PRESCHOOL CHILDREN OF EATING COMPETENT PARENTS HAVE HIGHER QUALITY OF LIFE AND LOWER NUTRITION RISK

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Abstract

Objective: Examine if nutrition risk or quality of life (QoL) in preschool children is associated with parent eating competence (EC).

Study Design, Setting, Participants, Intervention: Cross-sectional online survey of preschool parents recruited from low-income venues. Parents (n=117) were female, 77% white, resource-constrained (62% reported social service program participation), mean age 32.2 ± 7.8 y; 50% were EC. Low socioeconomic position (SEP) was defined by worrying about money for food and social service program participation; 28% had a low SEP. Mean preschool age was 3.4 ± 1.0 y. NutriSTEP identified 28% at nutrition risk. Pediatric QoL was below the 80th percentile for 6%.

Outcome Measures and Analysis: EC measured with ecSI 2.0; parent behaviors assessed with Three-Factor Eating Questionnaire-18, General Health Questionnaire, Child Feeding Styles Questionnaire, Pittsburgh Sleep Quality Inventory, self-report height/weight/worry about money for food. Child health examined with Pediatric QoL Inventory (PedsQL) and NutriSTEP. NutriSTEP and PedsQL scores were compared between EC and non-EC parents using GLM controlling for SEP.

Results: EC parent health, sleep, weight, stress were better with less emotional and uncontrolled eating. NutriSTEP and PedsQL were associated with EC (r = -.29, *P*=.004; r=.22, *P*=.03 respectively). NutriSTEP indicated lower nutrition risk (*P*=.007), PedsQL revealed better quality of life(*P*=.07) for children of EC parents, also after controlling for SEP (16.6 ± 1.1 vs. 19.6 ± .9, *P*=.03; 99.0 ± 1.6 vs. 95.0 ± 1.2, *P*=.044 respectively). Child nutrition risk was lower with EC parents when controlling for program use (15.9 ± .8 vs. 18.8 ± .9; *P*=.02).

Conclusions and Implications: Interventions designed to enhance preschool parent EC may benefit child nutrition status.

Background

What is eating competence?

Eating competence (EC) is a construct in academic terms; a perspective or way of eating in lay terminology. This way of eating is intra-individual and entrains positive biopsychosocial outcomes. [1]

Competent eaters are:

- ✓ matter-of-fact and reliable about getting enough to eat of enjoyable and nourishing food
- ✓ positive, comfortable and flexible with eating
- ✓ trusting of being able to eat satisfying amounts of rewarding food to maintain a stable body weight

EC has been associated with better sleep quality, [2] perception of being more physically active, [3] greater diet quality, [4] more satisfied with body weight, [5, 6] decreased cardiovascular risk, [7] and better food resource management skills. [5, 6]

EC parents of 4th grade children demonstrated 1) more **self-efficacy and outcome expectancies for their child to eat fruits and vegetables at meals and snacks; 2) more modeling of child obesity.** [8]

Data Collection

Participants were recruited from WIC clinics and low-income venues (e.g. libraries, laundromats, food banks), using flyers and cards either posted or distributed in-person. Flyers included the URL for an online survey (Qualtrics, Provo UT) that was completed independently at participant convenience after confirming eligibility.

- ✓ parent of a child aged 2 through 5 years
- ✓ some responsibility for feeding the preschooler
- ✓ no history of a chronic illness affecting eating behavior
- ✓ not a nutrition student or nutritionist
- ✓ child not a ward of the state

Data were collected from May through October 2014. Pilot study data (n=8) collected the previous May were also included after affirming demographic similarity.

Data Analyses

Normal distribution of ecSI 2.0 and NutriSTEP scores was confirmed. Nonparametric tests were used with PedsQL scores. ecSI 2.0 scores were correlated with NutriSTEP and PedsQL scores; scores were compared between EC and non-EC parents with independent t-test or Mann-Whitney U test. A variable was created to represent low-income status if a participant worried about money for food and used an assistance program. ecSI 2.0 and NutriSTEP score comparisons used a general linear model controlled for low-income status.

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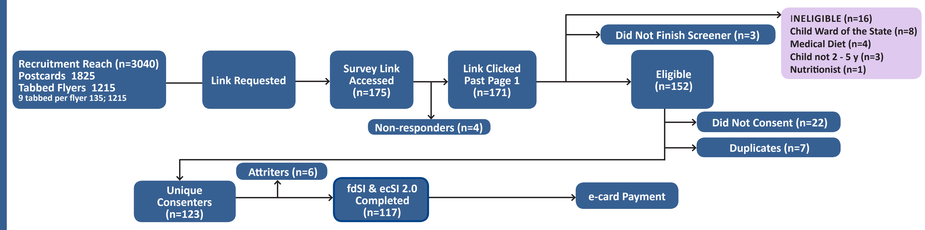
Instruments

Measurement	Instrument	Description/Analyses
Eating Competence	Satter Eating Competence Inventory [5, 6] (ecSI 2.0)	16 items, 5 response options scored from 3 to 0. Possible score 0-48; scores ≥ 32 indicate eating competence. Cronbach α 0.89
Eating Behavior	Three Factor Eating Questionnaire-18 (TFEQ-18) [9, 10]	18 items on a 4-point response scale; items are summed into scales for Cognitive restraint, Uncontrolled eating, and Emotional eating. Higher scores indicate greater frequency of the behavior. Cronbach α: Cognitive restraint 0.75; Uncontrolled eating 0.71; Emotional eating 0.78
Sleep Behavior	Pittsburgh Sleep Quality Index (PSQI) [11]	18 items that assess Subjective sleep quality, Sleep latency, Sleep duration, Habitual sleep efficiency, Sleep disturbances, Sleep medication use, and Daytime dysfunction due to sleep quality during the past month. Each of the scales is equally weighted with scores ranging from 0 to 3. Scales are summed to generate a global index score that reflects quantitative aspects of sleep. Global scores range from 0 to 21, with higher scores reflecting poorer sleep quality. A global score of 5 or higher is indicative of a poor-quality sleeper.
Emotional/ Psychological Health Status	General Health Questionnaire (GHQ) [12]	12 items scored on a 4-point Likert scale from 0 (not at all) to 3 (much more than usual). Total scores range from 0 to 36; higher scores indicate > stress and emotional problems. Cronbach α 0.89
Child Nutrition Status	Nutrition Screening Tool for Every Preschooler (NutriSTEP) [13-15]	17 items with 2 to 5 response options per item. Each response option for an item has an assigned value. Items are summed. A score ≤ 20 indicates good eating and activity habits; scores ≥ 26 indicate consultation with a health professional is recommended.
Child Quality of Life	Pediatric Quality of Life Inventory (PedsQL) [16] for Toddlers (2 – 4 years)	18 items with 5 response options summed to form 3 subscales: Physical functioning (8 items); Emotional functions (5 items); Social functioning (5 items). Items are reverse scored and transformed to a linear scale from 0 – 100 (higher QoL). Cronbach α 0.87
Parenting Style	Caregiver's Feeding Style Questionnaire [17]	19 items, 5 response options. Scores converted to 4 caregiver feeding styles.
Child Feeding Behavior	Child Feeding Questionnaire [18]	31 items, 5 response options. Items are summed to form 7 scales: Preceived responsibility; perceived parent weight; perceived child weight; concern about child weight; restriction; pressure to eat; monitoring. Monitoring subscale Cronbach α 0.91.
Parent Perceived Stress	Single item from the Community Health Database [19]	Visual analog scale from 0 (no stress) to 10 (extreme stress).

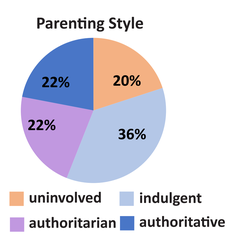
Results

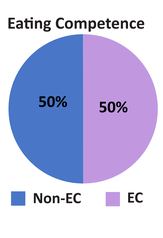


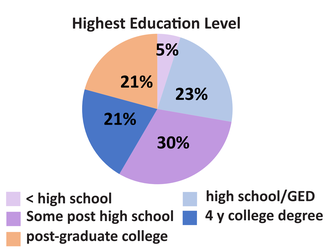
Participant characteristics

Participants (n=117) were **female** (94%); **white** (77%; black 10%); **non-Hispanic** (92%); **food insecure** (39% worried about money for food; 62% **participate in assistance programs,** SNAP 29%, WIC 40%, Food Banks 11%); **overweight/obese** (61%, mean BMI 28.5 ± 8.0); **dissatisfied with their weight** (59%) and **felt stressed** (mean 6.7 ± 2.1; 53% scored ≥ 7).

Mean parent age was 32.2 ± 7.8 y; mean child age 3.4 ± 1.0 y; mean ecSI 2.0 score 31.6 ± 8.2. Child nutrition risk high for 9%, moderate for 19% and low for 72%.







Results

EC parents had . . .

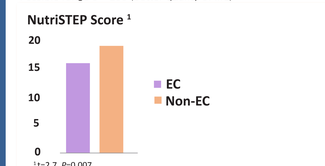
- better emotional/psychological health (10.0 ± 4.7 vs. 12.7 ± 6.1; *P*=0.014)
- less psychological distress (5.9 ± 2,1 vs, 7.2 ± 3.2; *P*=0.017)
- less social dysfunction (4.2 ± 2.8 vs 5.4 ± 3.0, *P*=0.024)
- higher scores on the monitoring CFQ subscale (4.3 ± .9 vs. 3.9 ± 1.0; *P*=0.05)
- greater weight satisfaction (*P*=0.003)
- lower BMI (26.1 ± 7.1 vs 30.1 ± 7.7; *P*=0.008)
- trend for a lower PSQI (5.5 ± 3.6 vs 7.0 ± 3.8; *P*=0.085)
- less emotional eating (5.6 ± 2.3 vs 6.8 ± 2.5; *P*=0.013)
- less uncontrolled eating (17.1 ± 3.8 vs 19.5± 4.0; *P*=0.002)
- meals and snacks at the same times (3.2 ± .7 vs 2.9 ± .6; *P*=0.007 and 2.8 ± 6 vs. 2.4 ± .9; *P*=0.006 respectively)
- more enjoyable meals for everyone (4.0 ± .9 vs 3.6 ± .9; *P*=0.031)
- less stress in their lives (6.1 ± 2.2 vs 7.2 ± 2.0; 2.6, *P*=0.013)
- better sleep quality (5.5 ± 3.6 vs. 7.0 ± 3.8; *P*=0.085) with higher ecSI 2.0 scores for parents with good sleep quality (33.2 ± 7.0 vs. 29.3 ± 9.6; *P*=0.049)

Parent **eating competence** was correlated with **lower nutrition risk** (r=-.29; *P*=0.004) and with **higher pediatric quality of life** (rho .23; *P*=0.016).

Pediatric Quality of Life [1]

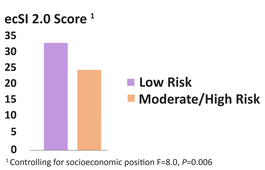
	Mean ± SD	Range	Comment
Total Peds QL	97.1 ± 8.6	58.3 - 100	≤ 80 for 6%
Social Functioning	98.0 ± 6.4	60.0 - 100	≤ 80 for 7%
Emotional Functioning	98.6 ± 5.5	55.0 - 100	≤ 80 for 3%
Physical Functioning	95.7 ± 15.3	25.0 - 100	≤ 80 for 6%

[1] Possible range 0 – 100 (better quality of life)



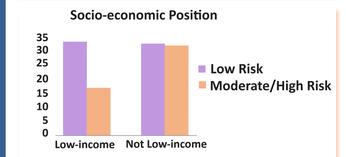
[1] t=2.7, *P*=0.007

Nutrition risk was moderate for 18%, high for 9% but significantly lower for EC parents. Significant NutriSTEP differences between EC and non-EC parents persisted after controlling for assistance program participation (*P*=0.02).

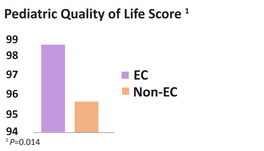


[1] Controlling for socioeconomic position F=8.0, *P*=0.006

ecSI 2.0 scores were lower for parents of children at moderate/high nutrition risk.



ecSI 2.0 scores were lower for low-income parents when nutrition risk was moderate or high. F=7.3, *P*=0.008



[1] *P*=0.014

EC parents perceived their child had a significantly better quality of life than non-EC parents. PedsQL differences remained significant after controlling for socioeconomic position (*P*=0.04).

Conclusions

1. Tenets of healthful approaches to eating and lifestyle behaviors associated with being eating competent were supported.
2. A disconcerting number of children (27%) in this low-income sample were at moderate or high nutrition risk.
3. 6% of parents perceived a low pediatric quality of life for their preschoolers.
4. Nutrition risk of preschoolers was lower for EC parents.
5. Pediatric quality of life was lower for non-EC parents.
6. Consider education focused on enhancing parent EC to address preschooler nutrition risk and quality of life.

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