

# BISQ Questionnaire for Infant Sleep Assessment: translation into brazilian portuguese

## *Questionário BISQ para Avaliação do Sono na Primeira Infância: tradução linguística para português brasileiro*

Magda Lahorgue Nunes<sup>1</sup>, Julia de la Puerta Raya Kampff<sup>1</sup>, Avi Sadeh<sup>2</sup>

### ABSTRACT

The aim of this article was the translation into Portuguese of the Brief Infant Sleep Questionnaire (BISC), a tool for screening sleep disorders in infants and toddlers (0-3 years). After obtaining the consent from the author (Avi Sadeh), two bilingual professionals translated the questionnaire into Portuguese. Later, two other bilingual professionals performed the back translation into English. The best version of BISQ was chosen in a consensus meeting. The translation of BISQ into Portuguese will allow effective screening and that a greater number of children with sleep disorders could be diagnosed by pediatricians in Portuguese-speaking countries.

**Keywords:** infant, questionnaires, sleep disorders.

### RESUMO

Este estudo teve como objetivo efetuar a tradução para português do “Brief Infant Sleep Questionnaire (BISC)”, instrumento para triagem de distúrbios do sono em lactentes e primeira infância (0-3 anos). Após obtenção da autorização do autor (Avi Sadeh), dois tradutores profissionais verteram o texto para português e outros dois fizeram a retro-tradução. A melhor versão do questionário foi decidida por consenso. A tradução do BISC para português vai possibilitar uma triagem efetiva e que maior número de crianças com distúrbios do sono sejam identificadas por pediatras de países lusofônicos.

**Descritores:** distúrbios do sono, lactente, questionários.

### INTRODUCTION

The value of clinical attention to pediatric sleep is increasingly being recognized. This is due to the growing evidence of high prevalence of sleep disorders among children and the effects of disrupted or insufficient sleep on somatic and behavioral development<sup>(1)</sup>.

The consolidation of sleep during the night, the “sleeping through the night,” is a rapid process of maturation that occurs during the first year of life<sup>(2)</sup>. However, some studies have shown that 20 to 30% of infants and small children face difficulties in this process. Thus, their sleep is still fragmented, manifested in multiple and prolonged awakenings during the night<sup>(3,4)</sup>.

Sleep disorders are among the most common complaints reported in pediatric practice. In most cases, a detailed

clinical history enables establishing a proper diagnosis allowing the physician to estimate the severity of the problem and offer proper care<sup>(5)</sup>.

The complaint of sleep disorders is generally not considered for parents a medical issue. In addition, routine pediatric medical history does not evaluate sleep and potential sleep disorders. However, it is known that the persistence of sleep disorders that begin in childhood may be associated with behavioral and emotional problems at school age and adolescence. Therefore, the approach to such disorders should be a priority in pediatric care<sup>(5,6)</sup>.

Sleep questionnaires are useful tools to assess sleep because they allow the measurements to become standardized and reproducible. When selecting a sleep questionnaire attention should be given to some factors: if the components are clear, if it is easy to understand and apply and if the time required for the application of such an instrument is appropriate<sup>(7)</sup>.

In order to attempt a categorization of sleep disorders in children, Bruni and collaborators developed the Sleep Disturbance Scale for Children (SDSC) for use in school-age children. This scale is able to differentiate among conditions such as disorders of initiating and maintaining sleep, sleep breathing disorders, disorders of arousal, sleep-wake transition disorders, excessive somnolence and sleep hyperydrosis<sup>(8)</sup>. This questionnaire was lately translated and validated for Brazilian Portuguese, however it is not adequate to use for infants or toddlers, due to its original design<sup>(7,8)</sup>.

Several other sleep questionnaires intended to be filled by parents have been developed and validated, including the Pediatric Sleep Questionnaire (Chervin et al., 2000) and the Sleep Habits Questionnaire for Children (Owens et al., 2000)<sup>(9,10)</sup>. However, most of them are not available in Portuguese.

The objective of this study was the translation into Portuguese of the Brief Infant Sleep Questionnaire (BISC), an instrument used in several countries for sleep assessment

<sup>1</sup> Pontifícia Universidade Católica do Rio Grande do Sul (PUCRS), Porto Alegre - RS - Brazil.

<sup>2</sup> Laboratory for Children's Sleep-Wake Disorders, Department of Psychology, Tel Aviv University, Tel Aviv, Israel.

**Corresponding author:** Magda Lahorgue Nunes. Pontifícia Universidade Católica do Rio Grande do Sul. Serviço de Neurologia do HSI PUCRS. Av. Ipiranga, nº 6690, sala 220. Porto Alegre - RS. CEP: 90610-000.

Received: 18/12/2011. Accepted: 15/05/2012.

in infants and toddlers (0-3 years), providing a useful tool for easy application that could be part of the pediatric visits routine.

## METHODS

In 2004, Sadeh formulated the Brief Infant Sleep Questionnaire (BISQ) with the aim of creating a brief and appropriate tool for screening of sleep disorders in infants and toddlers (0-3 years). The BISQ was created based on literature review of the infants sleep, primarily searching significant variables in clinical studies that used subjective and objective measures of the sleep. The administration time of the questionnaire is 5 to 10 minutes and questions are related to the last week sleep periods of the infant<sup>(1)</sup>. The criteria used to define poor sleepers on the basis of the BISQ measures are as follows: 1) the child wakes > 3 times per night; 2) nocturnal wakefulness period is > 1 hour; or 3) the total sleep time is < 9 hours. Soothing techniques and the location of sleep are also evaluated and seem to play important roles in infant sleep. Infants who fall asleep alone in the crib and sleep in a crib in a separate room are more likely to sleep through the night, with fewer night wakings<sup>(1)</sup>.

For the preparation of the Portuguese version of the BISQ questionnaire, two steps were followed. In the first stage, two bilingual professionals translated the questionnaire for the Portuguese language independently.

In the second step, the two translations were randomly distributed to two other bilingual professionals. Also independently, these two professionals performed the back translation into English of the two versions developed in the first step.

Finally, in a consensus meeting, together with the author of the original questionnaire (Avi Sadeh), the most accurate translation was chosen (Table 1) considering the following items: conceptual equivalence, semantic and cultural appropriateness.

## DISCUSSION

The reliability, validity and clinical applicability of BISQ as a tool for rapid screening of sleep problems in infants and toddlers up to 3 years for clinical and research purposes was assessed by two previous studies conducted by Sadeh<sup>(1)</sup>. The first compared the results of BISQ with sleep diary and actigraphy and a significant correlation was observed, as well as the ability of BISQ measures to distinguish between sleep-disturbed and control infant. The second study was based on an internet survey in which 1028 respondents completed the BISQ that had been posted on a website about infant sleep. In the study, measurements showed BISQ epidemiological results and the development of sleep consistent with the findings of existing literature on sleep patterns in early childhood. Moreover, the results of this study suggested references for clinical applicability<sup>(1)</sup>.

Considering the importance that sleep plays in children development, reliable and easily applicable tools for use in pediatric practices have been increasingly valued. The translation into Portuguese of an accurate tool for assessing the quality of sleep may help the screening of sleep disorders in childhood and to prevent the misdiagnosis of sleep conditions.

## ACKNOWLEDGEMENTS

MLN is supported with PQ program of CNPq.

**Table 1.** Translation of BISQ questionnaire to Portuguese: Breve Questionário sobre Sono na Infância (BQSI).

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Por favor, marque apenas uma opção quando você responder às questões que apresentam mais de uma opção de resposta!

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Nome do entrevistado: \_\_\_\_\_ Data: \_\_/\_\_/\_\_\_\_

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Parentesco do entrevistado:  
 Pai  Mãe  Avó/Avô  Outro (especificar): \_\_\_\_\_

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Nome da criança: \_\_\_\_\_ Data de nascimento: \_\_/\_\_/\_\_\_\_

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Sexo:  
 Masculino  Feminino

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Ordem de nascimento da criança:  
 Mais velho  Do meio  Mais novo

Organização para dormir:  
 Berço em um quarto separado  
 Berço no quarto dos pais  
 Na cama dos pais  
 Berço no quarto com irmãos  
 Outro (especificar): \_\_\_\_\_

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Em que posição seu(sua) filho(a) dorme na maior parte das vezes?  
 Barriga para baixo  
 De lado  
 De costas

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Quanto tempo seu(sua) filho(a) passa dormindo durante a NOITE (entre 7 da noite e 7 da manhã)?  
 Horas: \_\_\_\_\_ Minutos: \_\_\_\_\_

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Quanto tempo seu(sua) filho(a) passa dormindo durante o DIA (entre 7 da manhã e 7 da noite)?

Horas: \_\_\_\_\_ Minutos: \_\_\_\_\_

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Média de vezes que seu(sua) filho(a) acorda por noite:

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Durante a noite (entre 10 da noite e 6 da manhã) quanto tempo seu filho permanece acordado(a)

Horas: \_\_\_\_\_ Minutos: \_\_\_\_\_

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Quanto tempo você leva para fazer seu(sua) filho(a) adormecer à noite?

Horas: \_\_\_\_\_ Minutos: \_\_\_\_\_

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Como o seu bebê adormece?

- Sendo alimentado  
 Sendo embalado  
 No colo  
 Sozinho na sua cama  
 Na cama perto dos pais
- 

A que horas normalmente seu filho(a) adormece à noite?

Horas: \_\_\_\_\_ Minutos: \_\_\_\_\_

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Você considera o sono seu(sua) filho(a) um problema?

- Um problema muito grave  
 Um problema pouco grave  
 Não considera um problema
- 

## REFERENCES

1. Montgomery-Downs HE, O'Brien LM, Gulliver TE, Gozal D. Polysomnographic characteristics in normal preschool and early school-aged children. *Pediatrics*. 2006;117(3):741-53.
2. Anders TF, Halpern LF, Hua J. Sleeping through the night: a developmental perspective. *Pediatrics*. 1992;90(4):554-60.
3. Armstrong KL, Quinn RA, Dadds MR. The sleep patterns of normal children. *Med J Aust*. 1994;161(3):202-6.
4. Nunes ML. Sleep Disorders. *J Pediatr (Rio J)*. 2002;78(supl.1):S63-72.
5. Nunes ML, Cavalcante V. Clinical evaluation and treatment of insomnia in childhood. *J Pediatr (Rio J)*. 2005;81(4):277-86.
6. Batista BHB, Nunes ML. Validação para língua portuguesa de duas escalas para avaliação de hábitos e qualidade de sono em crianças. *J Epilepsy Clin Neurophysiol*. 2006;12(3):143-8.
7. Ferreira VR, Carvalho LB, Ruotolo F, de Moraes JF, Prado LB, Prado GF. Sleep disturbance scale for children: Translation, cultural adaptation, and validation. *Sleep Med*. 2009;10(4):457-63.
8. Bruni O, Ottaviano S, Guidetti V, Romoli M, Innocenzi M, Cortesi F, et al. The Sleep Disturbance Scale for Children (SDSC) construction and validation of an instrument to evaluate sleep disturbances in childhood and adolescence. *J Sleep Res*. 1996;5(4):251-61.
9. Chervin RD, Hedger K, Dillon JE, Pituch KJ. Pediatric Sleep Questionnaire (PSQ): validity and reliability of scales for sleep-disordered breathing, snoring, sleepiness, and behavioral problems. *Sleep Med*. 2000;1(1):21-32.
10. Owens JA, Spirito A, McGuinn M. The Children's Sleep Habits Questionnaire (CSHQ): psychometric properties of a survey instrument for school-aged children. *Sleep*. 2000;23(8):1043-51.
11. Sadeh A. A brief screening questionnaire for infant sleep problems: validation and findings for an internet sample. *Pediatrics*. 2004;113(6):e570-7.