

A Nepali translation of Brief Infant Sleep Questionnaire (BISQ) for assessment of sleep in infants and toddlers: A preliminary report

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ABSTRACT

Background: Sleep problems are common in children and various questionnaires have been devised to screen these problems. Brief Infant Sleep Questionnaire (BISQ) is one of the sleep screening tools which is simple, reliable and valid tool and is being used for screening of sleep problems in infants and toddlers in various countries.

Objectives: The objective of this study was to translate English version of Brief Infant Sleep Questionnaire to Nepali language using a standard technique so that Nepali version could be used to screen sleep problems in Nepalese infants and toddlers.

Methods: This article describes the process of translation of original BISQ questionnaire into Nepali language in a standard method. Four bilingual paediatricians translated English BISQ to Nepali language which was then tested among few parents for understanding, clarity and uniformity of expected response. A draft version was finalized after consensus of translators, two expert paediatricians and original author. This version was then translated back into English by two independent medical professionals and compared with original BISQ for content and meaning. The final version of Nepali translation was approved after consensus agreement.

Results: The translated Nepali BISQ was then tested among 15 parents who had a child below three years of age. These parents did not find difficulty in understanding and responses were uniform and as expected from the original questionnaire.

Conclusion: The Nepali version of BISQ could be applicable as a screening tool to assess sleep in infants and toddlers in clinical setup as well as research studies.

Key words: BISQ, Infant Sleep Questionnaire, Nepali sleep questionnaire, Sleep questionnaires.

INTRODUCTION

Sleep is an important physiological state that is crucial for growth and development as well as optimal functioning in children¹. Sleep pattern like other developmental milestones matures through different stages of development from infancy to adolescence². The transition through these stages are generally smooth, however as many as 25% of children can have various problems at any period during childhood which may have lasting consequences on their health³. Sleep problems in adolescence and adulthood are usually the result of persistence of childhood sleep problems and

early diagnosis and treatment of which may decrease sleep-related medical problem in adults⁴.

Paediatric sleep problems are common around the world and occur in all cultures and socioeconomic levels⁵. The global incidence of sleep problem of about 25% and is consistent throughout the globe⁵. Sleep problems in children are recognized in Nepal, however, there is scarce literature regarding their exact incidence and patterns. There is lack of single reliable diagnostic tool or method to identify various patterns of sleep problem in infants and toddlers. Hence various sleep questionnaires have been developed for different age groups, for different abnormal sleep conditions and questionnaires covering different aspects of sleep to screen normal and abnormal pediatric sleep problems⁶. The Brief Infant Sleep Questionnaire (BISQ) was developed in 2004 as a

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screening tool for sleep disorders in children under the age of three years⁷. The items are related to the sleep pattern in infants and toddlers within the past two weeks. It is easy to administer and can be completed within five to ten minutes^{7,8}. It is a simple sleep questionnaire and has been translated into many languages^{6,8}.

The BISQ was translated to Nepali in accordance with standard guidelines⁹. The objective of translation was that this questionnaire could be used to screen sleep related problems in Nepalese infants and toddlers visiting the outpatient and immunization clinics and to enable comparison with normative data collected in other countries around the world.

METHODS

The permission for translation of the original English version of BISQ sleep questionnaire to Nepali and use of this questionnaire for clinical purpose was obtained from the original author.

The first phase involved forward translation from English to Nepali which was done by four paediatricians independently. The native language of the paediatricians involved in the forward translation is Nepali and all of them are well versed in English. The best response for each question was chosen among the responses of the translators and compiled into a complete set of a questionnaire. This first draft of Nepali version was then critically analyzed by two expert senior paediatricians independently. There were a few comments and suggestions for the change of words in the initial draft by the experts. This initial draft was finally revised by consensus of experts and involved paediatricians incorporating the suggestions. This revised questionnaire was tested among different small subsets of parents of children aged less than three years for clarity of language and understanding. All the questions were clear among the respondents except for a question pertaining to the position of the toddler during sleep. With a few modifications and discussion with the experts, the first Nepali version of BISQ was prepared which was then translated back into English.

The back translation from Nepali to English was done to identify if the original English version and translation from Nepali version had similar meaning and understanding. This was carried out by two experts independently; one was a physician whose primary language is English and well versed in Nepali and the other expert was a professional medical translator who is an expert in questionnaire translation. Both of

these back translators were previously not exposed to the original English version of the questionnaire. They independently performed the back translation into English from the revised first draft Nepali version. The back translated English version was compared with the original English version of BISQ and was again discussed with the experts for the homogeneity, clarity of the content and meaning. There were few differences in vocabulary; however the core content and meaning were found to be similar. Final consensus was reached among the expert pediatricians and the translating pediatricians regarding the Nepali version of BISQ which was then communicated to and approved by the original author. (Appendix)

RESULT (POST QUESTIONNAIRE TESTING)

The Nepali translation of the questionnaire was piloted with 15 parents whose children were less than three years of age. This included medical doctors, non-medical hospital staffs, parents attending the immunization clinic and parents of play school children, who completed questionnaire independently. The respondents had no difficulties in understanding the questionnaire, their answers were appropriate and none of the parents returned questionnaire for any clarification.

DISCUSSION

Our pilot study in a small number of parents found that the Nepali version of the BISQ sleep questionnaire was clear, easy to use, took a short time to complete and was applicable in different settings like outpatient clinics, well baby visit, play school and inpatients ward. Ambiguities of questions were not reported and responses to the questions were as expected as in the English version.

The validity and reliability of the original BISQ has already been established in previous studies using sleep diary, actigraphy and patient survey through internet⁷. The BISQ questionnaire is clinically applicable and has been used in research¹⁰. The strength of original BISQ questionnaire is that it is a 'multidimensional' sleep screening tool in infants⁶. A child requires attention and clinical referral to sleep physician, if, as defined by original BISQ, when child has any one of following: night awakening > three times per night, night time wakefulness > one hour per night or total sleep duration < nine hour⁷. The limitations of the questionnaire are reporter bias and inapplicability to children with developmental disorders like autism⁶. The original BISQ has been even modified to incorporate history, physical examination, twin birth, prematurity, snoring habit, smoking habit, siblings, breastfeeding, bedtime rituals,

parents' occupation, educational level and income range and this has been validated in an Indonesian study¹⁰. It has been translated in to many languages in diverse cultural settings⁶ but needs further research to identify possible effects of culture on BISQ sleep questionnaire⁷. The most important characteristics of any translated questionnaire should be standardized method for the translation, ease of use, clarity, reproducibility and ultimate validation¹¹.

There is lack of awareness and attention to sleep problems by child health care provider, not only in Nepal but throughout the world⁵. There should be an increased awareness and advocacy towards the detrimental effects of paediatric sleep problems. The use of screening tool to enable early identification and treatment for childhood sleep problems should be encouraged. Although there are various screening tools in use, none of the questionnaires are in Nepali language. Translation

of this screening questionnaire is an important step to overcome this situation.

This Nepali version of BISQ questionnaire could be incorporated into outpatient and well baby clinic as well as for further large scale research to detect sleep related problems in Nepalese children. This questionnaire can be modified and new questions could be incorporated based on the research finding in Nepalese children and most importantly it should be validated each time when modified.

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APPENDIX: NEPALI VERSION OF BISQ

प्रश्नावली

क्रमसंख्या :

मिति:

कृपया तपाईंलाई सबैभन्दा उपयुक्त लागेको उत्तरमा चिन्ह लगाउनु होस् ।

- उत्तरदाताको नाम :
- बच्चासँगको नाता: बुबा आमा हजुरबुबा/आमा अन्य..... (कृपया नाता खुलाउनुहोस्)
- बच्चाको नाम : जन्म मिति: साल महिनागते
- लिंग : पुरुष महिला
- जन्मक्रम : सबैभन्दा जेठो बीचको सबैभन्दा कान्छो
- बच्चाको सुत्ने ठाउँ:
 - अलग्गै कोठामा रहेको सानो ओछ्यान/कोक्रोमा
 - आमाबुबाको कोठाभित्र रहेको सानो ओछ्यान/कोक्रोमा
 - आमा/बुबासँगै ओछ्यानमा
 - अरु बच्चाहरु सुत्ने कोठामा रहेको सानो ओछ्यान/कोक्रोमा
 - अन्य (कृपया खुलाउनुहोस्)

- तपाईंको बच्चा धेरै जसो कसरी सुत्न मनपराउँछ ?
 - घोप्टो परेर
 - उत्तानो परेर
 - कोल्टो परेर
- तपाईंको बच्चा बेलुका ७ बजे देखि बिहान ७ बजे भित्र कति बेर निदाउँछ ?घण्टा.....मिनेट
- तपाईंको बच्चा बिहान ७ बजे देखि बेलुका ७ बजे भित्र कति बेर निदाउँछ?घण्टा.....मिनेट
- तपाईंको बच्चा रातभरमा लगभग कति पटक बिउँकिन्छ ? पटक
- तपाईंको बच्चा रातभरमा धेरै जसो जम्मा कति बेरका लागि बिउँभेको हुन्छ ? (राती १० बजे देखि बिहान ६ बजे भित्र)घण्टामिनेट
- तपाईंको बच्चालाई बेलुका सुताउन प्राय कति बेर लाग्छ ?.....घण्टा.....मिनेट
- तपाईंको बच्चालाई सुताउन के गर्दा सजिलो हुन्छ ?
 - खुवाउँदै गर्दा
 - भुल्लाउँदा/हल्लाउदा
 - बोकेर
 - एकलै ओछ्यानमा पल्टाउँदा
 - आमा/बुवासँगै ओछ्यानमा पल्टाउँदा
- तपाईंको बच्चा राति प्राय: कति बजे निदाउँछ ?
.....बजे.....मिनेट
- तपाईंलाई आफ्नो बच्चाको सुताइमा समस्या छ जस्तो लाग्छ ?
 - धेरै ठूलो समस्या (यदि समस्या छ भने कृपया उल्लेख गर्नु होला.....)
 - सानो समस्या (यदि समस्या छ भने कृपया उल्लेख गर्नु होला.....)
 - कुनै समस्या छैन ।

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