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A Spanish Version of the Children's Sleep Habits Questionnaire (CSHQ)

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A SPANISH VERSION OF THE CHILDREN'S
SLEEP HABITS QUESTIONNAIRE (CSHQ)

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Psychology:
General-Experimental

by
Duvia Lara Ledesma

June 2014

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ABSTRACT

This study was done to validate a widely used parent questionnaire that assesses sleep problems in children ages 4-10. To date, no Spanish-language sleep questionnaire is available for the Spanish-speaking population. Research has found that sleep problems affect both typically developing children and children with developmental disabilities, potentially detracting from their quality of life. Spanish is the second most frequently spoken language in the United States, so it is of high importance to make available a Spanish-language sleep questionnaire. The Children's Sleep Habits Questionnaire (CSHQ) was chosen to be translated. The norming data for validation of the CSHQ-S included 151 children from the community sample and 30 children from the clinical sample. A confirmatory factor analysis failed to replicate the purported internal structure of the English-language CSHQ. Subsequent exploratory factor analysis yielded a unique 5-factor solution which generally met criteria of reliability and validity. Our results show that children with disabilities experience more sleep problems than typically developing children. The CSHQ-S can be considered to be a good Spanish-language sleep measure in typically developing children and children with disabilities.

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DEDICATION

I would like to dedicate this thesis to my mother who is my role model, my inspiration, and my best friend.

TABLE OF CONTENTS

ABSTRACT	iii
ACKNOWLEDGMENTS	iv
CHAPTER ONE: INTRODUCTION	1
CHAPTER TWO: METHOD	
Children’s Sleep Habits Questionnaire (CSHQ)	7
Spanish Translation	8
Preliminary Evidence of Translatability	10
Procedure	11
Community Sample	12
Clinical Sample	12
Demographics	13
CHAPTER THREE: RESULTS	
Summary of Analyses	14
Internal Structure of the Spanish-Language Version	14
Group Comparison on the Spanish-Language CSHQ	16
Comparison of Current Sample and Earlier Samples on the Original Eight Subscales	17
CHAPTER FOUR: DISCUSSION	19
APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL FORM	24
APPENDIX B: CONSENT FORM	26
APPENDIX C: CHILDREN’S SLEEP HABITS QUESTIONNAIRE - SPANISH (CSHQ-S)	31
APPENDIX D: FIESTA EDUCATIVA INC. PERMISSION LETTER	37

APPENDIX E: TABLE 1: T-TEST SCORES FOR THE SECOND PILOT TEST DONE FOR THE SPANISH CSHQ	39
APPENDIX F: TABLE 2: DEMOGRAPHICS OF THE COMMUNITY AND CLINICAL SAMPLE	41
APPENDIX G: TABLE 3: FACTORS AND ITEMS LOADINGS OF THE CONFIRMATORY FACTOR ANALYSIS FOR THE SPANISH-LANGUAGE CSHQ	43
APPENDIX H: TABLE 4: FACTOR AND ITEM LOADINGS OF THE EXPLORATORY FACTOR ANALYSIS FOR THE SPANISH-LANGUAGE CSHQ	46
APPENDIX I: TABLE 5: MEANS AND STANDARD DEVIATIONS FOR THE COMMUNITY AND CLINICAL SAMPLE COMPARING THE FIVE FACTORS	49
APPENDIX J: TABLE 6: CSHQ INTERNAL CONSISTENCIES FOR THE SUBSCALE IN THE SPANISH COMMUNITY AND CLINICAL SAMPLE FOR THE FIVE FACTORS.....	51
APPENDIX K: TABLE 7: MEANS AND STANDARD DEVIATIONS FOR THE COMMUNITY AND CLINICAL SAMPLE COMPARING THE EIGHT CHSQ SUBSCALES.....	53
APPENDIX L: TABLE 8: CSHQ INTERNAL CONSISTENCIES FOR THE ORIGINAL SUBSCALES IN THE SPANISH COMMUNITY AND CLINICAL SAMPLE AND THE ENGLISH COMMUNITY AND CLINICAL SAMPLE.....	55
REFERENCES.....	57

CHAPTER ONE

INTRODUCTION

Sleep problems are present in 11% to 50% of typically developing children (Cotton & Richdale, 2006; Couturier et al., 2005; Owens, Ovipari, Nobile, & Spirito, 1998; Polimeni, Richdale, & Francis, 2005) potentially detracting from their quality of life. Research has reported greater sleep problems for children with developmental disabilities than for typically developing children (Gruber, Avid, & Raviv, 2000; Patzold, Richdale, & Tonge, 1998; Quine, 2001; Richdale & Prior, 1995; Wiggs, 2001). Research on the scope of children's sleep difficulties, has relied on parental reports and sleep diaries (Krakowiak, Goodlin-Jones, Hertz-Piaciotto, Croen, & Hansen, 2008) and these have been used as the primary research instruments for English speakers. The purpose of the present study was to develop a Spanish-language version of the most frequently used instrument for studying children's sleep — the Children's Sleep Habits Questionnaire (CSHQ) (Owens, Spirito, & McGuinn, 2000). Considerable research has demonstrated the importance of understanding sleep problems in children and how these difficulties affect children's behavior, emotional development, and physical well-being (Liu, Liu, & Wang, 2003; Stores, 1999).

Sleep problems have been shown to affect daytime behavior in children (Goodlin-Jones, Tang, Liu, & Anders, 2009). More specifically, previous studies have found that sleep problems in typically developing children

negatively affect their working memory (Steenari et al., 2003) and are associated with a greater risk for being bullied (Smaldone, Honig, & Byrne, 2007). Sleep problems in children make them more prone to injuries (Owens, Fernando, & McGuinn, 2005) and have been found to impair their achievement motivation and school performance (Blunden & Lushington, 2001; Gozal, 1998; Meijer & van den Wittenboer, 2004). Inadequate sleep has also been linked to children's depressive symptoms, anxiety, and mood disorders (Smaldone et al., 2007). The detrimental effects of children's sleep problems have been tied to excessive daytime sleepiness. In fact, 11% to 12% of children experience daytime sleepiness (Owens, Spirito, McGuinn, & Nobile, 2000; Stein, Mendelsohn, Obermeyer, Amromin, & Bencals, 2004) thus supporting its prevalence. Research has also found that sleep problems can have detrimental effects in children with developmental disabilities. Children with autism have been shown to have more sleep problems than typically developing children (Hoffman, Sweeney, Gilliam, & Lopez-Wagner, 2006; Richdale & Prior, 1995, Williams, Sears, & Allard, 2004). Children with autism have more sleep problems than children with other developmental disabilities (Richdale, 2001). Sleep difficulties in children with developmental disabilities may further impact pre-existing social and communication problems (Krakowiak et al., 2008).

Sleep difficulties in typically developing children and children with disabilities have been associated with parents' sleep difficulties and, in turn,

have been shown to adversely affect parenting and family processes. For example, children's sleep problems have been found to be correlated with their parents sleep problems (Lopez-Wagner, Hoffman, Sweeney, Hodge, & Gilliam, 2008; Smedje, Broman, and Hetta, 1998) possibly affecting parents' health and overall well-being. Furthermore, there is extensive literature indicating the adverse affects of adults' sleep problems on their functioning (Chambers & Keller, 1993; Hauri & Fisher, 1986; Stephanski, Zorick, Sticklesteel, Young, & Roth, 1986; Zammit, 1988). For instance, adults who experience sleep problems have higher rates of depression and anxiety (Spoormaker & van den Bout, 2005), along with more daytime sleepiness and fatigue, and problems with concentration (Alapin et al., 2000). Children's sleep difficulties have been associated with negative parent emotional health (Smaldone et al., 2007). As a consequence, family functioning may be affected. The sleep problems of typically developing children and of children with developmental disabilities have also been shown to disrupt parenting (Hoffman et al., 2008). Indeed, sleep difficulties in children have been negatively correlated with stressful parenting and family problems (Doo & Wang, 2006; Mindell & Durand, 1993; Polimeni et al., 2005; Sadeh et al., 2002; Wiggs & Stores, 1998). The sleep problems of children have been shown to diminish parenting effectiveness and to disrupt family functioning (Lopez-Wagner et al., 2008). Finally, sleep-deprived children may not be able

to respond as positively to educational programs or to interventions provided for them during the day (Hoffman et al., 2005).

Unfortunately, at the present time, there is no Spanish-language sleep instrument available to assess parents' reports of their children's sleep difficulties. This is problematic given the large number of Spanish-speaking persons in our country and throughout the world. According to the U.S. Census Bureau (2013), Spanish is the second most frequently spoken language at home other than English in the U.S. and the second most spoken language in the world. Individuals living in the U.S. come from various Latin American countries (Mexico 65%, Central and South America 14%, Puerto Rico 10%, Cuba 5%, and other Spanish speaking countries 7%) (Loredo, et al., 2010). It is, of course, probable that children in Spanish-speaking families evidence similar sleep difficulties to English-speaking families. This needs to be determined empirically and extended. Sleep problems in children are present in all cultures (Owens, 2004). Parents' approach to parenting a child with sleep problems may vary in Spanish-speaking cultures. Sleep behaviors are not only influenced by biological and psychological components, but may also be affected by cultural variables (Lui et al., 2003; Owens et al., 2005) and the availability of a Spanish-language version of a standard measure of sleep problems would permit further studies in this important field.

For the present study, the widely used 33-item CSHQ was selected to be translated with permission from the author. It yields eight subscales

assessing various sleep disturbances in children (Owens et al., 2000): Bedtime Resistance, Sleep Onset Delay, Sleep Duration, Sleep Anxiety, Night Wakings, Parasomnias, Sleep Disordered Breathing, and Daytime Sleepiness. The CSHQ has demonstrated good internal consistency for community and clinical samples, high internal validity, and good test-retest reliability (Owens et al., 2000). The CSHQ has been utilized in English-speaking samples assessing sleep problems in children (Miller, Palermo, Powers, Scher, & Hershey, 2003; Seifer, Sameroff, Dickstein, Hayden, & Schiller, 1996). Moreover, it has been translated to other languages to study sleep habits in Chinese children (Liu, Liu, & Wang, 2003) Italian children (Cortesi, Giannotti, Sebastiani, & Vagnoni, 2004), Israeli children (Tzchishinsky, Lufi, & Shochat, 2008), German children (Schlarb, Schwerdtle, & Hautzinger, 2010), and Portuguese children (Silva, Silva, Braga, & Neto, 2013) supporting its cross-cultural use.

Parental reports have been widely used, and have been shown to be reliable in children's sleep literature (Minde et al., 1993). The CSHQ has been extensively employed in examining sleep in typically developing children (Owens et al., 1999; Seifer, Sameroff, Dickstein, Hayden, & Schiller, 1996), children with autism (Doo & Wing, 2006; Goldman et al., 2009; Goodlin-Jones et al., 2008; Hoffman et al., 2006, 2008; Honomichl, Goodlin-Jones, Brunham, Hansen, & Anders, 2002; Malow et al., 2006; Souders et al., 2009), and children with Pervasive Developmental Disorders (Couturier et al., 2005;

Honomichl, Goodlin-Jones, Burnham, Gaylor, & Anders, 2002). Moreover, a parent-report measure is necessary in certain populations (e.g., autism) because some children cannot tolerate the equipment needed to gather more objective measures of sleep (Arbelle & Ben-Zion, 2001). The CSHQ has objectively validated sleep problems (Souders et al., 2009) and has been shown to yield findings consistent with those of actigraphy, an objective instrument (Goldman et al., 2009). The present study was designed to address the lack of empirical information on sleep in Spanish-speaking families by creating a Spanish version of the questionnaire most widely used in research to ascertain parents' reports of their children's sleep.

CHAPTER TWO

METHOD

Children's Sleep Habits Questionnaire (CSHQ)

The CSHQ is a 33-item retrospective parent questionnaire that assesses sleep behavior in children between the ages of 4 and 10 (Owens et al., 2000). Items in the CSHQ describe common clinical sleep complaints in this particular age group and was derived from clinical symptoms in pediatric diagnosis (American Sleep Disorders Association, 1990). Parents are asked to answer the questions by thinking about their child's sleep behavior during the "*past week*" or "*typical week*." Parents respond using a 3-point scale ranging from *usually* (5-7 nights per week), to *sometimes* (2-4 nights per week), and *rarely* (0-1 night per week).

The original CSHQ contains eight subscales derived from factor analysis of questionnaire items. The Bedtime Resistance Subscale has six items, (Cronbach's alpha = .70 for community sample; Cronbach's alpha = .83 for clinical sample) (e.g., "Goes to bed at same time"). The Sleep Onset Delay Subscale has one item "Falls asleep in 20 minutes." The Sleep Duration Subscale has three items (Cronbach's alpha = .69 for community sample; Cronbach's alpha = .80 for clinical sample) (e.g., "Sleeps too little") The Sleep Anxiety Subscale has four items (Cronbach's alpha = .63 for community sample; Cronbach's alpha = .68 for clinical sample) (e.g., "Needs parent in room to sleep"). The Night Wakings Subscale has three items (Cronbach's

alpha = .54 for community sample; Cronbach's alpha = .44 for clinical sample) (e.g., "Moves to other's bed in night"). The Parasomnias Subscale has seven items (Cronbach's alpha = .36 for community sample; Cronbach's alpha = .56 for clinical sample) (e.g., "Wets the bed at night") The Sleep Disordered Breathing Subscale has three items (Cronbach's alpha = .51 for community sample; Cronbach's alpha = .93 for clinical sample) (e.g., "Snores loudly"). The Daytime Sleepiness Subscale has eight items (Cronbach's alpha = .65 for community sample; Cronbach's alpha = .70 for clinical sample)(e.g., "Wakes by himself"). As can be seen, the subscales vary in reliability with the majority of scales showing acceptable alpha values. A Total Sleep Disturbance Score can also be obtained from the CSHQ. Using this summative score, the CSHQ has demonstrated good internal consistency in a community sample (Cronbach's alpha = .68) and a clinical sample (Cronbach's alpha = .78) (Owens et al., 2000). Test-retest assessments also indicate good reliability with coefficients ranging from .62 to .79 (Owens et al.). Norms for the CSHQ have been established with a community group ($n = 469$) and a clinical sample ($n = 154$) of parents with children ages 4-10 diagnosed with sleep disorders (Owens et al.).

Spanish Translation

A research assistant from the University Center for Developmental Disabilities (UCDD) translated all items into Spanish in 2008. Forty bilingual parents from California State University, San Bernardino (CSUSB) were

recruited. Half of the parents completed the English version and half completed the Spanish version. Two weeks later, participants completed the version that was not completed at time one. Packets contained the informed consent, instructions, demographics, CSHQ, and debriefing. Paired-samples t-tests were conducted to determine whether responses differed from one version to the next. After analysis, some items needed to be further re-translated.

In 2011, four bilingual graduate students, fluent in English and Spanish, re-translated items from the previous translation. The translated items needed to be in accordance with the different dialects in the Spanish language, so two more undergraduates from CSUSB assisted in the translation process. One of the translators spoke the Spanish dialect from Colombia, two translators spoke the Spanish dialect from Baja California, Mexico, and all other translators spoke the Spanish dialect from California, U.S. It is important to note that Spanish was the first language of all translators who assisted in re-translating the items. After mutual agreement on the translated version, it was then given to another bilingual graduate student translator. The bilingual graduate student, unfamiliar with the questionnaire, performed a back-translation into English. The graduate student who completed the back-translation version spoke Spanish as their second language. The translation approach was obtained from Brislin (1970). The back-translation was done in order to further reassure similarity to the original questionnaire. The back-translated version

was then compared to the original CSHQ by two psychology professors familiar with the English CSHQ.

Preliminary Evidence of Translatability

Ten bilingual parents from CSUSB were recruited for pilot testing of the Spanish version. Children reported on were between the ages of 4-10. Parents included in the study were able to read and understand English and Spanish. Participants were asked to complete a packet consisting of a demographic section and both versions of the CSHQ. Informed consent was in English, instructions were in English, demographic sections were either in English or Spanish, and the debriefing letter was in English. In a two-week period, participants had to complete both versions, but in no particular order. Each questionnaire took approximately 35 minutes to complete. Participants had one week to complete and return each packet. Participants received two extra-credit points after completing both questionnaires

A Pearson product-moment correlation coefficient and paired-samples T-test were calculated to assess item comparability between Spanish and English versions for both pilot studies. The analysis technique was derived from Solis and Abidin (1991). Results from both pilot studies demonstrated that the Spanish CSHQ was comparable to the English CSHQ. Table 1 contains the T-test results and p values for the 33 items used in the second pilot study.

Procedure

Recruitment for our sample took place via CSUSB, the community, the University Center for Developmental Disabilities, and the Fiesta Educativa Inc. parent meeting. Participants were included in the clinical sample if the child was reported as having a developmental disability. The community sample included children with no reported developmental disability.

Participants were given a packet that contained a Spanish informed consent, Spanish CSHQ, Spanish demographic section, and Spanish debriefing letter. Research assistants collected packets one week after distribution from the community. Packets from UCDD San Bernardino campus were collected 1-week later and packets from UCDD Palm Desert campus were collected at the end of the parent meeting. Fiesta Educativa Inc. packets were collected the same day of distribution. Parents returned the informed consent, indicating their willingness to participate, completed the CSHQ and demographic section, and sealed these materials in an envelope to reassure confidentiality. Children reported on were 4-10 years of age. Parents needed to be 18 years or older to participate in the study. If they did not have children within the age group or did not understand Spanish, participants were given the option of having a family member or friend complete the questionnaire. Participants attending the university had the opportunity to receive 1 point of extra credit that was applied to a class of their choice. The questionnaire took approximately 35 minutes to complete.

Four children were dropped from our sample because of missing age. Five children were dropped because they were less than 4 years old. Twenty children were dropped because they were more than 10 years old. People were retained if their rate of Spanish fluency was mostly fluent or very fluent or language spoken at home was Spanish only or they reported speaking Spanish more than English. Eighteen people did not meet the criteria from our sample. Fifty-seven packets were removed because they at least had 1 item that was missing from the CHSQ.

Community Sample

Participants consisted of 151 Spanish-speaking parents for the community sample. Age-of-child ranged from 4 to 10 years. There were a total of 80 females (52.9%) and 70 males (46.4%). Gender was not reported for 1 of the children. Participants reported as being Hispanic (n = 147) and mixed and other ethnicity (n = 4).

Clinical Sample

Thirty Spanish-speaking families of children with a developmental disability were recruited for our study. Age-of-child ranged from 4 to 10 years. Participants included 9 females (30%) and 19 males (63.3%). Gender was not reported for 2 of the children. Participants reported as being Hispanic (n = 30). Participants reported their children as having Mental Retardation (n = 8), Seizure Disorder (n = 3), Cerebral Palsy (n = 4), Autism (n = 9), Attention

Deficit Disorder Hyperactivity (n = 7), Sleep Problems (n = 7), and/or Down Syndrome (n = 3).

Demographics

Income is different in the clinical group compared to the community group. Seventy-two percent of the respondents in the clinical group reported a household income below \$24,000 while 40% of the community sample had an income below \$24,000. Fisher's exact test provides evidence that the distribution of income was significantly different for the clinical and community groups ($p = .022$).

Education was assessed in three categories: high school not complete, high school graduate, and above high school education. The distribution of maternal education was significantly different in the clinical and community groups ($p = .012$) with 72% of mothers in the clinical group not completing high school compared to 41% in the community group. The distribution of fathers education was not significantly different for clinical and community samples ($p = .290$). Statistical significance was analyzed using Fisher's exact test. Other demographic details are reported in Table 2.

CHAPTER THREE

RESULTS

Summary of Analyses

Several items of the CSHQ were reverse coded prior to the analyses such that a higher score reflected greater sleep disturbance. These items were: “Goes to bed at same time,” “Falls asleep in own bed,” “Falls asleep in 20 minutes,” “Sleeps the right amount,” “Sleeps same amount each day,” and “Wakes by himself.”

To determine the internal structure of the Spanish-language version of the CSHQ, confirmatory and exploratory factor analyses were performed on the CSHQ items. Community and clinical groups were combined for these factor analyses. Reliability for the subscales resulting from the exploratory analysis and reliability for the original subscales was assessed through Cronbach’s alpha – an index of internal consistency. Subsequently, T-tests were conducted to compare the community group and the clinical group on each resulting subscale and on the original subscales.

Internal Structure of the Spanish-Language Version

A confirmatory factor analysis was performed with 32 items after the removal of the 1-item Sleep Onset Delay subscale to determine whether the structure of the Spanish-language version of the scale matches the original 8 subscale structure as shown in Table 3. Results from our sample indicated

that the Spanish Language Version did not show a good fit to the original 8 subscales. An exploratory factor analysis with varimax rotation and listwise exclusion was performed which yielded 11 factors with eigenvalues greater than 1.00 for the Spanish-language version of the CSHQ. The factors accounted for between 17.44% and 3.15% of the variance. To be considered a potential subscale, a factor had to meet several criteria. Specifically, it must have an eigenvalue greater than 1.00, must contain at least 4 items, and must be interpretable. In addition, the scree plot for the analysis must show that the factor falls above the point at which eigenvalues level off, thereby indicating that the factor is associated with meaningful discriminability. A five-factor solution was chosen, which explained 44.07% of the variance. The content of the subscales and the amount of variance explained by the corresponding factors are as follows. Subscale 1 (17.44%), labeled *Disruptive Sleep Behaviors* consisted of the items, "Sleep walks," "Awakens screaming, sweating," "Snores loudly," "Stops breathing," and "Snorts and gasps." Subscale 2 (9.37%), labeled *Cosleeping Behaviors* consisted of items "Falls asleep in other's bed," "Afraid of sleeping alone," "Falls asleep in own bed," and "Needs parent in room to sleep." Subscale 3 (6.58%), labeled *Bedtime Routine* consisted of the items "Goes to sleep at the same time," "Falls asleep in 20 minutes," "Sleeps the right amount," and "Sleeps same amount each day." Subscale 4 (5.78%), labeled *Morning Wake Up* consisted of the items "Wakes up in negative mood," "Hard time getting out of bed," "Takes long time

to be alert,” “Seems tired,” and “Others wake child.” Subscale 5 (4.92%), labeled *Nighttime Waking* consisted of the items “Struggles at bedtime,” “Sleeps too little,” “Awakens once during night,” and “Awakens more than once.” Factor loadings of items on these subscales are contained in Table 4.

Comparing the 5 factor structure of the Spanish Language version of the scale to the 8 factor structure of the English Language version, Factor 1 of the Spanish Language version consisted of 2 out of 7 items from the Parasomnias subscale and 3 out of 3 items from the Sleep Disordered Breathing subscale of the English Language version. Factor 2 consisted of 4 out of 6 items from the Bedtime Resistance subscale. Factor 3 consisted 1 out of 6 items from the Bedtime Resistance subscale, 1 out of 1 item from the Sleep Onset Delay subscale, and 2 out of 3 items from the Sleep Duration subscale. Factor 4 consisted of 5 out of 8 items from the Daytime Sleepiness subscale. Factor 5 consisted of 1 out of 6 items from the Bedtime Resistance subscale, 1 out of 3 items from the Sleep Duration subscale, and 2 out of 3 items from the Night Wakings subscale.

Group Comparison on the Spanish-Language CSHQ

Independent T-tests were conducted to compare the community and clinical groups on the 5-factor structure of the Spanish-language version of the CSHQ. Means and standard deviations for these analyses are presented in Table 5. As indicated in the table, a significant difference was found between the community and clinical samples for Disruptive Sleep Behavior,

$t(179) = -4.976, p < .05$, Bedtime Routine, $t(179) = -4.487, p < .05$, and Nighttime Waking, $t(179) = -5.61, p < .05$. In addition, the group difference on the Morning Wake Up factor approached significance, $t(179) = -1.69, p > .05$. All mean differences indicated greater sleep problems in the clinical sample. The mean scores of the community and clinical groups did not differ on the Cosleeping Behavior factor, $t(179) = -.677, p > .05$.

Reliability was assessed through Cronbach's alpha for each subscale separately for the community and clinical sample and as a combined sample. Cronbach's alpha values for the community sample were: Disruptive Sleep Behaviors (Cronbach's alpha = 0.22), Cosleeping Behaviors (Cronbach's alpha = 0.81), Bedtime Routine (Cronbach's alpha = 0.70), Morning Wake Up (Cronbach's alpha = 0.69), and Nighttime Waking (Cronbach's alpha = 0.54). Cronbach's alpha values for the clinical sample were: Disruptive Sleep (Cronbach's alpha = 0.90), Cosleeping Behaviors (Cronbach's alpha = 0.80), Bedtime Routine (Cronbach's alpha = 0.67), Morning Wake Up (Cronbach's alpha = 0.79), and Nighttime Waking (Cronbach's alpha = 0.61). Table 6 represents each Cronbach's alpha value for each subscale.

Comparison of Current Sample and Earlier Samples on the Original Eight Subscales

Although the Spanish-language version of the CSHQ does not appear to have an eight-factor structure, the community and clinical samples were compared on the original eight subscales in Table 7. This comparison shows

higher scores in the clinical sample than the community sample. Additionally, reliability of the original English Language subscales was calculated for both samples as represented in Table 8.

CHAPTER FOUR

DISCUSSION

The purpose of this study was the adaptation and validation of the Spanish version of the Children's Sleep Habits Questionnaire (CSHQ-S). The CSHQ is a sleep-screening tool that measures sleep problems in childhood. While exhibiting a different internal structure than the English Language version, the Spanish CSHQ can be considered a good screening tool to assess sleep problems in typically developing children and children with developmental disabilities.

Confirmatory factor analysis indicated that the original 7-factor structure of the CHSQ was not a good fit with the structure of the Spanish Language version. Exploratory factor analysis yielded 5 factors that were both comparable to and yet distinct from the original subscales. It is important to note that Dutch and Portuguese samples also failed to replicate the original 8-factor structure (Silva et al., 2013; Waumans, Terwee, Van Den Berg, Knol, Van Litsenburg, & Gemke, 2010) for the scale. This demonstrates that the findings of the present study are not aberrant and that there are cultural differences in how sleep behaviors and patterns are understood or in the very nature of such behaviors/patterns.

Cultural values are one likely source of the unique structure of the CHSQ with the current sample. Spanish-speaking parents may perceive sleep patterns and behaviors differently due to societal expectations in the Latino

culture. Cultural beliefs about sleep problems may play a role in how parents report sleep problems (Jenni & O'Connor, 2005). Research has found that preschool age Latino children are more likely to sleep in the same room as their parents (Milan, Snow, & Belay, 2007), thus it is possible that school age children may continue to sleep in their parents' room. In our study, there were no significant differences between groups in the cosleeping subscale, which could imply that regardless of the clinical status of the child, co-sleeping behaviors in children in the Spanish-speaking population are similar. This practice differs significantly from sleeping arrangements in Caucasian families. This study also found that preschool Latino children were still using bottles as part of their bedtime routine. In a recent study that used the English CSHQ, school age Latino children had more sleep problems than school age White children (Sheares et al., 2013), suggesting that frequency of occurrence, or of reported occurrence, can vary substantially across cultures. On the whole, research on the Spanish-speaking population is limited making it difficult to understand precisely why our population answered the way they did.

Supporting the overall validity of the Spanish Language CSHQ, the parents in the clinical sample reported more sleep problems than parents in the community sample on the majority of the five subscales. Reliability coefficients for the Spanish Language version of the scale, however, vary considerably with the Disruptive Sleep Behaviors subscale showing very poor reliability of .22. This differs substantially from the reliability of the same

subscale assessed via the clinical sample. The reason for this difference is not entirely clear, but the most likely explanation is the extremely low variability of scores within the community sample ($SD = .15$) (See table 6). The community sample had less variation in responses with a high percentage of participant reporting “1” for items in the subscale compared to the clinical sample. Items in the Disruptive Sleep Behaviors subscale (Sleep walks, Awakens screaming, sweating, Snores loudly, Stops breathing, and Snorts and gasps) may relate to the more severe sleep disturbances that children with developmental disabilities experience. It is also the case that reliability values for heterogeneous groups tend to be higher than those for homogeneous groups (de Vet, Terwee, Mokkink, & Knol, 2011). It is possible that the clinical sample is more heterogeneous. In either case, the alpha value obtained with the community sample would be an underestimate of the population value.

Working with the original subscales of the English Language CSHQ, the community sample in the present study had similar internal consistencies to the English CSHQ with the exception of a relatively low score in the Sleep Disordered Breathing subscale. There were no major differences between internal consistencies in the Spanish clinical sample (present study) and the English clinical sample. Furthermore, the means were significantly higher in the clinical sample than the community sample for most of the original subscales of the CSHQ. The CSHQ, therefore, appears to predict the greater incidence of sleep problems known to be present in developmentally delayed

children. Children with autism, for example, have been found to have difficulty going to sleep, and to experience night wakings, short sleep duration, early morning wakings, and sleepiness during the day (Wiggs & Stores, 2004).

There are several limitations to the present study. A test-retest reliability check was not conducted in the norming data of the validation. The sample in this study may not properly represent the Spanish speaking population because participants were recruited in the U.S. Also, participants at UCDD Palm Desert campus and Fiesta Educativa Inc. typically completed packets the same day while a number of other participants took substantially longer. Thus time-to-completion of the questionnaire varied across participants and may have varied systematically between the clinical and community samples. As a result, retrospective bias may have operated more for one sample than the other. In addition, clinical disabilities were parent-reported and we cannot verify answers to a self-reported questionnaire. Another limitation is that we had a small clinical sample compared to the community sample. Our small clinical sample size could have affected our reliability scores. Additionally, our clinical group was comprised of different developmental disabilities with different behavioral characteristics. Education may play a role in how much a parent is able to read and understand questions in Spanish. Our population included a high number of parents not completing high school.

In conclusion, this study has added to the small body of research that is available for the Spanish-speaking population in relation to sleep. The Spanish

CSHQ has demonstrated good psychometric properties due to the significant difference between the community and clinical sample in the 5-factor structure. In addition, future research should seek to confirm the original internal structure for the scale with English-speaking participants, as reported by Owens. This structure is not always replicated when non-English speaking populations are used. Future work should consider collecting data from parents of different Spanish dialects to see how they these populations differ from one another. Additionally, future studies should factor in obesity, sleep apnea, asthma, and other detrimental factors that may be of high prevalence in the Spanish-speaking community and examine how these may influence sleep. A small sample size was used for these preliminary results of the Spanish translation of the CSHQ for a Master's degree thesis requirement. Collection of data for both the community and clinical sample will be continued. In addition, future research should consider separating clinical disorders, along with explaining how comorbidity and medication may influence sleep. Furthermore, research should focus on understanding sleep habits in the Spanish-speaking population. Overall, the CHSQ-S is considered a potentially valuable sleep-screening measure and research tool.

APPENDIX A
INSTITUTIONAL REVIEW BOARD APPROVAL FORM

**Human Subjects Review Board
Department of Psychology
California State University,
San Bernardino**

PI: Hoffman, Hodge and Ledesma
From: Michael R. Lewin
Project Title: Spanish Version of the Children's Sleep Habits Questionnaire
Project ID: H-12SP-25
Date: 6/2212

Disposition: Administrative Review

Your IRB proposal is approved. This approval is valid until 6/22/2013.

Good luck with your research!



Michael R. Lewin, Co-Chair
Psychology IRB Sub-Committee

APPENDIX B
CONSENT FORM



College of Social and Behavioral Sciences
Department of Psychology

Spanish Version of the Children's Sleep Habits Questionnaire (CSHQ)

Charles D. Hoffman, Research Director
Dani Hodge, Associate Research Director
Duvia Lara Ledesma, Research Assistant
(909) 537-7305 or (909) 537-5689

Informed Consent

You are invited to participate in this study if you are the parent of a child between 4 and 10 years old and are fluent in Spanish. Your child must live at home with you. If you are not comfortable reading and responding to questions in Spanish, you should not participate in this study. The goal of this study is to validate the Spanish translation of the Children's Sleep Habits Questionnaire (CSHQ) – a measure widely used to assess parents' report of their children's sleep. Currently, the CSHQ is not available in Spanish. This study has been approved by the Department of Psychology Institutional Review Board Sub-Committee of the California State University, San Bernardino, a copy of the official Psychology IRB stamp of approval should appear on this consent form.

In this study, you will be asked to fill out the attached survey packet in Spanish. The questionnaire will ask some demographic questions and you will be asked about your child's sleep habits. It will take approximately 35-40 minutes to complete the questionnaire. Once the questionnaire has been completed, you will be asked to put the questionnaire in an envelope and seal it.

If you are a CSUSB student, you may receive 2 points of extra credit in a selected Psychology class at your instructor's discretion through SONA, however it is not necessary that the student complete the survey themselves. A friend, family member, co-worker, etc. may also complete the survey. CSUSB Students will be asked to write their SONA ID on the label outside of the envelope in which the surveys are provided. A researcher or student assistant will return to your class in a week to collect your survey.

If you are a parent attending a Fiesta Educativa meeting, a research assistant will collect your survey during the parent meeting.

All of the participants' responses will be kept in a secured location and will be held in the strictest of confidence by all researchers. No names will be recorded with your responses. Individual answers will not be reported. We are only interested in group responses. Only a trained researcher will open the sealed envelope for data processing. Additionally, data will be stored in a locked, limited access, secure location in our research office at CSUSB.

Your participation in this study is entirely voluntary. You are free to withdraw your participation at any time during the study, or refuse to answer any specific question, without penalty or withdrawal of benefit to which you are otherwise entitled. Since some parents may have more than one child appropriate for this study, we ask that parents identify, by first name


only, the child that they will focus on when responding to the child-specific questions. Identifying the child by first name will allow you to consistently respond with respect to the same child throughout the questionnaire. The child's name will not be a component of any data analyses, nor will it be entered into any database, or used in any other manner.

This study involves no risk beyond those routinely encountered in daily life, nor any direct benefits to you as a participant. It is very unlikely that any psychological harm will result from participation in this study. However, if you would like to discuss any distress you have experienced, do not hesitate to contact the CSUSB Counseling Center at 909 537-5040 (If you are a CSUSB student) or the Community Counseling Center at 909 537-5569 (if you are a Fiesta Educativa parent). If you like, you may receive a report when the study has been completed after December 2013. The results from this study will be included in Duvia Lara Ledesma's Master's thesis and submitted for publication to a scientific journal. Data will be destroyed five years after publication. If you have questions about the study, please feel free to contact Dr. Charles Hoffman at (909) 537-7305; choffman@csusb.edu. If you have concerns about the study you may also contact Department of Psychology Institutional Review Board Sub-Committee of the California State University, San Bernardino at psyc.irb.@csusb.edu.

By marking the box below, you acknowledge that you have been informed about the study, its nature and purpose. Further, you acknowledge that you are at least 18 years of age and that you agree to participate in this study.

Thank you in advance for agreeing to participate in this research.

I agree to participate (check here): Date today: _____

CALIFORNIA STATE UNIVERSITY			
PSYCHOLOGY INSTITUTIONAL REVIEW BOARD SUB-COMMITTEE			
APPROVED	9/9/13	VOID AFTER	9/9/14
IBB #		CHAIR	
H12SP-25			



College of Social and Behavioral Sciences
Department of Psychology

Spanish Version of the Children's Sleep Habits Questionnaire (CSHQ)

Charles D. Hoffman, Research Director
Dani Hodge, Associate Research Director
Duvia Lara Ledesma, Research Assistant

Consentimiento Informado

Usted es invitado a participar en este estudio si es el padre o madre de un niño entre 4 y 10 años. Su niño debe vivir en casa con usted. Si usted no se siente cómodo respondiendo preguntas en Español, usted no debería participar en este estudio. El objetivo de este estudio es validar la traducción en Español del Children's Sleep Habits Questionnaire (CSHQ) – un cuestionario usado comúnmente en el que los padres reportan el sueño de sus niños. Actualmente, el CSHQ no está disponible en Español. Este estudio ha sido aprobado por el examinador Institucional del departamento de Psicología de la Universidad Estatal de California, San Bernardino. Una copia del sello del IRB del departamento de Psicología con aprobación debería aparecer en esta forma de consentimiento.

En este estudio, le pedirán que llene el paquete de revisión adjunto en Español. El cuestionario hará algunas preguntas demográficas y le preguntará sobre los hábitos de sueño de su niño. Se necesitarán aproximadamente 35-40 minutos para completar el cuestionario. Una vez que el cuestionario haya sido completado, le pedirán poner el cuestionario en un sobre y sellarlo.

Si usted es un estudiante de CSUSB, usted puede recibir 2 puntos de crédito suplementario en una clase de Psicología seleccionada con la discreción de su instructor por SONA, sin embargo no es necesario que el estudiante mismo complete la revisión, podría ser un amigo, miembro de su familia, compañero de su trabajo, etc. A estudiantes les pedirán escribir su SONA ID en la etiqueta fuera del sobre. Un investigador o estudiante asistente volverá a su clase en una semana para recoger el cuestionario.

Si usted es un padre que participa en la reunión de padres en Fiesta Educativa, un asistente de investigación recogerá la encuesta durante la reunión.

Todas las respuestas de los participantes se mantendrá en un lugar seguro y se tratarán con la más estricta confidencialidad de parte de todos los investigadores. No nombres se registrarán con sus respuestas. Las respuestas individuales no serán reportadas. Sólo estamos interesados en las respuestas del grupo. Sólo un investigador entrenado abrirá el sobre sellado para procesamiento de datos. Además, datos se almacenarán en un acceso bloqueado, limitado, ubicación segura en nuestra oficina de investigación en CSUSB.

Su participación en este estudio es totalmente voluntaria. Usted es libre de retirar su participación en cualquier momento durante el estudio, o negarse a responder cualquier pregunta específica, sin pena o retiramiento del beneficio al que de lo contrario tiene derecho.


Dado que algunos padres pueden tener más de un hijo apropiado para este estudio, pedimos que los padres identifiquen al niño en el que se enfocará al responder las preguntas específicas sólo por el nombre. Si es el padre de un niño que asiste a la UCDD, asegúrese de que el niño que se identifica en la parte frontal del cuestionario es el niño que recibe servicios. Identificar al niño por su primer nombre le permitirá responder consistentemente con respecto al mismo niño en todo el cuestionario. El nombre del niño no será un componente de cualquier análisis de datos, ni se entrará en cualquier base de datos, o utilizar de cualquier otra manera.

Este estudio implica ningún riesgo más allá de los que se producen habitualmente en la vida cotidiana, ni ningún beneficio directo a usted como un participante. Es muy improbable que pueda haber cualquier daño psicológico a resultado de la participación en este estudio. Sin embargo, si usted desea discutir cualquier dificultad que haya experimentado, no dude en ponerse en contacto con el Centro de Consejería de CSUSB al 909 537-5040 (Si usted es un estudiante CSUSB) o el Centro de Consejería de la Comunidad al 909 537-5569 (si es un padre que participa en Fiesta Educativa). Si lo desea, puede recibir un informe cuando se haya completado el estudio después de Diciembre de 2013. Los resultados de este estudio serán incluidos en la tesis de maestría de Duvia Lara Ledesma y presentados para su publicación en una revista científica. Para sus preguntas sobre el estudio, no dude en ponerse en contacto con el Dr. Charles Hoffman al (909) 537-7305; choffman@csusb.edu. También puede comunicarse con la Oficina de Sujetos Humanos en la Universidad Estatal de California, San Bernardino a psyc.irb.@csusb.edu.

Marcando la casilla de abajo, usted reconoce que han sido informados sobre el estudio, su naturaleza y finalidad. Además, usted reconoce que es al menos 18 años de edad y que acepta participar en este estudio.

Gracias de antemano por haber aceptado participar en esta investigación.

Estoy de acuerdo en participar (marque aquí): Fecha de hoy: _____

CALIFORNIA STATE UNIVERSITY			
PSYCHOLOGY INSTITUTIONAL REVIEW BOARD SUB-COMMITTEE			
APPROVED	8/9/13	VOID AFTER	8/9/14
IBB #		CHAIR	
H12SP-25			

APPENDIX C
CHILDREN'S SLEEP HABITS QUESTIONNAIRE - SPANISH
(CSHQ-S)



College of Social and Behavioral Sciences
Department of Psychology

Instrucciones

Para que podamos apreciar completamente las normas de sueño es importante que lea usted las preguntas con cuidado y que no deje usted ninguna pregunta sin respuesta.

Le van a pedir que responda algunas preguntas demográficas y preguntas relacionadas con el sueño de un niño en específico entre las edades de 4 a 10 años que viva con usted. Ya que haya seleccionado a un niño en su familia para evaluar y para responder preguntas mencionadas, por favor escriba usted abajo el primer nombre:

Solo el primer nombre del niño/a: _____
(Este nombre no será usado en el proceso de datos)

Identificando el primer nombre del niño/a le permitirá enfocarse consistentemente en el mismo niño/a cuando está respondiendo las preguntas sobre el sueño del niño/a. El nombre del niño/a no será parte de ningún análisis de datos, ni será ingresado en una base de datos, ni será usado en ningún procedimiento aparte.

Por favor lea usted las preguntas con cuidado y marque su respuesta con una (marque aquí) o una X. **Es importante que no deje ninguna pregunta sin contestar.** No contestar completamente podría impedirnos el uso de la información que usted provea.

Cual es su relación con este/a niño/a? Mamá Papá Otro: _____

Es usted un estudiante de universidad? Sí No

Fecha de hoy: _____

Después de completarlo, por favor ponga usted el cuestionario y la carta de consentimiento informado en el sobre y selle el sobre para mayor confidencialidad.

INFORMACIÓN DEL NIÑO

Edad del niño: _____

Sexo:

- ① Femenino
- ② Masculino

Etnicidad:

- ① Afroamericano
- ② Asiático/ Isleño del Pacífico
- ③ Hispano/Latino
- ④ Anglosajón
- ⑤ Indígena Norteamericano
- ⑥ Otro _____

¿Ha sido su hijo diagnosticado con alguno de los siguiente desordenes?

- ① Retraso Mental
- ② Ataques convulsivo
- ③ Parálisis Cerebral
- ④ Autismo
- ⑤ Síndrome de Asperger
- ⑥ Trastorno generalizado del desarrollo
- ⑦ Trastorno por déficit de atención e hiperactividad
- ⑧ Problemas de sueño
- ⑨ Otro _____

INFORMACIÓN ACERCA DE LA MADRE (o persona primaria del cuidado)

¿Quien es la que cuida principalmente al niño?

- ① Madre
- ② Madrastra
- ③ Madre de custodia
- ④ Madre adoptiva
- ⑤ Abuela
- ⑥ Otra _____

Edad: _____

Etnicidad:

- ① Afroamericano
- ② Asiático/ Isleño del Pacífico
- ③ Hispano/Latino
- ④ Anglosajón
- ⑤ Indígena Norteamericano
- ⑥ Otro _____

Estado civil:

- ① Soltera
- ② Casada
- ③ Separada
- ④ Divorciada
- ⑤ Viuda
- ⑥ Cohabitante

Educación:

- ① Sin preparatoria
- ② Preparatoria incompleta
- ③ Graduado de preparatoria
- ④ Universidad incompleta
- ⑤ 2 años de la Universidad
- ⑥ Graduado de Universidad
- ⑦ Maestría o posgrado

INFORMACIÓN DEL HOGAR

¿Total de ingresos?

- ① Menos de \$24,000
- ② \$24,001 a \$35,999
- ③ \$36,000 a \$47,999
- ④ \$48,000 a \$59,999
- ⑤ \$60,000 a \$71,999
- ⑥ \$72,000 o más

Información de los hermanos(as) que viven en el mismo hogar

	Sexo del hermano/a		Edad del hermano/a
	Femenino	Masculino	
1	①	②	_____
2	①	②	_____
3	①	②	_____
4	①	②	_____
5	①	②	_____

¿Han sido los hermanos diagnosticado con una discapacidad o problemas del sueño?

Describe: _____

¿Cuántas personas viven en el hogar? _____

INFORMACIÓN ACERCA DEL PADRE (o persona primaria del cuidado)

¿Quien es el que cuida principalmente al niño?

- ① Padre
- ② Padrastro
- ③ Padre de custodia
- ④ Padre adoptivo
- ⑤ Abuelo
- ⑥ Otro _____

Edad: _____

Etnicidad:

- ① Afroamericano
- ② Asiático/ Isleño del Pacífico
- ③ Hispano/Latino
- ④ Anglosajón
- ⑤ Indígena Norteamericano
- ⑥ Otro _____

Estado civil:

- ① Soltero
- ② Casado
- ③ Separado
- ④ Divorciado
- ⑤ Viudo
- ⑥ Cohabitante

Educación:

- ① Sin preparatoria
- ② Preparatoria incompleta
- ③ Graduado de preparatoria
- ④ Universidad incompleta
- ⑤ 2 años de la Universidad
- ⑥ Graduado de Universidad
- ⑦ Maestría o posgrado

INFORMACIÓN ACERCA EL PADRE

Por favor califique su idioma fluidez en Español. (Por favor circule el elemento que mejor se aplica a usted).

- ① ② ③ ④ ⑤
- Nada Algo fluido Muy fluido

Por favor, indique los idioma (s) que se hablan en el hogar?

- ① Inglés solamente
② Español solamente
③ Español e Inglés
④ Más Español que Inglés
⑤ Más Inglés que Español
⑥ Ambos por igual
⑦ Otros (especificar): _____

CSHQ-S: Por favor piense en el niño que identifico en la primera pagina de este paquete. Las siguientes declaraciones son acerca de los hábitos de sueño de su niño y posibles dificultades del sueño. Para responder las siguientes preguntas considere los hábitos de su hijo durante la semana pasada. Si la semana pasada fue inusual, por alguna razón específica (por ejemplo, si su hijo tuvo una infección en el oído y no durmió bien, o la televisión estaba descompuesta), piense en la semana mas reciente que fue usual para el niño. Responda **NORMALMENTE** si algo ocurre **5 veces o más** en una semana; responda **A VECES** si ocurre de **2 o a 4 veces** en una semana; responda **RARAMENTE** si algo **nunca ocurre o ocurrió 1 vez** durante la semana.

	NORMALMENTE 5 o más veces por semana	A VECES 2-4 veces por semana	RARAMENTE 0-1 vez por semana
1. Escriba la hora de acostarse de su niño/a: _____	①	②	③
2. El niño se va a la cama a la misma hora cada noche.	①	②	③
3. El niño se duerme dentro los 20 minutos después de irse a la cama.	①	②	③
4. El niño duerme solo/a en su propia cama.	①	②	③
5. El niño se duerme en la cama de sus padres o hermanos/as.	①	②	③
6. El niño se duerme con movimientos oscilantes o rítmicosos.	①	②	③
7. El niño necesita un objeto especial para dormirse (muñeca, cobija especial, etc.).	①	②	③
8. El niño necesita un padre en el cuarto para dormirse.	①	②	③
9. El niño está listo/a para dormirse a la hora de acostarse.	①	②	③
10. El niño resiste ir a la cama a la hora de acostarse.	①	②	③
11. El niño tiene dificultad a la hora de acostarse (llora, no quiere quedarse en la cama, etc.).	①	②	③
12. El niño tiene miedo de dormir en la oscuridad.	①	②	③
13. El niño tiene miedo de dormir solo/a.	①	②	③
14. Escriba la cantidad de tiempo que el niño usualmente duerme cada día: _____ horas y _____ minutos (combinando las noches y siestas)	①	②	③
15. El niño duerme muy poco.	①	②	③
16. El niño duerme demasiado.	①	②	③
17. El niño duerme la cantidad de tiempo apropiada.	①	②	③
18. El niño duerme aproximadamente la misma cantidad de tiempo cada día.	①	②	③
19. El niño se orina en la cama durante la noche.	①	②	③
20. El niño habla durante el sueño.	①	②	③
21. El niño es inquieto y se mueve mucho durante el sueño.	①	②	③
22. El niño camina dormido durante la noche.	①	②	③
23. El niño se va a la cama de otra persona durante la noche (padre, hermano, hermana, etc.).	①	②	③
24. El niño dice que tiene dolores en el cuerpo durante el sueño. Si es el caso, donde?	①	②	③
25. El niño rechina los dientes durante el sueño (su dentista tal vez le ha dicho esto).	①	②	③
26. El niño ronca fuertemente.	①	②	③
27. El niño parece que para de respirar durante el sueño.	①	②	③
28. El niño resopla o jadea al respirar durante el sueño.	①	②	③
29. El niño tiene dificultad durmiendo fuera del hogar (visitando parientes, vacaciones).	①	②	③
30. El niño se queja de problemas para dormir.	①	②	③
31. El niño se despierta gritando, sudando, e inconsolable durante la noche.	①	②	③
32. El niño se despierta alarmado por un sueño espantoso.	①	②	③
33. El niño se despierta una vez durante la noche.	①	②	③
34. El niño se despierta más de una vez durante la noche.	①	②	③
35. El niño vuelve a dormir sin ayuda después de que se despierta.	①	②	③
36. Escriba el número de minutos que el niño dura despierto/a cuando se despierta durante la noche: _____	①	②	③
37. Escriba la hora del día que su hijo usualmente despierta: _____	①	②	③
38. El niño despierta por si mismo.	①	②	③

CSHQ-S

39. El niño despierta con el reloj-despertador.	①	②	③
40. El niño despierta de mal humor.	①	②	③
41. Adultos o hermanos despiertan al niño.	①	②	③
42. El niño tiene dificultades para salir de la cama en la mañana.	①	②	③
43. El niño toma mucho tiempo en las mañanas para estar alerta.	①	②	③
44. El niño madruga muy temprano por la mañana.	①	②	③
45. El niño tiene un buen apetito por la mañana.	①	②	③
46. El niño toma siestas durante el día.	①	②	③
47. El niño se duerme de repente en medio de algún comportamiento activo.	①	②	③
48. El niño parece cansado/a.	①	②	③

CSHQ-S: Durante la semana pasada, ¿su hijo/a parece tener mucho sueño o se duerme durante las siguientes ocasiones (marque todo lo que aplica):

	No Tiene Sueño	Tiene Mucho Sueño	Se duerme
49. Jugando solo.	①	②	③
50. Mirado televisión.	①	②	③
51. Viajando en un coche.	①	②	③
52. Comiendo comida.	①	②	③

Muchas gracias por participar en éste estudio. Por favor verifique que todas las preguntas estén contestadas. Después, ponga el paquete y la carta de Consentimiento en el sobre, cierre el sobre para su confidencialidad. Solamente un investigador entrenado abrirá los sobres para el procesamiento de los datos. Regrese éste sobre a la persona indicada. De nuevo, sus respuestas son confidenciales y serán reportadas por grupo, no individualmente. Su nombre o el nombre de su hijo, no será documentado en ningún conjunto de datos.

Owens, J. A., Spirito, A., & McGuinn, M. (2000). The children's sleep habits questionnaire (CSHQ): Psychometric properties of a survey instrument for school-aged children. *Sleep*, 23(8), 1043-1051.

APPENDIX D
FIESTA EDUCATIVA INC. PERMISSION LETTER

Fiesta Educativa Riverside County

27852 Post Oak Pl. Murrieta Ca. 92562

Tel: (951) 600-7305

E mail: arodriguez@fiestaeducativa.org



FIESTA EDUCATIVA

Dear Institutional Review Board:

The purpose of this letter is to inform you that I give Duvia Lara Ledesma permission to pass out packets to parents of children with disabilities for her research titled A Spanish Version of the Children's Sleep Habits Questionnaire during the Fiesta Educativa Inc. parent meeting. Fiesta Educativa Inc. parent meetings will be held on Saturday, August 20th, Saturday, September 14th, and Saturday, October 12th at St. Martha's Catholic Church in 37200 Whitewood Rd., Murrieta, CA.

Sincerely;

Alma Rodriguez
Parent Coordinator Fiesta Educativa Inc.
Riverside County

APPENDIX E

TABLE 1: T-TEST SCORES FOR THE SECOND PILOT
TEST DONE FOR THE SPANISH CSHQ

Table 1. *T-test scores for the second pilot test done for the Spanish CSHQ*

CSHQ	<i>t</i>	<i>p</i>
Item 1	1.00	0.34
Item 2	0.00	1.00
Item 3	-1.51	0.17
Item 4	1.81	0.10
Item 5	0.00	1.00
Item 6	-1.86	0.10
Item 7	-0.80	0.44
Item 8	-0.57	0.57
Item 9	0.00	1.00
Item 10	-0.80	0.44
Item 11	0.56	0.59
Item 12	1.00	0.34
Item 13	-0.56	0.59
Item 14	-0.26	0.80
Item 15	-1.00	0.35
Item 16	-1.15	0.28
Item 17	-1.71	0.10
Item 18	-0.56	0.59
Item 19	1.00	0.35
Item 20	1.00	0.34
Item 21	-1.07	0.29
Item 22	1.00	0.34
Item 23	0.56	0.59
Item 24	-0.56	0.59
Item 25	0.00	1.00
Item 26	0.00	1.00
Item 27	0.00	1.00
Item 28	1.00	0.34
Item 29	-0.23	0.82
Item 30	-1.50	0.17
Item 31	-0.56	0.59
Item 32	0.68	0.50
Item 33	0.57	0.57

APPENDIX F

TABLE 2: DEMOGRAPHICS OF THE COMMUNITY
AND CLINICAL SAMPLE

Table 2. *Demographics of the community and clinical sample*

Variable	Community (n = 151)	Clinical (n = 30)
Child gender		
Male	70	19
Female	80	9
Child age		
4 years old	26	5
5 years old	14	2
6 years old	21	0
7 years old	24	6
8 years old	19	5
9 years old	21	6
10 years old	26	6
Household Income		
Less than 24,000	59	21
24,000 to 35,999	44	2
36,000 to 47,999	15	2
48,000 to 59,000	15	2
60,000 to 71,999	9	2
72,000 or more	7	0

APPENDIX G

TABLE 3: FACTORS AND ITEMS LOADINGS OF THE
CONFIRMATORY FACTOR ANALYSIS FOR
THE SPANISH-LANGUAGE CSHQ

Table 3. *Factors and item loadings of the confirmatory factor analysis for the Spanish-language CSHQ*

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
1. Child snorts and/or gasps during sleep	0.72	-0.07	0.14	0.09	0.26	0.26	-0.12
2. Child seems to stop breathing during sleep		-0.01	0.01	0.08	0.15	0.35	-0.25
3. Child snores loudly	0.70	0.02	0.06	0.12	0.01	-0.07	0.04
4. Child sleepwalks during the night	0.61	-0.02	0.04	0.02	-0.06	0.43	0.16
5. Child awakens during night screaming sweating and inconsolable	0.47	-0.11	0.02	0.24	0.11	0.41	0.11
6. Child falls asleep in siblings bed	-0.03	0.80	-0.06	-0.06	0.19	-0.01	-0.04
7. Child falls asleep in own bed	-0.08	0.78	-0.05	-0.02	0.34	-0.05	-0.07
8. Child is afraid of sleeping alone	0.05	0.76	0.22	0.26	-0.04	0.10	0.18
9. Child needs parent in room to fall asleep	0.04	0.76	-0.04	0.10	-0.19	-0.08	-0.16
10. Child moves to someone else's bed during the night parent brother sister etc	-0.21	0.35	0.15	0.26	0.15	0.32	-0.12
11. Adults or siblings wake up child	-0.07	0.00	0.79	-0.08	-0.12	0.10	-0.12
12. Child has difficulty getting out of bed in the morning	0.14	0.13	0.78	0.23	0.06	-0.06	0.05
13. Child wakes up by him herself	-0.08	-0.02	0.63	-0.27	0.21	0.22	0.00
14. Child wakes up in negative mood	0.27	-0.08	0.57	0.31	0.07	-0.04	0.11
15. Child takes a long time to become alert in the morning	0.20	0.01	0.53	0.28	0.28	0.03	0.19

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
16. Child awakes once during the night	-0.02	-0.01	-0.02	0.71	0.18	0.12	-0.10
17. Child awakes more than once during the night	0.11	0.06	-0.13	0.65	-0.06	0.33	0.11
18. Child struggles at bedtime cries refuses to stay in bed	0.09	0.20	0.20	0.63	0.11	0.03	-0.09
19. Child seems tired	0.27	0.06	0.18	0.46	0.11	0.06	0.03
20. Child has trouble sleeping away from home visiting relatives vacation	0.25	0.07	0.17	0.31	0.27	-0.06	0.14
21. Child sleeps the right amount	0.21	0.03	0.07	0.12	0.79	0.06	0.03
22. Child sleeps about the same amount each day	0.28	0.02	0.03	0.08	0.73	0.04	0.01
23. Child goes to sleep at the same time at night	-0.16	0.22	0.10	0.10	0.61	0.02	-0.06
24. Child wets bed at night	0.13	-0.13	-0.01	0.03	0.00	0.57	-0.12
25. Child is restless and moves a lot during the sleep	0.11	0.14	0.11	0.14	-0.01	0.54	-0.01
26. Child talks during sleep	0.22	-0.04	0.01	0.00	0.07	0.49	0.17
27. Child is afraid of sleeping in the dark	-0.05	0.25	0.28	0.21	-0.03	0.41	0.36
28. Child sleeps too little	-0.06	-0.04	0.03	0.25	0.40	0.40	-0.19
29. Riding in a car	0.07	-0.11	0.05	-0.02	0.02	-0.14	0.66
30. Child awakens alarmed by a frightening dream	0.10	-0.04	-0.04	0.32	0.21	0.36	0.50
31. Watching TV	-0.15	-0.01	0.05	-0.23	-0.19	0.13	0.45
32. Child grinds teeth during sleep Your dentist may have told you this	0.24	0.06	0.24	0.00	0.04	0.29	-0.30

Note: Bold figures indicate items greater than .40 of factor loadings.

APPENDIX H

TABLE 4: FACTOR AND ITEM LOADINGS OF THE
EXPLORATORY FACTOR ANALYSIS FOR
THE SPANISH-LANGUAGE CSHQ

Table 4. Factors and item loadings of the exploratory factor analysis for the Spanish-language CSHQ

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1. Child seems to stop breathing during sleep	0.84	0.02	0.11	0.01	0.13
2. Child snorts and/or gasps during sleep	0.74	-0.07	0.26	0.09	0.08
3. Child sleepwalks during the night	0.65	-0.01	-0.04	0.18	-0.04
4. Child awakens during night screaming sweating and inconsolable	0.65	-0.09	0.07	0.08	0.34
5. Child snores loudly	0.63	0.01	0.01	0.23	-0.01
6. Child falls asleep in siblings bed	0.04	0.82	0.17	-0.03	-0.01
7. Child falls asleep in own bed	-0.08	0.79	0.34	0.00	-0.02
8. Child needs parent in room to fall asleep	-0.04	0.75	-0.18	-0.02	0.04
9. Child is afraid of sleeping alone	0.02	0.75	-0.05	0.19	0.20
10. Child sleeps the right amount	0.22	0.03	0.78	0.08	0.10
11. Child sleeps about the same amount each day	0.22	0.03	0.70	0.15	-0.06
12. Child falls asleep within 20 minutes after going to bed	0.04	0.08	0.64	0.02	0.32
13. Child goes to sleep at the same time at night	-0.18	0.22	0.61	0.19	0.08
14. Child has difficulty getting out of bed in the morning	0.03	0.13	0.05	0.76	0.04
15. Child wakes up in negative mood	0.16	-0.07	0.03	0.68	0.09
16. Child takes a long time to become alert in the morning	0.14	0.02	0.27	0.65	0.12
17. Child seems tired	0.19	0.09	0.10	0.59	0.20
18. Child struggles at bedtime cries refuses to stay in bed	0.13	0.19	0.12	0.17	0.66
19. Child awakes once during the night	0.02	0.00	0.18	0.21	0.66
20. Child awakes more than once during the night	0.18	0.06	-0.05	0.11	0.65
21. Child sleeps too little	0.20	-0.01	0.34	-0.14	0.49
22. Child wakes up by him herself	0.05	-0.02	0.17	0.14	-0.09
23. Adults or siblings wake up child	-0.03	0.00	-0.15	0.43	-0.01

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
24. Child is restless and moves a lot during the sleep	0.13	0.10	0.04	0.05	0.19
25. Child talks during sleep	0.16	-0.09	0.14	0.06	-0.04
26. Riding in a car	0.01	-0.13	0.00	0.07	-0.12
27. Child is afraid of sleeping in the dark	0.02	0.22	-0.06	0.03	0.29
28. Child awakens alarmed by a frightening dream	0.14	-0.04	0.20	0.26	0.23
29. Child wets bed at night	0.21	-0.11	-0.01	0.01	0.01
30. Child moves to someone elses bed during the night parent brother sister etc	-0.12	0.38	0.08	0.10	0.28
31. Watching TV	-0.03	-0.02	-0.12	-0.03	-0.08
32. Child grinds teeth during sleep Your dentist may have told you this	0.21	0.05	0.01	0.14	-0.01
33. Child has trouble sleeping away from home visiting relatives vacation	0.14	0.04	0.28	0.15	0.18

Note: Bold figures indicate items greater than .40 of factor loadings

APPENDIX I

TABLE 5: MEANS AND STANDARD DEVIATIONS FOR
THE COMMUNITY AND CLINICAL SAMPLE
COMPARING THE FIVE FACTORS

Table 5. Means and standard deviations for the community and clinical sample comparing the five factors^a

Subscales	Community (n = 151)		Clinical (n = 30)		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
1. Disruptive Sleep Behaviors	1.08	0.15	1.34	0.55	-4.976
2. Cosleeping Behaviors	1.59	0.67	1.68	0.67	-0.677
3. Bedtime Routine	1.65	0.31	1.95	0.42	-4.487
4. Morning Wake Up	1.5	0.44	1.65	0.57	-1.685
5. Nighttime Waking	1.21	0.31	1.59	0.48	-5.615

a Note: Some items were reverse coded, with a higher score indicating a more disturbed sleep behavior.

APPENDIX J

TABLE 6: CSHQ INTERNAL CONSISTENCIES FOR THE
SUBSCALE IN THE SPANISH COMMUNITY AND
CLINICAL SAMPLE FOR THE FIVE FACTORS

Table 6. *CSHQ internal consistencies for the subscales in the Spanish community and clinical sample for the five factors*

Subscale	Community Spanish (n = 151)	Clinical Spanish (n = 30)	Combined (n = 181)
1. Disruptive Sleep Behaviors	0.22	0.9	0.74
2. Cosleeping Behaviors	0.81	0.8	0.8
3. Bedtime Routine	0.7	0.67	0.72
4. Morning Wake Up	0.69	0.79	0.71
5. Nighttime Waking	0.54	0.61	0.63

APPENDIX K

TABLE 7: MEANS AND STANDARD DEVIATIONS FOR THE
COMMUNITY AND CLINICAL SAMPLE COMPARING
THE EIGHT CHSQ SUBSCALES

Table 7. Means and standard deviations for the community and clinical sample comparing the eight CSHQ subscales ^a

Subscales	Community (n = 151)		Clinical (n = 30)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Bedtime Resistance	1.71	0.46	1.81	0.48
2. Sleep Duration	1.22	0.36	1.66	0.57
3. Sleep Anxiety	1.47	0.50	1.71	0.55
4. Night Wakings	1.25	0.36	1.54	0.49
5. Parasomnias	1.21	0.22	1.40	0.41
6. Sleep Disordered Breathing	1.13	0.24	1.43	0.70
7. Daytime Sleepiness	1.59	0.35	1.68	0.44

^a Note: Some items were reverse coded, with a higher score indicating a more disturbed sleep behavior.

APPENDIX L

TABLE 8: CSHQ INTERNAL CONSISTENCIES FOR THE
ORIGINAL SUBSCALES IN THE SPANISH COMMUNITY
AND CLINICAL SAMPLE AND THE ENGLISH
COMMUNITY AND CLINICAL SAMPLE

Table 8. *CSHQ internal consistencies for the original subscales in the Spanish community and clinical sample and the English community and clinical sample*

Subscale	Community Spanish (n = 151)	Clinical Spanish (n = 30)	Community English (n = 469)	Clinical English (n = 154)
1. Bedtime Resistance	0.66	0.66	0.7	0.83
2. Sleep Duration	0.57	0.69	0.69	0.8
3. Sleep Anxiety	0.61	0.6	0.63	0.68
4. Night Wakings	0.44	0.55	0.54	0.44
5. Parasomnias	0.43	0.78	0.36	0.56
6. Sleep Disordered Breathing	0.27	0.94	0.51	0.93
7. Daytime Sleepiness	0.56	0.66	0.65	0.7

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