



Cultural Adaptation of the Infant Sleep Scale for Parents

Ebeveynler için Bebek Uyku Ölçeği'nin Kültürel Uyarlaması

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Abstract

Objective: The aim of this study was to conduct a cultural adaptation study of the Infant Sleep Scale for Parents (ISS-P).

Materials and Methods: The research was conducted methodologically at Family Health Centers in Bulanık district of Muş between March and May 2022. The study sample consisted of 352 parents with a 12-month-old infant who met the research criteria and volunteered to participate in the research on the specified dates. The questionnaire form and ISS-P were used in collecting research data.

Results: The scale consisted of 11 items and 3 sub-dimensions: "Sleep routines", "sleep autonomy", and "screen media in the sleep environment". The content validity index of the scale items was 0.97. The Kaiser-Meyer Olkin value of the scale was 0.73, Bartlett's test $X^2=754.652$. $p=0.001$. The fit index values for confirmatory factor analysis were found as " X^2 /standard deviation 1.435, goodness of fit index (GFI) 0.948, adjusted GFI 0.917, comparative fit index 0.975, root mean square residual (RMR) 0.033 RMSEA 0.048, standardized RMR 0.0423, normed fit index (NFI) 0.924, Tucker-Lewis index 0.967, incremental fit index 0.976, parsimony GFI 0.589, and parsimony NFI 0.689". The total Cronbach alpha coefficient of the scale was found to be 0.73. The mean score of the parents from ISS-P was 2.44 ± 0.47 .

Conclusion: The ISS-P Turkish version can be used as a valid and reliable scale.

Keywords: Infant, parents, reliability, sleep, validity

Öz

Amaç: Araştırmanın amacı, Ebeveynler İçin Bebek Uyku Ölçeği'nin (EBUÖ) kültürel uyarlama çalışmasını yapmaktır.

Gereç ve Yöntem: Araştırma, Mart-Mayıs 2022 tarihleri arasında Muş'un Bulanık ilçesine bağlı Aile Sağlığı Merkezleri'nde metodolojik tipte olarak yürütüldü. Araştırmanın örneklemini, belirtilen tarihlerde araştırma kriterlerini taşıyan, araştırmaya katılmaya gönüllü olan, 12 aylık bebeği olan 352 ebeveyn oluşturdu. Araştırma verilerin toplanmasında anket formu ve EBUÖ kullanıldı.

Bulgular: Ölçek 11 madde ve "uyku rutinleri", "uyku özerkliği" ve "uyku ortamında ekran medyası" olmak üzere 3 alt boyuttan oluştu. Ölçek maddelerinin kapsam geçerlilik indeks değeri 0,97'dir. Ölçeğin, Kaiser-Meyer-Olkin değeri 0,73, Bartlett's testi $X^2=754.652$. $p=0,001$ 'dir. Doğrulayıcı faktör analizi için uyum indeks değerleri X^2 /standart sapma değeri 1,435, uyum iyiliği indeksi (GFI) 0,948, düzeltilmiş GFI 0,917, karşılaştırmalı uyum indeksi 0,975, kök ortalama kare artışı 0,033, kök ortalama kare yaklaşımı hatası 0,048 ve standartlaştırılmış kök ortalama kare artışı 0,0423, normlaştırılmış uyum indeksi 0,924, Tucker-Lewis indeksi 0,967, artırmalı uyum indeksi 0,976, sıkı iyilik uyum indeksi 0,589, sıkı normlaştırılmış uyum indeksi 0,689 olarak bulundu. Ölçeğin toplam Cronbach alfa katsayısı toplamda 0,73 olarak bulundu. Ebeveynler ölçekten ortalama $2,44\pm 0,47$ puan aldı.

Sonuç: EBUÖ Türkçe geçerli ve güvenilir bir ölçme aracı olarak kullanılabilir.

Anahtar Kelimeler: Bebek, ebeveyn, güvenilirlik, uyku, geçerlilik

Introduction

Sleep enables individuals to grow, develop, learn and rest. Sleep is a complex process that periodically changes with wakefulness, is the basic need of life, both mentally and physically, and is affected by individual and environmental factors (1). Although sleep is one of the most important needs of life, as stated in Maslow's need pyramid, later needs cannot be reached without fulfilling the need for sleep (2).

Children's sleep time varies according to age periods (3). American Academy of Pediatrics recommends daily sleep time for "0-3 months old babies 16-18 hours, 4-13 months babies 12-16 hours, 1-2 years old babies 11-14 hours, 3-5 years old

children 10-13 hours, 6-12 years old school children 9- 12 hours, 8-10 hours for adolescents aged 13-18" (4,5).

Non-repaid eye moment (NREM) phase occurs in infants after 6 months. In stages 3 and 4 of NREM, children spend more time than adults (6-8). It is more difficult to wake up during these phases and some hormones such as growth hormone are released during these phases (9,10).

As the age progresses and awareness increases in children under one year of age, sleep problems, crying and waking up at night become more frequent (11-13). Sleep in infants and children can be affected by; sleeping place, heat, light, noise, sound, bed type, sleeping position, sleeping behaviors, attachment to the

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mother, psychosocial status of the mother and health status of the baby (14).

Undernourishment or overfeeding of the baby before bedtime, inappropriate room temperature, separation anxiety, wet diaper, non-routine activities, improper feeding during the transition to complementary feeding, waking the baby occasionally in the night, and the baby's physical growth can cause sleep problems (10).

Interactive behaviors between parents and baby before going to bed play an important role in shaping babies' sleep behaviors. Parents can help shape sleep behaviors by determining a good sleep environment, regular bedtime, sleep time and sleeping places for babies (15).

In the literature review, no specific measurement tool suitable for Turkish culture was found that measures infant sleep behaviors for parents. Therefore, this study was conducted to define the cultural adaptation of Infant Sleep Scale for Parents (ISS-P) developed by Lo et al. (15) to describe infant sleep behaviors for parents and to introduce it to Turkish literature.

Materials and Methods

Type of Study

This study, which was conducted to test cultural adaptation of "ISS-P" has a methodological type.

Population and Sample of the Study

The universe of the research consisted of parents with a 12-month-old infant who came to the Family Health Centers (FHC) in Bulanık district of Muş between March-May 2022. There are three FHC in Bulanık district of Muş and all of them were included in the sample. Random sample selection was used in the study and the research was carried out with 352 parents. Because it is recommended that the sample size should be 5-10 times the number of scale items in the scale validity and reliability analyzes (16,17), the sample number was determined based on the items in the draft scale and considering possible missing data. First, explanatory factor analysis was performed on 120 parents for the 12-item scale, and then confirmatory factor analysis (CFA) was performed on 232 parents for the 11-item scale.

Inclusion criteria;

- Having a 12-month-old infant
- Being literate
- Parents who do not have any communication problems
- Informed consent to participate in the study
- Voluntary participation

Data Collection Instruments

Questionnaire Form and ISS-P were used to collect the study data.

Questionnaire Form: In this form, which was prepared by the researcher by examining the literature (2,15,18) are 13 questions that take into account the sociodemographic characteristics of the parents (age, gender, socioeconomic status, educational status, number of children, gender of the

child, etc.) and infant sleep (day and night sleep duration, sleep problem status).

Infant Sleep Scale for Parents (ISS-P): It was developed to assess infant sleep by Lo et al. (15) in 2021. The scale includes 12 items categorized in three factors. Factor 1 consists of 1-4 items for "sleep routines", 5-8 items for factor 2 "sleep autonomy", and 9-12 items for factor 3 "screen media in the sleep environment". Items 5, 6, and 8 are reverse coded. Each item is rated on a 4-point Likert scale as "1 (totally disagree), 2 (disagree), 3 (agree) and 4 (totally agree)". In the evaluation of the scale, "the sub-dimension points were computed by taking the average of the sub-dimension items. Higher sub-dimension points define higher levels of sleep routines, sleep autonomy and screen media in the sleep environment".

Data Collection

The research data were collected by the researcher between March-May 2022, five days a week, between the hours of 08-16, with the volunteer parents, in a separate room and when the babies were calm, the framework of the Coronavirus disease-2019 pandemic process restrictions, paying attention to the social distance and mask rules by face-to-face interview technique. The forms were given to the parents and asked to mark the statements appropriate to them and then withdrawn. It took 10-15 minutes on average to fill in the forms while collecting the research data.

Statistical Analysis

Skewness (0.378) and Kurtosis (0.425) values of the data were found to be within normal ranges. Histogram chart was also reviewed and it was found that the data were normally distributed. The data were analyzed with SPSS for Windows 22 package program and AMOS 20. "Content validity, construct validity and reliability analyses" were used for data assessment. Content validity index (CVI) was conducted for content validity and exploratory factor analysis (EFA) and CFA were conducted for construct validity. "Kaiser-Meyer Olkin (KMO) and Bartlett test's" were used for EFA, while " X^2/SD , root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), goodness of fit index (GFI), adjusted GFI (AGFI), comparative fit index (CFI), normed fit index (NFI), Tucker-Lewis index (TLI), incremental fit index (IFI), parsimony GFI (PGFI), parsimony NFI (PNFI) fit tests and path diagram" were used for CFA. For reliability analysis, "item-total correlation tests and Cronbach alpha internal consistency coefficient" were used. Demographic features of the parents were analysed by using descriptive statistics.

Ethical Principles

Permission was taken through e-mail from the authors who developed ISS-P to adapt the scale to Turkish society. After obtaining ethical approval, written permission was obtained from the Family Health Centers where the research would be conducted. The purpose of the study was explained to the parents who met the criteria of the research group, their questions were answered, and their verbal and written consents

were obtained. Ethical principles were followed in the research. Ethics approval of the study was taken from Atatürk University Faculty of Medicine Ethics Committee (decision no: 09, date: 27.01.2022).

Results

It was found that 43.5% of the parents who participated in the study were between the ages of 26-30, 81% were mothers, 44.3% lived in the country, 78.7% had a nuclear family, 56.8% had 2-4 children, 51.4% gender of the child was male, 70.5% had social security, 43.5% had income equal to their expenses, 39.2% had university degree, 57.4% were housewives. It was determined that 77.6% of their children had 0-3 hours of sleep during the day, 49.4% of their children had 7-9 hours of sleep at night and 74.7% of the children had no sleep problems (Table 1).

Validity

Language validity: For Turkish validity and reliability of ISS-P, first of all permission was taken from Lo et al. (15) who developed the study to use the scale. The scales were independently translated into Turkish by three researchers who had doctorate degree in nursing and a professional translator and the translations were checked by the researchers and turned into a single form. Later, it was translated into the original language by using the back translation technique by a different language expert who knew about both languages and cultures and sent to the author to assess conformity in terms of original language. Revisions were made and the items were finalized. Then the scales were sent to experts for content validity.

Content validity: Turkish form of the prepared scale was sent to 15 experts in paediatrics via e-mail and their opinions were received. These experts were academicians experienced in paediatric nursing and scale development. The experts were asked to evaluate the cultural relevance of ISS-P and whether the items covered the concepts that were intended to measure. In order to prove content validity with numerical expressions, the experts evaluated the items with CVI as “1=not suitable (1), needs to be adjusted (2), suitable but needs minor changes (3), very suitable (4)” by using Davis technique. After the evaluation, CVI was calculated by dividing the sum of experts’ “very suitable” and, “suitable but needs minor changes” evaluations by the total number of experts. The scale was revised and finalized in line with the suggestions of the experts. CVI values of all the items in ISS-P vary between 0.86 and 1.0. CVI value of the scale was found as 0.97. Therefore, no items were deleted from the scale in terms of content validity.

Pilot application: In order to test whether the scale items were understood by the parents, 30 individuals with different levels of education were selected from the target population and a pilot application was conducted. The parents in the pilot application were not included in the sample. The parents were asked to fill in the scale and then to evaluate each item in terms of comprehensibility. No changes were made to the items during the pilot application.

Socio-demographic characteristics		n	%
Age	18-25	89	25.3
	26-30	153	43.5
	31-35	67	19.0
	36 and above	43	12.2
Parent	Mother	285	81.0
	Father	67	19.0
Living place	City	153	43.5
	Country	156	44.3
	Village	43	12.2
Family type	Nuklear family	277	78.7
	Large family	75	21.3
Number of children	1	125	35.5
	2-4	200	56.8
	5-7	27	7.7
Child's gender	Girl	171	48.6
	Male	181	51.4
Social security status	Yes	248	70.5
	No	104	29.5
Level of income	Income less than expenses	148	42.0
	Income equivalent to expense	153	43.5
	Income more than expenses	51	14.5
Level of education	Primary education	100	28.5
	Secondary education	114	32.3
	University	138	39.2
Job	Housewife	202	57.4
	Not working	13	3.6
	Civil servant /worker	116	33.0
	Self-employment	21	6.0
Child's daytime sleep time	0-3 hour	273	77.6
	4-6 hour	63	17.9
	7-9 hour	7	2.0
	10-12 hour	9	2.5
Child's nighttime sleep time	0-3 hour	8	2.3
	4-6 hour	32	9.1
	7-9 hour	174	49.4
	10-12 hour	138	39.2
Child's sleep problem status	Yes	89	25.3
	No	263	74.7

Exploratory Factor Analysis

Reliability analysis was conducted to find out whether the items had suitable values. Total correlations of the items were found to vary between 0.263 and 0.575, while total Cronbach alpha value was found as 0.742. Since Cronbach alpha value and total correlation values of the items were found to be good in this

process, no items were removed. The analysis was continued with 12 items.

Factor analysis was conducted to find out the construct validity of ISS-P. Prior to factor analysis, KMO and Barlett's test were used to determine sample adequacy and whether the data were suitable for factor analysis. KMO value of the 12 item scale was found as 0.743. Similarly, Barlett's test results ($X^2=785.884$, $p=0.001$) showed that the data were correlated and suitable for factor analysis.

EFA was conducted for construct validity. Twenty five degrees of Promax rotation, which is choosed in scale adaptation researchs, was performed for construct validity. In more than one dimension in which an item gave load, the items with a difference of less than 0.10 between factor load values were considered to be overlapping. For this reason, item 7 was deleted.

In the EFA which was performed with 11 items, KMO value was found as 0.731, while Bartlett's test ($X^2=754.652$, $p=0.001$) was found to be significant. These results indicated that the data were appropriate for EFA.

It was found that the scale items gathered under three factors. The fact that there were 3 factors with an eigenvalue above 1 showed that the scale had a 3-factor structure. Scree Plots also showed that the scale had a 3-factor structure (Figure 1).

It was also examined whether the factor structure of the scale matched the original scale. It was found that the scale comprised of 3 factors, as the original scale, and the factors of the items matched the original scale (Table 2).

It was found that the second factor comprised of items 1, 2, 3 and 4. factor loads of the items were found to be between 0.633 and 0.878 and they were found to explain 21.60% of the total variance. This factor was called "sleep routines".

It was found that the third factor comprised of items 5, 6 and 8. factor loads of the items were found to be between 0.670 and 0.777 and they were found to explain 12.436% of the total variance. This factor was called "sleep autonomy".

It was found that the first factor comprised of items 9, 10, 11, and 12. factor loads of the items were found to be between 0.486 and 0.907 and they were found to explain 28.303% of the

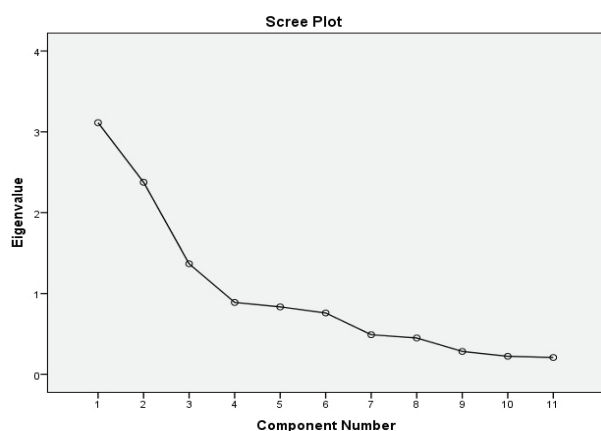


Figure 1. Scree plot factor structure

the total variance. This factor was called "screen media in the sleep environment".

When the 11-item scale was analyzed as a whole, it was found that the 3 factors explained 62.344% of the total variance and it was found that the scale explained adequate variance. The values acquired indicated that the scale was adequate for parents to evaluate their infant sleep. After EFA, structural equation modelling was established with CFA.

Confirmatory Factor Analysis

The structure obtained with EFA was tested with CFA. A large number of indices were used to analyze the fit of the model that belonged to ISS-P. The results were found as " X^2/SD 1.435, GFI 0.948, AGFI 0.917, CFI 0.975, RMR 0.033, RMSEA 0.048 and SRMR 0.042, NFI 0.924, TLI 0.967, IFI 0.976, PGFI 0.589, PNFI 0.689" (Table 3).

As a result of the analysis made with CFA, it was found that "4 items in F1 had standard solution varying between 0.32 and 0.89, while 4 items in F2 had standard solution varying between 0.49 and 0.86, 3 items in F3 had standard solution varying between 0.41 and 0.68" (Figure 2). The items were

Pattern matrix	Factors		
	1	2	3
i9: My child uses mobile or screen-based devices 1 to 2 hours before they go to bed	0.907	-	-
i10: My child has access to a mobile or screen-based device (such as an iPad or smartphone) while in bed	0.894	-	-
i11: My child falls asleep while using a mobile device	0.885	-	-
i12: A television is usually playing in the room when my child goes to sleep at night	0.486	-	-
i2: My child goes to bed at about the same time each night	-	0.878	-
i1: My child has a bedtime routine	-	0.837	-
i3: My child gets out of bed at about the same time each morning	-	0.800	-
i4: My child sleeps in the same room or location each night	-	0.633	-
i8: I lie with my child until s/he falls asleep	-	-	0.777
i6: My child sleeps at least some part of the night in my bed	-	-	0.765
i5: I put my child to bed after s/he is already asleep	-	-	0.670
Core values	3.113	2.377	1.368
Explained variance	28.303	21.605	12.436
Total eigenvalue	-	-	6.858
Total variance	-	-	62.344

ISS-P: Infant Sleep Scale for Parents

evaluated to be significant for the factors they were in. Path Diagram was analyzed and it was found that the values found were suitable in terms of item-factor agreement.

Index	Normal values	Acceptable value	Found value
X ² “p”	p<0.05	-	0.035
X ² /SD (CMIN/DF)	<2	<5	1.435
GFI	>0.95	>0.90	0.948
AGFI	>0.95	>0.85	0.917
CFI	>0.95	>0.90	0.975
RMSEA	<0.05	<0.08	0.048
RMR	<0.05	<0.08	0.033
SRMR	<0.05	<0.08	0.042
NFI	>0.95	>0.80	0.924
TLI	0.95< TLI <1	0.90< TLI <0.94	0.967
IFI	>0.90	-	0.976
PGFI	>0.89	>0.50	0.589
PNFI	>0.89	>0.50	0.689

GFI: Goodness of fit index, AGFI: Adjusted GFI, CFI: Comparative fit index, RMSEA: Root mean square error of approximation, SRMR: Standardized root mean square residual, NFI: Normed fit index, TLI: Tucker-Lewis index, IFI: Incremental fit index, PNFI: Parsimony NFI, PGFI: Parsimony GFI, SD: Standard deviation, ISS-P: Infant Sleep Scale for Parents

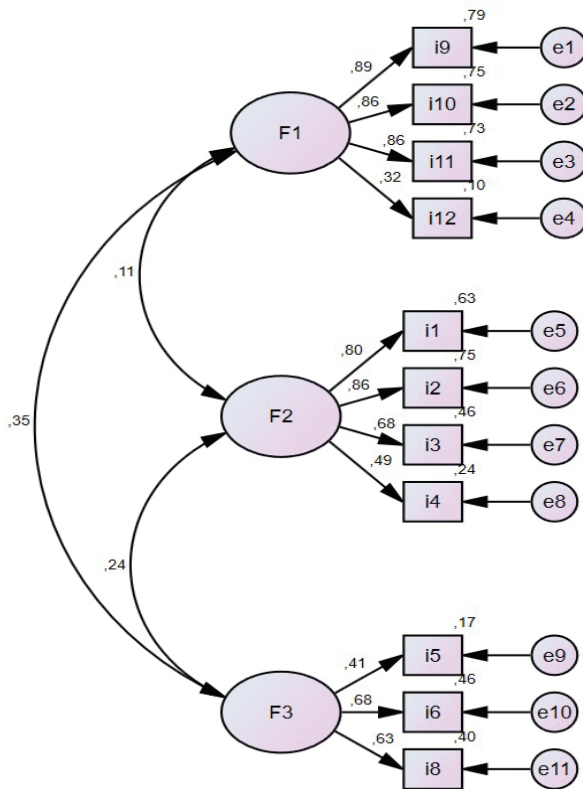


Figure 2. ISS-P confirmatory factor analysis diagram
ISS-P: Infant Sleep Scale for Parents

Reliability

Internal consistency (Cronbach alpha) coefficients

Cronbach alpha values of the scale for mothers were found as 0.81 for “sleep routines” factor, as 0.51 for “sleep autonomy” factor, as 0.80 for “screen media in the sleep environment” factor, while it was found as 0.73 for the total scale. Cronbach alpha values of the scale for fathers were found as 0.75 for “sleep routines” factor, as 0.81 for “sleep autonomy” factor, as 0.86 for “screen media in the sleep environment” factor, while it was found as 0.79 for the total scale. Cronbach alpha values of the scale were found as 0.80 for “sleep routines” factor, as 0.66 for “sleep autonomy” factor, as 0.81 for “screen media in the sleep environment” factor, while it was found as 0.73 for the total scale (Table 4).

Time invariance

In order to define the stability of the scale opposite time, an appointment was made one month after the first application and 66 parents were retested. Parents who applied this test were excluded from the sample. According to the results of the correlation analysis conducted to find out the correlation between test and retest, a positive significant correlation was found between the two tests ($p<0.01$, $r=0.834$).

The parents got a mean score of 3.09 ± 0.64 from “sleep routines” factor, 2.64 ± 0.73 from “sleep autonomy” factor, 1.64 ± 0.77 from “screen media in the sleep environment” factor. Mean score taken from ISS-P is 2.44 ± 0.47 (Table 5).

Table 4. 11-item ISS-P item-total correlations and Cronbach α coefficients

	Mean	SD	Corrected item total correlations	Cronbach's α if item deleted
i1	2.96	0.863	0.418	0.704
i2	3.01	0.813	0.382	0.709
i3	3.06	0.805	0.323	0.717
i4	3.35	0.760	0.274	0.722
i5	2.77	0.992	0.248	0.729
i6	2.38	1.020	0.354	0.713
i8	2.78	0.956	0.355	0.713
i9	1.67	1.013	0.564	0.679
i10	1.56	0.916	0.516	0.689
i11	1.58	0.960	0.493	0.692
i12	1.73	0.974	0.323	0.734

SD: Standard deviation, ISS-P: Infant Sleep Scale for Parents

Table 5. Distribution of scores from ISS-P and its sub-dimensions

	Mother	Fother	Total
Sleep routines	3.10 ± 0.66	3.05 ± 0.55	3.09 ± 0.64
Sleep autonomy	2.63 ± 0.70	2.70 ± 0.85	2.64 ± 0.73
Screen media in sleep environment	1.62 ± 0.76	1.69 ± 0.80	1.64 ± 0.77
Total ISS-P	2.43 ± 0.47	2.46 ± 0.49	2.44 ± 0.47

ISS-P: Infant Sleep Scale for Parents

Discussion

Understanding the parents' sleep practices both in sleep initiation and in response to nocturnal waking is significant both for understanding the infant's sleep problem and for the development of interventions (19). The aim of this study is to determine the cultural adaptation of the ISS-P. Infant sleep behaviors for parents can be evaluated with this scale.

All measurement instruments used in scientific studies should be valid and reliable so that they can be used in future studies (20,21). In the content validity performed with "Davis technique", CVI should be 0.80 and higher (22). CVI value was found as 0.97 in this study. As a result, it was found that ISS-P is a scale that adequately reflects infant sleep behaviors for parents.

KMO value higher than 0.5 is essential for factor analysis (23). KMO values are considered as "perfect between 0.90 and 1.00, as very good between 0.80 and 0.89, as good between 0.70 and 0.79, as moderate between 0.60 and 0.69, as weak between 0.50 and 0.59 and as unacceptable below 0.50". Barlett test result should be significant at $p < 0.05$ (24). The result that KMO value of ISS-P was higher than 0.70 shows that the sample adequacy was very good for factor analysis. In addition, Barlett test was found to be very significant and thus a correlation was found between the variables/factors of ISS-P.

Factor loads are expected to be above 0.40 (25,26). In the original scale, factor load values were found to vary between 0.32 and 0.89 (15). In this study, factor load values of ISS-P were found to vary between 0.486 and 0.907. Variance values explained in the original scale were total 51% (15). In this study, variance values explained were 62.344% for the total ISS-P. It is known in the literature that the variance is between 40% and 60% and the variance value explained by the scale is sufficient (24). The values acquired indicated that the scale was adequate to explain infant sleep behaviors for parents.

According to literature, X^2/SD value should be below 5 for the tested model to show a good fit (19,27). In this study, X^2/SD value was found to be perfect with 1.435. GFI was 0.91, AGFI was 0.87, and CFI was 0.96. Indices equal to or higher than 0.90 are acceptable values (28). RMSEA of ISS-P was found as 0.048, while RMR was found as 0.033. RMSEA value should be < 0.08 for a good fit. The model shows a good fit in case of $0.05 < RMR < 0.10$ (29). In addition, SRMR was found as 0.042, NFI was found as 0.924, TLI was found as 0.967, IFI was found as 0.976, PGFI was found as 0.589, PNFI was found as 0.689 and these values are acceptable. The fit indices found in the original scale and the fit indices in this study were found to be close values.

"Scales with a coefficient of 1.00-0.80 have high reliability, while scales with a coefficient of 0.60-0.79 are very reliable and scales with a coefficient of 0.40-0.59 have low reliability" (16,30). In the original of the scale, the internal consistency coefficient was found as 0.80 mothers 0.84 fathers for "sleep routines" factor, as 0.80 mothers 0.79 fathers "sleep autonomy" factor, as 0.81 mothers 0.85 fathers "screen media in the sleep environment" factor (15). In the this study, internal consistency coefficient was

found as 0.81 mothers 0.75 fathers and 0.80 total for "sleep routines" factor, as 0.51 mothers 0.81 fathers and 0.66 total for "sleep autonomy" factor, as 0.80 mothers 0.86 fathers and 0.81 total for "screen media in the sleep environment" factor and as 0.73 for total ISS-P. ISS-P is a very reliable scale. The items in ISS-P are consistent with each other and ISS-P consists of items which test the elements of the same feature.

It has been stated that items with an item total correlation of 0.20 and higher can be included in the scale and can discriminate between individuals in terms of the related feature (24,31). In the original scale, item total correlations were found to be higher than 0.30. In this study item total correlations were found to be higher than 0.25. This result showed that parents understood the items correctly and answered objectively, while the item discrimination of the scale was found to be high.

"A correlation coefficient of ≥ 0.80 is interpreted as high correlation, between 0.60 and 0.80 is interpreted as strong correlation, between 0.40 and 0.59 is interpreted as moderate correlation, between 0.20 and 0.39 is interpreted as low correlation and ≤ 0.20 ' is interpreted as weak correlation" (22,32). Correlation coefficient of ISS-P was found as 0.834 and these results showed consistent measurements over time. Sleep routines provide structure (15). In this study, mean score among mothers was found as 3.10 ± 0.66 for "sleep routines" factor. Average score among fathers was found as 3.05 ± 0.55 . Lo et al. (15), found as 3.49 ± 0.49 for mothers and 3.60 ± 0.49 for fathers. It seems that this sub-dimension is similar in our society.

Sleep autonomy or ensuring the opportunity for the infant self soothe and fall asleep unassisted, reflects autonomy support (15). In this study, mean score among mothers was found as 2.63 ± 0.70 for "sleep autonomy" factor. Average score among fathers was found as 2.70 ± 0.85 . Lo et al. (15), found as 2.83 ± 0.87 for mothers and 2.96 ± 0.84 for fathers. It seems that this sub-dimension is similar in our society.

The screen media in the sleep environment subscale, "captures parents" approaches to allowing both passive exposure to (e.g., television playing in the background) and active use of (e.g., direct interaction with mobile devices) screen media in the infants' sleep environment". In this study, mean score among mothers was found as 1.62 ± 0.76 for "screen media in the sleep environment" factor. Average score among fathers was found as 1.69 ± 0.80 . Lo et al. (15), found as 1.42 ± 0.54 for mothers and 1.21 ± 0.44 for fathers. It seems that this sub-dimension is similar in our society. Scores for this subscale seem to be very low in this sample,

Conclusion

As a result of validity and reliability analysis, ISS-P was found to be a valid and reliable measurement tool for parents to determine infant sleep behaviors. ISS-P was adapted into Turkish as a 4-Likert type scale consisting of 11 items and 3 factors such as "sleep routines", "sleep autonomy", "screen media in the sleep environment". Infant sleep behaviors for parents can be evaluated with ISS-P. ISS-P can be retested in babies of different months.

Ethics

Ethics Committee Approval: Ethics approval of the study was taken from Atatürk University Faculty of Medicine Ethics Committee (decision no: 09, date: 27.01.2022).

Informed Consent: Informed consent to participate in the study.

Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Concept: T.A., A.S., Design: T.A., A.S., Data Collection or Processing: T.A., Analysis or Interpretation: T.A., A.S., Literature Search: T.A., A.S., Writing: T.A., A.S.

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