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ARTÍCULO ORIGINAL

Design and construction of the Maternal Self-efficacy Scale for the Prevention of Excess Weight

Diseño y construcción de la Escala de Autoeficacia Materna para la Prevención del Exceso de Peso

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Abstract

The objective of the present study was to design, validate and obtain the reliability of the Maternal Self-efficacy Scale for the Prevention of Overweight. From an exploratory research where the role of mothers in childhood obesity was studied, 25 items were written, after an assessment by a panel of judges. The validation was carried out twice with different samples. The first one were 400 mothers (M_{age} = 33.1, SD = 6.8) of children aged 3-6 years (M = 5.0, SD = 0.6) and 18 items were obtained, divided into four factors: Food, Programming, Solutions, and Prohibition, with a Cronbach's *alpha* (*a*) between .62 - .88 and *omega* (*ω*) coefficients of .76 - .94. The second validation was with 369 participants, 97% were mothers (M_{edad} = 32.4, DS = 7.9) of children aged 3-6 years (M = 5.0, DS = 0.6) and 3% were grandmothers. The scale was one-dimensional composed by 11 items, with a = .90, $ω$ = .92, and explaining 52% of the variance that evaluates the perceived self-efficacy in the prevention of body weight excess. The proposed scale showed to be suitable and, therefore, its use will promote a greater understanding of childhood obesity.
Keywords. Parenting style; Self-efficacy; Overweight; Prevention; Measurement.

Resumen

El objetivo del presente estudio fue diseñar, validar y obtener la confiabilidad de la Escala de Autoeficacia Materna para la Prevención del Exceso de Peso. A partir de un estudio exploratorio que indagó el papel de las madres en la obesidad infantil, fueron redactados 25 ítems, mismos que fueron evaluados por un panel de jueces. La validación de este instrumento se realizó con diferentes muestras. En la primera participaron 400 madres (M_{edad} = 33.1, DS = 6.8) de hijos de 3 a 6 años (M = 5.0, DS = 0.6), y se obtuvieron 18 ítems, distribuidos en cuatro factores: Alimentación,

Programación, Soluciones y Prohibición, con *alpha* de Cronbach (*α*) entre .62 y .88, y coeficiente *omega* (*ω*) de .76 a .94. En la segunda validación participaron 369 madres (M_{edad} = 32.4, *DS* = 7.9) de hijos de 3 a 6 años (*M* = 5.0, *DS* = 0.6) y el 3% de abuelas. La escala fue unidimensional, compuesta por 11 reactivos con *α* = .90, *ω* = .92 y varianza explicada del 52% de la autoeficacia percibida para la prevención del exceso de peso. La escala propuesta mostró ser apta y, por tanto, su uso promoverá un mayor entendimiento de la obesidad infantil.

Palabras clave: Crianza; Autoeficacia; Exceso de peso; Prevención; Medición.

INTRODUCTION

In recent years, overweight and obesity have increased alarmingly in Mexico. According to the National Nutrition Survey Half-Way 2016 (ENSANUT-MC, for its acronym in Spanish), the combined prevalence of overweight and obesity in the school-age population (5-11 years) was 33.2%. In 2012 this prevalence was 34.4%, 1.2 points higher, however the confidence intervals in the prevalence of 2016 are relatively large, and therefore it is not possible to conclude that the combined prevalence of overweight (17.9%) and obesity (15.3%) have decreased over time. In 2016 the prevalence of overweight (20.6%) and obesity (12.2%) in girls were very similar to those observed in 2012 (20.2% and 11.8%, respectively). These data show that although there is evidence that prevalence have decreased this is no statistically different (Shamah, Cuevas, Rivera & Hernández, 2016).

One of the variables who is associated with prevention of overweight and/or obesity is self-efficacy, which refers to the belief or perception that a person has on their own conditions to face situations, perceiving themselves as fit. Bandura (1997) defines self-efficacy as "the judgments of people about their abilities to reach certain levels of performance" (p. 203). Perceived self-efficacy refers to the confidence in the ability to modify harmful behaviors through personal intervention. Beliefs, result expectations, as well as self-efficacy, play an influential role in the adoption of healthy behaviors, in the elimination of harmful habits and in the maintenance of change (Bandura, 2004).

Self-efficacy has been linked to the maintenance of a good diet and caring of body weight. Therefore some adaptations of specific self-efficacy instruments about food and weight care have been made by the perspective of the transtheoretical model for the behavior change (Villalobos, Campos, Camarillo & Enríquez, 2012). Additionally, it has been identified a relationship between self-efficacy and personal behavioral control (objective control, subjective control and control beliefs) in women with eating disorders. People with such disorders have difficulty in self-control behaviors, less sense of personal efficacy in self-regulate behavior, and greater belief in others' control over their acts and consequences (Lugli-Rivero & Vivas, 2001).

Perceived self-efficacy impacts health at two levels: at the most basic, it provides confidence to handle daily stressors and intervenes in biological systems that mediate health; in the second level, it is directly related with the control of modifiable healthy and aging behavior (Bandura, 2004). With this regard, interventions have been carried out to modify the level of self-efficacy. Torres (2014) implemented an orientation strategy in four primary schools impacting students' eating and physical activity, as a result, self-efficacy on healthy eating and physical activity improved significantly, which modified habits in their lifestyle. Campos and Pérez (2007) related self-efficacy to lose weight with decisional conflict in Chilean overweight women. They found an inverse relationship between these two variables: the greater self-efficacy the lower decisional conflict, significant differences were detected in the level of schooling; women with higher education had greater self-efficacy.

Self-efficacy has been used in the study of attitudes and feeding practices. Olivares, Bustos, Moreno, Lera and Cortez (2006) reported in a study with mother-child dyads, that children with obesity show low self-esteem, low self-efficacy, few motivations, and multiple barriers to acquire healthy feeding and physical activity habits. Correspondingly, mothers showed

little motivation and low self-efficacy to support their children with obesity.

Several instruments and/or scales have been designed to assess the beliefs that people have regard controlling their body weight, dieting, and general healthy habits. Román, Díaz, Cárdenas and Lugli (2007) developed an Inventory of Perceived Self-efficacy for college students with 37 items and two dimensions: Eating habits ($a = .88$) and Physical activity habits ($a = .91$), this to achieve and maintain the desired weight loss. In relation with weight control, self-efficacy is a determining factor for weight control and physical activity in adolescent men and women (Guzmán & Gómez, 2010, 2011).

Also, it has found that self-efficacy is an important predictor of healthy behaviors (Salamanca & Giraldo, 2012), as well as, the relationship between self-efficacy and behaviors for physical health care. Psychometric properties of the Self-efficacy Scale in Physical Health Care Behaviors were carried out using a scale (Ornelas, Blanco, Rodríguez & Flores, 2011), consisting of eight items divided into three factors: Dieting ($a = .72$), Physical health ($a = .60$), and Hydration ($a = .59$). Soto and Villagrán (2014) developed a scale of self-efficacy ($a = .87$) aimed at the prescribed diet for pregnant women with diabetes. The final instrument consists of 15 Likert-type items with three dimensions: Economic demands ($a = .76$), Personal status ($a = .80$), and External situation ($a = .73$). Another scale is the food self-efficacy ($a = .93$) of Palacios, Ramírez, Anaya, Hernández and Martínez (2017), with 21 items consisting of four factors: Consumption of high fat foods ($a = .85$), Consumption of healthy foods ($a = .84$), Consumption of sweet foods ($a = .79$), and Consumption of drinks ($a = .75$), this was validated with a population from 14 to 74 years ($M = 29$). Finally, the Healthy Eating and Weight Self-efficacy Scale (HEWSE) was designed and validated by Wilson-Barlow, Hollins and Clopton (2014). The results provided 11 items ($a = .82$) and two factors: Consumption of healthy foods ($a = .81$) and Healthy weight ($a = .82$).

According to the previous review it is clear the relevance and implications of perceived self-efficacy in healthy behaviors; however, parents have an important role in feeding and caring children's health. The maintenance of healthy habits throughout life are formed in childhood and adolescence (Bandura, 2004). Besides, parents, especially mothers, are those who make the decision about what kind of food their children may or may not consume, but sometimes this is not effective due to parents' beliefs.

Perceived maternal self-efficacy is defined by Zurdo (2013) as the beliefs or ideas that fathers and mothers exercise in terms of their conditions to fulfill their role as parents. In this study, maternal self-efficacy was related to the support attitude through the development of two scales aimed at measuring these variables. It was concluded that maternal self-efficacy and supportive attitude were negatively related to emotions that generate violence and that mothers with high self-efficacy and support used more democratic strategies, which favored crucial aspects of mother-child communication. Maternal self-efficacy has been a subject of study in the analysis of maternal weight perceptions, it has been suggested to strengthen maternal self-efficacy to be successful in the management of child weight-related problems and it has been reported that mothers with obese children have lower self-efficacy (Flores-Peña et al., 2014). Subsequently, this variable has been linked to Behaviors of the Child's Lifestyle (CEVH, for its acronym in Spanish), in recent studies, the Self-efficacy Scale (EAE, for its acronym in Spanish) for mothers was created to manage CEVH. The EAE ($a = .92$) has a Likert format and four dimensions (Flores-Peña et al., 2015): Self-efficacy ($a = .96$), Dieting ($a = .94$), Physical activity ($a = .83$), and Being overweight-obese ($a = .94$).

Behavioral problems in children are another phenomenon that has been related to maternal self-efficacy. Rocha (2012) identified a negative association between these two variables, that is, the less maternal self-efficacy with the more difficulty in handling behavioral problems of children, therefore the Life Style Behavior Checklist ($a = .85$) was used in Rocha's study. On the other hand, supportive attitude and maternal self-efficacy are vital elements for the mother-child relationship (Zurdo, 2013), these variables have crucial aspects to give balance to child's dieting, in this

study was used the Maternal Self-efficacy Scale (a = .70), which have seven items and is one-dimensional. On the other hand, the relationship between maternal self-efficacy and parenting styles has been investigated by Aminayi, Roshan, Shairi and Moharreri (2015), who made a comparison between these two variables and found that parents with maladaptive children experience low self-efficacy, to measure the variable maternal self-efficacy they used the Parenting Self-efficacy Questionnaire, which has 10 items (a = .70). Regarding parental practices, self-efficacy has shown to optimize them once parents internalize a sense of competence in their role, satisfaction and pleasure in parenting are achievable even under marginal conditions (Coleman & Karraker, 1997). For the Perception of Self-efficacy of Maternal Parentality Scale (PAEPM for its acronym in Portugesese) designed by Barnes and Adamson-Macedo (2007), which assess the maternal self-efficacy of newborns, the sample consisted of 87 mothers, 26 with premature infants and 61 term infants, the PAEPM (a = .86) has four subscales: Being careful (a = .78), Triggering behaviors (a = .74), Reading behavior (a = .70), and Situational beliefs (a = .80). The variance explained was: 44.5% in factor 1, 9.75% in factor 2, 7.9% in factor 3, and 6.8% in factor 4 (Tristão, Rabelo, Barnes & Adamson-Macedo, 2015).

Maternal self-efficacy has been implicit when explaining other variables. Martínez, Robles, Oudhof, Zarza and Villafaña (2013) formulated the parental skills scale in mothers (a = .78) and fathers (a = .85). In both cases, the parental self-efficacy was a dimension of the instruments. Gomez-Peresmitré, Platas, Pineda-García, Guzmán and León (2017) adapted the Inventory of Perceived Self-Efficacy for Weight Control of Román et al. (2007) for school population. The final instrument consists of 20 items and assess three basic components of self-efficacy on weight control: Physical activity, Nutritious diet, and Control over eating in emotional situations, the instrument has a high internal consistency (a = .88).

In accordance with the above, the objective of this study is to design, validate and obtain the reliability of a maternal self-efficacy scale for the excess weight prevention in preschool children.

The scale's development consisted of three stages: the first was a qualitative study with the purpose of knowing some beliefs that mothers have about the causes of childhood overweight and obesity; the second involves the first validation and after analyzing some inconsistencies of the first validation, and finally the third stage, the second analysis was carried out.

FIRST STAGE: QUALITATIVE STUDY

Method

A preliminary qualitative study was performed to understand the role that mothers ponder when taking care of body weight and dieting of their children. A demographic questionnaire was applied to a non-random and intentional type sample consisting of 113 mothers (M_{edad} = 31.5 years; DS = 6.7) with their children enrolled at preschool level from 1st to 3rd grade, with an age range from 3 to 6 (M = 4.6; DS = 0.69). The 48.7% were mothers of boys and 49.6% of girls, regard mothers' occupancy 57% were housewives, 17% were professionals and 14% were employed. The place of residence was 43% from Estado de Mexico and 57% from Mexico City. To this questionnaire we also add two items: *Why are children overweight?* and *Why are children obese?* From the content's analysis we obtained similar categories in both questions, the main cause of overweight was *poor diet*, however, the second category stands out *for they parents*, in which the mothers consider the carelessness of the parents, poor diet, fat fathers and the fact that they pamper their children (giving them the food that they want). Mothers considered of great importance that parents learn and be informed about what foods are suitable for their children based on their age and teach their kids to take into account the portions. The establishment of meal schedules and the responsibility of parents highlight the parents' role in the care and management of their children's BMI, mainly in pre-school and younger children since they depend on their parents, mainly on their mother. According to the results from the exploratory study and based on the literature review, a test plan was carried out with the components that made up the scale.

Procedure

From the obtained answers in the qualitative study, 25 items were written. According to the test plan, items focused on body weight, dieting, physical activity, and eating habits; six items were created by dimension. To obtain the content validity, the items were reviewed through a judging process. A total of five judges who had knowledge and experience in the field were summoned. Through a presentation were described to the judges the characteristics of the instrument and with a table of specifications they assessed the sufficiency, clarity, relevance and coherence of the items. During two hours they discussed the relevance of each item, when there was no agreement among judges the decisions were taken by majority. Changes suggested were performed. Subsequently, a pilot test was conducted in 15 mothers with a preschool child to verify that instructions and items were clear. The validation of this instrument was performed twice, a detailed description and specifications of sample, are described below.

SECOND STAGE: FIRST VALIDITY STUDY

Participants

The sample was a non-random intentional type conformed by 400 participants, 392 mothers (98%) and 8 grandmothers (2%) of preschool (73%) and elementary school (24%) children, from public (84%) and private (16%) schools of Mexico City. The mothers have an age range of 18 to 62 years (M_{edad} = 33.1, DS = 6.8) with high school education level (33%), junior high school (21%) and bachelor's degree (21%). The marital status was 20% single and 80% married; finally 43% were employees, 31% housewives and 10% carry merchants.

Instrument

According to qualitative analysis a total of 25 items were drawn, divided into four dimensions with six items each, except the Physical/sedentary activity dimension, that had seven items: Self-efficacy towards weight *("Find a way that my child maintain his/her suitable weight"),* Nutrition *("Feed my child in a healthy and nutritious way"),* Physical activity/sedentary lifestyle

("Restrict the time in front of the television"), and Eating habits *("Set a schedule for my child's feeding").* The instrument begins with the phrase: *"I feel CAPABLE of ¨.* The response format was pictorial Likert type with four response options, ranging from *"totally agree"* = 4 to *"strongly disagree"* = 1.

Procedure

The instrument was applied in public and private schools from Mexico City after the informed consent was obtained. School authorities gathered the mothers in a classroom who answered the instrument in 60 min approximately. In other schools the instrument was delivered and it was answered at home. It is noteworthy that for this study the mothers answered three instruments, which formed a total of 60 items, including self-efficacy scale. Subsequently, the statistical treatment was performed using the SPSS program v. 21.0.

Results

Psychometric validation was carried out following the criteria of Reyes-Lagunes and Garcia (2008). The first step of validation involved the analysis of each of the 25 items raised in the test plan. Frequency, central tendency, bias and dispersion analyzes were performed. The results are above the theoretical mean of each item. On the other hand, all items were negatively biased, which means that most of the answers leaned to answer "strongly agree". This first analysis allowed us to include all items in the next step. To check discrimination and directionality of the items Student's *t*-test for independent samples and crosstabs were performed. To perform both analyzes, the data was divided into four groups according to the scores. These quartiles indicated the extreme groups, we identified significant differences between the group of high scores against the group of low scores. In the second analysis both groups have no proper directionality. Subsequently, a Pearson correlation was made to choose the type of rotation to be used in the factorial analysis; very low correlations were obtained, so it was decided to use an orthogonal rotation. The factorial analysis converged in six iterations, from which the items 4, 12, 13, 14, 15,

17 and 25 were deleted. In the factorial analysis, the items that did not load in some factor (less than .40) or that were placed in two factors were removed. A *KMO* score of .88 was obtained ($p < .001$). Finally, reliability analysis was carried out using Cronbach's *alpha* for the total scale and for each factor. As seen in table 1, the four yielded factors can be named as follows: Feeding ($\alpha = .86$), Programming ($\alpha = .83$), Solutions ($\alpha = .76$), and Prohibition ($\alpha = .62$). The total α of the scale was .88, explaining 62% of the variance. Subsequently, an analysis was performed using the *omega* coefficient, based on the results of the total scale coefficient ($\omega = .94$), and

the factor values are: Feeding ($\omega = .84$), Programming ($\omega = .79$), Solutions ($\omega = .77$), and Prohibition ($\omega = .76$).

Despite the acceptable psychometric properties of the first validation, the scale lacks of construct validity since there is a combination of items that belong to other factors making difficult to name it. For instance in factor 1, which was called Feeding, items 2 and 8 belong to Physical activity and were grouped in this factor. Similarly, in factor 2 and 3 some items belong to other factors; factor 4 was the only one that obtained conceptual coherence, for this reason it was called Prohibition. Considering that the scale required further

Table 1. Components of the Maternal Self-Efficacy Scale for Overweight Prevention					
Cronbach's *alpha*	.88	.86	.83	.76	.62
% of explaining variance	62.00	22.41	16.47	15.11	10.30
Mean	3.69	3.77	3.70	3.78	3.38
SD	0.37	0.43	0.50	0.39	0.69
Items		1	2	3	4
5. Procure the food of the week is balanced		**.76**	.23	.13	.03
6. Balancing my child's nutrition		**.72**	.21	.26	.09
9. Teach my child good eating habits		**.70**	.14	.26	.12
3. Monitor my child's eating		**.70**	.35	.09	.06
8. Exercise with my child		**.64**	.28	.03	.19
2. Support my child to exercise		**.60**	.40	.27	-.04
22.Schedule activities for my son/daughter to exercise		.25	**.72**	.50	-.05
19.-Develop a series of activities in the park with my son		.33	**.71**	.05	.19
23. Set a schedule for my child's feeding		.26	**.70**	.05	.25
20. Monitor my child's weight		.25	**.67**	.16	.03
16. Prevent my child to have overweight or obesity		.22	.22	**.75**	.09
21. Identify when my child is gaining weight		.09	.41	**.69**	.08
10. Solving my child's weight problem		.14	.25	**.62**	.07
18. Decide how to feed my child		.28	-.20	**.58**	.12
1. Finding a way for my child to maintain his/her proper weight		.53	.16	**.52**	.13
11. Make my child stop watching TV		.05	.08	.03	**.81**
24. Prohibit my child from using video games		-.03	.08	.07	**.80**
7. Limit consumption of foods that are not healthy for my child		.35	.08	.13	**.51**

Extraction method: Principal component analysis.
Rotation method: Varimax standardization with Kaiser.
The items in bold, are those that belong to each factor.

analysis in each dimension and each item, a second validation of the scale is described below.

THIRD STAGE: SECOND VALIDATION

Participants

With a non-random and intentional type sample of 369 participants a second validation was carried out, the inclusion criteria was that parents should be in charge of their children's feeding, 94% were mothers, 3% were parents and 3% were grandmothers. The age range was from 17 to 63 years (M_{edad} = 32.4, DS = 7.9), 18% were single, 45% married, 34% of parents live together, and 2% were divorced. On the other hand, 63% were housewives, 26% employees, 5% professionals, 4% had their own business, and 1% were students. According to the level of studies, 1% did not have studies, 12% conclude elementary school, 33% junior high school education, 23% technical studies, 10% high school, 16% got a bachelor's degree, 0.5% a master's degree, and 0.5% a PhD degree. Participants were located in the South region of Mexico City. Regard children 52% were boys and 48% were girls from 3 to 6 years (M_{edad} = 5.0, DS = 0.6), 90% studied in public school and 10% in private school, 15% were in the second preschool year and 85% in the third grade.

Instrument

The 18 items obtained from the first validation were used, with the aim of exploring the psychometric properties of the scale. The instrument began with the phrase: *"I feel CAPABLE of ..."*. The response format was pictorial Likert type with five response options, ranging from *"strongly agree"* = 5 to *"strongly disagree"* = 1.

Procedure

As the initial validation, once the informed consent was delivered the instrument was applied. Some mothers answered the questionnaire at home and brought it back the next day. The statistical treatment was carried out with the previous steps and the results of the process are described below.

Results

According to the first step of validation, which involved the analysis of each of the 18 items, we found that all items were negatively biased ranging from -.75 to -3.29. This analysis allows to recognize the distribution of items, i.e., to be distributed either negatively, positively, or normally. To determine if items are among the low or high scores, a Student's *t*-test and a crosstab analysis were performed. This analysis allowed us to verify that all the response options were valid for all participants. All items had a bilateral significance of *p* < .001 which allowed including them all in the next step. Regarding the contingency table, none of the item showed directionality; however, according to the results in the t test, it was decided to continue with the factorial analysis. A Pearson moment correlation analysis was performed to know the relationship between the variables and decide between an analysis with orthogonal rotation or one with oblique rotation. Low to moderate correlations were obtained, so the orthogonal rotation was used in the factorial analysis, in this analysis the items 7, 11, 18, 22, 23 and 24 were deleted, because they fit in several factors. According to the analysis, .92 (*p* < .001) was obtained with the KMO score and the Bartlett test. The scale is one-dimensional with an explained variance of 52% and a reliability of the total test of *α* = .90 with 11 items. Subsequently, an analysis was performed using the *omega* coefficient, based on the results for we found (*ω* = .92). The psychometric properties can be seen in the table 2.

DISCUSSION

Based on the aim of this study, which was to design, validate and get the reliability of a scale of maternal self-efficacy for the prevention of overweight in preschool children, and according to the results, it is concluded that the scale meets the psychometric characteristics and demonstrates a high reliability through internal consistency by *α* = .91 and *ω* = .93, with a slight increase in the total final scale. In the first validation we found that certain inconsistencies arose in all the

Table 2. Items of the Maternal Self-Efficacy Scale for Overweight Prevention	
Cronbach' *alpha*	.90
% of explaining variance	52
Mean	4.55
SD	0.64
3. Monitor my child's eating	.83
6. Balancing my child's nutrition	.82
5. Procure the food of the week is balanced	.78
2. Support my child to exercise	.75
9. Teach my child good eating habits	.72
8. Exercise with my child	.72
21. Identify when my child is gaining weight	.70
19. Develop a series of activities in the park with my child	.67
16. Prevent my child to have overweight or obesity	.63
1. Finding a way for my child to maintain his/her proper weight	.62
10. Solving my child's weight problem	.56

Extraction method: Principal component analysis.
One component was extracted

factors. The score of Feeding factor decreased from .89 to .84, Programming from .86 to .79 and Solutions from .81 to .77; however, in the last factor, called Prohibition was from .62 to .76, showing an important increase. At the end we got a one-dimensional scale, maybe because the factors lacked of content validity, that is, there were items that belong to other factors. For example, in the Feeding factor, the items included were 2: (*"Support my child to exercise"*) and 8 (*"Exercise with my child"*), which initially corresponded to the Programming factor. These results agree with those obtained by Flores-Peña et al. (2015), however, unlike our scale, these authors include physical activity, nutrition, and being overweight and obese dimensions.

As mentioned previously, it was very complex to set the name of each dimension, since the items belonged to other dimensions. At the end a one-dimensional scale was obtained, as it is observed on the scale of Zurdo (2013), although the scale has *α* = .68, and applied to mothers of children from 3-11 years old. The scale's items are focused on beliefs about the ability of mothers to care and prevent overweight in children, that is, the efficacy of mothers is characterized in maintaining the proper weight of their children, seek a healthy eating and in which children perform physical activity.

Most scales that measure self-efficacy towards health focus in adolescents and adults since these is the population that maintain a healthy diet; for example: quantity, characteristics and type of food they can consume (Guzmán & Gómez, 2010, 2011; Palacios et al., 2017; Román et al., 2007), the ability to perform care and physical activity behaviors (Ornelas et al., 2011), as well as the ability to manage diabetes, even when there are difficult external and economic situations (Soto & Villagrán, 2014). On the other hand, regard maternal self-efficacy, the scales have been designed to assess the capacity of mothers to believe they can manage problems related to their children's weight, and lifestyle behaviors, that is, if they perform physical activity and feeding care (Flores-Peña et al., 2015). Although there are also scales that assess the ability to control weight and physical activity, as well as nutritious feeding and how control over-feeding in emotional situations in school-age children (Gomez-Peresmitré et al., 2017).

Promoting healthy eating habits and encourage physical activity in early childhood is a great responsibility for both parents, although studies have focused primarily on mothers (O'Key & Hugh-Jones, 2010); however, in recent years both parents have been involved (Nepper & Chai, 2016). On the other hand, maternal self-efficacy is an important predictor of the management of healthy behaviors in their children as prevention of excess body weight. However, the perception of their children's weight has been an interesting variable since mothers have had difficulty in identifying if their children have a normal weight, have overweight or obesity (Keller, Olsen, Kuilema, Meyermann & Van Belle, 2012). Even worse, when they identify overweight in children, they setup themselves in the belief that chubby children are pretty, beautiful and that later they will grow strongly, considering there is no worth to worry about it. Finally it is recommended that further research revise the scale and make the validity criteria.

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