

# Validity and Reliability of the Baby and Child Eating Behavior Questionnaire, Toddler Version (BEBQ-Mex and CEBQ-T-Mex) in a Low Sociodemographic Sample Recruited in a Mexican Hospital

Claudia Hunot-Alexander <sup>1,†</sup>, Jocelyn González-Toribio <sup>1,†</sup>, Edgar Manuel Vásquez-Garibay <sup>1,\*</sup>, Alfredo Larrosa-Haro <sup>1</sup>, Erika Casillas-Toral <sup>2</sup> and Carmen Patricia Curiel-Curiel <sup>1</sup>

## Supplementary Information S1

**Table S1.** Full set of BEBQ concurrent version and BEBQ-Mex items.

BEBQ <sup>1</sup>	Subscales		BEBQ-Mex <sup>2</sup>
<b>Food Approach subscales; Sub-escalas pro-ingestión</b>			
My baby frequently wants more milk than I provide If allowed to, my baby would take too much milk Even when my baby has just eaten well he/she is happy to feed again if offered My baby is always demanding a feed If given the chance, my baby would always be feeding My baby can easily take a feed within 30 minutes of the last one	Food Responsiveness	Respuesta a los Alimentos	Mi bebé frecuentemente quiere más leche de la que puedo darle Si se le permitiera, mi bebe toma demasiada leche Aun cuando mi bebe ha comido bien, estaría contento(a) de volver a comer si se le ofreciera Mi bebe siempre está demandando una comida/tetada Si le diera chance, mi bebe siempre estaría comiendo Mi bebe puede fácilmente volver a comer a los 30 minutos de la última tetada/toma
<b>Food Avoidance subscales; Sub-escalas anti-ingestión</b>			
My baby seems contented while feeding My baby loves milk My baby becomes distressed while feeding My baby enjoys feeding time	Enjoyment of Food	Disfrute de los Alimentos	Mi bebé parece contento mientras come A mi bebe le encanta la leche Mi bebe se angustia/aflige mientras come* Mi bebe disfruta la hora de comer
My baby gets full up easily My baby gets full before taking all the milk I think he/she should have My baby finds it difficult to manage a complete feed	Satiety Responsiveness	Respuesta a la Saciedad	Mi bebe se siente lleno(a) fácilmente Mi bebe se llena antes de tomar toda la leche que yo pensaba que debía recibir A mi bebe le cuesta trabajo terminarse una tetada/una comida completa
My baby finishes feeding quickly My baby takes more than 30 minutes to finish feeding My baby feeds slowly My baby sucks more and more slowly during the course of a feed	Slowness in Eating	Lentitud para comer	Mi bebe se termina sus tetadas/tomas rápidamente* A mi bebe le toma más de 30 minutos terminar de comer/ su tetada Mi bebe es lento para comer Mi bebe succiona cada vez más lento durante el transcurso de una comida/tetad
My baby has a big appetite	General Appetite	Apetito	Mi bebe tiene un gran apetito

<sup>1</sup> Response option: Never, Rarely, Sometimes, Often, Always. <sup>2</sup> Opción de respuestas: Nunca, Rara vez, Algunas veces, A menudo, Siempre.

**Table S2.** Full set of BEBQ retrospective version and BEBQ-Mex items.

BEBQ <sup>1</sup>	Subscales		BEBQ-Mex <sup>2</sup>
<b>Food Approach subscales; Sub-escalas pro-ingestión</b>			
My baby frequently wanted more milk than I provided If allowed to, my baby would take too much milk Even when my baby had just eaten well he/she was happy to feed again if offered My baby was always demanding a feed If given the chance, my baby would always be feeding My baby could easily take a feed within 30 minutes of the last one	Food Responsiveness	Respuesta a los Alimentos	Mi bebé frecuentemente quería más leche de la que puedo darle Si se le permitía, mi bebe tomaba demasiada leche Aun cuando mi bebe había comido bien, estaba contento(a) de volver a comer si se le ofrecía Mi bebe siempre estaba demandando una comida/tetada Si le daba chance, mi bebe siempre estaba comiendo Mi bebe podía fácilmente volver a comer a los 30 minutos de la última tetada/toma
My baby seemed contented while feeding My baby loved milk My baby became distressed while feeding My baby enjoyed feeding time	Enjoyment of Food	Disfrute de los Alimentos	Mi bebé parecía contento mientras come A mi bebe le encantaba la leche Mi bebe se angustiaba/afligía mientras come* Mi bebe disfrutaba la hora de comer
<b>Food Avoidance subscales; Sub-escalas anti-ingestión</b>			
My baby got full up easily My baby got full before taking all the milk I think he/she should have My baby found it difficult to manage a complete feed	Satiety Responsiveness	Respuesta a la Saciedad	Mi bebe se sentía lleno(a) fácilmente Mi bebe se llenaba antes de tomar toda la leche que yo pensaba que debía recibir A mi bebe le costaba trabajo terminarse una tetada/una comida completa
My baby finished feeding quickly My baby took more than 30 minutes to finish feeding My baby fed slowly My baby sucked more and more slowly during the course of a feed	Slowness in Eating	Lentitud para comer	Mi bebe se terminaba sus tetadas/tomas rápidamente* A mi bebe le tomaba más de 30 minutos terminar de comer/ su tetada Mi bebe era lento para comer Mi bebe succionaba cada vez más lento durante el transcurso de una comida/tetada
My baby had a big appetite	General Appetite	Apetito	Mi bebe tenía un gran apetito

<sup>1</sup> Response option: Never, Rarely, Sometimes, Often, Always. <sup>2</sup> Opción de respuestas: Nunca, Rara vez, Algunas veces, A menudo, Siempre.

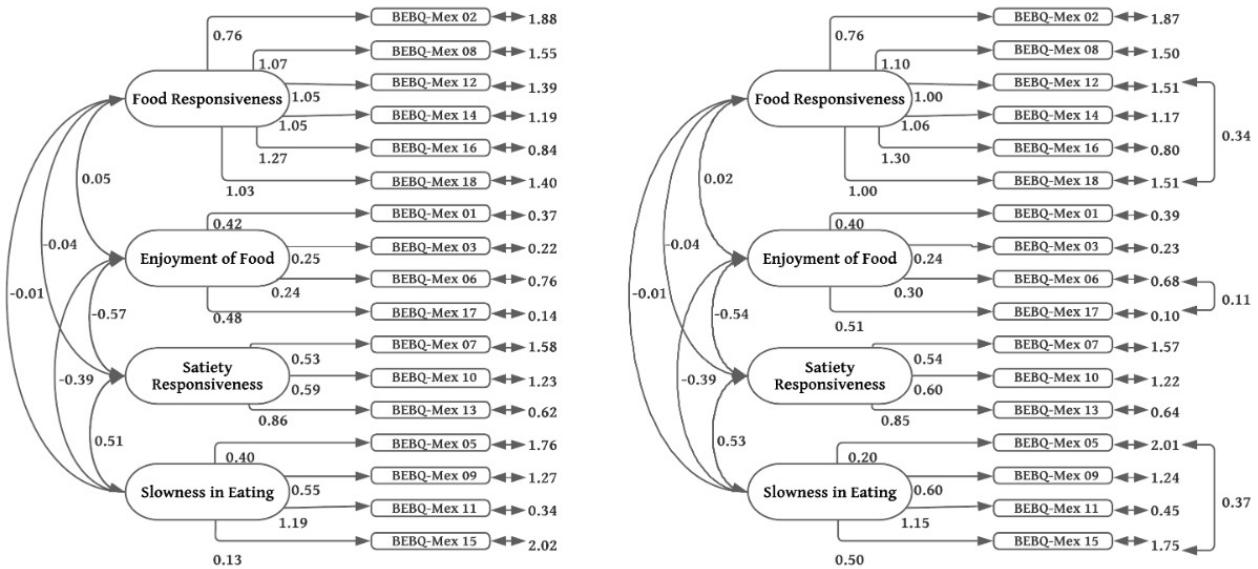
**Table S3.** Full set of CEBQ-T and CEBQ-T-Mex items.

CEBQ-T <sup>1</sup>	Subscales		CEBQ-T-Mex <sup>2</sup>
<b>Food Approach subscales; Sub-escalas pro-ingestión</b>			
My child is always asking for food If allowed to, my child would eat too much Given the choice, my child would eat most of the time Even when my child has just eaten well, he/she is happy to eat again if offered	Food Responsiveness	Respuesta a los Alimentos	Mi hijo(a) siempre está pidiendo más comida Si se le permitiera, mi hijo(a) comería demasiado Si mi hijo pudiera escoger, se la pasaría comiendo la mayor parte del tiempo Aun cuando mi hijo(a) haya comido bien, el/ella estaría contento(a) de volver a comer si se le ofreciera alimento

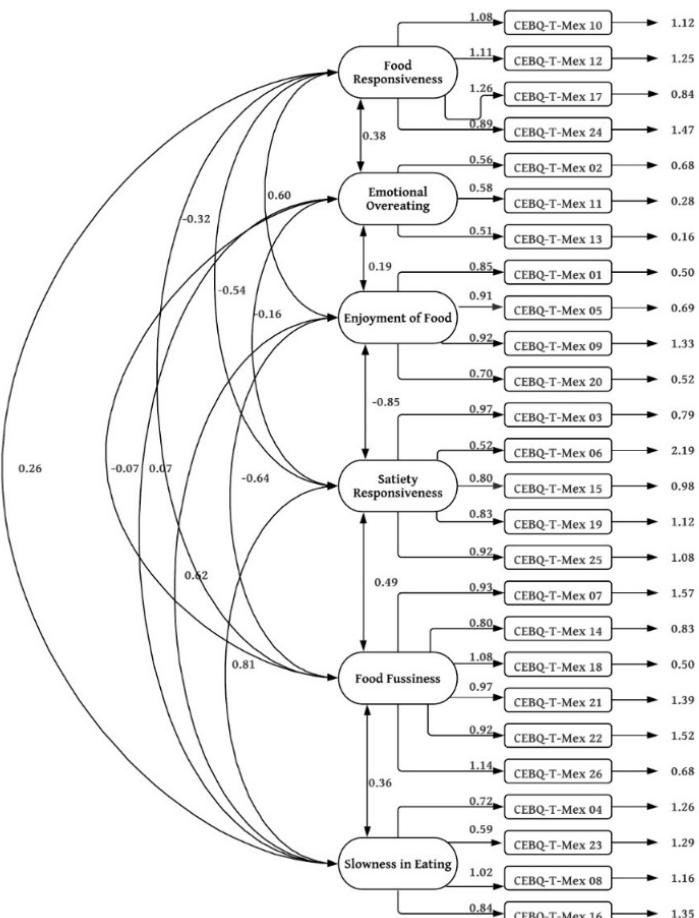
My child eats more when irritable My child eats more when grumpy My child eats more when upset	Emotional over-eating	Sobre-Alimentación Emocional	Mi hijo(a) come más cuando está enfadado(a) Mi hijo(a) come más cuando está malhumorado(a) Mi hijo(a) come más cuando está molesto(a)
My child loves food My child is interested in food My child looks forward to mealtimes My child enjoys eating	Enjoyment of Food	Disfrute de los Alimentos	A mi hijo(a) le encanta la comida Mi hijo(a) está interesado en la comida Mi hijo(a) espera con ganas la hora de las comidas Mi hijo(a) disfruta comer
<b>Food Avoidance sub-scales; Sub-escalas anti-ingestión</b>			
My child has a big appetite* My child cannot eat a meal if he/she has had a snack just before My child leaves food on his/her plate or in the jar at the end of a meal My child gets full before his/her meal is finished My child gets full up easily	Satiety Responsiveness	Respuesta a la Saciedad	Mi hijo(a) tiene un gran apetito* Mi hijo(a) no come a la hora de la comida si recibió un bocadillo justo antes Mi hijo(a) deja alimentos en su plato o en su taza al final de una comida Mi hijo(a) se siente lleno(a) antes de que termine su comida Mi hijo(a) se siente lleno(a)/satisfecho(a), muy fácilmente
My child refuses new foods at first My child enjoys a wide variety of foods*  My child enjoys tasting new foods* My child is difficult to please with meals My child decides that he/she does not like a food, even without tasting it My child is interested in tasting food he/she has not tasted before*	Food Fussiness	Actitud remilgosa	Al principio mi hijo(a) rechaza nuevos alimentos Mi hijo(a) disfruta de una gran variedad de alimentos* A mi hijo(a) le gusta probar alimentos nuevos* Mi hijo(a) es difícil de complacer con alimentos  Mi hijo(a) decide que no le gusta un alimento, antes de probarlo A mi hijo(a) le interesa probar alimentos nuevos que no ha probado antes*
My child finishes his/her meal quickly* My child eats slowly My child takes more than 30 minutes to finish a meal My child eats more and more slowly during the course of a meal	Slowness in Eating	Lentitud para comer	Mi hijo(a) termina sus alimentos rápidamente* Mi hijo(a) es lento para comer A mi hijo(a) le toma más de 30 minutos terminar sus alimentos Mi hijo(a) come cada vez más lento durante el transcurso de una comida

<sup>1</sup> Response option: Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree. <sup>2</sup> Opción de respuestas:  
Muy en desacuerdo, En desacuerdo, Ni en acuerdo ni en desacuerdo, En acuerdo, Muy en acuerdo.

## Supplementary Information S2



**Figure S1.** Path diagram of the four-factor models of the BEBQ-Mex with standardized estimates (factor-factor loadings, item squares multiple correlations and error-covariances) fitted in a sample of 330 mother-infant dyads (Model 1: left panel, Model 2: right panel).



**Figure S2.** Path diagram of the six-factor model of the CEBQ-T-Mex with standardized estimates (factor-factor loadings, item squares multiple correlations and error-covariances) fitted in a sample of 330 mother-toddler dyads.

Results of the correlations between BEBQ-Mex subscales and BMI-z in infants revealed after adjusting for sex, age and feeding type, that those infants with greater response to food, had lower BMI-z, in direct opposition to results found in different studies [13,33,34] possibly pointing to the misinterpretation of the child's external cues [30]. This signals the need to address these issues and better educate mothers in a responsive feeding narrative [32]. Slowness in Eating, whose difficulties in showing good values of internal reliability, was negatively correlated to BMI-z after adjustment by age, sex and feeding type. These results have been replicated in several studies [13,23,33,34]. Infants with a more avid appetite tended to have a higher BMI-z. This last result was the only one observed in the Mexican study of 40 infants under the age of 6 months [17] (Table S4).

Toddlers with a greater enjoyment of food, who are unable to recognize their internal satiety cues and are not fussy eaters, tend to show increased weight. [36] have shown direct correlations with Food Responsiveness and inverse correlations with Satiety Responsiveness and Slowness in Eating and BMI-z scores in a prospective study of 210 infants followed prospectively from birth until 24 months of age in Singapore [36], similar to those found in our study. These results therefore suggest better interpretations of the toddlers' satiety cues by the mothers.

**Table S4.** Linear regressions between Infant and Toddler's appetitive traits and BMI-z adjusting by sex, age and feeding type.

Subscales	Infant BMI-z		Toddler BMI-z	
	$\beta$	Adjusted- $\beta^1$	$\beta$	Adjusted- $\beta^1$
	95% CI	95% CI	95% CI	95% CI
Food Responsiveness	-0.03 (-0.07, 0.12)	-0.002 (-0.10, 0.09)	0.02 (-0.10, 0.14)	0.04 (-0.08, 0.16)
Emotional Overeating		NA	0.05 (-0.02, 0.12)	0.05 (-0.02, 0.12)
Enjoyment of Food	0.03 (-0.01, 0.07)	0.02 (-0.01, 0.06)	0.091 (-0.003, 0.19)	0.13 (0.03, 0.22) **
Satiety Responsiveness	0.01 (-0.06, 0.09)	-0.01 (-0.09, 0.06)	-0.13 (-0.22, -0.04) **	-0.15 (-0.24, -0.05) **
Food Fussiness		NA	-0.03 (0.13, 0.08)	-0.07 (-0.17, 0.04)
Slowness in Eating	-0.05 (-0.12, 0.02)	-0.07 (-0.13, -0.001) *	-0.02 (-0.07, 0.04)	-0.03 (-0.08, 0.03)
General Appetite	0.10 (0.02, 0.18) *	0.09 (0.01, 0.17) *		NA

<sup>1</sup> Ajusted by sex, age, feeding type. CI = Confidence Interval. \* Correlation is significant at the 0.05 level (2-tailed). \*\* Correlation is significant at the 0.01 level (2-tailed).