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Turkish Translation/Cultural Adaptation and Psychometric Analyses of the Affordances in the Home Environment for Motor Development-Infant Scale (AHEMD-IS)

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Abstract

In this study we translated the Affordances in the Home Environment for Motor Development-Infant Scale (AHEMD-IS) into Turkish, adapted the instrument culturally, examined its psychometric properties within a Turkish population, and identified its limitations. We administered the AHEMD-IS to families of 65 premature or full-term Turkish infants and repeated this testing for 17 families after one-two weeks to establish test-retest reliability. We calculated the Intraclass Correlation Coefficient (ICC) and Cronbach alpha coefficient to assess reliability, and we evaluated test validity using the Spearman's correlation coefficient and correlations with the Bayley-III motor development score. The Cronbach Alpha coefficient of the questionnaire was 0.846, and, for test-retest reliability, the ICC score was 0.830. The Turkish AHEMD-IS total score was moderately correlated with the Bayley-III fine motor development score ($r = 0.469$, $p < 0.001$), the Bayley-III gross motor development score ($r = 0.533$, $p < 0.001$), and the Bayley-III total motor development score ($r = 0.526$, $p < 0.001$). The

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Turkish version of the AHEMD-IS was found to be valid and reliable for children born prematurely or at full-term. The use of this questionnaire in Turkey will facilitate the creation of a home environment that will support motor development in children between 3-18 months of age.

Keywords
motor development, affordance, home environment, reliability, validity

Introduction

The International Classification of Health, Function, and Disability (ICF), developed by the World Health Organization, provides a standardized framework for identifying children's body functions and structures, personal and environmental factors of relevance to this functionality, and activity restrictions and difficulties in children's participation in physical activity. A major ICF innovation is the introduction of a classification system for identifying environmental barriers and facilitators of the infant's capacity for and performance of daily activities and tasks. The physical, social, and behavioral environments in which humans live are shaped by such external environmental factors that may have a positive or negative impact on an individual's participation, performance, and body function/structure (Chapireau, 2005; Zoghi et al., 2019).

Children's motor development is affected by genetic, epigenetic, and environmental factors (Hwang et al., 2014; Sheldrick & Perrin, 2013; Weaver, 2014). The home environment that encourages experiences even from the earliest stages of development is very important for motor development, especially during infancy (Zoghi et al., 2019). An enriched and more stimulating environment can positively affect social and cognitive development and support infant motor development (Rodger & Ziviani, 2006). An effective home environment includes educational and supportive materials (e.g., toys, books, activities) and encouragement from family members. In other words, encouragements and learning opportunities (e.g., toys, equipment, activities, space) provide a stimulating link between the environment and the organism to foster meaningful development (Adolph & Kretch, 2015; Flôres et al., 2019; Gibson, 1988). The quality of the motor practices provided by caregivers, parents, the home environment, and teachers' in educational settings critically impact all aspects of development (Howes et al., 2008; Krauss, 2000; Pianta et al., 2008).

The activities of early childhood health professionals include assessments of both child development and the home environment (Ammar, et al., 2013; Freitas et al., 2013). Prior investigators have shown that family interactions and stimuli as well as physical space enhance children's psychomotor, cognitive, and social development (Caçola, et al., 2011; Flôres et al., 2019). For children with delayed or at risk motor development, a facilitative environment can improve motor functions

(Flôres et al., 2019; Kolobe, 2004). Thus, environmental assessments and regulations related to motor development are of great importance for both typically developing children and children with developmental delays.

The Affordances in the Home Environment for Motor Development-Self Report (AHEMD-SR) was developed in 2005 to assess the home environment of children aged 18–42 months (Rodrigues, et al., 2005). More recently, a 3–18 month version of this tool (AHEMD-Infant Scale (IS)) was validated for general use in assessing the quality and quantity of motor development opportunities provided in the home environment (Caçola et al., 2011). Since its initial publication, the AHEMD-IS has grown in popularity as both a clinical and research tool. Data from the AHEMD-IS support the claim that environmental factors can positively impact infants' future motor skills and cognitive behaviors (Miquelote et al., 2012; Valadi & Gabbard, 2020).

The importance of the AHEMD-IS is not only to examine the effect of the home environment on motor development but also to ensure that a suitable home environment is created for cognitive and social development. Although the AHEMD-IS has been translated from its original English version into eight languages and has been found valid and reliable in countries such as China, Spain, Lebanon, and Iran (Dinkel et al., 2019; Gabbard, et al., 2008; Hsieh et al., 2011; Kavousipor et al., 2019; Rodrigues et al., 2005), neither this tool nor any other has been validated for use by healthcare professionals or parents in assessing home environments in Turkey. Therefore, we aimed, in this study, to (a) translate and culturally adapt the AHEMD-IS into Turkish, (b) examine the psychometric properties of this translated tool within a Turkish population (including computations of test-retest reliability, internal consistency, and validity), and (c) identify possible limitations of this new Turkish version. We aimed to determine whether the translated questionnaire meets the appropriate and necessary quantitative and qualitative psychometric standards to be used as a measure of the motor proficiency of 3–18 month old children.

Method

Participants

In this study, we included 74 Turkish children aged 3–18 months and their families. Children were referred to the Pediatric Rehabilitation Unit of Physiotherapy and Rehabilitation Department in the Faculty of Health Sciences at Gazi University, from different hospitals in Ankara, and from the Pediatric Department of Gazi University Hospital. We obtained approval for the study from Gazi University Ethics Committee (#91610558-604.01.02, date: 06.10.2020). We registered our study at ClinicalTrials.gov with the number of NCT05210959. Parents of all infants were asked to read and sign an informed consent form.

Of these 74 referred infants, five did not meet our inclusion criteria (see details below) and four families declined an invitation to participate, leaving 65 newborns in our study (15 term, and 50 preterm; see Figure 1). We excluded children who were

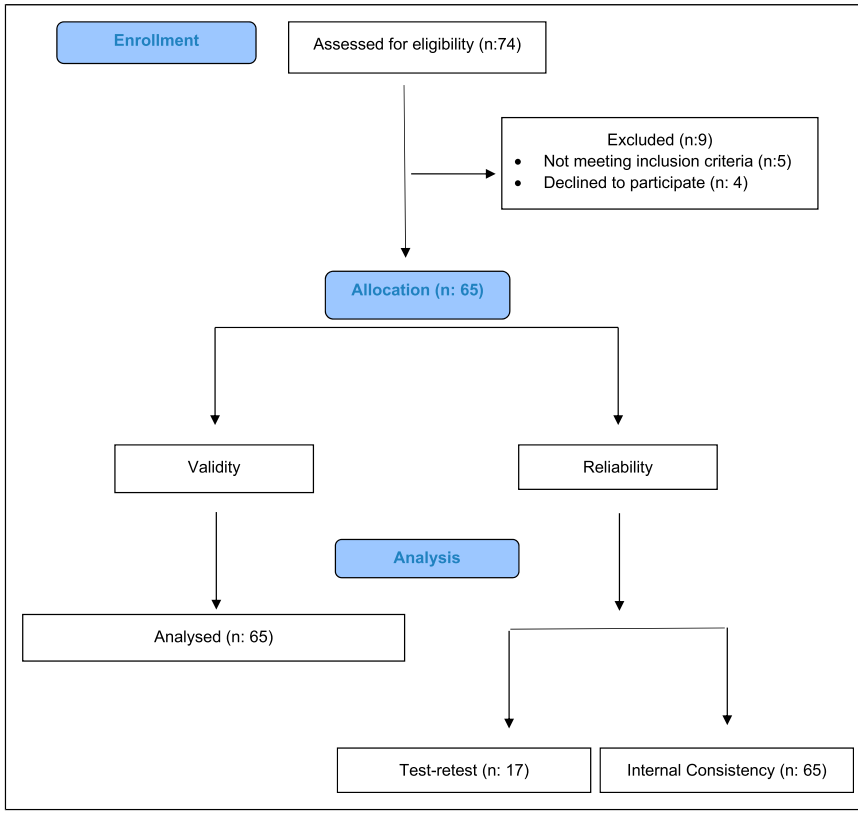

Figure 1. Participant Flow Diagram.

younger than 3 months or older than 18 months and also excluded those with congenital or systemic diseases. We recorded demographic information, including birth information, gestational age, and birth weight, at the beginning of the study. We used the Bayley Scales of Infant and Toddler Development-III (Bayley-III), administered by a physical therapist with 10 years of experience to assess the infants' motor development (Albers & Grieve, 2007). We used only the motor development (gross and fine motor and total motor score) sections of the Bayley-III. We used the AHEMD-IS to assess the developmental affordances of the home environment.

Measurement Details

Affordances in the Home Environment for Motor Development. The AHEMD-IS is a questionnaire administered to parents for assessing the home environment of children aged 3–18 months. The scale consists of 41 items in total, with four dimensions:

(a) Physical Space (PS), divided into Inside Space and Outside Space; (b) Variety of Stimulation(VS), (c) Gross Motor Toys (GMT), and (d) Fine Motor Toys (FMT). In these categories, the home is described as 'excellent,' 'adequate,' 'moderately adequate,' and 'less than adequate.' In the Inside Space and Outside Space divisions of Physical Space (PS), floor types, steps, and the presence of a garden are evaluated, while, in the Variety of Stimulation (VS) section, the presence or absence of sitting and walking equipment and playgrounds are evaluated. In addition, the presence of walkers, balls, cubes, and sound toys are evaluated in the Gross Motor Toys (GMT) and Fine Motor Toys (FMT) sections.

Scoring information is available in the AHEMED-IS manual for two age groups: 3–11 months and 11–18 months. For infants aged 3–11 months, the first 32 items were answered, while respondents were told that the other items were not suitable for babies under 12 months. All items were administered to infants aged 12–18 months. Questions answered 'yes' or 'no' in the first part were scored as 0 and 1 (0: no, 1: yes). The questions in the second part pertained to the time the child spends in an activity and were answered as 'never' (0), 'sometimes' (1), 'often' (2), and 'always' (3). A total of 66 points was available for babies up to 12 months of age, while babies older than 12 months might procure as many as 93 points. A higher score indicated better environmental enrichment (Caçola et al., 2011, 2015b).

Within the scope of this study, we administered the AHEMD-IS to the parents through a face-to-face interview, and parents were also asked to complete the questionnaire. Fifteen parents completed the AHEMD-IS in their home environment. The others completed it in the Pediatric Department of Gazi University Hospital. The questionnaire and the interview took approximately 20 minutes. Two physical therapists completed the family interview. One of these physical therapists had 10 years of experience in pediatric rehabilitation, while the other had four years of experience in pediatric rehabilitation.

Bayley Scales of Infant and Toddler Development -III (Bayley-III). The Bayley-III is a widely used test battery to evaluate the cognitive ability and receptive and expressive language skills, and gross and fine motor development in children aged 1–42 months. In the motor development section, the gross motor development scale consists of 72 items, and the fine motor development scale consists of 66 items (Del Rosario et al., 2021). Items in each section are scored as 1 (can perform the desired skill) and 0 (cannot perform the desired skill). The raw scores obtained from all items are converted into scaled scores ranging from 1-19 points. Then, a composite score is obtained according to this scaled score, and this composite score is commonly reported in studies. Composite scores range from 40–160. A higher score indicates better improvement. A composite score below 85 in any developmental area indicates a developmental delay in that realm (Albers & Grieve, 2007; dos Santos et al., 2013). We considered the infant's corrected age while performing the Bayley-III. Corrected age is a premature baby's chronological age minus the number of weeks or months early they were born. The Bayley-III was administered by a physiotherapist with 10 years of experience in

Gazi University Faculty of Health Sciences, the Department of Physiotherapy and Rehabilitation, the Unit of Pediatric Rehabilitation. In the evaluation room, we established appropriate environmental conditions (temperature, lighting, and sound).

Procedure

Phase 1: Translating the Questionnaires. For translating the AHEMED-IS into Turkish, we followed Beaton et al.'s (2000) guidelines. We translated the original English version into Turkish with help from two experts - a physiotherapist and a linguist who each had good command of English. These experts then convened to develop a single Turkish version. To evaluate its compatibility with the original, we back-translated the questionnaire into English with help from two native English-speaking translators with a good command of Turkish. The translation team then synthesized the Turkish version into a single translation and evaluated its accuracy.

Phase 2: Committee review. An expert panel of eight physiotherapists, a pediatrician, an occupational therapist, and a developmental psychologist met to discuss the cultural suitability of the new version of the AHEMED-IS. Panel members examined each sentence for fluency, Turkish grammar, and usage. With consensus, the expert panel made some minor revisions to create the final survey. Revisions included modifications to some words for body regions rather than body parts. The expert panel then reached an agreement that the original AHEMD-IS and the Turkish one were compatible.

Phase 3: Pretesting. For comprehensibility, we administered the revised questionnaire to 15 mothers with 3–18 months old infants. The participants were asked to express their understanding of the instructions and of each question. At this stage, some parts of the questionnaire were modified, based on the participants' feedback. Four out of 15 families reported difficulty understanding some statements, including the expression "premature birth" which was rephrased as "preterm delivery" in our final version.

Phase 4: Final Version Development. Phases 1 and 2 resulted in linguistic alterations from the initial translation to enhance clarity for general public understanding. Phase 3 resulted in minor formatting changes, based on feedback received during family interviews. Following the completion of all these stages, we conducted reliability and validity studies of the final version of the Turkish AHEMD-IS.

Data Analysis

The reliability of the new version of the AHEMED-IS was determined by test-retest and internal consistency analyses. To investigate test-retest reliability, we randomly selected the families of 17 children in the study and asked them to complete the questionnaire again 7–14 days after their first completion and send it back to the investigators via e-mail. Thus, we determined the consistency of the answers given over

time. We determined the internal consistency of the translated AHEMED-IS using the Cronbach Alpha value. We used the Intraclass Correlation Coefficient (ICC) to measure test-retest reliability. For external construct validity, we established a link between the AHEMD-IS and the Bayley-III motor development scores with the Spearman's correlation coefficient. We conducted a power analysis, using G-power (G*power version 3.1.9.2, Axel Buchner, Universität Kiel). Based on similar studies, we set statistical power at 80%, an error rate at 5% and we assumed a moderate effect size (≥0.5). The estimated required number of participants was determined to be 60 (Kavousipor et al., 2019). Correlation coefficients were classified as weak for 0-0.24, moderate for 0.25-0.49, strong for 0.50-0.74, and very strong for 0.75-1.00 (Altman, 1992).

Data were analyzed with the Statistical Package for the Social Sciences (SPSS, Version 22, IBM Corp., Chicago, IL, USA). We determined whether the data were normally distributed using visual methods such as histograms and analytical methods such as the Shapiro Wilk test. We described data in terms of means (and standard deviations) in normally distributed data and median and interquartile ranges in non-normally distributed data. Descriptive statistics for qualitative variables were presented as percentages and frequency values. We made a comparison of scores on the AHEMD-IS across three participant groups of varied Social Economic Status (SES) using the Kruskal-Wallis Test, followed by Bonferroni corrections for pairwise comparisons. Statistical significance was set as $p < 0.05$.

Results

Table 1 shows the demographic characteristics of the 65 infants and their families from this study. The infants' mean gestational age was 31.3 weeks, their mean age at the time of evaluation was 10 months, and their mean birth weight was 1797 g. Thirty-six (55.4%) of these infants were girls, and 29 (44.6%) were boys. The preterm birth rate was 76.9%, while the full-term birth rate was 23.1%. There were 11 families (16.9%) who lived in homes, and 54 families (83.1%) who lived in apartments. In terms of the education status of mothers and fathers, the highest degree obtained was a university education. Regarding the three socio-economic levels of participants, we found that 23.1% of the families lived on ≤ 500 dollars per month; 67.7% lived on 500-750 dollars per month, and 9.2% lived on > 750 dollars per month (currency: $1 = 7.38 Turkish liras in 2021 January; a minimum annual wage was $380 in 2021) (Table 1). While minimum wage accounts for poor socioeconomic status, $ 750 per month indicates moderate to good socioeconomic status in Turkey in 2021.

Among the sub-parameters of the AHEMD-IS, for the 65 respondents in this Turkish sample, the median score for the physical space dimension was 7, the median score of the variety of stimulation dimension was 11, the median score of the gross motor toys dimension was 8, the median score of the fine motor toys dimension was 9, and the median total score was 35 (Table 2). When we compared our median score with the study of Caçola, et al., 2015a, their scores were 4 for physical space dimension, 12 for variety of stimulation dimension, 8 for gross motor toys dimension, 9 for fine motor

Table 1. Descriptive Characteristics of the Families and Infants Participating.

Demographic characteristics N = 65		Mean (*SD*)
Gestational age (week)		31.3 (4.4)
Age (month)		10 (2.5)
Birth weight (gr)		1797 (859)
Maternal age (year)		30.1 (4.9)
Father's age (year)		33.3 (4.4)
Demographic characteristics n: = 65		*n* (%)
Sex	Female	36 (55.4)
	Male	29 (44.6)
Prematurity	Yes	50 (76.9)
	No	15 (23.1)
Housing type	House	11 (16.9)
	Apartment	54 (83.1)
Adults living in the house	2	55 (84.6)
	3	4 (6.2)
	≥4	6 (9.2)
Children living in the house	1	19 (29.2)
	2	34 (52.3)
	3	12 (18.5)
Bedrooms in the house	1	27 (41.5)
	2	25 (38.5)
	3	13 (20)
Duration of residence at this house (months)	<3	2 (3.1)
	3–6	0 (0)
	7–12	5 (7.7)
	>12	58 (89.2)
Mother's education	Primary school	1 (1.5)
	Secondary school	4 (6.2)
	High school	17 (26.2)
	University	35 (53.8)
	Postgraduate	8 (12.3)
Father's education	Primary school	0 (0)
	Secondary school	3 (4.6)
	High school	15 (23.1)
	University	41 (63.1)
	Postgraduate	6 (9.2)
SES (monthly income)	≤500 dollars	15 (23.1)
	500-750 dollars	44 (67.7)
	>750 dollars	6 (9.2)

Note: *SD* = standard deviation, SES = social economic status.

Table 2. Participants' Median and Quartile Scores on the AHEMD-IS.

Measure	Physical space	Variety of stimulation	Gross motor toys	Fine motor toys	Total
Questionnaire range (3–18 months)	0–10	0–23	0–27	0–33	0–93
25th percentile	4	10	6	6	29
50th percentile	7	11	8	9	35
75th percentile	9	11	11	13	45

Note: AHEMD-IS = affordances in the home environment for motor development–infant scale.

toys dimension and 33 for total score, respectively. There was no statistically significant difference between our two studies, except for physical space.

Regarding test-retest reliability of the Turkish version of the AHEMD-IS, we found an ICC of 0.918 (95% CI: 0.775, 0.970) for the physical space dimension, an ICC of 0.947 (95% CI: 0.855, 0.981) for the variety of stimulation dimension, an ICC of 0.792 (95% CI: 0.425, 0.925) for the gross-motor toys dimension, an ICC of 0.863 (95% CI: 0.622, 0.950) for the fine motor toys dimension, and an ICC of 0.830 (95% CI: 0.552, 0.902) for the total score. Internal consistency results for the Turkish version of the AHEMD-IS were indicated by Cronbach alpha values of 0.840 for the physical space dimension, 0.532 for the variety of stimulation dimension, 0.844 for the gross-motor toys dimension, 0.774 for the fine motor toys dimension, and 0.846 for the total score. There were differences across the three SES groups in the gross-motor toys dimension, fine motor toys dimension, and the total score of the Turkish AHEMD-IS. There was a moderate positive correlation between the gross-motor toys dimension and the Bayley-III gross motor score, fine motor score, and total motor composite score ($p < 0.05$). There was a strong positive correlation between the fine motor toys dimension and the Bayley-III gross motor score, fine motor score, and total motor composite score ($p < 0.001$). There was a strong positive correlation between the total score of the AHEMD-IS, the Bayley-III gross motor score and total motor composite score, and a moderate positive correlation between the total score of the AHEMD-IS and the Bayley-III fine motor score ($p < 0.001$) (Table 3).

Discussion

Our Turkish translated version of the AHEMD-IS was found to be a valid and reliable tool for measuring motor development opportunities in the home environment for Turkish infants aged 3–18 months. We found good internal consistency, test-retest reliability, and external construct validity of our Turkish version of the questionnaire. Test-retest reliability was found to be above 0.7 on all sub-parameters and on the total score of the translated AHEMD-IS. In the original article in which the questionnaire was presented in 2011, these rates were reported as 0.737 for the external physical space, 0.810 for the internal physical space, 0.936 for the variety of stimulation,

Table 3. Psychometrics Properties of the AHEMD-IS and Bayley-III Motor Tests.

	Test-Retest ICC (CI 95%) (n:17)	IC (n:65)	SES (3 Groups)*p*	Bayley-III gross motor score (n:65)	Bayley-III fine motor score (n:65)	Bayley-III Total motor composite score (n:65)
Physical space	0.918 (0.775–0.970)	0.840	0.225	0.163	0.152	0.219
Variety of stimulation	0.947 (0.855–0.981)	0.532	0.488	0.161	0.294*	0.238
Gross motor toys	0.792 (0.425–0.925)	0.844	0.009^{+}	0.382*	0.320*	0.439**
Fine motor toys	0.863 (0.622–0.950)	0.774	0.025^{+}	0.502**	0.523**	0.597**
Total	0.830 (0.552–0.902)	0.846	0.028^{+}	0.533**	0.469**	0.526**

Note: AHEMD-IS = affordances in the home environment for motor development–infant scale, ICC = intraclass correlation coefficient, CI = confidence interval, IC = internal consistency, SES = social economic status, *Correlation is significant at the 0.05 level, **Correlation is significant at the <0.001 level, $^{+}$Kruskal-Wallis Test (Comparison of AHEMD-IS in 3 groups of SES).

0.934 for the fine motor toys, 0.925 for the gross motor toys, and 0.940 for the total score (Caçola et al., 2011). In the article published by the same authors in 2015, the content of the questionnaire was rearranged, and the intra-rater reliability of the questionnaire was found to be 0.949 (Caçola, et al., 2015a). In the Persian version of the questionnaire, test-retest reliability was 0.96 for physical space, 0.93 for variety of stimulation, 0.78 and 0.93 for gross motor toys, 0.84 and 0.96 for fine motor toys, and 0.87 for total score (Kavousipor et al., 2019). Our findings for this sample were similar to those of other samples, as reported in the literature. We observed that the ICC score for the gross motor toys dimension was lower than was reported in other studies. During our study, when families completed the questionnaires, they stated that some gross motor toys were not available in their homes and noted that they would like to purchase them. We think that the ICC scores of this dimension were low because some families increased the number of gross motor toys during the retest period. Also, we did not do home visits or control between the AHEMD-IS responses and the spaces and materials in the houses.

When we examined the internal consistency of the questionnaire, we found the Cronbach alpha value in the variety of stimulation dimensions to be below 0.7. On other dimensions and total scores, the Cronbach alpha value was above 0.7. In 2015, Caçola et al. (2015a) reported the internal consistency rates of the original questionnaire to be 0.776 for the internal physical space, 0.657 for the external physical space, 0.639 for the variety of stimulation, 0.763 for gross motor toys, 0.760 for fine motor toys, and 0.824 for the total score. Kavousipor et al. (2019) stated that the internal consistency rates of the questionnaire were 0.79 for the physical space, 0.61 for the variety of stimulation, 0.61 and 0.66 for the gross motor toys, 0.65 and 0.78 for the fine motor toys, and 0.75 for the total score. Valadi et al. (2018) evaluated 18–42 months old

children and their families and reported the internal consistency value of the total score of the questionnaire as 0.82. Compared with the results in the literature, we found similar characteristics, with the internal consistency of the variety of stimulation dimensions low, as in other studies (Caçola et al., 2015a; Kavousipor et al., 2019; Valadi et al., 2018). When they developed the questionnaire, Caçola et al. (2015a) omitted three items from the physical space and three items from the variety of stimulation; they reduced the questionnaire to 35 items and they achieved higher internal consistency rates. As we used the 41-item version of the questionnaire, we think that the internal consistency of the variety of stimulation dimensions was low, but the questionnaire still exhibited satisfactory internal validity.

Socioeconomic status (SES) of participants affected the score for the gross motor toys dimension, fine motor toys dimension, and the total score. We observed that the scores on these items increased as the income level increased. When Freitas et al. (2013) examined the relationship between SES and motor affordances in the home environment, they found that the physical space dimension of the questionnaire and the game materials dimension (gross and fine motor toys) were affected by SES. Kavousipor et al. (2019) reported that SES affected all parameters of the questionnaire except for the variety of stimulation. We concluded that the physical space dimension was not affected by SES as is parallel to the findings in the literature. Most families in our study lived in apartments with generally similar space (square meters), architectural features, and structurally, perhaps explaining why the physical space dimension did not differ according to the SES of our participants. Another dimension where we observed no difference was the variety of stimulation. The questions in this dimension consist of yes/no questions like 'My/Our child regularly (at least twice a week) plays with other children,' 'I/We usually have a daily time for playing (interacting) with our child,' and 'I/We regularly (at least twice a week) play games with my/our child to practice movements, such as "clap hands," "wave," "crawl," "walk,", etc.'. In addition, other items in this dimension are four-point Likert type, such as "How would you describe the awake time of your child spends in each of the situations such as walking device, sitting device or tummy time play?" As can be concluded from these questions, this part of the questionnaire was related to parent-child interaction and time management. Therefore, we think that this section was not affected by SES. In our study, the game materials (gross and fine motor toys) part of the questionnaire was affected by SES. Families with higher SES had a greater quantity and variety of toys at home. Considering that motor affordances at home affect motor development, families with low SES should be offered guidance and support to increase motor affordances at home.

We examined external construct validity by the correlation of the questionnaire with the Bayley-III motor composite score results. As a result, the gross motor toys dimension, fine motor toys dimension, and total score of the questionnaire had a moderate to strong positive correlation with the Bayley-III fine motor score, gross motor score, and composite score. Caçola et al. (2011) used the Alberta Infant Motor Scale (AIMS) to assess the external construct validity of the AHEMD-IS. They found a moderate positive correlation between the gross and fine motor toys dimensions and the AIMS

(Caçola et al., 2011). Miquelote et al. (2012) investigated the effects of the home environment on motor and cognitive development in infants and reported that the daily activities and toy materials dimensions of the AHEMD-IS were positively correlated with the Bayley-III gross and fine motor scores (Miquelote et al., 2012). Valadi and Gabbard (2020) stated that home motor affordances could have a significant influence on child's motor skills development. The Turkish version of the AHEMD-IS exhibited good external construct validity, and it has the potential to be useful to pediatric therapists, to significantly contribute to the understanding of an infant's motor development, and to assess how the home provides affordances for motor development of Turkish infants.

Limitations and Directions for Further Research

A limitation of our study was our inability to examine inter-rater reliability. Unfortunately, our participant recruitment coincided with the onset of the COVID-19 pandemic, preventing us from conducting enough home visits to perform this analysis. Future investigators should address this omission by using different professionals to evaluate home environments and then analyzing inter-rater reliability. Replications of this study with larger and more diverse participant samples will also permit a further analysis of potentially relevant variables not studied in this research (e.g., potential differences in sex of the child, stability of the parents' relationship, parents' emotional well-being, etc.).

Conclusion

In conclusion, the Turkish version of the AHEMD-IS, developed as described here, is a valid and reliable tool for evaluating the home environment of infants in Turkey. The questionnaire is suitable and easy to use in the Turkish population, both for clinical and research purposes. Further research will be needed to address inter-rater reliability and various other characteristics of the home environment, such as the quality of the relationship between parents and their separate emotional well-being.

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