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The Baby Alarm Distress Scale in Down syndrome: a validity study

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Abstract

The evaluation of the withdrawal reaction in toddlers using a standardized instrument should take into account the child psychopatologic context and developmental moment. The authors present the BADS questionnaire third validation phase by its application in thirty 0-to-2-year-old Down syndrome children, recruited from many specialized outpatient centers in São Paulo City. The results were compared with those of 90 healthy children evaluated previously in another study done by the same authors. The test used was the independent t test, with mean scores of 5,90 ± 2,57 for healthy children and 11,133 ± 4,582 for Down Syndrome children, with p - 0.0466 for significance level of 5%. Thus, it was observed that the Down syndrome children withdrawal reaction was significantly different of that of healthy children. With such results, the scale shows its importance as a screening tool, but it is important to be studied in other populations.

Index-terms: Baby Alarm Distress Scale; Child; Questionnaire; Validation; Down syndrome.

Validação da Escala de Retração Prolongada para Crianças com Síndrome de Down

Resumo

A avaliação da reação de retração prolongada em crianças pequenas usando um instrumento padronizado deveria levar em conta o contexto da psicopatologia da criança bem como a fase de seu desenvolvimento. Os autores apresentam o questionário BADS em sua terceira fase de validação aplicado em 30 crianças de 0 a 2 anos com síndrome de Down, recrutadas de ambulatórios localizados na região central da cidade de São Paulo. Os resultados foram comparados com 90 crianças sadias, avaliadas em estudo prévio dos mesmos autores. O teste t de Student para amostras independentes foi usado, com escores médios e desvios-padrão de 5,90 ± 2,57 para crianças sadias e 11,13 ± 4,58 para crianças com síndrome de Down, com p - 0.0466 e nível de significância de 5%. Assim, concluiu-se que as crianças com síndrome de Down apresentaram reação de retração significativamente diferente das crianças sadias. Com estes resultados, mostrou-se a importância da escala como instrumento de diagnóstico, entretanto parece recomendável que seja estudada em outras populações.

Descritores: Escala de Reação de Retração Prolongada, criança, questionário, validação, síndrome de Down.

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Validation de l'Échelle de Rétraction Prolongée pour Enfants avec Syndrome de Down

Résumée

L'évaluation de la réaction de rétraction prolongée des petits enfants en utilisant un instrument standardisé devrait prendre dans compte le contexte de la psychopathologie de l'enfant ainsi que la phase de son développement. Les auteurs présentent le questionnaire BADS dans leur troisième phase de validation appliquée dans 30 enfants de 0 à 2 ans avec syndrome de Down, enrôlées ambulatoires localisés dans la région centrale de la ville de São Paulo. Les résultats ont été comparés avec 90 enfants sains, évaluées dans étude préalable des mêmes des auteurs. Le test t de Student pour échantillons indépendants a été utilisé, avec écores des demis et de deviant-standardisé de 5,90 +/- 2,57 pour enfants sains et 11,13 +/- 4,58 pour enfants avec syndrome de Down, avec p - 0.0466 et niveau d'importance de 5%. Ainsi, il s'est conclu que les enfants avec syndrome de Down ont présenté de la réaction de rétraction significativement différente des enfants sains. Avec ces résultats, s'est montrée l'importance de l'échelle mange instrument de diagnostique, néanmoins semble recommandable qu'il soit étudié dans d'autres populations.

Mots-clés : Échelle de Réaction de Rétraction Prolongée; enfant; questionnaire; validation; syndrome de Down.

Validación de la Escala de Retración Prolongada para bebés con síndrome de Down

Resumen

La evaluacion de la reacción frente a los niños retraídos utilizando un instrumento padronizado debería llevar en cuenta el contexto psicopatológico de éstos, asi como también las diversas etapas de su desarrollo. Los autores presentan el cuestionario BADS en su tercera etapa de validación aplicado a 30 niños de 0 a 2 años con síndrome de Down, reclutados en los consultorios externos de la región central en la ciudad de San Pablo. Los resultados fueron comparados con los 90 niños saludables, evaluados en estudios anteriores por los mismos autores. Fue usado para las muestras independientes la prueba t de Student, con scores de medias y desvio patrón equivalente a 5,90 $\pm$ 2,57 para niños saludables, y 11,13 $\pm$ 4,58 para niños con Síndrome de Down, con p - 0.0466 y nivel de significancia de 5%. Finalmente, se concluye que los niños con sindrome de Down presentaron reacción de retraimiento significativamente diferente al de los niños saludables. Con tales resultados, se demostró la importancia de la escala como un instrumento de diagnóstico, sin embargo se sugiere realizar estudios en otras poblaciones.

Descriptores: Escala de Retración Prolongada; crianza; cuestionario; validación; síndrome de Down.

Introduction

The evaluation of the overall performance and development of children in risk situation, whether physical, psychic, emotional or social, is a concern of many professionals involved with the care of this population, mostly because identification of these children enables early intervention in probable deviations in their development.

The working out of scales and questionnaires for clinical use, specially in the practice of pediatrics, is designed to track down children who may be suffering some kind of harm due to detrimental internal or external stimuli (environmental, familiar or organic), so that they may be accompanied more carefully and, if necessary, with the evaluation and help of other professionals, besides the general pediatrician (Assumpção, 2002). As useful examples, mention is made to Health of the Outcome Scales for Children and Adolescents /HoNOSCA (Gowers et al., 1999; Gowers et al., 1999) and to the Paddington Complexity Scale (Yates, Garralda, & Higginson, 1999). The evaluation of the newborn and toddlers as to their changes in development and behavior is made more difficult due to the scant repertoire of reactions displayed by this population. Hence, the extended withdrawal reaction issues as an important manifestation of unbalance, common to various causes, since the symptomatic and syndromic specificity of psychiatric and neurological manifestations is somewhat limited in toddlers.

The concept of extended withdrawal is interesting in the collaboration between pediatricians and child psychiatrists, because of its appearance both in pediatric and relational pathologies. It comes with Brazelton as a form of normal interaction regulation comprising an alarm reaction observed in precocious manifestations of depression, autistic syndromes or other pervasive development

disorders, anxiety disorders, as posttraumatic stress, sensorial deficiencies, problems in emotional relationships, some feeding disturbances and some other relational problems. It consists of the "blackening out" of the child, with resistance to emotional stimuli, absence of autoerotic stimuli, facial rigidity, atypical finger movements, crying and loss of appetite (Guedeney, 2000).

In addition, it should be noted whether or not there are biological markers or objective measurements for the majority of psychiatric disorders (Menezes & Nascimento, 2000), with their diagnosis remaining to be ascertained in clinical examinations.

As a result of this, in a past study, we validated a diagnostic scale of possible infantile psychiatric symptoms (Assumpção Jr, Kuczynski, Rego, & Rocca, 2002). Such validation, performed only with normal babies, was no guarantee of the faithfulness of the instrument. On a later occasion, another study was performed with a population interned at a pediatric infirmary, to provide more refined conclusions than the ones obtained before, with no interference with somatic diseases being observed in connection with a child response to these scales (Assumpção Jr & Assumpção, 2002). In continuation of the validation and study of this instrument, we applied it to another population, to provide a more useful instrument in the possible early detection of psychiatric pathologies.

Whereas a child's overall reaction is to the stimuli undergone thereby (Marcondes, 1988), one of the first difficulties to be regarded in relation to the instrument is the infant's reaction to pediatric pathologies; since in his original study, in 1999, Guedeney (Guedeney, 1999) points to acute diseases as being capable of mimicking or producing a state of retraction, which already had been noticed before by other authors (Ironside, 1975).

The Baby Alarm Distress Scale (Echelle d'evaluation de la réaction de retrait prolongé du jeune enfant or The Baby Alarm Distress Scale) is a clinical scale, in habitual and progressive order, designed to be used in the manner proposed by Winnicott (Winnicott, 1969). Its points range from zero to four in each item and total points are the simple arithmetic addition of the scores obtained. It may be used simply and briefly in different locations, mainly during routine consultations in pediatrics (Appendix I). Hence, it is useful in tracking possible psychiatric cases (Andreoli, Blay, & Mari, 2000), which has prompted us to proceed with our former work, with a view to enhancing the instrument in keeping with our reality, for use in clinical work and research.

Patients and method

In the first stage of the study, adaptation of the instrument with the permission of its originator, comprising its translation and "back translation", as well as its application to the population of day nurseries run by São Paulo City Hall (Assumpção Jr et al., 2002).

For performance of the present step, the scale was applied to thirty children recruited from a number of specialized outpatient centers, providing care for the mentally deficient in the city of São Paulo in the period from February through December, 2003, aged zero to two-years old, belonging to both sexes (Table 1), suffering from clinically and laboratory-diagnosed Down's Syndrome, by cytogenetic study. The informed consent was obtained of the parents or accompanying family members of the evaluated children.

Data obtained through its application was analyzed by independent t test (Agresti, 1990), with indication of when a comparison occurred between two groups of information with independent numerical measurement levels and sampling.

Results

The mean age of the population evaluated was of 7.21 ± 5.5 months (Table 2) and the intellectual quotient (IQ), visualized by Gesell scale, considering the Adaptive Development Quotient (DQ), of 78.48 ± 14.27. The option of using the adaptive DQ was selected because of its correlation with the nervimotor state and school age IQ, as per Amatruda (Knobloch & B., 1987). There was concern to avoid the evaluation of children with severe mental retardation, able to mimic the presenting of possible psychiatric manifestations, on account of their insufficient aspect.

The average amount of points obtained was $5.98 + 2.57$ for the control group, comprised of normal children from day nurseries run by São Paulo City Hall (7Assumpção Jr et al., 2002), and 11.13 ± 4.58 for the experimental group (Table 3), with $p < 0.0466$ being obtained for a 5% significance level, characterizing the results obtained as different for either sample.

Discussion and conclusion

The psychopathological evaluation of a child in the sensorimotor period (0 to 2 years of age) is difficult and, although this instrument has already been standardized for a normal population in our midst, we cannot yet gauge its faithfulness in the identification of psychopathological disturbances, which would be extremely useful in

Table 1. Experimental group distributed by gender.

GENDER	FREQUENCE
Male	13(43.33%)
Female	17(56.67%)

Table 2. Experimental group distributed by its age.

AGE	FREQUENCE
0 to 3-months and 29-days	08(26,67%)
4-months to 7-months and 29 days	13(43,33%)
8-months to 11-months and 29 days	06(20%)
12-months to 15-months and 29 days	00
16-months to 19-months and 29 days	00
20-months to 24-months	03(10%)
MEAN: 7.213 +/- 5.5 months	

Table 3. Comparison between scores obtained by BADS application on healthy and Down syndrome 0 to 2-year-old babies.

	Control group	Experimental group
Mean scores	5,98	11,133
Standard deviation	2,57	4,582
N	90	30

P=4,659

determining precursory signs of future clinical manifestations for early implementation of preventive therapeutic measures. Nevertheless, the population studied, even not presenting significant retardation in its development, displays considerable differences in its performance when compared with this evaluation scale.

The extended retraction reaction is perhaps a good clinical indicator of such presentations, especially as concerns manifestations of depressive and/or autistic features, since it is based on motor and sociability arrangements able to be identified in a zero to 2-year-old infant (sensorimotor period). It can also be used in the tracking of children with deficiencies in their development, depending on the results of this work, since it will be found that they differ statistically from the ones obtained with healthy children, which is one of the factors for their use in the tracking of psychopathological changes and well-structured and well-established cognitive changes (this being the reason why we opted for the choice of babies with a Down Syndrome diagnosis).

It does not seem safe for us to calculate a cutoff point, because the instrument still needs to be used for a longer time to become better known. Thus, in the next stage, we must apply it on children with specific prior neuropsychiatric diagnosis, so that suitable comparisons can be established between the populations.

Due to its ease of use and reliability thus far demonstrated, we believe that, following new studies, this instrument may be put to practical use in pediatrics and child psychiatry, as a screening tool for the infantile population in the sensorimotor period of development (zero to 2-years of age).

References

Agresti, A. (1990). *Categorical Data Analysis*. Washington: John Willey & Sons.

Andreoli, S. B., Blay, S. L., & Mari, J. J. (2000). Escalas de rastreamento aplicadas na população geral. In C. Gorenstein, L. H. S. G. Andrade & A. W. Zuardi (Eds.), *Escalas de Avaliação Clínica em Psiquiatria e Psicofarmacologia* (pp. 45-52). São Paulo: Lemos.

Assumpção Jr, F. B., & Assumpção, T. M. (2002). Escala de Avaliação da Reação de Retração no bebê com doenças pediátricas: um estudo de validade. *Arquivos de Neuropsiquiatria*, 60(4), 971-973.

Assumpção Jr, F. B., Kuczynski, E., Rego, M. G. S., & Rocca, C. C. A. (2002). Escala de Avaliação da Reação de Retração no Bebê: um estudo de validade. *Arquivos de Neuropsiquiatria,* 60(10), 56-60.

Assumpção, T. M. (2002). A influência das condições ambientais no desenvolvimento precoce infantil. Infanto – *Revista de Neuropsiquiatria da Infância e Adolescência*, 10(2), 72-78.

Gowers, S. G., Harrington, R. C., Whitton, A., Lelliott, P., Beevor, A., Wing, J., et al. (1999). Health of the Nation Outcome Scales for Children and *Adolescents. Brit J Psychiatry,* 174, 428-431.

Gowers, S. G., Harrington, R. C., Whitton, A., Lelliott, P., Beevor, A., Wing, J., et al. (1999). Brief scale for measuring the outcomes of emotional and behavioural disorders in children. Health of the Nation Outcome Scales for children and Adolescents (HoNOSCA). *Br J Psychiatry,* 174, 413-416.

Guedeney, A. (1999). De la réaction précoce et durable de retrait a la depression chez le jeune enfant. *Neuropsychiatr Enfance Adolesc, 47(*1-2), 63-71.

Guedeney, A. (2000). La construction et la validation d'une échelle de retrait relationnel du jeune enfant. Voir ensemble pour intervenir plus tôt. *Perspectives Psy, 39*(3), 179-184.

Ironside, W. (1975). The infant development distress syndrome: A predictor of impaired development? *Aust N Z J Psychiat, 9* (3), 153-158.

Knobloch, H., & B., P. (1987). *Gesell e Amatruda: diagnóstico do desenvolvimento.* Rio de Janeiro: Atheneu.

Marcondes, E. (1988). Introdução. In E. Marcondes, A. C. S. L. Sucupira, M. I. Saito & M. H. P. Dias (Eds.), *Pediatria em Consultório* (pp. 1-8). São Paulo: Sarvier.

Menezes, P. R., & Nascimento, A. F. (2000). Validade e confiabilidade das escalas de avaliação em Psiquiatria. In C. Gorenstein, L. H. S. G. Andrade & A. W. Zuardi (Eds.), *Escalas de Avaliação Clínica em Psiquiatria e Psicofarmacologia* (pp. 23-28). São Paulo: Lemos.

Winnicott, D. W. (1969). *De la Pédiatrie à la Psychanalyse*. Paris: Payot.

Yates, P., Garralda, M. E., & Higginson, I. (1999). Paddington Complexity Scale and Health of the Nation Outcome Scales for Children and Adolescents. *Brit J Psychiatry,* 174, 417-423.

Appendix I

ESCALA AVALIAÇÃO DA REAÇÃO DE RETRAÇÃO PROLONGADA DA CRIANÇA PEQUENA*

Cada item está ao lado de um número de 0 a 4. As indicações são fornecidas somente a título de indicação em casos onde hajam dúvidas entre dois valores da escala:

0: normal
1: dúvida sobre o caráter patológico
2: sinal patológico mais discreto
3: evidente para todos os observadores
4: intenso

A escala é melhor preenchida pelo próprio observador, com base em suas próprias observações logo após a consulta. Avaliam-se os comportamentos espontâneos, após a reação aos estímulos (sorriso, voz, gestos, toques, etc.) e a evolução das reações no decorrer do exame. O valor corresponde à reação mais significativa durante toda a observação.

1. Expressão facial: avaliação da redução da expressividade facial:
0: a face é expontaneamente móvel, expressiva, animada por freqüentes mudanças de expressão
1: face móvel, expressiva, mas sem mudanças freqüentes de expressão
2: pouca mobilidade facial expontânea
3: face imóvel, triste
4: face imóvel, fria, ausente, ou tendo um ar de envelhecimento prematuro

2. Contato visual: avaliação da redução do contato visual:
0: contato visual expontâneo, fácil e prolongado
1: contato visual expontâneo, porém breve
2: contato visual possível, mas somente quando provocado
3: contato visual fugaz, vago, fugidio
4: recusa total do contato visual

3. Atividade corporal: avaliação da redução da atividade da cabeça, torso e membros, sem considerar-se a atividade de mãos e dedos:
0: movimentos freqüentes e expontâneos do torso, cabeça e membros
1: atividade geral expontânea ligeiramente reduzida
2: pouca ou quase nenhuma atividade expontânea
3: atividade falha na resposta aos estímulos
4: imóvel e congelada, independentemente dos estímulos

4. Gestos de auto-estimulação: avaliação da freqüência com a qual a criança brinca com seu próprio corpo (dedos, mãos, cabelos, sucção do polegar, fricções repetidas, etc.), de maneira automática e sem prazer, em comparação com a atividade geral:

0: ausência de auto-estimulação; a atividade de auto-exploração é ligada harmoniosamente com o nível de atividade geral
1: auto-estimulação não identificável com certeza
2: auto-estimulação pouco freqüente, porém evidente
3: auto-estimulação freqüente
4: auto-estimulação constante

5. Vocalizações: avaliação da redução das vocalizações traduzindo o prazer (gargalhadas, risos, lalação, balbucios, gritos agudos de prazer, etc.)

0: vocalizações positivas espontâneas freqüentes, alegres, moduladas; gritos ou choros breves em resposta a uma sensação desagradável
1: vocalizações espontâneas breves; gritos ou choro intermitente
2: choro quase que constante
3: vocalizações de desprazer raras e breves, somente em resposta a um estímulo
4: nenhuma vocalização

6. Vivacidade das reações aos estímulos: avaliação da redução da vivacidade da reação à estimulação agradável ou desagradável, no decorrer do exame (sorriso, voz, toque):

0: reação adaptada, viva e rápida
1: reação ligeiramente retardada
2: reação marcadamente retardada
3: reação muito lentificada, mesmo com estimulação desagradável
4: ausência total de reação

7. Relação: avaliação da atitude da criança ao iniciar a relação com o observador, médico ou qualquer pessoa apresentada, exceção feita àquela que lhe cuida. A relação é avaliada pelo comportamento, contato visual, reação aos estímulos e a reação ao fim da seqüência.

0: a relação é rápida e marcadamente estabelecida (após uma eventual fase de ansiedade), equilibrada e evolutiva
1: relação identificável, freqüentemente positiva, mas não acentuada
2: relação pouco acentuada, retardada, às vezes negativa e não evolutiva
3: dúvida sobre a existência de uma relação
4: ausência de relação identificável

8. Atratividade: avaliação da impressão geral que o contato com a criança fornece:

0: a criança atrai a atenção sobre si de forma ativa, inspirando sentimentos de interesse e prazer
1: inspira interesse, porém não sentimento de prazer
2: não inspira interesse sobre si
3: contato desagradável, com impressão de ser mantido à distância
4: contato ausente, impressão de ser uma criança inatingível

TOTAL: _____

NOME: _____ RG: _____

IDADE:.....meses.....dias

EXAMINADOR: _____