DEVELOPMENTAL MILESTONES IN JAMAICAN CHILDREN

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PRESENTATION OUTLINE

- Background on Developmental Milestones
- JA Kids Study Methods (Brief Overview)
- Detailed Methods
  - Developmental Milestones
  - Assessment
- Preliminary Results – 18 Months and 20 Months
- Early ‘Conclusions’
DEVELOPMENTAL MILESTONES

- These are abilities, skills and behaviours children attain as they grow.
  - Used by parents, doctors and other professionals.
  - Help to identify emerging developmental problems.

- Early identification of developmental problems leads to early intervention which puts the child on a trajectory for successful outcomes.
DEVELOPMENTAL MILESTONES

Developmental milestones include:

- Social – solving conflicts, making friends
- Physical – gross and fine motor skills
- Cognitive – ability to think, learn and solve problems, knowledge of numbers and letters
- Emotional – sharing, expressing and identifying emotions
- Communication skills (language) – talking and using gestures
DEVELOPMENTAL MILESTONES

- Developmental milestones are sometimes used in the development of screening tools.
- There are no comprehensive milestones for Jamaican children, international standards are used.
DEVELOPMENTAL MILESTONES

18 months

Gross Motor
- Stand up alone
- Walks up and down stairs alone with railing

Fine Motor
- Inserts shapes
- Stacks two – three blocks
- Scribbles
- Turns several pages in a book

Communication
- Follow one step command
- Uses 15 words, two – word phrases
- Gestures
- Label objects
- Imitates
- Simple pretend play
- Understanding simple verbal input
HIGHLIGHTS FROM THE LITERATURE

▶ Early childhood developmental milestones predict childhood developmental outcomes – Brothers, Glascoe and Robertshaw, 2008

▶ (Early) identification of delays
  ◦ Allows referral for parent support and improved mother/child relationship – Bailey et al, 2005
  ◦ Assists in establishing appropriate child care and therapy – Maulik and Darmstadt, 2007

▶ Screening should be incorporated in regular medical surveillance – Oberklaid and Efron, 2005
OBJECTIVES

- Evaluate Jamaican children’s performance on selected milestones at 18–22 months
- Determine whether Jamaican parents’ report of milestones is comparable with developmental assessment
## METHODS – PHASE 1 AND 2

<table>
<thead>
<tr>
<th>Contact period</th>
<th>Modality</th>
<th>Participant selection</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 – 12 months (Phase 1)</td>
<td>Telephone interviews</td>
<td>Entire cohort</td>
<td>7600</td>
</tr>
<tr>
<td>18 – 22 months (Phase 1)</td>
<td>Telephone (25%)</td>
<td>Randomly selected</td>
<td>2450</td>
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<tr>
<td></td>
<td>Face to face (10%)</td>
<td>Randomly selected</td>
<td>1035</td>
</tr>
<tr>
<td>4 – 5 years (Phase 2)</td>
<td>Face to face</td>
<td>Focus cohort</td>
<td>1300</td>
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</tbody>
</table>
ASSESSMENTS

- Parent report 9 – 12 months
  - Ages and Stages Questionnaire – third edition
  - Ten Question Screen

- 18 – 22 months
  - Ages and Stages Questionnaire – third edition
  - Ten Question Screen
  - Modified Checklist for Autism in Toddlers (MCHAT)

- Detailed developmental, behavioural assessments

- 18 – 22 months
  - Mullen Scales of Early Learning (18 – 22 months)
  - Child Behaviour Checklist (CBCL)

- 4 – 5 years old
  - Griffiths Mental Development Scales – Extended Revised
  - Wechsler Individual Achievement Test – third edition
  - Peabody Picture Vocabulary Test – fourth edition
  - Executive function tasks
  - Child Behaviour Checklist
Mullen Scales of Early Learning

- A comprehensive measure of cognitive ability and motor development.
- Age Range: birth – 68 months
- Modality: Individually administered
- Estimated Completion Time: 40 – 60 minutes

- Consists of five subscales:
  - Gross Motor
  - Visual Reception
  - Fine Motor
  - Expressive Language
  - Receptive Language
Receptive Language (18–22 mths)

- Understands simple verbal input: 99.4%
- Understands gestures: 99.4%
- Understands questions: 82.7%
- Identifies objects: 95.8%
- Follows directions: 61.5%
Expressive Language (18–22 mths)

- Uses two-word phrases: 77.7%
- Imitates short sentences: 1.9%
- Says eight words: 86.7%
Fine Motor (18–22 mths)

- Opening a closed container: 10.2%
- Refined pincer grasp: 4.3%
- Stacking 3-5 blocks vertically: 21.6%
- Drawing a vertical line: 16.8%
Gross Motor (18–22 mths)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Stands-squats-stands</td>
<td>99.3</td>
</tr>
<tr>
<td>Walks alone</td>
<td>99.1</td>
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<tr>
<td>Walks downstairs by self</td>
<td>4</td>
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<tr>
<td>Kicks a ball</td>
<td>95.1</td>
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</table>
Comparing Developmental assessments with Parental Reports

- Receptive language

<table>
<thead>
<tr>
<th>Task</th>
<th>Developmental Assessment</th>
<th>Parents' Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follows directions</td>
<td>61.5</td>
<td>94.8</td>
</tr>
<tr>
<td>Understands questions</td>
<td>82.7</td>
<td>98.5</td>
</tr>
<tr>
<td>Understands gestures</td>
<td>87.7</td>
<td>99</td>
</tr>
<tr>
<td>Understands simple verbal input</td>
<td>97.1</td>
<td>99</td>
</tr>
</tbody>
</table>
Comparing Developmental assessments with Parental Reports

- Expressive language

- Says eight words
  - Developmental Assessment: 83
  - Parents' Reports: 86.7

- Uses two-word phrases
  - Developmental Assessment: 69.8
  - Parents' Reports: 77.7
Comparing Developmental assessments with Parental Reports

- Fine Motor

- Drawing a vertical line
- Stacking 3-5 blocks vertically
- Refined pincer grasp
- Opening a closed container

![Bar chart comparing Developmental Assessment and Parents' Reports]

- Developmental Assessment
- Parents' Reports
Comparing Developmental assessments with Parental Reports

- Gross Motor

- Kicks a ball: Developmental Assessment (97), Parents' Reports (95.1)
- Walks downstairs by self: Developmental Assessment (4), Parents' Reports (86.1)
- Walks alone: Developmental Assessment (98.4), Parents' Reports (99.1)
- Stands-squats-stands: Developmental Assessment (99.2), Parents' Reports (99.5)
Further Analyses

- So far we’ve only scratched the surface

- Examine variation by:
  - Child’s gender
  - Parents’ sociodemographic characteristics
  - Health
  - Psychosocial variables
‘Conclusions’

- Parent report is a reliable source for developmental milestones in domains of:
  - Expressive Language
  - Receptive Language
  - Gross Motor Skills

- Less accurate for Fine Motor skills, probably because Fine Motor skills is not observed by parents as frequently as language and motor skills.