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RESEARCH ARTICLE

Construction and validation of scale factors and attitudes associated with parenting of children with high-risk birth

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Abstract

Background: *High-risk birth is a public health problem that generates atypical parenting practices. This study aimed to identify these practices to construct and validate a scale to measure parenting factors and attitudes in children with high-risk birth parents.* **Methods:** *The instrument was applied to an intentional non-probabilistic sample of 701 parents of children with high-risk births (age range 17-64 years). The scale consists of 56 items, each with five Likert-type response options.* **Results:** *As a result of the factor analysis with Varimax rotation, the final version was divided into two subscales: factors and attitudes associated with parenting skills. In the first, with 36 items and six factors (low educational skills, overprotection, and permissive parenting, dissatisfaction with the parental role, stress in raising a child with a high-risk birth, tri-generational disapproval of the parental role, and positive support from the extended family), a Cronbach's alpha value of 0.90 was obtained, explaining 53.16 of the variance. In the second subscale, with 30 items grouped in four factors (parenting beliefs, negative coping with high-risk birth, self-validation in parenting, and parental resilience to the experience of high-risk birth parenting), a Cronbach's alpha of 0.82 was obtained, explaining 48.08 of the variance.* **Conclusions:** *We suggest that this scale be applied together with others that measure theoretically related variables.*

Keywords: *Parenting. High-risk birth. Overprotection. Stress.*

Construcción y validación de la escala de factores y actitudes asociados con las prácticas de crianza parental de niños con nacimiento de alto riesgo

Resumen

Introducción: *El nacimiento de alto riesgo es un problema de salud pública que genera prácticas de crianza atípicas. El objetivo de este estudio fue identificar estas prácticas para construir y validar una escala para medir factores y actitudes de la crianza en los padres de niños con nacimiento de alto riesgo.* **Métodos:** *La escala consta de 56 reactivos con cinco opciones de respuesta tipo Likert. El instrumento se aplicó a una muestra no probabilística de 701 padres de niños con nacimiento de alto riesgo (rango de edad: 17-64 años).* **Resultados:** *Como resultado del análisis factorial con rotación Vari-*

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max, la versión final se dividió en dos subescalas: factores y actitudes asociados con la crianza. En la primera, con 36 reactivos y seis factores (bajas habilidades educativas, sobreprotección y crianza permisiva, insatisfacción ante el rol parental ejercido, estrés ante la crianza de un niño con nacimiento de alto riesgo, desaprobación trigeneracional en el rol parental y apoyo positivo de la familia extensa), se obtuvo un valor alfa de Cronbach de 0.90, explicando el 53.16 de la varianza. En la segunda subescala, con 30 reactivos y cuatro factores (creencias ante la crianza, afrontamiento negativo ante el nacimiento de alto riesgo, autovalidación en la crianza y resiliencia parental ante la experiencia de la crianza y el nacimiento de alto riesgo), se obtuvo un valor alfa de Cronbach de 0.82, explicando el 48.08 de la varianza. **Conclusiones:** *Se sugiere la aplicación de esta escala junto con otras que midan variables teóricamente relacionadas.*

Palabras clave: *Crianza. Nacimiento de alto riesgo. Sobreprotección. Estrés.*

Introduction

High-risk birth constitutes one of the most critical health problems in society[1], representing the first cause of neonatal and infant morbidity and mortality[2]. The National Institute of Perinatology (INPer, for its Spanish acronym) reported that in infants who survived high-risk birth, the most frequent morbidities were severe bronchopulmonary dysplasia (in 38%), followed by intraventricular hemorrhage grade III/IV (in 20%), and stage 3 retinopathy of prematurity (in 2.6%)[3]. Survivors may have neurodevelopmental sequelae[4-6], as seen in extremely low birth weight infants, who report significantly lower cognitive development and intelligence quotient[7].

Faced with this scenario, families who experience high-risk birth are confronted with different situations: biological vulnerability[8], a change in the expected image of the child, and frustration of the planned family project[9]. Parents also face health problems that can keep the child hospitalized for months, generating alterations in the usual family dynamics and experiencing uncertainty, anxiety, stress, depression, guilt, among other emotions, for not being able to care for their child personally and with the constant fear of his or her death, which generates a tremendous emotional impact. In addition, parents conceive their child as weak, vulnerable, and sick, which generates emotional sequelae, affects their development[4,8], and influences family dynamics and parenting[6,10].

Family attitudes can influence the evolution of the disease, causing a significant burden of stress, time, effort, and costs[11]. Therefore, it is essential to know how parents experience parenting their children when they are born at high risk, help them adapt to these new conditions, know the resources and limitations available for this population, and guide parenting[6,10,12].

Parenting is defined as the knowledge, attitudes, and beliefs that parents assume concerning health, nutrition, the importance of physical and social environment, and learning opportunities for their children at home[13]. Parenting is influenced by different factors: the social group in which the caregivers or parents are immersed, the thoughts they have regarding how to manage their children, the explanations given about education, and the actions towards children[14], which will persist in families through transmission between generations[15,16], while attitudes are the forms that will define the favorable or unfavorable attributions of beliefs[16].

Attitudes are positive or negative affective reactions to a particular situation. Thus attitude is a predisposition to respond emotionally. As attitudes are formed from the accumulation and integration of interrelated experiences, attitudes towards children are the acquired mental states or dispositions that provoke or lead parents to react specifically towards their child. The different components are the following: a cognitive one formed by judgments, beliefs, and values; a reactive one, which is the disposition to act in a certain way; and an affective one, which is the sympathy or antipathy, feelings, pleasant or unpleasant sensations towards the child, as well as the parents' own experience and the characteristics of their personality[17]. Attitudes towards parenting are the thoughts that predispose parents or caregivers to act positively or negatively towards the child, implying the degree of kindness, acceptance, rejection, or detachment that exists in their relationship, which sometimes defines the degree to which parents will be permissive or restrictive in the limits they set with their children[16,18].

Parenting practices are the specific actions and behaviors that parents or caregivers exhibit to form their children and foster their development in different aspects. These practices are influenced by family structure, parents' behaviors towards their children, the number of children, family income, and their perceptions on parenting practices[19-24].

Other conditions that influence parenting are the child's characteristics, illness, temperament, and

high-risk birth, and the characteristics of the parents involved in parenting, such as their personality traits, support networks that favor psychological well-being, and social support[16,25].

Therefore, the factors and attitudes associated with parenting practices in children with high-risk birth allow observing specific behaviors and actions of parents or caregivers, which are determined by external and internal motivations and by the child's characteristics, influenced by the adult's education. Thus, specific attitudes and behaviors towards children with high-risk birth oriented to ensure survival, growth, learning, and psychosocial development in an adaptive manner are generated. The specific needs of these children at each stage of development must be considered, using strategies, skills, tools, and competencies, which have a direct impact on their behavior and establish the co-responsibility of family interaction, beliefs, affections, and emotions, being determined by socio-historical and cultural norms, generating a particular family configuration in the education, stimulation, and socialization of children[14,19,23,25-35].

The effects of medical, biological, and psychoemotional risk on these children promote early interactions in the performance of parental roles and the ability to cope with the stress of the high-risk birth. These effects create a situation between the newborn and the caregiver that has an emotional and unexpected impact on the family experience and parenting. The members of this system may not be prepared to face such a situation, living it as a traumatic experience that will leave its mark over time, despite the child's satisfactory development[8].

It has been observed that there are more alterations in the upbringing of premature children by their mothers since limits and clear rules are not established, resulting in low educational skills due to the stress generated from birth, which, in turn, affects the family dynamics[33,36,37].

Anxiety or stress related to parenting promotes an overprotective attitude and excessive concern for the child's health. Consequently, this conduct generates a series of limitations to develop an independent behavior in the child, violating his or her autonomy, leading to a decrease in feelings of responsibility and, sometimes, promoting learning problems[17].

Several evaluations on parenting have been developed in different countries, starting with the studies of Baumnrid (1971, 1973) and their reformulation (Maccoby and Martin, 1983), as well as those of Darling (1999), who redefined parenting styles and made a distinction between parenting styles and practices, generating a series of scales around these concepts[38].

Different scales on parenting practices have been constructed in Mexico. For example, Gaxiola et al. (2006)[39] reported parenting practices in a Mexican population and evaluated them according to Baumnrid's classification. These authors described three major factors: authoritarian style (reasoning 0.47, participation 0.79, democratic 0.52, and good behavior 0.48), authoritarianism (verbal hostile 0.37, corporal punishment 0.66, punitive strategies 0.47, little directivity), and permissiveness (lack of supervision 0.35). Similarly, Flores and Cortés (2017)[38] conducted a scale on the perception of parenting practices that are significant in a given socio-cultural context. They included the perception of the father's parenting (communication-school support 0.91, positive affect 0.90, punitive control 0.82, control-monitoring 0.59, limits and rules 0.63) and the perception of the mother's parenting (communication 0.87, school support 0.81, positive affect 0.77, punitive control 0.77, control-hostility 0.66, control-monitoring 0.60, limits and rules 0.58). For their part, Robles and Oudhof (2019)[40] addressed parenting duties in Mexican women, measuring the parenting practiced by mothers through seven factors: parent-child communication, acceptance of the child's identity, adequate material resources, control over children's actions, care of physical and mental health, limits and expectations, and environment and coexistence. Also, García-Méndez et al. (2014)[41] conducted a scale on the perception of parental parenting that evaluates the parenting styles used by fathers and mothers through five factors: punishment 0.763, permissiveness 0.702, negative emotions 0.692, behavioral control 0.644, and negative cognition 0.681.

When analyzing the scales of parenting practices in Mexico, we observed different types of scales that assess several factors. However, we did not find a scale that assesses parenting practices in families with high-risk births, and the items of the current scales cannot be used in this particular population. Therefore, this study aimed to construct and validate the Scale of Factors and Attitudes Associated with Parenting Practices toward Children with High-Risk Births.

Methods

Participants

The sample was selected in a non-probabilistic purposive manner. It consisted of parents of children with

high-risk birth who attended their pediatric follow-up at the INPer. Of the participants, 73.2% were women, and the age range was between 17 and 64 years [μ = 35.58, standard deviation (SD) = 8.[18]. The schooling of the majority of the population was high school; the occupation was a housewife in 45.4% of women and various trades in 16.5% of men. In addition, 83.9% of the sample lived with their partner and children with μ= 8.79 (SD= 7.28) years of cohabitation with high-risk birth children.

The Scale of Factors and Attitudes Associated with Parenting Practices toward Children with High-Risk Birth was conducted as follows:

1. The existing literature was reviewed. Based on the findings, a guide for the focus group was constructed.
2. Through the focus groups, the parenting practices exercised by the parents were identified. A discourse analysis was conducted to obtain the main categories of the construct[10,35].
3. Two content analyses were performed. The first yielded three dimensions with 32 categories, resulting in 340 questions with five Likert-type response options. The type of response was then divided into two subscales: the first with frequency responses (never, rarely, sometimes, often, frequently, always) and the second with attitudinal responses (strongly disagree, disagree, sometimes, agree, strongly agree).
4. The response was selected according to the frequency with which parents perform a series of specific behaviors and actions. Although they do not qualify the parenting practices *per se*, they do qualify the factors associated with them so that the subscale was classified as factors associated with parenting practices.
5. In the attitude subscale, responses were classified according to the parents' assessment or conceptualization of the accumulation and integration of experiences and mental attitudes acquired in the face of the high-risk birth, which leads them to react in a specific way to their child on a day-to-day basis.
6. The dimensions were checked for consistency with the theoretical framework. Construct validity was obtained through the participation of five expert judges, who were asked to check the adequacy of the defined dimensions of the questionnaire with the formulation of the proposed items. Subsequently, the scale was subjected to a content validity analysis. Some items were filtered again and eliminated due to the low sensitivity of the statement or the formulation of sensitive and conflicting topics. The result was a shorter version of four dimensions with 24 categories, composed of 202 items that met the approval of the experts; the remaining items were eliminated[10,35].
7. Once the judges had approved the formulation of the items of this first version of the instrument, a pilot assessment was carried out with parents of high-risk birth children, who provided some suggestions regarding certain words and expressions used in the items, without showing any inconvenience regarding the instructions and the mode of response used. Adjustments were made for a better understanding of the items. Thus, the scale version to be validated consisted of 140 items to be applied in the questionnaires to the target population.

Procedure

The instrument was applied when the children with high-risk birth came for a consultation at the INPer. Parents were invited to participate by explaining the objective of the research and how to answer the questionnaire. They were provided with an informed consent form. The mean response time was 40 minutes.

Results

Subscale of factors associated with parenting practices

The psychometric analysis of the items of the instrument was carried out to analyze its performance. In this analysis, the following tests were performed to obtain the levels of validity and reliability of the instrument:

Discrimination analysis of the items was performed according to the method proposed by Reyes-Lagunes and García-Barragán (2006)[42]. Subsequently, construct validity was obtained through an exploratory factor analysis, which allows a more precise exploration of the underlying dimensions of the observed variables, constructs, or latent variables[43]. Given the nature of the items, we performed the analysis by principal components because it allows us to identify the number and composition of the necessary components[44] and reduce the variables by considering the total variance and deriving those factors that contain small portions of unique variance[45]. In addition, orthogonal rotation was used because it assumes the independence of the factors[43], and Varimax rotation was used because the relationship between the factors was unknown, and the aim was to maximize the weights at the factor level. In other words, each item or variable was expected to be

representative in only one of them to reduce the number of variables within each factor[45]. Finally, the internal consistency coefficients were obtained.

For item discrimination, each item was correlated with the total scale. For each subscale, discrimination between the low extreme group and the high extreme group of the item was performed using the Student's t-test. For each subscale, the frequency and bias of the item > 0.5 were analyzed. In the subscale "Factors associated with parenting practices," 11 items out of a total of 140 were eliminated because they did not meet two of the three required criteria. An exploratory principal component factor analysis with orthogonal Varimax rotation was applied to determine the construct validity of each subscale, considering that the Kaiser-Meyer-Olkin (KMO) test revealed that the matrix was factorable (KMO = 0.913). The subscale items obtained communalities > 0.40, indicating that they measure the same construct. Six factors were chosen with an eigenvalue > 1, which explained 53.16% of the variance, with a Cronbach's alpha of 0.90. An orthogonal rotation (Varimax) was performed, and those items with a factorial weight ≥ 0.40 in a single factor were chosen to form the first subscale of the final instrument. The best version of the subscale of factors associated with parenting practices consisted of 36 items (Table 1).

Based on the distribution of the items, the factors that compose the behaviors associated with parenting practices in children with high-risk birth were defined. The definition of each of the subscale factors, "Factors associated with parenting practices," is shown in Table 2.

Finally, a Pearson product-moment correlation was performed between the subscale factors. Table 3 shows the correlations; the factors have a significant correlation, indicating that the subscale measures what was theoretically proposed.

Subscale of attitudes associated with parenting practices

In this subscale, two of a total of 38 items were eliminated because they did not meet two of the three criteria required for discrimination. Subsequently, a factor analysis with orthogonal rotation (Varimax) was performed since the KMO test revealed that the subscale matrix was factorizable (KMO = 0.876). Four factors were obtained with an eigenvalue > 1 that explained 48.08% of the total variance and a Cronbach's alpha of 0.823. The best version of the subscale of attitudes associated with parenting practices consisted of 20 items (Table 4).

Based on the distribution of the items, the factors that compose the attitudes associated with parenting practices in children with high-risk birth were defined (Table 5).

Finally, a Pearson product-moment correlation was performed. Table 6 shows the correlations between the subscale factors. Again, the factors have a significant correlation with each other, which indicates that the subscale measures what was theoretically proposed.

Discussion

The construction and validation of the scale Factors and Attitudes Associated with Parenting Practices of Children with High-Risk Birth were carried out in a Mexican population.

The data from the present study indicate the formation of two subscales. Parenting practices are specific behaviors and actions of parents or adults determined by external and internal motivations and by the children's characteristics influenced by their upbringing, guided by socio-historical and cultural norms[35]. Based on the above, the first subscale was named "Factors associated with parenting practices" and consisted of 36 items distributed in six factors: 1) low educational skills; 2) overprotection and permissive parenting; 3) dissatisfaction with the parental role played; 4) stress due to parenting a high-risk birth child; 5) tri-generational disapproval in the parental role; and 6) positive support from the extended family.

Since attitudes are thoughts resulting from the integration of acquired experiences that provoke or lead parents to react in a specific way towards their child, giving a particular configuration in each family for the education, stimulation, and socialization of children, the second subscale was named[17,35] "Attitudes associated with parenting practices." This subscale consists of 20 items comprising four factors: 1) beliefs toward parenting, 2) negative coping toward high-risk birth, 3) self-efficacy in parenting and 4) parental resilience toward parenting and the experience of a high-risk birth.

The scale does not assess parenting practices *per se*, but rather the factors and attitudes associated with parenting practices mainly used by parents of children with high-risk birth from an individual, family, and social perspective. Thus, the subscales and factors obtained in the exploratory factor analysis describe and explain the experiences of families affected by high-risk births, who face medical, biological, and psychoemotional

Table 1. Items and factors of the subscale "factors associated with parenting practices"

Items	Factor						
	1	2	3	4	5	6	Total
My child has tantrums I would never have imagined	0.681	0.135	-0.012	0.094	0.151	-0.003	
My child blackmails me to get what he wants	0.675	0.054	0.153	0.123	0.117	0.045	
My child tries to get attention; that is why he does not want to obey	0.668	0.072	0.257	-0.105	0.065	0.070	
I try to set rules for my child, but he does not obey; he does not listen	0.644	0.089	0.062	0.204	0.128	0.077	
I consider my child to be very rebellious, and that overwhelms me	0.642	0.075	0.102	0.199	0.206	0.012	
My child challenges me, and I do not know how to behave	0.608	0.170	0.129	0.158	0.148	-0.003	
My child tries to get our attention to get our expression of affection	0.579	0.219	0.287	0.077	0.025	0.026	
My child obeys everyone except me	0.556	0.120	0.134	0.072	0.124	-0.027	
I feel that I have hurt my child by solving all of his problems, but I did not mean it that way	0.497	0.277	0.135	0.154	0.130	-0.044	
I need much patience to avoid yelling at my child or getting desperate	0.485	0.072	0.041	0.277	0.158	-0.013	
I talk to my child, but he does not understand me	0.479	0.180	0.069	0.206	0.020	-0.040	
I have specific considerations with my child because of his condition	0.041	0.749	0.014	0.066	0.050	0.055	
I remember seeing my child so small, so fragile when he was born, makes me not want him to suffer now	0.119	0.708	0.049	-0.097	0.142	-0.165	
I am limited by the fear of my child getting sick when I set limits because of the risk he had at birth	-0.012	0.698	0.144	0.109	0.020	0.095	
I have to take great care of my child because I do not want him to suffer more than he has already experienced	0.085	0.637	0.092	-0.001	0.145	-0.088	
I have a hard time letting my child do activities without my help	0.187	0.593	0.055	0.285	0.038	0.006	
I rearrange the environment for my child's benefit to prevent him from struggling too much	0.176	0.590	-0.049	0.205	-0.004	-0.030	
I prefer to help my child with everything to avoid an accident	0.147	0.569	0.101	0.056	0.026	-0.033	
I try to compensate my child and devote myself entirely to him because of the guilt I feel	0.218	0.498	0.196	0.221	0.136	0.040	
My child is very pampered because of everything he went through	0.361	0.492	0.051	-0.006	0.229	-0.014	
I am so busy with my work that I do not notice what my child is doing	0.145	0.063	0.735	0.125	0.034	-0.020	
I have so much work that I do not pay as much attention to my child as I would like to	0.172	0.090	0.704	0.292	0.067	0.049	
I think I do not see some of my child's accomplishments because I do not have much time with him	0.150	0.133	0.616	0.081	0.165	0.082	
I do not realize what my child wants because I am busy with other things (TV, work, phone, computer, housework)	0.198	-0.003	0.602	0.041	-0.042	-0.032	
I am so busy at work every day, so I try to compensate my child by buying him what he wants, so he knows how much I love him	0.232	0.291	0.537	0.102	0.126	0.034	
My child has me so overwhelmed by how much he demands. He does not let me rest	0.306	0.124	0.139	0.738	0.040	0.032	
My child demands so much of my time, and I feel like I am going to explode	0.303	0.160	0.178	0.703	0.059	-0.026	
I get desperate with parenting my child because I did not imagine that he would have so many problems at birth when I was expecting him	0.255	0.258	0.087	0.578	0.142	0.064	

(continues)

Table 1. Items and factors of the subscale "factors associated with parenting practices" (*continued*)

Items	Factor						
	1	2	3	4	5	6	Total
It is challenging to allocate quality time for my family since my child was born	-0.021	0.053	0.193	0.547	0.178	0.062	
I think that my family does not let me behave freely with my child to educate him	0.232	0.088	0.023	0.143	0.767	-0.039	
There are behaviors that the family has with my child that I do not like; however, I have to tolerate them because they help me with him	0.154	0.101	0.125	0.166	0.725	-0.072	
My family is very overprotective with my child, and it bothers me	0.258	0.168	0.078	0.082	0.687	0.062	
My family and I think differently about how to raise my child	0.190	0.140	0.101	-0.028	0.580	0.131	
I receive the greatest support with my child from my family	0.022	-0.079	0.008	-0.052	-0.055	0.814	
My family has been with me through all the happy and challenging times since my child was born	0.011	0.009	0.051	0.064	-0.011	0.802	
I have a good relationship with my family, and they help me take care of my child	0.042	-0.037	0.021	0.079	0.092	0.786	
Number of items	11	9	5	4	4	3	36
Explained variance (%)	13.35	11.14	7.02	6.54	6.49	2.93	53.16
Eigenvalue	8.8	2.6	1.9	1.7	1.4	1.3	
Cronbach's alpha	0.861	0.831	0.739	0.716	0.742	0.733	0.901
Mean (SD)	3.77 (0.70)	3.73 (0.73)	3.94 (0.70)	4.2 (0.73)	3.7 (0.90)	3.9 (0.94)	
KMO							913

Bartlett's test of sphericity: X^2 (630) = 8206.53, $P < 0.001$.
KMO, Kaiser-Meyer-Olkin test; SD, standard deviation.

risks that generate early interactions in the parental functions[8] and specific parenting practices.

From the subscale "Factors associated with parenting practices," a first factor named "low educational skills" explains the parents' self-perception regarding their poor educational ability to deal with their children's behaviors, such as tantrums, defiance of authority, manipulation, among others. In this regard, Lopez et al.[33] have attempted to conceptualize and delimit the skills parents should master in parenting-related tasks: warmth and affection, recognition of achievements, control and supervision, adequate communication, and confidence-building stimulation and learning support. In addition, these skills favor the adaptability of parents to the characteristics of their children, especially in parents who have faced situations such as fear of their children's death, illness at birth that can keep them hospitalized for up to months, generating alterations in the usual family dynamics[4,8]. As this research shows, these events tend to generate confusion and fear in parents in the face of their children's health problems, impacting their self-control and self-efficacy in their educational skills.

Factor 2, "overprotection and permissive practices," measures the behaviors that occur in parents due to the emotional impact generated by their children's birth, which leads them to exercise permissive and overprotective parenting practices to establish limits poorly. The different stressors generate particular attitudes in parents when interacting with their children and influence parenting. These attitudes are determined by external and internal motivations[17,28,30], ranging from stress to subjective feelings of responsibility in parenting[37] and, therefore, each parent's characteristics[30]. When there is a child with a high-risk birth, the emotional impact experienced and the child's perception as weak, vulnerable, and sick promotes overprotective and permissive parenting practices. This behavior is

Table 2. Definition of factors of the subscale "factors associated with parenting practices"

Factors	Definition
Factor 1 Low educational skills	Parental self-perception of poor educational skills such as tantrums, challenging authority, manipulation
Factor 2 Overprotection and permissive parenting	Parental behaviors result from the emotional impact generated by the birth of their children, leading to permissive, overprotective parenting practices, and poor limit setting
Factor 3 Dissatisfaction with the parental role exercised	It evaluates the dissatisfaction of the parental role on the behaviors exercised, generating guilt (discomfort and displeasure) due to the little interaction and work overload that prevent parents from being part of the development and improvement of their children
Factor 4 Stress of parenting a child with a high-risk birth	Assesses the perceived burnout and overwhelm of parents faced with the demands of raising and caring for a child with a high-risk birth
Factor 5 Tri-generational disapproval in the parental role	Evaluates the intrusive and negative behaviors of the extended family in the exercise of parenting practices and parental role
Factor 6 Positive extended family support	Evaluates the accompaniment conduct provided by the extended family when faced with a high-risk birth and the parenting practices during the child's development

Table 3. Correlation between the factors of the subscale "factors associated with parenting practices"

	F1	F2	F3	F4	F5	F6
F1: Low educational skills	1					
F2: Overprotection and permissive parenting	0.460**	1				
F3: Dissatisfaction with the parental role exercised	0.492**	0.343**	1			
F4: Stress of parenting a child with a high-risk birth	0.532**	0.393**	0.444**	1		
F5: Tri-generational disapproval in the parental role	0.500**	0.363**	0.309**	0.363**	1	
F6: Positive extended family support	0.046	-0.055	0.073	0.074	0.044	1

*$p < 0.05$; **$P < 0.01$.
F, factor.

due to the intention that the child should not suffer more than he/she has already experienced and will depend on how the parents experienced the different stressors[9,30,37] and on the particular motivations of each family.

Factor 3 assesses parental role dissatisfaction and guilt provoked by the discomfort or displeasure after the little interaction with the children and the work overload that restrict parents from being part of the development and improvement of their offspring. According to Webster-Stratton, this discomfort is associated with the influence of parental stress on interactions with their children during parenting[30]. This author notes that non-familial factors, such as socioeconomic and sociodemographic issues, everyday problems, such as work and time-consuming work, can trigger parents' dissatisfaction with their parenting role.

Factor 4 assesses parents' perceived burnout and exhaustion due to the demands of parenting and caring for a child with a high-risk birth. The literature states that when children are hospitalized after birth, parents experience uncertainty, anguish, stress, sadness, anxiety, guilt for not caring for their child personally, and constant fear of death[4,8,12]. All the above influences family dynamics and parenting[6,10], which leads to alterations in the children's behavior because of the anxiety produced in the family[8,46,47], which can promote less independence, development of competencies[48], and parental overwhelm due to the constant demands of their children.

Table 4. Subscale "attitudes associated with parenting practices"

	Factors				
	1	2	3	4	Total
My child has to explore to learn	0.720	0.166	0.161	0.192	
I discovered that I could set limits for my child since he was young because he responds	0.679	0.135	0.150	-0.059	
I understood that despite the conditions present when my child was born, he had to be integrated into regular activities	0.655	0.115	0.111	0.207	
Parenting is about learning and adapting as a family	0.605	-0.074	0.167	0.252	
As time goes on, my child behaviors let me know that things are going well with his development	0.510	0.252	0.231	0.173	
I have had a hard time accepting everything that has happened since I was told my child would be at high risk	0.102	0.734	-0.094	0.067	
It has been hard to face everything I lost when my child was born, and he is living with the consequences of that	0.024	0.718	0.138	0.070	
I have a hard time coping with my child going to school because he is still vulnerable	0.116	0.666	0.000	0.050	
I have not enjoyed raising my child because of the conditions of his birth	0.027	0.663	0.030	0.042	
I wish my child would not grow up because I did not enjoy him enough as a baby	0.109	0.552	0.033	-0.043	
My child's improvement is the result of the discipline of following the specialists' indications	0.198	0.071	0.793	0.033	
The experience of having a child born with high risk gives you maturity, no matter how old you are	0.225	-0.014	0.741	0.082	
I learned from what I was taught in the hospital how to raise my child correctly	0.274	-0.005	0.544	0.318	
With the guidance I have been given at the hospital, I have learned to educate my child differently.	-0.022	-0.015	0.503	0.375	
With the arrival of our child, I learned to prepare myself to face the conflicts that may arise	0.282	0.109	0.496	0.247	
Children are a reflection of their parents	0.060	0.046	0.013	0.691	
When my child was born, I decided to accept the experience and carry him forward despite setbacks	0.264	0.116	0.193	0.628	
The experience of giving birth and raising my child made me an emotionally stronger person	0.053	0.113	0.234	0.607	
I learned to adapt to my child's needs and he to mine	0.257	-0.056	0.109	0.554	
With a high-risk birth child, you have to take away your fear; you have to be decisive and strong	0.397	-0.004	0.277	0.455	
Number of items	5	5	5	5	20
Explained variance (%)	13.08	12.09	11.62	11.28	48.08
Eigenvalue	5.1	2.23	1.17	1.09	
Cronbach's alpha	0.724	0.703	0.720	0.673	0.823
Mean (SD)	4.36 (0.59)	4.12 (0.75)	4.25 (0.64)	4.23 (0.64)	
KMO					0.876

Bartlett's test of sphericity: X^2 (190) = 3277.497, $P < 0.001$.
KMO, Kaiser-Meyer-Olkin test; SD, standard deviation.

Table 5. Definition of factors of the subscale "attitudes associated with parenting practices"

Factors	Definition
Factor 1 Beliefs towards parenting	Parents' beliefs, ideas, or thoughts favor or facilitate the integral development (developmental potential) of the child with high-risk birth
Factor 2 Negative coping toward high-risk births	Assesses parental coping skills in the face of a high-risk birth that harm parenting practices
Factor 3 Self-efficacy in parenting	It assesses the perception of parental self-efficacy that modulates the competencies, beliefs of skills, actions, and specific behaviors that parents have to deal with the different situations that arise and to favor the developmental potential of the child with high-risk birth
Factor 4 Parental resilience towards parenting and the experience of a high-risk birth	Assesses the resilience and coping capacity of parents who experienced high-risk birth and who use positive behaviors for parenting practices

Table 6. Correlation between factors of the subscale "attitudes associated with parenting practices"

	F1	F2	F3	F4
F1: Beliefs towards parenting	1			
F2: Negative coping toward high-risk births	0.273**	1		
F3: Self-efficacy in parenting	0.533**	0.117**	1	
F4: Parental resilience towards parenting and the experience of a high-risk birth	0.509**	0.150**	0.546**	1

*$p < 0.05$; **$p < 0.01$.
F, factor.

Factor 5 evaluates the intrusive and negative behaviors of the extended family in the exercise of parenting practices and the parental role. The literature reports that Mexican families commonly present intrusiveness of the extended family, where family boundaries tend to be diffuse and rigid, the hierarchy is confusing, promoting coalitions rather than alliances[49], which generates confusion and anger in parenting due to perceived parental behaviors.

Factor 6 assesses the companionship provided by the extended family in response to the high-risk birth and parenting practices during the child's development. As mentioned in the literature[27,34], parenting is not an exclusive function of the parents, and they are not the only ones responsible for it; instead, parenting involves a social interweaving that involves several people. Thus, from its social function, the family has co-responsibility in education and upbringing, transmitting a variety of socio-cultural facts, symbolic representations, beliefs, patterns, habits, guidelines, norms, and systems or practices of upbringing in the formative processes of children. As observed in this research, the extended family also supports parenting practices in structure, affection, behavior control, and communication in intrafamily and microsystemic relationships, as well as the transmission of values and external systems[23,24], evidencing the diversification and family configurations in each culture[34]. As shown, parents perceive the intervention of the extended family as supportive.

Regarding the subscale "Attitudes associated with parenting practices," from which four factors were derived, we highlight the following:

Factor 1, named "parenting beliefs," assesses the parents' beliefs, ideas, or thoughts, which favor or facilitate the integral development (developmental potential) of the child with high-risk birth. As mentioned in the literature[17,26,41], these beliefs will motivate adults to guide children to improve their development, quality of life, and well-being. In a child with a high-risk birth family, a series of attitudes and beliefs will modulate parenting in the family's need to adapt to a new life and get the child to make the most of his or her abilities[6,10,11].

Factor 2, named "negative coping towards the experience of parenting and high-risk birth," assesses the coping skills that parents experienced and that impair parenting practices. This factor is associated with reports citing that families are not prepared to face a situation of this type so that they live it as a traumatic experience that will leave its mark despite time, even if the child has a good evolution[8]. As observed in this

study, families may interfere in parenting due to the stress experienced, fostering the child's vulnerability and perceiving that he/she has more significant difficulties in coping with the situation[50].

Factor 3 evaluates the parental perception of self-efficacy. As referred to in the literature[51], self-efficacy depends on the ability one feels to achieve a goal. It also modulates the competencies, strategies, beliefs about skills, actions, and specific behaviors that parents deploy when facing different situations that arise and directly impact the child's behavior, learning, and developmental potential with high-risk birth[19,52].

Factor 4 assesses resilience and coping with the high-risk birth experience through positive attitudes toward parenting practices. As the literature indicates, the resilient potential is the capacity of individuals to cope with adversity and influences different areas of life[53]. As observed in this research, these competencies allow parents to focus on their children, generate real expectations, and enhance their capabilities and strengths[54].

Finally, it is essential to mention that parenting practices differ among parents and their effect on children. The effects depend on the method used to modulate and channel the children's behaviors and on the direction parents intend and wish to value, considering that these practices will be done according to personality. Therefore, some dimensions, such as discipline, the relationship tone, the communication level, and the forms adopted by the expression of affection, are related[23].

Furthermore, this scale allows us to observe the factors and attitudes associated with the parenting practices used by parents of children with high-risk birth from an individual and family perspective, which differ from the practices used in children with no problems at birth.

As being the first version of the scale, a limitation of this study was that a non-probabilistic sampling was used, so the results of this validation are only applicable to similar samples.

For further studies, we suggest applying this scale with others that measure theoretically related variables to determine the convergent and divergent construct validity and corroborating the factorial structure through confirmatory factor analysis.

Based on this instrument, diagnoses can be made in clinical populations to create intervention programs that favor the development of factors and attitudes associated with effective parenting practices and, thus, help children with high-risk birth to achieve more significant integral development.

We can conclude that we obtained a valid and reliable instrument that allows us to identify a common social phenomenon in the population of Mexico City.

Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author has this document.

Conflicts of interest

The authors declare no conflict of interest.

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