The Meaning of School Body Mass Index (BMI) Screening and Referral to the Parents/Guardians of 1st, 3rd & 6th Grade Students in Florida

A Mixed Methods Research Study by Mary Louise Jorda, PhD, RN
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The problem

- Increased obesity rates worldwide. (CDC, WHO)
- Immediate and long term physical & psychological health problems. (Daniels et al, 2005; Deitz, 2004; Freedman et al, 2007)
- Incalculable economic costs. (Finkelstein et al, 2009; RWJ Foundation, 2015)
- Inaccurate parental perception. (Mareno, 2012)
The State of Florida is mandated to screen for growth & development.

Body Mass Index (BMI) = Weight in pounds \times 703 \div \text{Height in inches}^2
The problem with school BMI screening
BMI controversies

Why BMI is a Big Made-Up Invention

<table>
<thead>
<tr>
<th>Weight (lb)</th>
<th>Height (in)</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>230</td>
<td>6'1&quot;</td>
<td>30.3</td>
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</table>

BMI

- 18.5 - 24.9: Normal Weight
- 25.0 - 29.9: Over Weight
- 30.0 - 34.9: Obesity Class I
- 35.0 - 39.9: Obesity Class II
- 40.0 - 49.9: Obesity Class III
Purpose of the study

- To investigate the meaning that parents attribute to school BMI screening and referral.
- To determine whether school BMI referral serves as an impetus to healthy lifestyle changes.
Methodology
Concurrent triangular mixed methods
Methods

**Quantitative**
Cross sectional 55-item survey distributed to 1st, 3rd & 6th grade students.

**Qualitative**
Interviews with parents who received a BMI referral.
Participants

Parents/Guardians of 1st, 3rd & 6th grade students at 5 schools (four K-8 and one elementary school) in east central Florida.
Quantitative data:
125 Surveys

4 sections plus demographic information

- Section 1 - Concerns regarding child’s weight
- Section 2 - Knowledge regarding BMI
- Section 3 - Beliefs regarding school screening
- Section 4 - Action items taken upon receipt of a referral
Quantitative findings

- 82% of the surveys were completed by Mothers
- 30 acknowledged receiving a referral
- 98 believed their child’s weight was normal
- Only 16 reported their child was overweight
Variables

- **Independent variable:** Receipt of BMI referral letter
- **Dependent variables:** Possible actions taken in response to an actual or possible BMI referral letter
Variables (Action Items, Dependent Variables)

If my child’s school told me my child’s BMI/weight is unhealthy

I would:

1. Call the school nurse.
2. Call my child’s doctor.
3. Change my child’s diet.
4. Change my child’s activity level.
5. Reduce the amount of time my child can watch television or play video or computer games.
6. Sit down and have a talk with my child about his/her unhealthy BMI.
7. Require my entire family to make changes together.
8. Want my child to know that the school told me his/her BMI/weight.
Quantitative Findings

Respondents indicated they would change their child’s diet ($\text{Mean}=9.85$, $\text{SD}=2.557$) and activity levels ($\text{Mean}=9.98$, $\text{SD}=2.227$) upon receipt of a BMI referral.
Respondents who received and did not receive BMI referrals for their children

T-tests failed to reveal any statistically significant differences between these groups.
Respondents with knowledge and without knowledge of BMI

95 of the respondents indicated they knew what BMI was while 30 did not or were unsure.

T-tests revealed statistically significant differences between the groups as follows:

- Change diet \( p=0.008 \)
- Change activity \( p=0.007 \)
- Talk to child \( p=0.001 \)
- Family changes together \( p=0.029 \)
- Want child to know \( p=0.003 \)
Factor Analysis

Action items rotated into 2 factors

- Change Diet & Activity Habits
- Reduce Screen Time
- Family Changes Together

Call Doctor, Nurse
Talk to Child
Qualitative data: 20 Interviews
Collected and analyzed utilizing van Manen’s Phenomenology
Interviews were transcribed and analyzed for themes.

Holistic analysis revealed overarching themes:

- **Reflecting** (either on role as parent or role of school)
- **Changing**
Other themes revealed

**ESSENTIAL THEMES** from overarching themes

- **CHANGING NUTRITIONAL INTAKE & PHYSICAL ACTIVITY for the FAMILY**
- **CHANGING the BMI SCREENING & REFERRAL PROCESS**

**SUBTHEMES** formed SCREEN acronym

**INCIDENTAL THEMES**

- Parent involvement
- Anthropomorphizing the school
- Questioning timing of screening
- Fearing stigma of referral letter instead of weight of child
Implications for practice

Review screening procedures each year with SCREEN.
SENSITIVITY

Don’t use the word 
obese

ETYMOLGY OF OBSE (ADJ.)
1650s.

“That 
has 
eaten 
itself 
fat.”
RESPECT PRIVACY
ENSURE ACCURACY

- Calibrate equipment
- Train screeners
- Review procedures every year
- Monitor screeners for correct techniques
Every student, every time

Assess every student prior to referral for:

- Previous BMI
- Health issues that may affect BMI
NOTIFICATION

Only send one referral via USPS
Providing screening with manifestations of caring that parents value

**Sensitivity**

**Confidentiality & caring**

**Respect privacy**

**Ensure accuracy**

**Every student, every time**

**Notify only once, thru the USPS**
Summary

School BMI screening & referral are valuable tools

- To inform parents
- Who are mostly satisfied with the process


