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The development and validation of the Parent Rational and Irrational Beliefs Scale

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Abstract

Irrational and rational cognitions/beliefs are evaluative cognitive structures. Irrational thinking has been consistently associated with psychopathology; in contrast, rational thinking is considered important for resiliency. We conducted two studies to construct and validate the Parent Rational and Irrational Beliefs Scale (P-RIBS), a new self-report measure of parent irrational and rational cognitions/beliefs. Results show a three-factor solution for P-RIBS. The P-RIBS displayed strong psychometric, support evidencing adequate internal consistencies and concurrent validity.

Keywords: rational and irrational cognitions/beliefs, parent cognitions, parent distress and psychopathology.

1. Introduction

Elevated levels of parent dysfunctional/irrational cognitions are associated with parental distress (Bugenthal & Johnston, 2000; Joyce, 1995; McGillicuddy-DeLisi & Siegel, 1995). Parent cognitions are currently measured using mainly descriptive/inferential ("cold") cognitions scales (e.g., locus of control, parental efficacy). The field lacks parent scales focused on evaluative/appraisal processes ("hot" cognitions, like rational and irrational beliefs), based on modern developments in cognitive science (see David, 2003). The accurate assessment of specific parental irrational (IBs) and rational (RBs) beliefs can have a major impact on both practice and research in the parenting field (see Gavita & Joyce, 2008; Gavita, Joyce, & David, in press).

Parent Rational and Irrational Beliefs Scale (P-RIBS) was developed by Gavita, DiGiuseppe, David, & DelVecchio, based on the view of IBs and RBs as non-polar opposites (DiGiuseppe, Leaf, Exner, & Robin, 1988). P-RIBS also considers the recent priming methodologies (i.e., Articulated Thoughts in Simulated Situations; ATSS– Davidson, Robins, & Johnson, 1983; David, Szentagotai, Kallai, & Macavei, 2005); that is, the following guided imagery instruction was introduced as a way to prime/access parents' evaluative beliefs: "*Please think about a situation when your child(ren) disobey, or disrespect you. Try and recall the thoughts that you have had in such situations*."

An equal number of statements reflecting rational and irrational processes were generated by applying the RIBS-GF (Rational and Irrational Beliefs Scale-General Format; see Montgomery, David, DiLorenzo, & Schnur, 2007) to the parenting domain. The original RIBS-GF is an 8-item scale based on Walen et al.'s (Walen, DiGiuseppe, & Dryden, 1992) discussion of Rational-Emotive Behavior Therapy (REBT). The items were constructed to reflect (1)

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the four irrational beliefs (demandingness-DEM, awfulizing-AWF, low frustration intolerance-LFT, and global evaluation-GE) and (2) four rational beliefs [preferences/flexibility rather than demandingness (PRE); negative evaluations rather than awfulizing (BAD); frustration tolerance rather than low frustration tolerance (FT); and unconditional acceptance rather than global evaluation (non-GE)], as measured by the Attitudes and Beliefs Scale (ABS-II; DiGiuseppe et al., 1988). The scale was reviewed and a group of five experts trained in REBT approved the face validity of the items. The total score on the scale was obtained by summing the items, with rational items scored in a reversed way.

The statements of the P-RIBS were designed to reflect evaluative processes in the two content areas found relevant for parenting: (1) child behaviour (Part 1 of the Scale) and (2) parent-role (Part 2 of the scale). Special attention was devoted to wording of the items to avoid being contaminated by emotions. Two pools (of 12 items each) were generated, one for each content domain, each pool having 5 IBs items, 5 RBs items and 2 control items; GE and its rational counterparts had two items, one referring to child (other) and one referring to parent (self). Each of the items was assembled in a 5-point Likert format, ranging from strongly disagree (1) to strongly agree (5). Based on the rational and irrational phrasing, four principal processes were designed for each of them as follows: Demandingness vs. Preference (DEM/PRE), Low Frustration Tolerance vs. Frustration Tolerance (LFT/FT), Awfulizing vs. Badness (AWF/BAD), and Global Evaluation vs. Unconditional Acceptance (GE/UA).

2. Study 1

The aim of this study was to provide psychometric validation for the Parent Rational and Irrational Beliefs Scale (P-RIBS).

2.1. Method

*Participants.*176 parents (146 mothers and 30 fathers) of children aged between 2 to 17 (M = 7.51, SD = 3.36) years old were recruited for this study from the local kindergartens and community schools within the Cluj county, Romania. Parents mean age was 35.66 years old (SD = 5.37). 51.4% of the children were boys and 48.6% were girls.

Measures. Parents responded to the pool of 24 items developed for the Parent Rational and Irrational Beliefs Scale (P-RIBS; see Appendix) on the 5-point Likert scale.

2.2. Results

Exploratory factor analytic techniques were used to explore the factor structure of the scale. A Principal Axis Factoring extraction with Oblimin rotation was run on the sample to determine the factor structure. The exploratory factor analysis yielded five factors with eigenvalues greater than one; these factors accounted for 60.67% of the total variance. Based on the theoretical model proposed in the introduction, a constrained exploratory factor analysis was conducted extracting two-factor model with Oblimin rotation. The total variance explained is 36.37%, with all items having a factor loading of .30 or greater for at least one of the factors, factor loadings ranging from .36 to .63. When internal consistencies were examined for the P-RIBS total score, the Cronbach's alpha was $\alpha = .42$.

2.3. Conclusions and discussion

Although the theoretical construct of a two-factor model is supported by the developmental research of the scale, the items that loaded onto each factor failed to yield a theoretically interpretable rationale for being grouped together. Indeed, the rational and irrational items loaded on both subscale, indicating that the constructs were overlapping. In other words, parents that wanted their children to behave did not make the distinction between "*preferring*" and "*demanding*" and checked both or only the irrational item. A possible solution to overcome this limitation was to add an instruction explaining the difference between "*preferences*" and "*demands*", to avoid the confusions induced by the wording process.

3. Study 2

The solution proposed for overcoming the overlapping between the rational and irrational items was to add an instruction explaining the difference between "*preferences*" and "*demands*", as follows: "*When faced with adverse situations, some parents tend to think that situation absolutely must be the way they want (in terms of absolute must). In the same situation, other people think in preferential terms and accept the situation, even if they want very much that those situations do not happen and even they might try to change it. In light of these possibilities, please estimate how much the statements below represent the thoughts that you have in such situations*." Indeed, telling people the meaning we are looking for could help them to avoid misunderstandings induces by the wording process. Moreover, an ATSS procedure (see Davidson et al., 2003), for priming the meanings, was used "*Please think about a situation when your child(ren) disobey, or disrespect you. Try and recall the thoughts that you have had in such situations*."

The aim of this study was to investigate the psychometric characteristics (i.e., reliability, validity) of the modified Parent Rational and Irrational Beliefs Scale (P-RIBS), based on the results obtained in Study 1.

3.1. Method

Participants. Participants in the second study were 287 parents, 87.8% mothers and 12.2% fathers, with ages varying between 25 to 52 years old, having mean age 34.68 years old (SD = 4.72). 214 of the parents filled the questionnaires besides the P-RIBS. Children were aged between 2 and 14 years old (M = 6.13, SD = 2.71), 50.6% being girls and 49.4% boys. 69.5% of the parents were working at the time and 91.8% of the parents were married.

Measures. The following measures were used:

- *Parent Rational and Irrational Beliefs Scale* (P-RIBS; Gavita, DiGiuseppe, David, DelVecchio; see Appendix).
- *General Attitudes and Beliefs Scale–Short Form* (GABS-SF; Lindner, Kirkby, Wertheim, & Birch, 1999). The GABS-SF is a 26-item self-report measure for rational and irrational cognitive processes (e.g., demandingness, awfulizing, global evaluation, low frustration tolerance). High total score indicate a high level of irrational cognitions. Adequate psychometric properties have been reported in the literature (Lindner et al., 2007). GABS-SF has also adequate psychometric properties on Romanian population (Cronbach α = .81; David, Schnur, & Belloiu, 2002).
- *Unconditional Self Acceptance Questionnaire* (USAQ; Chamberlain & Haaga, 2001). The USAQ is a 20-item inventory (Cronbach α = .72) generated from the Rational-Emotive Behaviour Theory/Therapy literature. The USAQ assesses a specific rational belief (i.e., unconditional self-acceptance) that one fully and unconditionally accepts oneself, regardless of behaviour, achievement, approval, respect, or love from others (Ellis, 2005). A high score indicates a high level of unconditional self-acceptance (some items are reversed for scoring).
- *Parental Stress Scale* (PSS; Berry & Jones, 1995). PSS is a self-report scale with 18-items that represent positive themes of parenthood (i.e., emotional benefits, self-enrichment, personal development) and negative indicators (i.e., demands on resources, opportunity costs and restrictions). Higher scores on the scale indicate greater stress. The scale assesses parental stress (for both mothers and fathers) of children with and without clinical problems. The Parental Stress Scale demonstrated good internal reliability (α = .83), and test-retest reliability (r = .81). Similar levels of internal consistency were demonstrated on Romanian population (Cronbach α = .85, N = 194), obtained from a sample included in this study.

Procedure. Questionnaires were administered to parents based on a strict protocol regarding the ethical handling of the data. After gaining informed consent, the questionnaires were completed by the parents independently.

3.2. Results

Exploratory factor analytic techniques were utilized to explore the structure of the two-factor proposed design (rational vs. irrational beliefs). A Principal Axis Factoring extraction with Oblimin rotation was run on all the item responses of P-RIBS to determine the factor structure. In order to determine the factor model, three aspects were examined: (1) the number of eigenvalues greater than one, (2) that each factor has at least three item loadings, and (3) the theoretical construct of the factor. Within the exploratory factor analysis, five factors had eigenvalues greater than one and those five factors accounted for 48.08% of the total variance.

From the five factors, only three had three or more items loading .30 or greater. Within the exploratory factor analysis, the two factors accounted for 32.49% of the total variance, with the first one explaining 19.22%, and the second 13.26% of the variance. A constrained exploratory factor analysis was conducted, extracting a two-factor model, with Oblimin rotation. All items had a factor loading of .30 or greater for at least one of the factors, with factor loadings ranging from .34 to .70. Additionally, an exploratory constrained factor analysis was conducted by extracting a three-factor model, with Oblimin rotation. The total variance explained by introducing an additional factor is 39.50%, with the first factor explaining 17.19%, second 12.57%, and the third factor 9.73% of the variance. Similar to the two factors model, all items had a factor loading of .30 or greater for at least one of the factors, with factor loadings ranging from .31 to .76.

The total score on P-RIBS registered high correlations with the three subscales derived from constrained exploratory factor analyses: GE factor, $r(285) = .64$, $p < .01$, IBs factor, $r(285) = .63$, $p < .05$, and RBs factor, $r(285) = -.59$, $p < .01$. The theoretical construct of a three-factor model seems to be best supported by the developmental research of the scale; the items that loaded onto each factor within the three theoretically derived factors have solid interpretable reasoning for being grouped together. Given the scree plot, the theoretical construct of each model, and the factor loadings, the three-factors model appears to be a more parsimonious and interpretable design.

Based on the data obtained, P-RIBS can be scored by getting the P-RIBS Total score, the Rational Beliefs (RBs) Subscale score, the Irrational Beliefs (IBs) Subscale score, and the Global Evaluation Subscale (GE) score.

Internal consistencies were examined for the P-RIBS Total score, and for the three subscales. The inter-item correlations fell within the moderate range. The Cronbach's alpha was adequate for the P-RIBS Total, $\alpha = .73$, RBs Subscale, $\alpha = .83$, IBs Subscale, $\alpha = .78$, and GE Subscale $\alpha = .71$.

Seventy-nine of the parents participating at the study were followed for retest at two months interval. The Pearson coefficient was used to determine test-retest reliability and results show an $r(77) = .78$, $p < .01$, for the Total score of irrationality on the P-RIBS (all rs were higher than .70 in case of the three Subscales).

Significant correlations were obtained between the GABS total score and P-RIBS total score, $r(212) = .54$, $p < .01$, the IBs $r(212) = .36$, $p < .01$, GE $r(212) = .56$, $p < .01$, and RB $r(212) = -.23$, $p < .01$. P-RIBS has been associated with self-acceptance (USA), in total score $r(212) = -.60$, $p < .01$, and the other subscales (GE $r(212) = -.49$, $p < .01$, IBs $r(212) = -.33$, $p < .01$, and RBs $r(212) = .59$, $p < .01$). The correlations suggest that P-RIBS total and its specific factor scores are associated with general irrational cognitions. The strength of the correlations is moderate, therefore parent irrational cognitions appears to be strongly associated with the general irrational cognitions but in the same time, distinct from general adult irrational cognitions. This supports our contention that it is best to measure context (parental) specific rational and irrational beliefs.

Significant relationships emerged also between P-RIBS scores and parental distress. P-RIBS total score correlates strongly with the parental distress, $r(212) = .62$, $p < .01$; also, significant correlations were obtained for P-RIBS subscales (RBs $r(212) = -.52$, $p < .01$; IBs $r(212) = .39$, $p < .01$; GE $r(212) = .63$, $p < .01$), with the strength of the correlations being in the medium range.

Table 1 presents a set of preliminary norms for the P-RIBS and its subscales, based on the means and standard deviations (SD) obtained in this study.

Table 1. *P-RIBS norms for the total score and subscales (N = 287)*

Variable	P-RIBS IBs	P-RIBS RBs	P-RIBS GE	P-RIBS Total
M (mean)	20.82	36.76	8.22	49.87
SD (Standard Deviation)	4.13	5.69	2.90	8.18
Very Low	0 – 15	0 - 30	3	39
Low	16 - 18	31 - 33	4 - 6	40 - 46
Medium	19 - 22	34 - 38	7 - 10	47 - 53
High	23 - 25	39 - 42	11 - 13	54 - 59
Very High	26	43	14	60

3.3. Conclusions and discussion

The P-RIBS displayed strong psychometric support, evidencing good reliability and concurrent validity. The factor structure of the scale was examined through exploratory factor analysis. Initially, the exploratory factor analysis derived a five-factor model, which had less than three items for majority of the factors and the factors lacked interpretable reasoning for grouping items together. The scree plot indicated a two- or three- factors model, therefore each was examined trough extracting the two models in a constrained exploratory analysis; the three-factor model appeared to be the most parsimonious model. The hypothesized factors, Rational Beliefs (RBs) and Irrational Beliefs (IB), were supported by the exploratory factor analyses. Additionally, another factor emerged from factor analysis, Global Evaluation (GE), phrased irrationally.

As hypothesized, the P-RIBS Total and Subscales scores were significantly correlated with scores of general rational and irrational cognitions (GABS, USAQ) and with measures of parents distress (PSS). Analyses show that although both P-RIBS and GABS measure rational and irrational processes, they measure different areas of rational and irrational cognitions – general vs. specific-, which may account for the moderate relation between the two scales.

4. General conclusions and discussion

These two studies developed and investigated the psychometric properties of a new self-report measure of parental rational and irrational cognitions. This is the first psychological scale measuring rational and irrational beliefs in parenting field, following the new development (e.g., different scores for rational and irrational beliefs, ATSS priming mechanism) in rational-emotive & cognitive-behavior theory. The results showed that P-RIBS has adequate psychometric properties and provide support for the use of the P-RIBS with parents of children aged 4 to 14 years old. From the REBT theory, we proposed that demandingness and self-downing might be separate types of core irrational schemas (DiGiuseppe, 1996). Indeed, DiGiuseppe (1996) claimed that confirmatory factor analysis suggest that there are two main factors: DEM, FI, and AWF statements load on one factor and GE/SD on the other. The results in case of P-RIBS are consistent with this view. The current study utilized traditional exploratory factor analysis to examine the factor structure, which might be considered a limitation. Structural equation modeling considered a more powerful and flexible alternative to traditional factor analytic methods (DeVellis, 2003). Due to the exploratory nature of the studies, future studies could further investigate the psychometric properties of the PAS using confirmatory analysis.

Clinical Implications. From the cognition-based models of parenting behaviour, parent cognitions are considered important predictors of parents' emotional reactions and specific child-rearing strategies used by the parents (Bugenthal & Johnston, 2000; McGillicuddy-DeLisi & Siegel, 1995). Therefore, the aim of the P-RIBS is to contribute to identifying cognitive mechanisms that are responsible for parental dysregulated affect and behaviour.

The validation of the P-RIBS has a number of implications to the field of parenting research and interventions. Specifically, the P-RIBS could lead to further understanding of parents' thinking in selecting different discipline strategies, such as adaptive or maladaptive responses. The P-RIBS could also facilitate the identification and measurement the mechanisms of change following participation to parent management training or group therapy sessions.

It would be important for future studies to compare parents of normal and clinical children in terms of rational and irrational cognitions endorsed. Overall, after considering the limitations of these two studies (Study 1 and Study 2), the results suggest that the P-RIBS can be utilized as a valid self-report measure of parent rational and irrational cognitions. The P-RIBS appears to be a potentially useful measure for predicting parental distress and may be a useful tool for parent training groups to assess therapeutic mechanisms of change (Gavita, Dobrean, & David, 2010; Gavita, Joyce, & David, in press).

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Appendix

Items			
No.		*Phrased*	*Process*
2	If my child disobeys me, it doesn't mean that I am a worthless person.	RBs	UA-S
7	I can stand when my child disobeys me, although it is difficult for me to tolerate it.	RBs	FT
9	I really do not want my child to disobey me, but I realize and accept that things do not have to always be the way I want them to be.	RBs	PRE
10	It is unpleasant and unfortunate to be disobeyed by my own child, but it is not terrible.	RBs	BAD
12	When my child disobeys me, I accept them as being worthwhile despite her/his poor behavior.	RBs	UA-O
14	If I am not a good parent, it doesn't mean that I am a worthless person.	RBs	UA-S
19	I can stand to be a bad parent.	RBs	FT
21	I really do want to be a good parent, but I realize and accept that I may not always be as good at parenting as I want to be.	RBs	PRE
22	It is unpleasant and unfortunate to be a bad parent, but it is not terrible.	RBs	BAD
24	When I am not a good parent, I can accept my children as being worthwhile and not condemnable.	RBs	UA-O
1	My child absolutely must respect and obey me.	IBs	DEM
3	I think it is awful to be disobeyed by my own child.	IBs	AWF
5	It is unbearable to be disobeyed by my own child.	IBs	LFT
13	I absolutely must be a good parent.	IBs	DEM
15	I think it is awful to be a bad parent.	IBs	AWF
17	It is unbearable to think of myself as a bad parent.	IBs	LFT
11	When my child disobeys me, I think that my children are bad, worthless, or condemnable.	GE	GE-OD
23	If I am not a good parent, I think that my children are bad, worthless, or condemnable.	GE	GE-OD
16	If I am not a good parent, it means that I am worthless.	GE	GE-SD
4	If my child disobeys me, it means that I am worthless.	GE	GE-SD
6/18	I am always optimistic about my future.	-	Control
8/20	It is important for me to keep busy.	-	Control

Note. IBs = Parental Rational and Irrational Beliefs Scale–Irrational Beliefs Subscale; RBs = Parental Rational and Irrational Beliefs Scale–Rational Beliefs Subscale; FT = Frustration Tolerance; LFT = Low Frustration Tolerance; PRE = Preferences; DEM = Demandingness; BAD = Badness; AWF = Awfulizing; GE = Parental Rational and Irrational Beliefs Scale–Global Evaluation Subscale; UA-S = Unconditional Acceptance–Self; UA-O = Unconditional Acceptance-Other; GE-SD = Global Evaluation-Self-Downing; GE-OD = Global Evaluation-Other-Downing.