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Questionnaire for the Evaluation of Parents' Educational Skills

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ABSTRACT

Objectives: The aim of this paper is to propose a self-report questionnaire designed to assess the ability of parents to use appropriate educational strategies to manage the behavior of children, based on the principles of analysis and behavior modification.

Methods: 180 subjects, divided into 3 groups of 60 subjects: parents of Italian nationality, Italian parents with a disabled child, parents with no Italian nationality (including 20 Filipinos, 20 Sinhalese and 20 Moroccans), were invited to fill the questionnaire.

Results: The results showed that the instrument has the potential to be very suitable for the evaluation of behavioral educational skills, which are the basis of behavioral parent training programs, but also to have the possibility to check the effectiveness of the training in terms of more competent techniques learned, even after a long time.

Conclusions: The results showed that the instrument has the potential to be very suitable for the evaluation of behavioral educational skills. To improve the level of confidence it will need to make some corrections, related to the revision of some item. We consider that further studies in this area should be conducted, so to broaden the range of instruments used for the assessment of educational skills.

Keywords: *Education, Parenting, Behavior Modification, Psychometric analysis, Discipline.*

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Introduction

Various incidents of violence reported in the media do reflect the need to investigate further the reasons of the growing discomfort experienced by young people and, more generally, by families.

Just in family, various forms of psychological distress and social maladjustment arise. Family has the responsibility for educational, emotional, behavioral and affective managing of young people and it is responsible for all the problems that characterize them. Some parents are generally unprepared to face these responsibilities but they are forced to do it, often with an inadequate cultural and behavioral baggage and without the possibility of any social support.

The literature and clinical experience strongly emphasize the opportunity to intervene on families as early as possible to see if their educational skills are adequate to carry out properly their difficult task. It is essential, therefore, to have appropriate evaluation tools which can detect any deficit and provide the information needed for the design of psychological interventions for families in need.

It is very important to define properly, and in advance, our object of inquiry: what we mean by “parenting skills” to anticipate what problems might arise for parents in managing their children's education, and, finally, to build a tool that had the characteristics of reliability, validity, and sensitivity you expect from an assessment tool (Woodcock, 2003).

Definition and theoretical models. The parenting skill is the ability of parents to raise their children, protecting them from risks and fostering their developmental experiences (Bornstein, 2002). It is a very complex task, which includes different skills such as sensitivity to the needs of the child, ability of communication and expression of emotions, ability to handle discipline maintaining an adequate emotional control (Hurley, Huscroft-D’Angelo, Trout, Griffith, & Epstein, 2014).

These skills, in a relational sphere, are influenced by many elements of variability. Such elements, interacting among each other, can represent a crucial source of risk and /or enhance pre-existing risk factors but, on the other hand, they can be a fundamental resource for the development of a functional parenting (Rutter, M., 1985).

The educational competence is also about the ability to adapt to gradual changes related to physical and psychological development of the child and to the continuous changes in the environment and contexts of individual and family development (Bornstein, 2002). Parents should be able to address and solve the problems of everyday life, maintaining a balance between the demands posed by circumstances and the educational project developed for their children.

On a psychological level, this relates to different individual skills of each parent, such as the ability to recognize, understand and meet the needs of their children and the awareness of the effects of their behavior on their cognitive, emotional, motivational and affective-relational development.

Equally important is flexibility, i.e. the ability of parents to not stiffen up on their positions and to adapt themselves to changing circumstances, being consistent at the same time, both on a personal level and as a parental couple about behavioral models to be transmitted and about behavioral rules (Sawyer, Crosland, Miltenberger, & Rone, 2015).

It is quite evident, therefore, the impossibility of a parenting that can be defined optimal, especially if one wants to evaluate it as competence in the long term rather than a specific skill related to a period or a limited context (Conley, C. 2003).

It would be certainly impossible, through a single instrument, to assess the presence of all the skills that define "educational competence." On the other hand, as argued by Scott (1998), it is mainly the quality of behavioral interactions between parents and children to influence the welfare of the child and to define the relational climate of the family.

It is true, in fact, that the presence of particular hardship, such as economic hardship, illness or other, does not necessarily affect the quality of parenting, (Larcan e coll., 1999; Cuzzocrea, Larcan, 2005) rather it creates conditions of greater vulnerability and risk.

The complexity of the construct of competent parenting and the evaluation of the advisability of using different measurement instruments, not excluding of course the direct observation, which remains, among all, the more objective procedure, has led us to restrict our goal of study to the assessment of the ability to use contingencies (ABCs' model) in the management of discipline.

This choice was motivated by several reasons, among the others mainly the lack of tools that analyze this important aspect of parenting; in fact, with few exceptions, the parenting assessment tools mainly focus on general aspects without providing specific behavioral indicators related to parent-child interactive situations. We also believe that the assessment of this aspect of the parent-child relationship could be extremely useful in many clinical family situations, such as for example, the presence of children with disabilities or with specific conduct disorders, or for the design of prevention interventions in the presence of specific individual risk conditions or referred to the entire family. Before describing the tool, we have designed and tested for the evaluation of these specific educational skills, including the ability to manage contingencies (reinforcement and punishment) in interactive situations of everyday life, we find useful to provide some guidance on the concept of discipline, which has guided our study. In fact, the concept of "discipline", although various scholars of educational issues frequently invoke it, lacks of a precise definition.

Also, on authoritative texts of Psychology, such as the Encyclopedia of Applied Developmental Science (Fisher & Learner, 2005) or the Handbook of Parenting (Bornstein, 2002), there is not a definition of "discipline", even though it represents one of the basic dimensions of parenting.

In the rare cases in which there is an attempt of definition, as in the case of Papalia et al. (2006), it is referred to the set of methods that are used to shape the character and to teach appropriate behavior and self-control, more often, inappropriately, it is equated with punishment.

It seems interesting the distinction between “reactive” and “proactive” discipline proposed by Socolar (1997) and subsequently applied and modified by Straus and Fauchier (2007) in “preventive” and “corrective” discipline. The instrument developed by the authors, the DDI (Dimensions of Discipline Inventory) mainly refers to the corrective discipline and establishes a distinction between punitive and non-punitive methods.

In fact, we believe that the two dimensions of the discipline, the corrective and preventive aspects, cannot be separated. This is because, as the authors argue, corrective discipline is also preventive, but mainly because a fundamental aspect of the discipline, which is the positive reinforcement of appropriate behaviors, which is often overlooked, is in our opinion the disciplinary method to estimate excellence.

This does not mean we want to diminish the importance of corrective discipline, understood as “the set of behaviors, issued by parents in response to the behavior of the child considered inadequate, and aimed to correct” (Straus & Fauchier, 2007), because it is true that, if not properly used, it may represent a considerable risk factor for the development of behavioral child (Kaufman Kantor, Brown, Drach et al., 2004; Straus, 2006; Straus & Kaufman Kantor, 2005; Taillieu, & Brownridge, 2015).

The corrective discipline, however, should not be confused with punishment and should not exclude attention to important preventive aspects for the development of processes of socialization.

Mistakenly parents often tend to focus on correcting behavior they consider inadequate, ignoring many of the appropriate behaviors of the children. These behaviors, if not sufficiently reinforced, could result in reduced frequency, or they could disappear (Pearlman, 2017).

Another important aspect of corrective discipline is the distinction contained in it, including inductive methods and authoritarian methods (Bombi, Di Norcia, Di Giunta, Pastorelli, & Lansford, 2015). To correct a behavior deemed inappropriate, the parent should not use coercive methods by imposing his authority to the child; it is certainly more effective the use of methods that induce reasoning, reflection on what is right and wrong and the consequences that this behavior could produce. The coercive methods, in addition to being ineffective in terms of long-term training, eventually pass on to children inadequate relational models, which they, in turn, could consider valid and effective to solve their social problems. For the assessment of competence to parenting and to verify the effectiveness of the methods used by them, in addition to those already mentioned, other aspects have to be taken into account.

If we take as a reference the “theoretical model of the disciplinary process” proposed by Straus and Fauchier (2007), the main factors to consider are: the different behaviors of the child and the methods (punitive / non-punitive) used by parents, surely mediated by their personal characteristics and cultural and contextual factors, such as their knowledge and beliefs on education and educational practices. Child's perception of the educational methods of parents in relation to different situations and contexts in which they use them it's also important, and the mutual interaction of all these elements of variability is equally important.

Based on this model, and in the light of the objectives that we set out, we thought it is useful to design an instrument that was both quick and easy to use, and that would meet our needs to assess, during the assessment phase, the knowledge and modes of use of the main contingencies management methods by parents of children aged 3 to 12 years with behavioral problems or for various reasons considered at risk. In the structuring of a behavioural parent training, and in particular the one we most frequently used (Larcan et al., 2008), which is mainly based on the teaching of contingencies management techniques, it is of fundamental importance to have a baseline of such knowledge and skills both for the design of an intervention, and for the subsequent evaluation of the effectiveness of the intervention and the measurement of preserving the effects (Larcan, Cuzzocrea, 2007).

The instrument, moreover, is designed to allow the verification of another fundamental aspect of parenting, namely the coherence intra and inter-parental, which enables an overall assessment of the most appropriate parental competence.

If, in fact, in the same interactive situation and in the presence of a similar behavior of the child, both parents usually use different educational procedures, the results on the behavior of the child could be harmful. The contextual aspect assumes a fundamental importance because the use of each method can have a meaning and a different weight in relation to the specific situation and to the use of the same or other methods in different situations. In other words, any educational method is absolutely adequate or inadequate, but becomes so in greater or lesser extent in relation to the contextual situation in which it is used, according to the meaning that a behavior assumes for a parent in a particular circumstance, the frequency with which it is issued, but also in relation to the educational cohesion demonstrated by the parent. If, in fact, in similar situations, a parent uses discordant methods with the other, the effects could be very different. And this, of course, is indicative of a different level of educational competence. In the light of the importance that contextual situations can have, we thought it is useful to envisage typical situations, which somehow represent highly probable interactive conditions in everyday life of a parent-child

relationship and a range of responses, as representative of educational solutions implemented by parents in the presence of specific behaviors emitted by their children.

Methodological aspects related to the calibration of the instrument. Analyzing the methods and procedures that are commonly used for the evaluation of educational skills, the trend is to use mainly individual interviews (or couple interviews) with the parents, and “packages” of psychometric tests and questionnaires. Only in rare cases, perhaps because of the excessive costs that the long preparation and training of observers required, direct and systematic observations of parent-child are made in ecological situations or in structured environments.

The self-report questionnaires are certainly less expensive, especially because they require much less time for the administration and interpretation of the results. Unlike direct observation, self-report questionnaires report their personal experiences in response to specific questions, according to established patterns. But we must not confuse the type of information obtained from direct and systematic observation with the one obtained through the questionnaires. In the first case, if properly carried out, and especially if the coding systems report the correct operationalization of the variables under consideration, the direct observation allows to achieve definitely more objective assessments (because judgment of many independent observers is required) and, consequently more reliable assessments. Therefore, if the situation allows it, it is always preferable to integrate the two different procedures, observational one and self-report, to have a range of information as widely as possible. With regard to the evaluation of educational skills of parents, Pelegrina et al. (2003) point out, for example, the opportunity to expand the family assessment procedures, proposing their children self-report instruments to verify the correlation between parents and children in the perception of the use of educational methods.

It is true in fact, as the authors argue, that comparing the perception of parents and children in relation to the degree of emotional involvement to the support for autonomy and other important aspects of the educational relationship, were found low or moderate correlations.

In any case, any test or questionnaire you decide to use, both on clinical grounds and for the purposes of investigation, they must represent a sample of human behavior and they have to be objective and standardized (Anastasi, 1995), so it is necessary to verify some preliminary psychometric characteristics, such as:

a) Reliability: even if the reliability in the literature has been defined in several ways, there is a sufficient general agreement considering a tool reliable when it involves reduced measurement errors and shows a certain continuity and persistence over time of scores assigned to the behaviors under study (Mitchell, 1979);

b) Validity: i.e. the extent to which a given set of data is in fact what has been designated to represent. Measure or "prove" the validity of an instrument is not easy and requires in any case a clear reference to the content of a theory or conceptual construct that justifies it (Suen & Ary, 1989).

c) Sensitivity / selectivity: i.e. the ability of the instrument to capture even slight differences between different individuals or between different conditions in which the application occurs.

The main objective of this study was, therefore, to test the reliability, validity and especially the sensitivity of the instrument we developed for the assessment of the educational competence of parents, with specific reference to the behavioural educational model. In this case, in fact, the educational competence is identified in the parents' ability to manage discipline through a proper use of the educational techniques of analysis and behavior modification.

Methods

Participants: The sample consisted of 180 subjects, divided into 3 groups of 60 subjects: parents of Italian nationality, Italian parents with a disabled child, and parents with no Italian nationality (including 20 Filipinos, 20 Sinhalese and 20 Moroccans). It was not possible to control all variables (for example, age, level of education and number of children); in this first phase of testing, the participants were compared according to their parental role (Mothers vs. Fathers).

With regard to educational level, 86% of the sample had an intermediate school level (average 35% lower, on average more than 51%), while only 10% had a university degree and 3.3% stopped at elementary schools.

Materials: The instrument (appendix 1) contains 10 items each proposing a behavior supposedly issued by the child. In particular, 5 items refer to behaviors and the other 5 to inappropriate behavior. For each item there are 4 alternative answers, which, based on the model of education, establish educational strategies at different levels of adequacy. Each alternative response is given a different score, from 4 (the best choice) to 1 (the choice less adequate). Central scores (3 and 2) indicate respectively acceptable choices, although not entirely appropriate, in the first case, and unacceptable choices, even if not absolutely incorrect, in the second case. Of course, the placement of items that describe appropriate and inappropriate behaviors, as well as options of choice, is balanced by the item. For each proposed behavior the parent is asked to indicate how often (low, medium or high frequency) it is issued by his son, because the educational solution commonly used may be assessed differently depending on the frequency of issue indicated. According to the preliminary assessment made by the experts, for items 1 to 9 the frequency indicated does not change the weight to be attributed to the different options of choice, while for item 10 there is a

different criterion for scoring according to the following scheme: it was assigned 1 point to answer a independently to behavior's frequency; 3 points to answer b if parents indicated low or medium frequency, while 4 if the behavior have a high frequency; 2 points to answer c independently to behavior's frequency; 4 points to answer d if parents indicated low or medium frequency, while 3 if the behavior have a high frequency.

Each parent also may be obtained from two different types of response: an indication of the educational strategy usually used, and the one that, in the light of their pedagogical knowledge, they believe more correct to use.

Overall, therefore, the scores that can be assigned ranging from a minimum total value of 10, to a maximum value of 40, that are indicative of a different level of expertise relating to the educational management of the discipline.

Procedure: The instrument was developed carrying out first of all a pilot study, which involved many families. Each parent was asked to report five behaviors perceived as appropriate and as many inadequate issued regularly by their children, also highlighting the areas in which most frequently these behaviors were manifested (antecedents and situational events), and indicating the steps of discipline and educational behaviors (consequences) normally used in such circumstances. Then, the five behaviors that were most frequently mentioned as suitable and the five behaviors that were most frequently reported as inadequate were selected. Among the various educational solutions more often proposed by parents, 3 independent scholars, experts in behavioral approach, selected for each stimulus-situation, 4 possible answer choices on the basis of greater or lesser adequacy according to the model of education, with an agreement index of 85%.

Data analysis

As a preliminary analysis did not reveal any statistically significant difference among the three groups of foreigners [$F(2, 58) = .76; p = \text{n.s.}$], these, for subsequent analysis, were included in a single group. Moreover, as the data express the relative frequencies with a constant denominator, for the analysis of inferential statistics they were transformed into arcsine with the formula of Freeman and Tukey (1950).

First of all, it was necessary to verify the sensitivity of the instrument, checking its ability to capture differences in skills object of analysis among the 3 groups of parents examined (Italian, Italian with disabled children, foreigners), compared with two different situations (child's behaviors considered appropriate *vs.* behavior deemed inappropriate). It was tested, therefore, the validity of the instrument through factor analysis. To ensure the reliability, it was not possible, at this stage, re-administering a questionnaire after a period of time, nor compares the results with those obtained by

administration of a similar tool, but we had to limit, for the moment, to verify the degree of reliability of the items.

Sensitivity / Selectivity

To test the instrument's sensitivity / selectivity, the differences both between different individuals (the three family groups and fathers *vs.* mothers) and between different conditions (appropriate behaviors *vs.* inappropriate behavior) were tested. The average scores (table 1) obtained by the fathers and mothers of the three different types of parents, were compared in two different situations described in the questionnaire (behavior of the child considered adequate / inadequate).

		Adequate behaviours	Inadequate behaviours
Italians	Fathers	7.37 (2.63)	8.6 (2.24)
	Mothers	10.3 (1.7)	9.93 (2.08)
Italians with disabled children	Fathers	9.37 (2.6)	9.67 (2.1)
	Mothers	11.13 (1.98)	11.53 (1.63)
Foreigners	Fathers	10.93 (1.99)	9.37 (3.37)
	Mothers	11.37 (1.81)	8.8 (2.68)

Table 1 - Means and Standard Deviations of the scores obtained by the three groups of parents

Scores obtained from the three different types of parents were preliminarily compared. The statistical analysis showed highly significant differences among the three groups analyzed [$F(2, 174) = 10.30$; $p < .001$]. It is appropriate, therefore, to make some simple comparisons using the Student's t test, in order to verify the existence of any statistically significant differences between the individual groups. Even in this case, the instrument proved to be able to grasp the differences. In particular, the analysis has identified highly significant differences between Italian parents, and foreign parents [$t(118) = 3088$; $p < .01$] and between Italian parents with and without children with disabilities [$t(118) = 4174$; $p < .001$], while no significant differences were found between parents of children with disabilities and foreign parents [$t(118) = .791$; $p = n.s.$].

Differences between the fathers and the mothers of the three groups were found. Mothers scored significantly higher than fathers [$F(1, 174) = 22.43$; $p < .001$], however, while there are no significant differences between mothers and foreign fathers [$t(58) = .262$; $p = .79$], the difference is certainly more marked among Italian parents [$t(58) = 5.475$; $p < .01$], especially those who have children with disabilities [$t(58) = 4.420$; $p < .01$].

Statistical significance differences between the parents examined, with respect to two different situations envisaged by questionnaire were found.

The scores obtained by different parents were compared in items describing behaviors and those describing inappropriate behavior. Also, in this case significant differences were found [$F(1, 174) =$

378; $p < .05$] and between types of parents [$F(1,174) = 13.067$; $p < .001$], but not between fathers and mothers [$F(1,174) = 278$; $p = .09$].

In fact, significant difference was found between the three groups of fathers [$F(2, 87) = 8.94$; $p < .001$], and between the three groups of mothers [$F(2, 87) = 7.59$; $p < .001$]. Although overall there were no significant differences between fathers and mothers in the two situations described in the questionnaire, in a more specific analysis it was found that in the management of both behaviors (adequate and inadequate) mothers and fathers of Italian parents with and without children with disabilities differ significantly, while there are no statistically significant differences between mothers and foreign fathers in both situations (table 2).

Fathers vs. Mothers	Behaviours	<i>t</i>	<i>fd</i>	<i>p</i>
	Adequate	-4.89	58	.001
Italian Parents	Inadequate	-2.29	58	.02
Parents with disabled children	Adequate	-2.73	58	.008
	Inadequate	-3.89	58	.001
Foreign parents	Adequate	-.76	58	.45
	Inadequate	.8	58	.43

Table 2 – Simple comparison between fathers and mothers

In fact, fathers, especially Italian ones, are much less competent than mothers especially when dealing with adequate behaviors, while the differences are less marked in the management of inappropriate behavior, with the exception of mothers of disabled children, who get higher scores both with respect to other mothers and compared to the fathers.

Validity

To test the questionnaire's validity, factor analysis was applied to data obtained. Specifically, confirmatory factor analysis was used because we wanted to test the internal validity of the instrument and the ability to group the items according to two dimensions already established (educational management of adequate and inadequate behavior).

With the varimax orthogonal method rotation and extraction of the factors with eigenvalue greater than 1, with normalization of Kaiser, although with due caution implied in this type of analysis, it was possible to check the degree of correlation between the items relating to the educational management of adequate and inadequate behavior.

Table 3 shows the correlation matrix. In it are shown the correlation coefficients of the responses from the sample examined in the item relating to the educational management of appropriate behaviors (Item odd: 1, 3, 5, 7 and 9) and those relating to the management of inappropriate behaviors (Item equal: 2, 4, 6, 8, 10).

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9
Item 2	-.034 .323								
Item 3	.240 .001***	.160 .016**							
Item 4	.122 .052*	.065 .192	-.107 .076						
Item 5	.183 .007**	.076 .154	.120 .054*	.210 .002					
Item 6	.178 .008**	-.006 .468	.145 .026**	.148 .024**	.092 .110				
Item 7	.170 .011**	.111 .069	.198 .004***	-.033 .332	.321 .000***	.015 .421			
Item 8	.052 .245	.054 .235	.037 .309	.172 .010*	.200 .004	.350 .000**	-.027 .361		
Item 9	-.152 .021**	.091 .111	.051 .249	-.073 .164	-.158 .017**	.044 .279	-.005 .472	-.012 .438	
Item 10	.048 .261	-.019 .402	-.092 .109	.307 .000**	.155 .019**	.061 .206	.054 .234	.044 .279	-.082 .137

Table 3 - Correlation matrix of the raw data over the entire sample

The analysis of items related to the first dimension of the questionnaire, the educational management of adequate behaviors, revealed significant correlations between all items, with the exception of item 9. In fact, the item 1 correlates positively significantly with the items 3, 5 and 7, as well as the item 3 correlates positively with 5 and 7 and the item 7 correlates with the 1, the 3 and 5. While the item 9 correlates, but negatively, with the item 1 and 5.

With regard to the second dimension, that is the management of inappropriate behaviors, the analysis showed that the item 4 correlates positively significantly with the items 6, 8 and 10 and, also the correlation between the item 6 and 8 is statistically significant. Item 2 does not correlate with any other item.

Being confirmatory factor analysis, it was considered appropriate to extract 2 factors, in order to verify the validity internal with respect to the two dimensions of the questionnaire considered. Table 4 shows the percentage of variance explained, which is the ability of the factor solution compared to the two components extracted.

Item	Adequate behaviours	Inadequate behaviours
8	.784	-.033
4	.568	.055
6	.529	.000
10	.325	.125
7	-.209	.840
5	.432	.749
1	.166	.305
3	-.028	.293
2	.028	.170
9	-.106	-.115

Table 4 – Matrix of the components rotated (Varimax with normalization of Kaiser) obtained from the extraction of the main components

The analysis allowed us to confirm what has already emerged in the examination of correlations between items. That is, with regard to the first dimension of the questionnaire, namely the management of appropriate behaviors, the items 4, 6, 8 seems to explain the variance in an appropriate manner, while the item 2 is not among the main components. With regard to the second dimension, i.e. the management of inappropriate behaviors, remains confirmed the validity of the items 7 and 5, while, seem to explain the variance to a lesser extent the items 1 and 3, with the exception of item 9.

Reliability

To analyze the internal consistency, the index most commonly used is Cronbach's alpha. In particular, we want to evaluate how the items are mutually consistent in measuring to what were intended to measure. The evaluation of the questionnaire showed a value of $\alpha - \text{total} = .48$, while for the two dimensions examined were obtained respectively: $\alpha - \text{appropriate behaviors} = .39$, $\alpha - \text{inappropriate behaviors} = .41$.

Table 5 shows in detail the analysis of the reliability of the entire questionnaire. In it it's possible to detect that only 9 ($\alpha = .52$) has a value significantly higher than total alpha ($\alpha = .48$), which confirms the lack of consistency with respect to the other item.

	Media without item	Variance without item	Correlation item-corrected total scale	Alpha without item
Item 1	26.75	13.52	.23	.45
Item 2	26.51	14.08	.12	.48
Item 3	26.65	13.97	.19	.46
Item 4	27.34	13.09	.23	.45
Item 5	27.22	11.01	.36	.39
Item 6	26.6	13.09	.27	.44
Item 7	26.62	12.44	.22	.45
Item 8	26.2	12.6	.23	.45
Item 9	26.74	15.55	-.08	.52
Item 10	26.89	13.73	.15	.47

Table 5- Analysis of the reliability of all the items of the questionnaire

The reliability analysis relating to the items of the first dimension of the questionnaire (table 6), confirms once again the lack of coherence of item 9 ($\alpha = .50$). Even in this case, in fact, the value obtained is significantly higher compared to alpha total ($\alpha = .39$). On the contrary, the values obtained by all the other items amounted below the value of total alpha.

		Media without item	Variance without item	Correlation item- corrected total scale	Alpha without item
First Dimension: Adequate Behaviours	Item 1	11.67	5.06	.22	.33
	Item 3	11.58	5.13	.27	.30
	Item 5	12.14	3.73	.26	.29
	Item 7	11.54	3.65	.35	.18
	Item 9	11.67	6.49	-.11	.50
Second Dimension: Inadequate Behaviours	Item 2	11.86	5.55	.04	.46
	Item 4	12.69	4.31	.31	.28
	Item 6	11.95	4.66	.26	.32
	Item 8	11.55	4.06	.27	.30
	Item 10	12.24	4.9	.17	.39

Table 6 - Analysis of the reliability of all items relating to the educational management of appropriate and inappropriate behaviors

In table 6 is shown in detail the reliability analysis of the items referred to the educational management of inappropriate behaviors. The alpha relative to this dimension is equal to .41. Even in this case it is only one item, 2 ($\alpha = .46$) to bring to a higher value compared to alpha total ($\alpha = .41$), confirming the lack of consistency with respect to the other items of the same size.

Subsequent applications of the questionnaire

In table 7 we can observe the frequency distributions of the type of response provided by the entire sample, or from Italian parents with and without a disabled child and the foreign parents.

Median (Me), mode (Mo), mean (M) and standard deviation (SD) using as a parameter the total score and the scores from items related to both the educational management of adequate and inappropriate behaviors were calculated (table 7).

		Total	Adequate behaviours	Inadequate behaviours
Total sample	Me	30	15	15
	Mo	32	16	17
	M (SD)	29.73 (3.94)	15.08 (2.52)	14.65 (2.55)
	P ₂₅	27	13	13
	P ₅₀	30	15	15
	P ₇₅	32	17	17
Italian parents	Me	29	14	14
	Mo	23	16	13
	M (SD)	28.10 (3.62)	13.83 (2.65)	14.27 (2.24)
	P ₂₅	25	12	12.25
	P ₅₀	29	14	14
	P ₇₅	31	16	16
Italian parents with disabled children	Me	31.50	15.50	16
	Mo	32	14	17
	M (SD)	30.85 (3.60)	15.25 (2.44)	15.60 (2.04)
	P ₂₅	28.25	14	14
	P ₅₀	31.5	15.5	16
	P ₇₅	33	17	17
Foreign parents	Me	31	16	14.50
	Mo	26	17	17
	M (SD)	30.23 (4.09)	16.15 (1.90)	14.08 (3.03)
	P ₂₅	28.25	14	14
	P ₅₀	31.5	15.5	16
	P ₇₅	33	17	17

Table 7 - Descriptive statistics (Median, Mode, Average and Standard Deviation, 25[^], 50[^] and 75[^] Percentiles).

To facilitate the comparison between the types of response provided by the reference sample and any future administration of the questionnaire, was carried out the calculation of the percentiles,

reported in table 7, in relation to different types of parents, proceeding to a first calibration of the instrument and verification of potential differentials.

Discussion

The main objective of this study was to determine the sensitivity, validity and reliability of a questionnaire designed to assess the ability of parents to use appropriate educational strategies for managing the behavior of children, based on the principles of analysis and behavior modification. The results obtained confirm the sensitivity of the instrument and to a large extent also its validity and reliability. To test the sensitivity of the instrument was tested the ability to grasp the differences between different individuals and between different conditions. In particular, we compared the scores of three groups of parents: Italian, foreigners and Italian with a disabled child, in circumstances relating to the issue of children's appropriate/inappropriate behaviors.

The analysis captured statistically significant differences between the three types of parents in the two situations described. We will not describe the results of all the comparisons made, albeit interesting, but we just report the most relevant statistical information to the objective of the study. It has been observed, for example, that while Italian parents are overall less competent than the parents, also Italian, but with a disabled child, and with respect to foreign parents (Filipino, Sri Lankan and Moroccan), in fact, it would seem that competence is expressed differently between Italians and foreigners, because, while Italian parents (with or without children with disabilities) are more competent in the implementation of disciplinary measures relating to the issue of inappropriate behaviors, on the contrary, foreign parents appear to be more competent in the educational management of appropriate behaviors. This result is quite controversial and deserves, in our opinion, further investigation. It is not clear, in fact, if this data indicates a greater attention to the prior regulations, which refer Fauchier Straus (2007), or if this instead denounces a lack of attention to the "corrective" discipline. The comparison between fathers and mothers appeared interesting enough. Mothers, in general, are more competent than fathers, especially mothers of disabled children, who (in the management of inappropriate behavior) had the highest average score, while the less competent fathers seem to be the Italians who have obtained the lowest score, both in the management of appropriate behaviors, and in the management of inappropriate behavior. From the results it can be presumed that the instrument has a good ability to grasp the differences between different subjects, in other words it has a good level of sensitivity.

To analyze the internal validity, the degree of correlation between the items related to different behavioral issues has been verified (appropriate/inappropriate behaviors). The correlation between all the items related to appropriate behaviors was significant, with the exception of item 9, probably because it does not take sufficient account of cultural differences in the management of children's

behavior in the presence of strangers. Similar results and a similar interpretation can be proposed for the correlations between the items related to inappropriate behavior, which appear consistent overall, with the exception of item 2. To check the reliability of the instrument was assessed how the items were mutually consistent. The correlations between the items grouped according to the type of behavior to which they referred were specifically analyzed (adequate/inadequate). The results show a good accuracy, but still not enough especially in relation to the two dimensions evaluated (management of appropriate/inappropriate behaviors), confirming the need to redefine the items 2 and 9.

Conclusions

The importance of the parenting plays within the family context is now widely shared. The growing popularity of parent training programs, especially of those related to behavioral approach, aimed at parents who, for various reasons, live in a problematic way the educational relationship with their children, emphasizes the need, both in clinical and the research ground, to create diagnostic tools that enable a greater and more accurate assessment of the various dimensions that characterize this construct as complex. Although there are already some tools for the evaluation of some aspects of parenting, the national literature still shows some weaknesses, especially in assessing the skills of parents in the management of discipline. Most the available tools exist in a foreign language, and therefore they are not suitable to evaluate some aspects of the educational relationship that characterize our culture and in general these tools are limited to measuring the family environment or, principally, other affective- relational aspects. While it is certainly true that these issues cannot and should not be neglected in the evaluation of educational relationships, it is equally true that would be a mistake to omit the assessment of conduct which then defines these relations. This questionnaire was born from the need to have a baseline measurement of the more or less appropriate use of educational techniques of behavior modification which are the basis of behavioral parent training programs. It is created also to have the possibility to check the effectiveness of the training in terms of more competent techniques learned, even after a long time. As the questionnaire was frequently used by us in our experiences parent training with parents from different social backgrounds and with different types of problems, revealing every time an assessment tool sufficiently effective, in this work we have found useful to make an initial tool calibration, because it could be used by those who deal with educational interventions for families in an effective and reliable way. The results showed that the instrument has the potential to be very suitable for the evaluation of behavioral educational skills, but to improve the level of confidence will need to make some corrections, related not so much to the overall structure of the

questionnaire, but in the revision of some item (in particular item 2 and item 9) which do not correlate to the other significantly. After this change, of course, it will be necessary to recalibrate the instrument, this time on a larger sample, and proposing it at a distance of time, for a more complete assessment of its reliability. It should be considered that, although the sample size was adequate for the purposes of the experiment, the number of subjects used does not yet allow a broad generalization of the results. Moreover, although in the literature there are tools that have been calibrated with samples numerically similar if not lower, than that used in this research, it is necessary to emphasize the fact that the work cannot be considered complete yet and that this is only the first essential step in the standardization process.

We consider that further studies should be conducted in this area, so to broaden the range of instruments used for the assessment of educational skills. In particular, we think it might be interesting to make a similar questionnaire to evaluate in parallel the educational skills of teachers and to provide the opportunity to check the educational consistency of the most important figures for the training and development.

Declaration of Interest statement: none

Authors' contribution

Gugliandolo Maria Cristina assisted with concept, study design, data analysis, manuscript preparation and manuscript editing; Costa Sebastiano assisted with the generation of the initial draft of the whole manuscript, manuscript editing and data interpretation; Cuzzocrea Francesca assisted with manuscript editing and study concept; Larcan Rosalba assisted with manuscript editing, data analysis, data interpretation, and study supervision. All authors contributed to and have approved the final manuscript.

APPENDIX 1: QUESTIONNAIRE - What do (would) you do when your son ...

1. He refuses to do something that I asked	<i>Scoring</i>
a) I get angry and I start to cry	2
b) I lose patience and I beat him up	1
c) I try to understand why he refused	3
d) I repeat until it obeys	4
Behavior's frequency: low <input type="checkbox"/> medium <input type="checkbox"/> high <input type="checkbox"/>	
2. If she/he shares, borrows or offers his/her things with others (friends, family ...)	<i>Scoring</i>
a) I reproach him/her because he/she must be more responsible for his/her own things	2
b) I award him/her because it is important to be generous	4
c) I don't speak because he/she is free to do what he/she wants with his/her stuff	3
d) I intervene because return them to him/her	1
Behavior's frequency: low <input type="checkbox"/> medium <input type="checkbox"/> high <input type="checkbox"/>	
3. He/ She has aggressive behavior towards other people and / or objects	<i>Scoring</i>
a) I give him/her a good telling-off or I beat him up	2
b) I explain to him/her that he/she he was wrong to do so	3
c) I'll show him/her how we should behave	4
d) I ignore it, to avoid clashes	1
Behavior's frequency: low <input type="checkbox"/> medium <input type="checkbox"/> high <input type="checkbox"/>	
4. He/ She tidies up his/her things ...	<i>Scoring</i>
a) I think it's obvious and then I don't say anything	2
b) I manifest my appreciation	3
c) I tell him/her that it was time to do it	1
d) I reward him/her for his behavior	4
Behavior's frequency: low <input type="checkbox"/> medium <input type="checkbox"/> high <input type="checkbox"/>	
5. He/ She misbehaves at the table ...	<i>Scoring</i>
a) I explain to him/her that he/she was wrong to do so	3
b) I punish him/her	2
c) I threaten to punish him/her, but I know that I will not do it	1
d) I try to figure out if he/she has a problem	4
Behavior's frequency: low <input type="checkbox"/> medium <input type="checkbox"/> high <input type="checkbox"/>	
6. He/ She plays or interacts with other	<i>Scoring</i>
a) I do not deal	2
b) Every now and then I make him/her feel my presence	3
c) I show openly that I'm glad	4
d) I show openly that I do not agree	1
Behavior's frequency: low <input type="checkbox"/> medium <input type="checkbox"/> high <input type="checkbox"/>	
7. He/ She has a tantrum to get what he/she wants.	<i>Scoring</i>
a) I concede what he wants as long as he/she stop	1
b) I do not give in because he/she has to understand that it is wrong to make a fuss	4
c) I threaten to punish him/her, even though I will not do it	2
d) I punish him/her because he /she must not do it anymore	3
Behavior's frequency: low <input type="checkbox"/> medium <input type="checkbox"/> high <input type="checkbox"/>	
8. He/she gets closer to make and / or receive expressions of affection ...	<i>Scoring</i>
a) I hug and caress him/her immediately	4
b) I get nervous because I have something else to do	3
c) I avoid because he/she doesn't grow weak	2
d) I satisfy him/her if I am in a good mood	1
Behavior's frequency: low <input type="checkbox"/> medium <input type="checkbox"/> high <input type="checkbox"/>	
9. If he/she misbehaves in the presence of strangers	<i>Scoring</i>
a) I give him a toy as long as he/she stop annoying	1
b) I give him/her a good telling-off and give him something else to do	4
c) I let him do what he wants because people will understand that he/she is still a child	2
d) I give him/her a good telling-off because he/she has to understand that it is wrong	3
Behavior's frequency: low <input type="checkbox"/> medium <input type="checkbox"/> high <input type="checkbox"/>	
10. He/she does his/her homework alone	<i>Scoring</i>
a) I make fun of him/her if he/she did something wrong	1
b) I show my appreciation	3-3-4*
c) I tell him/her that it was time to learn to	2
d) I reward him/her	4-4-3**
Behavior's frequency: low <input type="checkbox"/> medium <input type="checkbox"/> high <input type="checkbox"/>	

Min = 10 Max = 40 - higher the score/ better skills

* 3 points to answer **b** if parents indicated a low and a medium frequency, while 4 if the behavior has a high frequency;

** 4 points to answer **d** if parents indicated a low and a medium frequency, while 3 if the behavior has a high frequency.

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