</td>
<td>26.98%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>39.30%</td>
<td>47.62%</td>
</tr>
<tr>
<td>Middle Eastern/ N African</td>
<td>4.20%</td>
<td>3.20%</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pac Islander</td>
<td>0.00%</td>
<td>0.79%</td>
</tr>
<tr>
<td>White</td>
<td>1.20%</td>
<td>0.79%</td>
</tr>
<tr>
<td>Bi/Multi Racial</td>
<td>3.60%</td>
<td>1.59%</td>
</tr>
<tr>
<td>Other</td>
<td>0.60%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

- Reported gender was split relatively evenly in our classroom level population.
- However, children received child/family (C/F) level consultation disproportionately by gender.
Disproportionate Selection for C/F Consultation by Race/Ethnicity

<table>
<thead>
<tr>
<th>FY19 ECMH Consultation Child Demographics</th>
<th>Classroom Level (N=2900)</th>
<th>Child/Family Level (N=138)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Female</td>
<td>50.10%</td>
<td>36.90%</td>
</tr>
<tr>
<td>Male</td>
<td>49.90%</td>
<td>63.10%</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>American Indian/ Alaskan Native</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Asian</td>
<td>12.10%</td>
<td><strong>19.05%</strong></td>
</tr>
<tr>
<td>Black/AA</td>
<td>35.90%</td>
<td><strong>26.98%</strong></td>
</tr>
<tr>
<td>Hispanic</td>
<td>39.30%</td>
<td><strong>47.62%</strong></td>
</tr>
<tr>
<td>Middle Eastern/ N African</td>
<td>4.20%</td>
<td>3.20%</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pac Islander</td>
<td>0.00%</td>
<td>0.79%</td>
</tr>
<tr>
<td>White</td>
<td>1.20%</td>
<td>0.79%</td>
</tr>
<tr>
<td>Bi/Multi Racial</td>
<td>3.60%</td>
<td>1.59%</td>
</tr>
<tr>
<td>Other</td>
<td>0.60%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

- There were apparent disproportionalities in Asian, Black/AA, and Hispanic children receiving C/F consultation versus those children in Classroom consultation.
Classroom Strengths & Difficulties Questionnaire (C-SDQ)

- Classroom Difficulties Index (Potential Range: 0.00 to 3.00)
- Percentage of Children in the Classroom Rated as ANY Level of Difficulties
- Percentage of Children in the Classroom Rated as SEVERE Difficulties

**Infant/Toddler Strengths and Difficulties Classroom Questionnaire**

*For Teacher*

Please reflect on each of the children in your classroom and answer the following question:

Do you think that [child name] has difficulties in any of the following areas: emotions, regulation, behavior or relationships with family, caregivers or peers?

<table>
<thead>
<tr>
<th>Answer choices:</th>
<th>No</th>
<th>Yes – minor difficulties</th>
<th>Yes – definite difficulties</th>
<th>Yes – severe difficulties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Classroom Level Consultation
The Classroom Difficulties Index Score Improved

Classroom Difficulties Index

Time 1 Mean: 0.79

Time 2 Mean: 0.68

Change in Mean: 0.11**

Cohen’s d: 0.25

Percent ANY Difficulties

Time 1 Mean: 47.1%

Time 2 Mean: 42.7%

Change in Mean: 4.4%*

Cohen’s d: 0.19

Percent SEVERE Difficulties

Time 1 Mean: 8.9%

Time 2 Mean: 6.0%

Change in Mean: 2.9%**

Cohen’s d: 0.25
Classroom Level Consultation

Percent of Children Rated as having ANY Difficulties Decreased

N = 116

Classroom Difficulties Index

Time 1 Mean: 0.79
Time 2 Mean: 0.68
Change in Mean: 0.11**
Cohen's d: 0.25

Percent ANY Difficulties

Time 1 Mean: 47.1%
Time 2 Mean: 42.7%
Change in Mean: 4.4%*
Cohen's d: 0.19

Percent SEVERE Difficulties

Time 1 Mean: 8.9%
Time 2 Mean: 6.0%
Change in Mean: 2.9%**
Cohen's d: 0.25

*p<.05  **p<.01  ***p<.001
Classroom Level Consultation

The Percent of Children Rated as having SEVERE Difficulties Decreased

Classroom Difficulties Index
- Time 1 Mean: 0.79
- Time 2 Mean: 0.68
- Change in Mean: 0.11**
- Cohen's d: 0.25

Percent ANY Difficulties
- Time 1 Mean: 47.1%
- Time 2 Mean: 42.7%
- Change in Mean: 4.4%*
- Cohen’s d: 0.19

Percent SEVERE Difficulties
- Time 1 Mean: 8.9%
- Time 2 Mean: 6.0%
- Change in Mean: 2.9%**
- Cohen’s d: 0.25

*p<.05  **p<.01  ***p<.001
TPOT-SF Methodology & Results:

● Classroom Environment Index (Potential range: 0.00 to 1.00)
  ○ Comprised of 8 questions regarding the physical conditions in the classroom.
  ○ Ex. *The classroom is arranged such that all children in the classroom can move easily around the room.*

● Classroom Management Index (Potential range: 1.00 to 4.00)
  ○ Comprised of 26 questions regarding the behavior and interactions between ECE staff and children.
  ○ Ex. *Teachers’ tone in conversations with children is positive, calm, and supportive.*
Improvement in Classroom Environment

**Classroom Environment Index**

- **Time 1 Mean:** 0.90
- **Time 2 Mean:** 0.97
- **Change in Mean:** 0.07***
- **Cohen's d:** 0.58

**Classroom Management Index**

- **Time 1 Mean:** 3.28
- **Time 2 Mean:** 3.52
- **Change in Mean:** 0.24***
- **Cohen's d:** 0.82

*p<.05  **p<.01  ***p<.001
Improvement in Classroom Management

Classroom Environment Index

Time 1 Mean: 0.90
Time 2 Mean: 0.97
Change in Mean: 0.07***
Cohen's d: 0.58

Classroom Management Index

Time 1 Mean: 3.28
Time 2 Mean: 3.52
Change in Mean: 0.24***
Cohen's d: 0.82

*p<.05  **p<.01  ***p<.001
Devereux Early Childhood Assessment - Clinical (DECA-C)

- Total Protective Factor (TPF) T Score
  - Ex. *In the past four weeks, how often did the child... try different ways to solve a problem?*

- Total Behavioral Concern (TBC) T Score
  - Ex. *In the past four weeks, how often did the child... act overwhelmed or cry when asked to do simple things?*
**Child/Family Level Consultation**

## Average Scores Started in Concern Range and Ended in Typical Range

### Total Protective Factor (TPF) T Score

- **Concern**: 40
- **Typical**: 59
- **Strength**: 72

### Total Behavioral Concern (TBC) T Score

- **Concern**: 60
- **Typical**: 28

### N = 138

#### Time 1 Mean

- **Total Protective Factor (TPF) T Score**: 36.6
- **Total Behavioral Concern (TBC) T Score**: 62.5

#### Time 2 Mean

- **Total Protective Factor (TPF) T Score**: 40.1
- **Total Behavioral Concern (TBC) T Score**: 59.6

#### Change in Mean

- **Total Protective Factor (TPF) T Score**: 3.5***
- **Total Behavioral Concern (TBC) T Score**: 2.9***

#### Cohen’s d

- **Total Protective Factor (TPF) T Score**: 0.40
- **Total Behavioral Concern (TBC) T Score**: 0.31

---

*p<.05  **p<.01  ***p<.001
Larger Effect Size Among Children Starting in the Concern Range

- Children assessed as having more severe scores at Time 1 were found to have had a greater magnitude of improvement over time in each subscale.

![Graphs showing total protective factor (IPF) T-Score and total behavioral concern (TBC) T-Score](image)

\[\begin{align*}
\text{Total Protective Factor (IPF) T-Score} & \\
\text{Time 1 Mean:} & 32.2 \\
\text{Time 2 Mean:} & 37.3 \\
\text{Change in Mean:} & 5.1^{***} \\
\text{Cohen's d:} & 0.65
\end{align*}\]

\[\begin{align*}
\text{Total Behavioral Concern (TBC) T-Score} & \\
\text{Time 1 Mean:} & 67.9 \\
\text{Time 2 Mean:} & 63.5 \\
\text{Change in Mean:} & 4.5^{**} \\
\text{Cohen's d:} & 0.62
\end{align*}\]

* \(p<.05\)  ** \(p<.01\)  *** \(p<.001\)
Disproportionate Impact of C/F Consultation by Child Gender

- Male children had more severe DECA-C scores than female children at Time 1.
- Female children saw greater improvements in TBC T score than male children.
- Male children saw greater improvements in TPF T score than female children.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean TPF Time 1</th>
<th>Change in TPF</th>
<th>Mean TBC Time 1</th>
<th>Change in TBC</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Children</td>
<td>138</td>
<td>36.6</td>
<td>3.5***</td>
<td>62.5</td>
<td>2.9***</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>48</td>
<td>38.7</td>
<td>2.9*</td>
<td>58.8</td>
<td>4.1**</td>
</tr>
<tr>
<td>Male</td>
<td>82</td>
<td>35.7</td>
<td>3.6***</td>
<td>64.3</td>
<td>1.9^</td>
</tr>
</tbody>
</table>

*p<.05; **p<.01; ***p<.001
^ value is close to significance at the p<.05 level
Disproportionate Impact of C/F Consultation by Child Race/Ethnicity

- Asian and Black/AA children saw greater than average improvements in both subscales
- Asian children had a medium effect size for improvement in TPF T score
- Black/AA children had a medium effect size for improvement in TBC T score

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>N</th>
<th>Change in TPF</th>
<th>Change in TBC</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Children</td>
<td>138</td>
<td>3.5***</td>
<td>2.9***</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>24</td>
<td>4.2*</td>
<td>3.8*</td>
</tr>
<tr>
<td>Black/AA</td>
<td>34</td>
<td>4.7**</td>
<td>4.5**</td>
</tr>
<tr>
<td>Hispanic</td>
<td>60</td>
<td>2.7*</td>
<td>2.4^</td>
</tr>
</tbody>
</table>

*p<.05; **p<.01; ***p<.001
^ value is close to significance at the p<.05 level
## Results Overview

<table>
<thead>
<tr>
<th>Evaluation Questions</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is MHC associated with improved knowledge/skills in teaching staff?</td>
<td>• Significant improvements in classroom environment and management.</td>
</tr>
<tr>
<td>Is MHC associated with improved social-emotional and behavioral outcomes in children?</td>
<td>• Significant improvements in classroom behavioral difficulties, including improvements in severe difficulties.</td>
</tr>
<tr>
<td></td>
<td>• Significant improvements in children’s protective factors and behavioral concerns, with greater improvements in:</td>
</tr>
<tr>
<td></td>
<td>- children initially assessed as higher concern</td>
</tr>
<tr>
<td></td>
<td>- children identified as African American/Black or Asian</td>
</tr>
<tr>
<td></td>
<td>- male children protective factors (vs female children)</td>
</tr>
<tr>
<td></td>
<td>- female children behavioral concerns (vs male children)</td>
</tr>
</tbody>
</table>
Evaluation Barriers

● Interruption in consultation services and data collection due to:
  ○ Staff turnover at the Early Care and Education sites
  ○ Staff turnover among Network’s Mental Health Consultants
  ○ Service disruption (e.g., site closures or restructuring)

● Need for ongoing flexibility in data management system
Lessons Learned/Next Steps

● Data management protocols should include strategies to mitigate data collection issues related to staff turnover and service disruption.

● Expand individual-level demographic data collection to include:
  ○ Race/ethnicity of ECE staff and MHCs
  ○ Primary language spoken of children and families, ECE staff, and MHCs

● Explore findings:
  ○ Disproportionate selection for child/family consultation by gender and race/ethnicity
  ○ Differences in impact of child/family consultation by gender and race/ethnicity
Acknowledgements

● Network team:
  ○ NYC DOHMH Children, Youth & Families, Shirley Berger
  ○ NYC ECMH Training and Technical Assistance Center (TTAC)
  ○ NYC Early Childhood Therapeutic Centers (ECTCs)

● External:
  ○ ThriveNYC
  ○ NYC Early Care and Education Sites
  ○ Center of Excellence for Infant and Early Childhood Mental Health Consultation/Georgetown University Center for Child and Human Development
  ○ NYC Administration for Children’s Services
  ○ Families across NYC
References


THANK YOU!

Fatima Kadik, MA
Project Director

Kristen Pappas, MS
Evaluation and Quality Improvement Specialist

Elleanor Eng, MPH
Program Coordinator

Contact: Kristen Pappas, MS
kpappas@health.nyc.gov