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Construction and validation of the maternal locus of control scale

Construcción y validación de la escala de locus de control materna

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Abstract: The objective of this investigation was to obtain construct validity and internal consistency of the maternal locus of control scale for mothers with adolescent children. 765 mothers from single-parent and biparental families in Mexico City participated voluntarily (Mage = 42 years, SD = 6.66). Non-probabilistic, convenience sampling was used. An orthogonal rotation principal component analysis was performed. 30 items and 6 factors that explained 51.09% of the variance (internal consistency = .740) were obtained. Structural equation modeling was performed to confirm structure. The index of adjustment values were: chi square = 611.528, df = 356 > .05; NFI = .900; IFI = .956; CFI = .955; RMSEA = .031 (LO 90 = .026, HI 90 = .035). The scale proved to be valid and reliable to measure the maternal locus of control.

Keywords: efficacy, measurement, mothers, biparentality, single-parent

Resumen: El objetivo de la presente investigación fue obtener la validez de constructo y consistencia interna de la escala de locus de control materno para madres con hijos adolescentes. Colaboraron de manera voluntaria 765 madres monoparentales y biparentales de la Ciudad de México (Medad = 42 años, DT = 6.66). La muestra fue no probabilística intencional. Se realizó un análisis de componentes principales con rotación ortogonal, se obtuvieron 30 ítems y 6 factores que explicaron el 51.09% de la varianza, consistencia interna = .740. Se realizó un modelo de ecuaciones estructurales para confirmar la estructura de la escala. Los valores de los índices de ajuste fueron: chi cuadrada = 611.528, gl = 356 > .05; NFI = .900; IFI = .956; CFI = .955; RMSEA = .031 (LO 90 = .026, HI 90 = .035). Se concluye que la escala es válida y confiable para medir el locus de control materno.

Palabras clave: eficacia, medición, madres, biparentalidad, monoparentalidad

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Introduction

The theory of social learning states that reinforcement or rewards are essential for the acquisition of knowledge (Rotter, 1966). However, what some consider a reward or reinforcement may be perceived differently by others, causing dissimilar reactions. One of the determining factors of these perceptions is related to the degree to which people believe that a reinforcement or result is contingent on their own behavior (i.e., an internal locus of control) or a function of probability, luck and destiny and the control of powerful actors (i.e., an external locus of control) and thus could occur independently of their own actions (Rotter, 1990). Therefore, the perceived locus of control reflects how people attribute the cause of events in their lives, i.e., whether such events are considered to originate independently of personal volitional action (Virmozelova, 2016).

Individuals highly oriented toward a perception of external control have greater adjustment problems than individuals with high orientation toward internal control (Kennedy, Lynch, & Schwab, 1998). This finding reinforces reports that externality is associated with passive behavior, shyness, conformity and depression (Benassi, Sweeney, & Dufour, 1988; Rothbaum, Weisz, & Snyder, 1982) and low levels of physical and psychological well-being (Gore, Griffin, & 2016). Essentially, the perception of the locus of control occurs on a continuum. Thus, certain individuals occupy the middle of this continuum and can perceive a more or less internal or external locus of control depending on the situational context or other factors, such as mood (Warnecke, Baum, Peer, & Goreczny, 2014).

When people are intrinsically motivated to seek positive stimulation and avoid unpleasant stimulation, they act directly to strengthen the anticipation that a particular behavior or event will be followed by a similar reinforcement in the future. This phenomenon is known as expectancy (April, Dharani, & Peters, 2012). Expectations can be related to results or effectiveness. A results orientation is defined as a person's assessment that a given behavior will lead to certain results. An effectiveness orientation refers to the conviction that the behavior required to produce the expected results can be successfully performed (Bandura, 1977). Because of their characteristics, expectations are assumed to be an important

factor in learning to discriminate behaviors and results and to generalize these anticipations in the future, which defines the locus of control (April et al., 2012).

Related to expectations is responsibility, a variable considered to be strongly linked to self-efficacy and an internal locus of control, that is, a responsible individual acting with a sense of personal capacity and control over his or her actions and their consequences (De Castro, 2012). Self-efficacy refers to the belief that a particular task can be achieved and reflects confidence in one's ability to achieve an important goal. The perceived locus of control reflects the extent to which individuals believe that results are due to internal or external factors (Au, 2015)

The family and the parental locus of control

The family, as a system, is the most important group of belonging. It includes multiple processes of continuity and change related to its growth. It exhibits patterns of interaction that are modified according to internal needs (i.e., the life-cycle stage) and external demands (e.g., social, political, educational and economic demands). It is the source of the most lasting relationships and provides the individual's first social support as well as clothing, food, shelter and affection (García-Méndez, Rivera-Aragón, Díaz-Loving, & Reyes-Lagunes, 2015). As part of their functions, parents are responsible for ensuring the well-being of their children, paying attention to them and controlling them. They provide their children with educational, social and moral guidance through a set of actions correlated with the values, perceptions, priorities and parental practices that children perceive and learn through modeling, feedback, communication, monitoring, commitment, messages and boundaries (Stattin, & Kerr, 2000; Taubman-Ben-Ari, & Katz-Ben-Ami, 2012; White, Augoustinos, & Taplin, 2007).

The makeup, dynamics and structure of the family have changed, particularly with regard to the reduction in its size, the decline and delay of union or marriage and the increase in consensual unions and single-parent households. In Mexico, two types of family predominate: two-parent families with a heterosexual nuclear structure, followed by single-parent families in which only one parent is in charge of childrearing. In most

single-parent families in Mexico, it is more common for women to be heads of household (84%) than men (16%) (Instituto Nacional de Estadística, Geografía e Informática [INEGI], 2010).

For decades, the nuclear family was considered essential for the care and raising of children, and the patterns of family interaction have been related to gender and mental health (Williams, 2003). However, the effects of parenting on mental health can be obscured by specific events associated with the challenges involved in specific stages of child development (Rimehaug, & Wallander, 2010). For example, raising young children is different from raising adolescents. It is suggested that a series of challenges are faced with adolescents, such as the transition to a new role and new responsibilities as a mother or father (Angle, Divney, Magriples, & Kershaw, 2015).

Regarding single parenthood, various studies focus on the relationship with different forms of psychopathology, interpreting the mental health of single parents based on the tensions and disadvantages of combining parenthood with the management of responsibilities and problems without the support of others (Lundberg, & Andersson, 2000). Certain studies argue that more than the single-parent family structure, other variables are associated with family dysfunction that influence the conflictive predisposition of children, e.g., family environment, the quality of relationships among family members, family communication, the presence of family hostility and intra-family dialogue (Jociles, Rivas, Moncó, Villamil, & Díaz, 2008). Recent empirical evidence suggests that the associations between parenthood and mental health are complex because they depend on the interaction of multiple family and contextual factors in which society and culture intervene (Rimehaug, & Wallander, 2010).

In relation to the family and the locus of control, it is reported that perceived control is a mediator between various types of family variables and adjustment such that a family environment that discourages children from exercising control over events results in a decreased sense of control (Sokolowski, & Israel, 2008). However, the effectiveness of the family contributes to the quality of its functioning and satisfaction, providing strong support for the idea that beliefs in effectiveness are a result of family function-

ing (Bandura, Caprara, Barbaranelli, Regalia, & Scabini, 2011).

Thus, the parental locus of control is considered the perception of the power and effectiveness of parents in raising their children. It is a construct that denotes a cognitive determinant in parenting that influences child development (Campis, Lyman, & Prentice-Dunn, 1986; Hagekull, Bohlin, & Hammarberg, 2001). In this way, parents who perceive an external locus of control attribute the development of their children to forces outside parental control (Freed, & Tompson, 2011). This view results in feelings of impotence in controlling their children and in negative cognitions associated with different problems in children, including self-regulation and emotion regulation, externalization and internalization and difficulties in the parent-child relationship (Spokas, & Heimberg, 2009).

Another result of parents oriented toward an external locus of control is that they may perceive their efforts to teach their children to regulate themselves and their environment as ineffective. This perception probably increases the parent's chances of abandoning their task, of being coercive and authoritarian or being inconsistent in disciplinary practices. As a result, behavior problems occur in the children, who do not respond due to their own low self-perception of parental control (Bugental, Caporael, & Shennnm, 1980; Freed, & Tompson, 2011; Pérez-Padilla, Hidalgo-García & Menéndez-Álvarez-Dardet, 2012). A parenting style characterized by overprotectiveness, which reflects a belief that parenting results are largely determined by external factors, may interfere with a child's acquisition of social skills, which are necessary for development (Spokas, & Heimberg, 2009).

In contrast, parents oriented toward an internal locus of control attribute their children's development to their parenting efforts and make internal attributions regarding the causes of their children's behavior as being related to feelings of control, responsibility and self-esteem (Banks, Ninowski, Mash, & Semple, 2008). Such parents limit the use of coercive strategies and increase the use of positive responses of support, thus reducing behavioral problems in their children and significantly improving self-efficacy in parenting. These results have been observed in children of early school age and adolescents (Gross et al., 2003).

Table 1 presents six instruments for evaluating the locus of control. One instrument evaluates general locus of control, two evaluate the parental locus of control, and three evaluate the locus of control among the Mexican population based on different dimensions.

Of the three scales for Mexico, none addresses the parental locus of control, and those that do address it (Campis et al, 1986; Furnham, 2010) are designed for contexts other than that of Mexico. It is important to establish instruments that measure this construct that are consistent with Mexican culture. Therefore, the objective of this study is to determine the construct validity and internal consistency of a scale of the maternal locus of control.

Method

Participants

The sample was a non-probabilistic, convenience sample that consisted of 765 mothers in Mexico City. Of these, 460 (60.1%) were mothers in two-parent families (married or cohabitating), and 305 (39.9%) were mothers in single-parent families (divorced, single mothers, widows or separated). The age range of the mothers was 26 to 64 years ($Mage = 42$; $SD = 6.66$). Each mother had at least one adolescent child aged 12 to 17 years. At the national level, an intercensal survey (Instituto Nacional de Estadística, Geografía e Informática [INEGI], 2015) indicates that 29% of all households are female-headed, which means that female-headed households increased by 4% between 2010 (24.6%) and 2015 (29%). In Mexico City, 36% of households are female-headed.

Table 2 shows the socio-demographic characteristics reported by the participants. Educational level is only presented as a characteristic of the sample.

Instrument

- *Semantic networks*: Based on proposals by Rotter (1966), in a first phase, a study was performed using natural semantic networks (Reyes-Lagunes, & García, 2008) to investigate the locus of control among mothers in two-parent and single-parent households (García-Méndez, Méndez-Sánchez, Alvarez-Ramírez, Rivera, &

Melo, 2016). The networks included four stimulus phrases that were applied to a sample of 116 mothers in Mexico City, 60 (51.72%) in two-parent families (11 cohabitating and 49 married) and 56 (48.27%) in single-parent families (22 single mothers and 34 divorcees), all with adolescent children aged 12 to 17 years.

- *The Maternal Locus of Control Scale (MALO-CO) (Escala de Locus de Control Materna, LO-COMA)*: In a second phase, based on the results of the semantic networks investigation, a Likert scale was developed for assessing the maternal locus of control. This scale had three sections. The first section included an explanation of the study objectives and the anonymity of participants, who signed consent forms before completing the scale. To obtain the socio-demographic data and determine participant characteristics, the second section consisted of six questions that addressed the following: age, educational level, marital status, family structure, occupation and number of children and their age. The third section included the scale, which consisted of 73 items with five response intervals ranging from 1 = never to 5 = always.

Procedure

Schools and homes in Mexico City were visited. Public secondary schools were chosen because they have the greatest concentration of adolescents. The purpose of the study was presented to school authorities, who subsequently contacted the mothers. In terms of homes, visits were made to those previously identified by the work group as meeting the inclusion criteria. Both in the schools and the homes, the study objective and inclusion criteria were explained to the mothers who met the inclusion criteria. Their collaboration was requested, and they provided written informed consent to be administered the scale. The confidentiality and anonymity of their responses was guaranteed, and a research collaborator was present at all times to answer questions that arose during the application of the instrument. The study was performed with the approval of the Bioethics and Biosafety Commission of the Universidad Nacional Autónoma de México, Zaragoza Faculty of Higher Studies (UNAM, FES Zaragoza).

Table 1
Instruments that evaluate the locus of control

Author	Instrument	Description	Evaluated dimension
Rotter, 1966	Internal-External Locus of Control Scale	A unifactorial instrument that explains 53% of the total variance. It contains 29 biserial items that refer to the beliefs people have about the world. It has been applied in different contexts: reformatories, federal prisons, universities, the general population.	The scale is a measure of generalized expectancy, which can correlate with the value a person places on internal or external control.
Campis, Lyman, & Prentice-Dunn, 1986	Parental Locus of Control Scale (PLOC)	A Likert scale that contains 47 items and uses five response options: 1 = strongly disagree to 5 = strongly agree. Its overall reliability index is 0.92.	The items reflect the orientation of parental locus of control in relationships and situations with their children. It evaluates five factors: parental effectiveness, parental responsibility, destiny/opportunity, parental control and control of children.
Furnham, 2010	Locus of Parental Control Scale	The scale explains 40% of the variance. It consists of 52 items developed based on three dimensions: internal, other powers and fate. It contains nine response intervals ranging from agreement to disagreement.	Evaluates four factors: destiny, responsibility destiny/negation, personal effectiveness.
La Rosa, 1986	Locus of Control Scale	Consists of 53 items that explain 40.7% of the variance. The reliability indices range from 0.78 a 0.89. The scale uses five response options (1 = strongly disagree; 5 = strongly agree).	Evaluates five factors in the adult Mexican population: fatalism/luck, internality, affectivity, macrocosm powers and microcosm powers.
García & Reyes-Lagunes, 2000	Multifactorial Scale of Locus of Control	A pictorial scale with seven options and 40 Likert-type items. Its internal consistency is 0.88.	Evaluates five factors in the adult Mexican population: external achievement, internal achievement, internal affiliation, social affect, and family status quo.
Díaz-Loving & Andrade-Palos, 1984	Locus of Control Scale for Mexican Children	A dichotomous instrument (yes/no) with 30 items adapted from the scale by Nowicki and Strickland (1973). Its internal consistency ranges from 57 to 73. It was applied to children aged 10 to 15 years.	Evaluates locus of control in children through three subscales: instrumental (IS), affective (AS), and fatalist (FS).

Table 2
Socio-demographic characteristics of the sample

Family structure	f	%
Two-parent	460	60.1
Married	344	45
Cohabiting	116	15.1
Single-parent	305	39.9
Divorced	127	16.6
Single mothers	100	13.1
Widows	19	2.5
Separated	59	7.7
Education*		
Elementary school	304	39.8
High school	250	32.7
University	170	22.2
Postgraduate	16	2.1
Occupation		
Housewife	243	31.8
Employee	270	35.3
Businessperson	66	8.6
Professional	111	14.5
Laborer	4	0.5
Retired	4	0.5
Trade	65	8.5
Students	2	0.3

*25 mothers did not answer.

Results

Asymmetry was obtained for the collected data. Only items with values ≤ 1.500 were accepted. Student's t-test was used to determine the discrimination of the items ($p \leq 0.05$). Cronbach's alpha was used to obtain the correlation between the items, and items with values ≥ 0.200 were maintained. Based on the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (KMO = 0.889) and Bartlett's test of sphericity ($X^2 = 5448.58$, $df = 435$, $p < 0.0001$), we concluded that the data reflect normal multivariate distribution (Montoya, 2007).

Based on these results, 61 items were subjected to an exploratory factorial analysis of principal components with orthogonal rotation. This analysis was used to identify the number and composition of the factors necessary to explain the common variance of the set of items on the scale (Lloret-Segura, Ferreres-Traver, Hernández-Baeza, & Tomás-Marco, 2014). The criteria for considering an item part of a factor were that it have a factorial weight of > 0.40 and not share factorial weight with another factor. The factorial weights indicate the degree of correspondence between the item and the factor, where high loads indicate that the item is representative for the factor. Thus, it is desirable that each item have weight in a single factor, and values of 0.40 are considered reasonable (Montoya, 2007). As a result of this analysis, the scale consisted of 30 items distributed among six factors (Table 3) that explain 51.60% of the variance with an overall Cronbach's alpha of 0.736.

Factor 1, *parental effectiveness*, refers to a mother's recognition of her ability to favor the development and well-being of her child/children by achieving proposed goals and the recognition that she possesses the skills necessary to support her child/children's personal growth. Such mothers perform a series of actions aimed at providing their child/children with security and solve problems that could hinder their child/children's development. The items that comprise this factor refer to support, recognition, coping with specific situations, alternatives, observed results, perseverance and actions taken.

In Factor 2, *lack of control*, mothers perceive that no matter how hard they try their children's

behavior occurs independently of their desires, with children even taking control of certain situations. The items that compose this factor refer to the difficulties mothers have in regulating their children's behavior

Factor 3, *support from others*, is related to mothers' need for external support from other persons or family members in teaching their children to regulate themselves. Support from family and the opinions of others regarding what to do with children are important.

In Factor 4, *beliefs*, mothers assume that their children's behavior is influenced by higher forces. The items refer to giving thanks, being fortunate and wishing for good behavior from their children.

Factor 5, *responsibility*, refers to the personal capacity of mothers to act in accordance with what they consider to be best for their children's education and achieving their children's goals. The items refer to the mother's abilities and manner. Factor 6, *luck/destiny*, describes the mother's perception that her children's manner is due to chance or fate, without associating it with her own actions.

Regarding the differences in the MALOCO scale between single mothers and mothers in two-parent families, upon analyzing the differences in means among the scale factors, significance was only found for two of the six factors. In Factor 3 (support from others), single mothers scored higher ($M = 2.58$, $SD = 1.01$) than mothers in two-parent households ($M = 2.31$, $SD = 0.79$), $t = 4.09$, $df = 739$, $p < 0.001$. A similar outcome was observed for the factor luck/destiny, with single mothers scoring higher ($M = 2.05$, $SD = 0.89$) than mothers in two-parent households ($M = 1.85$, $SD = 0.70$), $t = 3.42$, $df = 746$, $p < 0.01$.

To validate the structure of the MALOCO scale, a factorial analysis was performed using a structural model. The fit indices for the scale were appropriate (Hu, & Bentler, 1999): chi-square = 611.528, $df = 356 > 0.05$; NFI = 0.900; IFI = 0.956; CFI = 0.955; RMSEA = 0.031 (LO 90 = 0.026, HI 90 = 0.035). Figure 1 shows the model that was used with the estimated standardized indices. As can be observed, the model confirms the data from the exploratory factor analysis, corroborating the six-factor structure of the MALOCO instrument.

Table 3
Factor weighting with orthogonal rotation of the scale of parental locus of control (n = 765)

Items	Factors					
	1	2	3	4	5	6
19. I face difficult situations with my child/children with respect to proposals.	0.689	-0.089	0.025	-0.075	-0.007	-0.007
22. The support I have given my child/children is reflected in their achievements.	0.658	0.029	-0.153	0.055	0.028	-0.017
33. I know I can face unexpected situations with my child/children in the best way.	0.645	-0.089	-0.076	0.061	0.115	-0.096
60. Based on the results, I believe I have done a good job with my child/children.	0.623	-0.233	-0.063	0.203	0.227	0.018
31. I recognize the effort of my child/children as a way to motivate their progress toward their goals.	0.618	0.002	-0.108	0.183	-0.052	-0.145
59. When a situation with my child/children becomes difficult, I propose alternatives to resolve it.	0.565	-0.185	-0.017	-0.115	0.222	-0.058
51. I can guide my child/children in achieving their goals.	0.561	-0.086	0.068	0.149	0.259	-0.195
48. My perseverance has made my child/children try harder for what they want.	0.518	-0.168	-0.040	0.290	0.276	0.077
54. With all that I have done, I have earned the trust of my child/children.	0.503	-0.207	0.001	-0.279	0.240	-0.011
16. Even when I make an effort to change the behavior of my child/children, they ignore my opinions.	-0.167	0.697	0.206	-0.121	-0.004	0.001
9. Occasionally, my child/children are so insistent that even though I disagree with them they get what they want from me.	0.040	0.678	0.082	0.016	0.091	-0.050
43. Because of pressure from my child/children, I occasionally change what was previously established.	-0.167	0.675	0.097	0.009	0.069	0.036
29. There are times when it is difficult for me to know what my child/children will do.	-0.083	0.623	0.010	0.099	-0.114	0.133
38. What I say to my child/children about their friends has little effect on them.	-0.025	0.614	-0.034	0.006	-0.139	0.126
35. No matter what I do, my child/children do what they want.	-0.259	0.498	0.189	-0.124	-0.108	0.276
65. Without support from my family, it would be difficult for me to supervise my child/children.	-0.107	0.019	0.753	0.117	-0.041	0.065
57. I ask others what to do when I have problems with my child/children.	-0.069	0.110	0.729	0.043	0.004	0.125
15. I let others intervene in the disciplining of my child/children.	-0.068	0.155	0.706	-0.104	0.055	0.129
68. The opinions of my family about how to raise my child/children are very important to me.	-0.104	-0.021	0.676	0.134	0.254	0.219
36. My family has a lot to do with the behavior of my child/children.	0.034	0.106	0.590	-0.006	-0.076	0.084
73. I am thankful that my child/children take into account what I tell them.	0.195	-0.069	0.040	0.762	0.213	-0.002
46. I am fortunate because my child/children listen to me and take into account what I tell them.	0.255	-0.090	-0.054	0.729	0.147	0.075
49. I wonder why my child/children continue to behave well.	0.105	0.192	0.187	0.720	0.084	0.059
67. Because of how I am, I know what is best for my child/children.	0.023	0.110	0.083	0.145	0.706	0.119
69. My abilities enable me to understand my child/children.	0.284	-0.084	-0.015	0.144	0.686	0.008
66. I believe I am able to ensure that my child/children take advantage of the opportunities presented to them.	0.283	-0.057	0.064	0.233	0.608	-0.008
63. I am capable of adequately supervising my child/children.	0.287	-0.214	-0.098	-0.049	0.436	-0.067
30. The problems of my child/children are often due to bad luck.	-0.151	0.059	0.170	0.012	0.023	0.783
26. My child/children are like this because of their genetic inheritance.	-0.056	0.118	0.164	-0.034	0.064	0.709
34. The success of my child/children depends to a large extent on their luck in life.	-0.070	0.135	0.251	0.218	0.007	0.623
Number of items	9	6	5	3	4	3
Explained variance	20.44	12.65	6.36	4.60	3.80	3.73
Reliability	0.820	0.743	0.750	0.706	0.617	0.648
Mean	4.25	2.52	2.42	4.09	3.81	1.93
Standard deviation	0.49	0.75	0.89	0.71	0.61	0.79

Note: 1 = Parental effectiveness; 2 = Lack of control; 3 = Support from others; 4 = Beliefs; 5 = Responsibility; 6 = Luck/destiny.

Statistically significant moderate correlations were observed between the factors, confirming their appropriateness to the construct. The correlations with the greatest weight were parental effectiveness with responsibility (0.79) and beliefs (0.63) and beliefs with responsibility (0.60). The first two pertain to an internal locus of control and the third to an external locus of control.

These results are in accordance with Warnecke et al. (2014), who state that the internal and external loci of control occur along a continuum, which is why both can be observed in the same person depending on the circumstances. Additionally, the obtained data suggest that for Mexican mothers, faith in higher powers is an important factor of support in performing their tasks.

Discussion

The scale of parental locus of control, a result of this study and supported by Rotter’s assumptions regarding the internal and external loci of control (1960), contains six factors. Two factors evaluate the internal locus of control (parental effectiveness and responsibility, 13 items), and four factors evaluate the external locus of control (lack of control, support from others, beliefs and luck/destiny, 17 items). The factor structure denotes that the scale is a measure of specific aspects of the internal and external loci of control (Campis et al., 1986; Rotter, 1966). The factors linked to the internal locus of control encompass the mothers’ perception that their actions are related to their children’s behavior. Thus, the mothers attribute their children’s development to their own commitment, effort, dedication and support.

These findings are consistent with the assertions that parents view their children’s behavior as a direct result of their parenting efforts (Campis et al., 1986; White et al. 2007), which are understood in terms of constant endeavor and perseverance in providing their children with attention and ensuring their well-being. The internal locus of control includes parental efforts to confront adversity and help children resolve problems and achieve their goals. These efforts are related to the effectiveness of constantly endeavoring to promote the development and well-being of all family members to maintain links that enable family members to obtain benefits from extra-family systems and to be resilient in the face of adversity (Bandura, 1977; Bandura et al., 2011).

In contrast, the factors of lack of control, external support, beliefs and luck/destiny, which are related to the external locus of control, are linked to mothers who perceive themselves as having little ability to control and guide their children. These mothers consider support from external agents to be necessary in childrearing. They perceive their children’s behavior as outside their control, and therefore, feelings of helplessness arise (Banks et al, 2008) that are occasionally related to external forces and other powers (Freed, & Tompson, 2011; Rotter, 1990).

Outsiders and external family members playing an important role in the discipline and

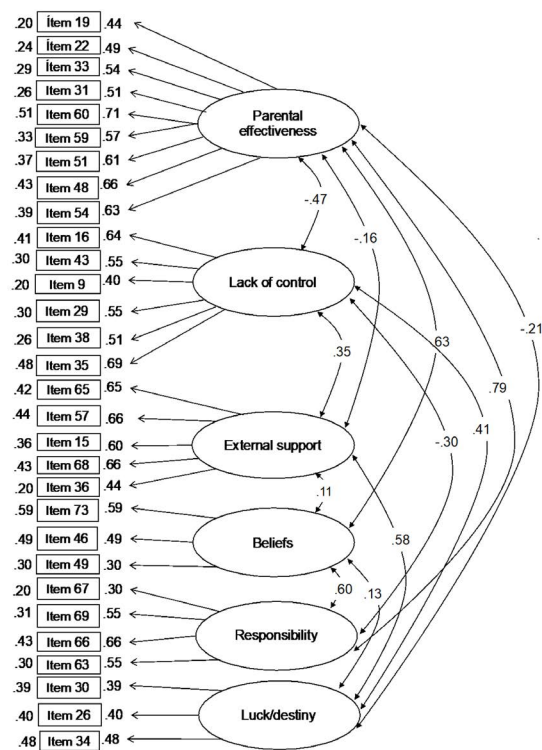


Figure 1
Structural model of the MALOCO scale

behavior of children can diminish the responsibility of the mother and disrupt family dynamics (Sokolowski, & Israel, 2008). Importantly, for the factors of external support and luck/destiny, significant differences were found between the scores of single mothers and mothers in two-parent households. The former scored higher, which is reasonable given that because they must work, such mothers turn to others for support in childrearing. This support, including from family and friends, can favor childrearing by increasing parental competence by providing resources during the period of transition of roles (Angle et al., 2015).

The more that childcare is delegated to others, the more likely it is that the control of mothers will decrease. However, if a balance is maintained between support from others in childcare with respect to the roles that each supporter plays, such delegation can be favorable for family dynamics and the children's development.

The phenomenon of mothers attributing their children's behavior to supernatural forces and other powers is consistent with previous studies (Campis et al., 1986; Furnham, 2000; Rotter, 1990). Even when these attributions are observed, it should be noted that the locus of control occurs along a continuum such that depending on the context, mothers in specific situations may exhibit behaviors related to both a perceived external and a perceived internal locus of control. Which locus predominates depends on different variables, including the mother's personality (Rotter, 1966) and mood (Warnecke et al., 2014).

Generally, the scale evaluates dimensions of the internal and external loci of control. An internal parental locus of control contributes to children's self-regulation, while an external parental locus of control favors overprotection (Spokas, & Heimberg, 2009), coercion (Freed, & Thompson, 2011), passive behavior (Rothbaum, Weisz, & Snyder, 1982) and depression (Benassi, Sweeney, & Dufour, 1988). An orientation toward an external locus of control is correlated with generalized feelings of incompetence and lack of control. Therefore, when problems with childrearing occur, they are likely due to the predominance of a more external parental locus of control, unlike with fathers and mothers who do not experience these problems (Campis et al., 1986).

Feelings of lack of ability and limited support are variables that cause parental stress, which in turn is related to the internalization and externalization of symptoms in adolescents (Cavendish et al., 2014). These phenomena have a detrimental effect on the ability of families to cope with problems.

We conclude that our psychometric analyses of the MALOCO scale demonstrate that in combination with theoretical and empirical support from Rotter (1966) and the results of a semantic networks investigation, it is a valid and reliable instrument for measuring dimensions of the locus of control. Because only mothers participated in this study, in future research, it would be important to use larger samples that include fathers and other variables related to the locus of control.

References

- Angle, M., Divney, A., Magriples, U. & Kershaw, T. (2015). Social support, family functioning and parenting competence in adolescent parents. *Maternal & Child Health Journal*, 19(1), 67-73. doi: 10.1007/s10995-014-1496-x
- April, K. A., Dharani, B., & Peters, K. (2012). Impact of locus of control expectancy on level of well-being. *Review of European Studies*, 4(2), 124-137. doi: <http://dx.doi.org/10.5539/res.v4n2p124>
- Au, E. W. M. (2015). Locus of control, self-efficacy, and the mediating effect of outcome control: predicting course-level and global outcomes in an academic context. *Anxiety, Stress, & Coping*, 28(4), 425-444.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. doi: <http://dx.doi.org/10.1037/0033-295X.84.2.191>
- Bandura, A., Caprara, G. B., Barbaranelli, C., Regalia, C., & Scabini, E. (2011). Impact of family efficacy beliefs on quality of family functioning and satisfaction with family life. *Applied Psychology: An International Review*, 60(3), 421-448. doi: 10.1111/j.1464-0597.2010.00442.x
- Banks, T., Ninowski, J. E., Mash, E. J., & Semple, D. L. (2008). Parenting behavior and cognitions in a community sample of mothers with and without symptoms of Attention-Deficit/Hyperactivity Disorder. *Journal of Child and Family Studies*, 17(1), 28-43. doi: 10.1007/s10826-007-9139-0
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria Versus New Alternatives. *Structural Equation Modeling*, 6(1), 1-55. <http://dx.doi.org/10.1080/10705519909540118>
- Benassi, V. A., Sweeney, P. D., & Dufour, Ch. L. (1988). Is there relation between locus of control orientation and depression? *Journal of Abnormal Psychology*, 97(3), 357-367. <http://psycnet.apa.org/doi/10.1037/0021-843X.97.3.357>
- Bugental, D. B., Caporael, L., & Shennnm, W. A. (1980). Experimentally produced child uncontrollability: Effects on the potency of adult communication patterns. *Child Development*, 51(2), 520-528. doi: 10.1111/1467-8624.ep12329676

- Campis, L. K., Lyman, R. D., & Prentice-Dunn, S. (1986). The parental locus of control scale: Development and validation. *Journal of Clinical Child Psychology*, 15(3), 260-267. http://dx.doi.org/10.1207/s15374424jccp1503_10
- De Castro e Costa Rizzato, S. (2012). *Dimensiones de personalidad, motivación de logro y expectativas de control en jóvenes emprendedores brasileños* (tesis de doctorado). España: Universidad de León.
- Cavendish, W., Montague, M., Enders, C., & Dietz, S. (2014). Mothers' and Adolescents' perceptions of family environment and adolescent social-emotional Functioning. *Journal of Child & Family Studies*, 23(1), 52-66. doi: 10.1007/s10826-012-9685-y
- Díaz-Loving, R., & Andrade-Palos, P. (1984). Una escala de locus de control para niños mexicanos. *Revista Interamericana de Psicología*, 18(1-2), 21-33.
- Freed, R. D., & Tompson, C. (2011). Predictors of parental locus of control in mothers of pre- and early adolescents. *Journal of Clinical Child & Adolescent Psychology*, 40(1), 100-110. doi: 10.1080/15374416.2011.533410
- Furnham, A. (2010). A parental locus of control scale. *Individual Differences Research* 8(3), 151-163. <http://discovery.ucl.ac.uk/id/eprint/1321252>
- García-Méndez, M., Méndez-Sánchez, M. P., Alvarez-Ramírez, E., Rivera, S., & Melo, V. H. (2016). El locus de control parental en madres biparentales y monoparentales con hijos adolescentes. En R. Díaz-Loving, I. Reyes-Lagunes, S. Rivera, J. E. Hernández, & R. García, (Eds.), *La Psicología Social en México*, 16, 685-691. México: Asociación Mexicana de Psicología Social.
- García-Méndez, M., Rivera-Aragón, S., Díaz-Loving, R., & Reyes-Lagunes, I. (2015). *Continuidad y cambio en la familia. Factores intervinientes*. México: El Manual Moderno.
- García, T., & Reyes-Lagunes, I. (2000). Estructura del locus de control en México. *La Psicología Social en México*, 8, 158-164. México: Asociación Mexicana de Psicología Social.
- Gore, J. S., Griffin, D. P., & McNierney, D. (2016). Does Internal or External Locus of Control Have a Stronger Link to Mental and Physical Health? *Psychological Studies*, 61(3), 181-196. doi:10.1007/s12646-016-0361-y
- Gross, D., Fogg, L., Webster-Stratton, C., Garvey, C., Julion, W., & Grady, J. (2003). Parent training of toddlers in daycare in low-income urban communities. *Journal of Consulting and Clinical Psychology*, 71(2), 261-278. doi: 10.1037/0022-006X.71.2.261
- Hagekull, B., Bohlin, G., & Hammarberg, A. (2001). The role of parental perceived control in child development: A longitudinal study. *International Journal of Behavioral Development*, 25(5), 429-437. doi: 10.1080/016502501316934851
- Instituto Nacional de Estadística, Geografía e Informática (2010). *Censo de población y vivienda 2010*. México: INEGI.
- Instituto Nacional de Estadística, Geografía e Informática (2015). *Cuentame. Hogares, vivimos en hogares diferentes*. México: INEGI.
- Jociles, M. I., Rivas, A. M., Moncó, B., Villamil, F., & Díaz, P. (2008). Una reflexión crítica sobre la monoparentalidad: el caso de las madres solteras por elección. *Portularia*, 8(1), 265-274.
- Kennedy, B. L., Lynch, G. V., & Schwab, J. J. (1998). Assessment of locus of control in patients with anxiety and depressive disorders. *Journal of Clinical Psychology* 54(4), 509-515. doi: 10.1002/(SICI)1097-4679(199806)54:4<509::AID-JCLP12>3.0.CO;2-J
- La Rosa, J. (1986). *Escala de locus de control y autoconcepto: construcción y validación* (tesis de doctorado). Facultad de Psicología. México: Universidad Nacional Autónoma de México.
- Lloret-Segura, S., Ferreres-Traver, A., Hernández-Baeza, A., & Tomás-Marco, I. (2014). El análisis factorial exploratorio de los ítems: una guía práctica, revisada y actualizada. *Anales de Psicología*, 30(3), 1151-1169. doi: 10.6018/analesps.30.3.199361
- Lundberg, M., & Andersson, P. (2000). Perception of parental rearing when growing up in a single-parent home. *Clinical Psychology and Psychotherapy*, 7(4), 275-278. doi: 10.1002/1099-0879(200010)7:4<275::AID-CPP259>3.0.CO;2-U
- Montoya, O. S. (2007). Aplicación del análisis factorial a la investigación de mercados. Caso de estudio. *Scientia et Technica*, 1(35), 281-285.
- Nowicki, S., y Strickland, B. R. (1973). A locus of control scale for children. *Journal of Consulting and Clinical Psychology*, 40(1), 148-154.
- Pérez-Padilla, J., Hidalgo-García, M. V., & Menéndez-Álvarez-Dardet, S. (2012). Estrés parental en familias en riesgo psicosocial. El papel del lugar de control como progenitor. *Ansiedad y Estrés*, 18(1), 55-67.
- Reyes-Lagunes, I. & García, B. (2008). Hacia un procedimiento de validación psicométrica culturalmente relevante. *La Psicología Social en México*, 12, 625-630.
- Rimehaug, T., & Wallander, J. (2010). Anxiety and depressive symptoms related to parenthood in a large Norwegian community sample: the HUNT2 study. *Social Psychiatry and Psychiatric Epidemiology*, 45(7), 713-721. doi: 10.1007/s00127-009-0110-9.
- Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology*, 42(1), 5-37. doi: 10.1037/0022-3514.42.1.5
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, 80(1), 1-28. <http://psycnet.apa.org/doi/10.1037/h0092976>
- Rotter, J. B. (1990). Internal versus external control of reinforcement. A case history of a variable. *American Psychologist*, 45(4), 489-493. doi: 10.1037/0003-066X.45.4.489
- Spokas, M., & Heimberg, R. G. (2009). Overprotective parenting, social anxiety, and external locus of control: Cross-sectional and longitudinal relationships. *Cognitive Therapy and Research*, 33, 543-551. doi: 10.1007/s10608-008-9227-5
- Stattin, H., & Kerr, M. (2000). Parental monitoring: A reinterpretation. *Child Development*, 71(4), 1072-1085. doi: 10.1111/1467-8624.00210
- Sokolowski, K. L., & Israel, A. C. (2008). Perceived anxiety control as a mediator of the relationship between family stability and adjustment. *Journal of Anxiety Disorders*, 22, 1454-1461. doi: 10.1016/j.janxdis.2008.02.009
- Taubman-Ben-Ari, O., & Katz-Ben-Ami, L. (2012). The contribution of family climate for road safety and social environment to the reported driving behavior of young drivers. *Accident Analysis & Prevention* 47, 1-10. doi: 10.1016/j.aap.2012.01.003
- Virmozelova, N. (2016). Locus of control and Its relationship with some social-demographic factors. *Psychological Thought*, 9(2), 248-258. doi:10.5964/psyc.v9i2.179
- Warnecke, A. J., Baum, C. A., Peer, J. R., & Goreczny, A. J. (2014). Intercorrelations between individual, personality factors and anxiety. *College Student Journal*, 48(1), 23-33.
- White, N. Augoustinos, M., & Taplin, J. (2007). Parental responsibility for the illicit acts of their children: Effects of age, type and severity of offence. *Australian Journal of Psychology*, 59(1), 43-50. doi: 10.1080/00049530600944374
- Williams, K. (2003). Has the Future of Marriage Arrived? A Contemporary examination of gender, marriage, and psychological well-being. *Journal of Health and Social Behavior*, 44(4), 470-487.