

Media Parenting Scale for School-Aged Children (MEPA-20): Psychometric Properties of the Turkish Version

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ABSTRACT

Background and purpose: Media parenting refers to the strategies and behaviors parents use to interact with their children regarding the amount, content, and context of screen use. Children's media/screen use is a significant indicator of media parenting practices. Therefore, this study aimed to determine the psychometric properties of the Turkish version of the Media Parenting Scale for School-Aged Children (MEPA-20).

Methods: This methodological study involved 524 parents with children aged 6–10 and was conducted between October 15, 2022, and February 15, 2023. In the data analysis, the Content Validity Index, Explanatory and Confirmatory Factor Analyses, Cronbach's alpha, Test-retest reliability, Hotelling T² test, and item-total score correlation were used. The test-retest reliability analysis of the Turkish version of MEPA-20 was performed with 30 parents after 4 weeks.

Results: MEPA-20 consists of 20 items and three sub-dimensions (active, restrictive, and over-protective mediation). The MEPA-20 Turkish version and its three factors were found to indicate acceptable levels of internal consistency and reliability. The three-factor construct validity of the MEPA-20 Turkish version determined with Explanatory Factor Analyses was successfully confirmed with Confirmatory Factor Analysis.

Conclusion: The MEPA-20 is a valid and reliable tool for assessing the media parenting practices of parents of children aged 6–10 years in the Turkish population.

Practice implications: Based on the impact of media parenting practices on child and family health, nurses should raise awareness and support parents regarding children's healthy screen use.

Introduction

The advancements in technology have brought about significant changes, leading to a substantial rise in media and screen usage (internet browsing, mobile phone usage, television watching, and video game playing) (LeBlanc et al., 2017; Samaha & Hawi, 2017; Zehir et al., 2020). With the widespread availability of technology, the internet, tablets, and smartphones have become an indispensable aspect of the lives of children and adolescents (The Lancet Child and Adolescent Health, 2018). According to UNICEF's State of the World's Children 2017: Children in a Digital World, one in every three internet users is under the age of 18 (UNICEF, 2023). According to the Turkish Statistical Institute's (TUIK) Survey on the Use of Information Technologies by Children conducted in 2021, it was reported that 66.6% of children aged 6–15 years possess at

least one of the following technology devices: computer (desktop/laptop/tablet), mobile phone/smartphone, TV, smartwatch, or game console (TUIK, 2021). Additionally, 82.7% of children in Turkey use the Internet, 64.4% use mobile phones/smartphones, 57.2% use tablet computers, and 55.6% use computers (TUIK, 2021). In Canada, a study by Tamana et al. (2019) found that children aged 3–5 years are exposed to an average of two hours of screen time per day. The United States Common Sense Media (2020) reported that daily screen use by children aged 0–8 years was reported to be 49 min for children younger than 2 years, two hours, and 30 min for 2–4 years, and three hours or more for 5–8 years. According to Common Sense Media's, 2022 report, children aged 8–12 years spend an average of five hours and 33 min per day engaged in screen-based entertainment. Evidence shows that screen/media usage begins at a very young age, and the amount of time children

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spend connected to screens continues to increase day by day (Coyne et al., 2017; LeBlanc et al., 2017; O'Connor et al., 2013; Samaha & Hawi, 2017; Zehir et al., 2020).

Background

Despite the advantages of enabling quick communication and easy access to a vast array of materials, screen use can have detrimental impacts on children's cognitive, psychological, social, and physical development (Hale & Guan, 2015; Li et al., 2020; Madigan et al., 2020; Martin et al., 2021; Odgers & Jensen, 2020; Trott et al., 2022). Research indicates that the utilization of screens among children has been linked to various adverse effects, including obesity, dry eyes, visual impairments, difficulties with attention and concentration, diminished academic performance, challenges in learning, problems with social and sexual behavior, inadequate social coping skills, desensitization to violence, nighttime fears, issues with posture, neck discomfort, delayed language development, depression, anxiety, increased aggression, cardiometabolic and heart ailments, aggressive behavior, internalizing and externalizing behavior problems, and sleep disturbances (Adelantado-Renau et al., 2019; Collier et al., 2016; Eirich et al., 2022; Hale & Guan, 2015; Li et al., 2020; Liu et al., 2016; Madigan et al., 2020; Martin et al., 2021; Santos et al., 2022; Trott et al., 2022; Zhang et al., 2022). The American Academy of Pediatrics (AAP) therefore issued recommendations to limit children's time and screen use. According to the AAP guidelines, children should refrain from using screens until they reach the age of 2 years old. Between the ages of 2 and 5, screen time should be limited to one hour per day, and it should be done under parental supervision. Additionally, for children over the age of 6, screen time should not exceed two hours per day (Council on Communications & Media, 2016). Additionally, it was emphasized that families should select the applications, games, and programs their children utilize, as well as exercise parental control over the material they access and the applications they download (Council on Communications & Media, 2016). Carson and Janssen (2012) emphasized the crucial role of parents in minimizing their children's screen time. Tang et al. (2018) highlighted the significance of media parenting practices employed by parents to manage their children's screen usage, as they directly influence the amount of time children spend on screens.

Media parenting encompasses the strategies and behaviors employed by parents to interact with their children regarding the quantity, content, and context of screen use (Collier et al., 2016; Coyne et al., 2017; Lukavská et al., 2021; Nagy et al., 2023; O'Connor et al., 2013). Parental practices related to media parenting can differ based on various factors such as parental characteristics (age, gender, digital literacy, etc.), socioeconomic and environmental factors (culture, place of residence, etc.), parents' personal beliefs and attitudes toward technology, as well as their competence in screen use, and age and gender of their children. Over the years, media parenting strategies have changed depending on the significant changes in technology use (Collier et al., 2016; Coyne et al., 2017; Eastin et al., 2006; Ergin & Kapçı, 2019; Ho et al., 2020; Livingstone et al., 2017; Livingstone & Helsper, 2008; Lwin et al., 2008; Lukavská et al., 2021; Modecki et al., 2022; Nagy et al., 2023; Nielsen et al., 2019; O'Connor et al., 2013; Rodríguez-de-Dios et al., 2018; Rudnova et al., 2023; Valkenburg et al., 1999; Valkenburg et al., 2013). Valkenburg et al. (1999) classified parental-mediation strategies in children's television viewing as restrictive mediation, instructive mediation, and social co-viewing. Eastin et al. (2006) classified parental mediation in children's internet use as factual, evaluative, and restrictive. In a study investigating the safety of children in an online environment, the concept of parental mediation was operationalized as a combination of restrictive and instructive mediation (Lwin et al., 2008). (Lwin et al., 2008). Livingstone et al. (2017) conducted a study on parental mediation in children's internet use and reported that parents employ both facilitative and restrictive mediation strategies, choosing either one or a combination of both depending on specific situations.

The study further revealed that an increase in facilitative mediation was associated with heightened online risks and opportunities for children, whereas an increase in restrictive mediation was linked to a decrease in both risks and opportunities (Livingstone et al., 2017). Nielsen et al. (2019) classified parental mediation practices concerning screen use into five categories: no mediation, monitoring, co-using, active mediation, and restrictive mediation. Lukavská et al. (2021) proposed three distinct media parenting strategies, namely, active mediation, restrictive mediation, and over-protective mediation. Active mediation is a parenting strategy that focuses on open communication between parents and their children regarding screen use and involves discussions about the educational aspects of media, fostering critical thinking skills, and promoting the acquisition of knowledge and digital literacy (Collier et al., 2016; Coyne et al., 2017; Lukavská et al., 2021; Nagy et al., 2023; O'Connor et al., 2013; Rudnova et al., 2023). With restrictive mediation, the parent regulates the child's screen time by setting limits on when, how long, and how the youngster uses the device (Collier et al., 2016; Coyne et al., 2017; Lukavská et al., 2021; Nagy et al., 2023; O'Connor et al., 2013; Rudnova et al., 2023). Over-protective mediation aims for parents to have full control over their children through restrictive regulations and practices regarding children's screen use (Lukavská et al., 2021). According to Beyens et al. (2022), various mediation strategies have an impact on children's screen usage. Given the significant role that parents play in minimizing their children's screen time, it becomes crucial to identify and understand effective media parenting practices (Carson & Janssen, 2012; Lukavská et al., 2021).

In the literature, some scales that assess media parenting only for a single screen or media type (Ergin & Kapçı, 2019; Ho et al., 2019; Valkenburg et al., 1999; Valkenburg et al., 2013). Television mediation was developed by Valkenburg et al. (1999) and includes the evaluation of television mediation activities by parents with children aged 5–12 years. In the literature, there are scales available that specifically measure media parenting practices related to individual screens or media types (Ergin & Kapçı, 2019; Ho et al., 2019; Valkenburg et al., 1999; Valkenburg et al., 2013). The Television Mediation Scale was developed by Valkenburg et al. (2013) to measure parents' perceptions regarding the frequency and way they restrict their children's media use, focusing on children aged 10 to 14 years. Parental Mediation for Internet Usage Scale Adolescent and Parent Forms was developed by Ergin and Kapçı (2019) and focused on parental mediation strategies in terms of internet use. The parental Social Media Mediation Scale, developed by Ho et al. (2019), assesses the strategies adopted by parents to manage their children's social media use. "Media Parenting Scale for Parents of School-Aged Children (MEPA-20)", developed by Lukavská et al. (2021), addressed a gap in the literature by providing a comprehensive assessment of parents' media parenting practices specifically related to children's use of all screens and media types (Lukavská et al., 2021). MEPA-20 was the first tool evaluating parents of children aged 6–10 years' media parenting practices toward the use of all screens/media. To the best of our knowledge, no measurement tool assessing parents' media parenting practices toward children's use of all screens/media has been devised in Turkey.

Aim

This study aimed to determine the psychometric properties of the Turkish version of the Media Parenting Scale for School-Aged Children (MEPA-20), which was developed to evaluate parents' media parenting practices toward children's screen/media use.

Methods

Design

This study used a descriptive, correlational, cross-sectional, and methodological design. It was conducted to test the reliability and

validity of the Turkish version of the “Media Parenting Scale for School-Aged Children (MEPA-20)”. The methods for the study are summarized in Fig. 1. The study followed the guidelines for Strengthening the Reporting of Observational Studies in Epidemiology (STROBE).

Participants

The study was conducted between October 15, 2022, and February 15, 2023, with the parents of 6–10-year-old children studying in six primary schools in the Eastern Black Sea region of Turkey. The inclusion criteria were (a) having a child aged 6–10 years, (b) being literate in Turkish, (c) volunteering to participate in the study and giving written consent, and (d) being able to read and understand the questions in the questionnaire. Exclusion criteria were (a) refusing to participate in the study and (b) being illiterate in Turkish.

In determining the sample size in scale studies (Swami & Barron, 2019), the participant/item ratio should be 10:1 (Tabachnick & Fidell, 2013), but Hogarty et al. (2005) suggested that this ratio should be 20:1. In scale psychometric studies, it is recommended that the sample be at least 300 participants for the number of items constituting the scale to be 5–20 times higher, the factor structure to be stable, and the results obtained to be generalized (Carpenter, 2018; DeVellis, 2016; Karagöz, 2019). The sample size for this study was determined following the 5–20 times rule (Carpenter, 2018; DeVellis, 2016; Karagöz, 2019). According to this rule, a minimum of five parents should be included for each item on the measurement scale (Carpenter, 2018; DeVellis, 2016; Karagöz, 2019). The MEPA consists of 20 items, and a minimum of 100 parents should be reached in line with this rule. The sample size needed for the formal study was determined to be 100–400. The sample of the study consisted of 524 parents with children aged 6–10 years who volunteered to participate in this study and met the inclusion criteria.

Data collection tools

The data were collected using the “Parent-Child Descriptive Information Form” and the “Media Parenting Scale for School-Aged Children (MEPA-20).”

The parent-child descriptive information form

The form created by the researchers in line with the literature (Coyne et al., 2017; LeBlanc et al., 2017; O’Connor et al., 2013; Samaha & Hawi, 2017; Zehir et al., 2020) includes questions about the sociodemographic characteristics of parents and children. In addition, the form includes three closed-ended questions about the technological tools used by children and the duration of parent-child use of technological tools.

The media parenting scale for school-aged children (MEPA-20)

The MEPA was developed by Lukavská et al. (2021) to assess the media parenting practices of parents with children aged 6–10 years (Lukavská et al., 2021). It consists of 20 items and 3 subscales (active mediation-8 items), (restrictive mediation-8 items), and (over-protective mediation-4 items). Active mediation (AM) includes parental communication and approaches to teaching their children to use technologies in a healthy and thoughtful manner. Restrictive mediation (RM) includes parental practices and rules for organizing screen activities to prevent their children’s excessive or inappropriate screen use. Over-protective mediation (OP) refers to parents’ restrictive activities by using any means to have full control over their child’s screen use. The scale items are 5-point Likert type, and each item in the scale is scored as “(1) = totally untrue, (2) = rather untrue, (3) = neither true nor untrue, (4) = rather true, and (5) = totally true”. There are no reverse-scored items on the scale. The average of the MEPA-20 items is calculated as three separate scores. The increase in the mean score of each sub-dimension indicates the parent’s parenting practice toward their child’s screen/media use (Lukavská et al., 2021). The reliability analysis of the sub-dimensions of MEPA-20 is as follows: AM [(Cronbach α =

0.77; McDonald ω = 0.78)], RM [(Cronbach α = 0.73, McDonald ω = 0.74)] and OP [(Cronbach α = 0.49, McDonald ω = 0.52)] (Lukavská et al., 2021). The scale was found to be a valid and reliable measurement tool that assesses parents’ media parenting practices.

Data collection

The instructors and administrators of the six primary schools were notified about the study before data collection began, and the parents who met the inclusion criteria were identified. Teachers and school officials informed the identified parents on the online platforms where they might be found about the study’s goals, the procedures involved, the voluntary nature of participation, and their right to withdraw at any time. The parents were then informed via these sites of the link to the Google form the researchers had prepared. Google’s privacy policy was read and accepted by parents along with the consent form (Google Privacy Policy, 2023). The study was completed with 524 parents, and all parents responded to all items. In addition, while collecting the data, parents were asked to complete the questionnaire form separately for each child aged 6–10 years. Parents who completed the data collection forms were asked to participate in the retest analysis of the study four weeks later. The retest analysis of the scale was conducted with 30 parents.

Adaptation procedure of the Media Parenting Scale for School-Aged Children (MEPA-20) to Turkish

The MEPA-20’s creators, Lukavská et al. (2021), provided written permission for the scale’s Turkish adaptation and use at the beginning of the study through email. Two linguists who had not seen the scale previously and had expertise in both languages evaluated the scale’s linguistic validity. Afterward, the Turkish translations of the scale were evaluated and revised by the researchers and an independent expert. A Turkish linguist reviewed the revised scale. The Turkish scale was then translated back into English by two different linguists. Thus, in this study, the conceptual and linguistic equivalence of the scale was ensured by the back translation method (Wild et al., 2005).

Evaluation by experts

According to scale study recommendations (Polit et al., 2007; Polit & Beck, 2018), at least 3–20 expert opinions should be obtained for content and content validity. In this study, a total of ten experts, including four faculty members of the Department of Child Health and Diseases Nursing, two pediatricians, two child psychologists, and two teachers, were consulted. The experts were asked to evaluate the Turkish and original versions of the scale items in terms of both language and content. As a result of these evaluations, the Item-Based Content Validity Index (I-CVI) was found to be between 0.80 and 1.00, and the Scale-Based Content Validity Index (S-CVI) was 0.98, and Content validity was above 90%, indicating excellent agreement among expert opinions (Polit & Beck, 2018).

Preliminary test phase

A preliminary study was conducted with 30 parents who met the study’s inclusion criteria to evaluate the scale’s readability, comprehension, and suitability for Turkish parents. As no negative feedback was received in the pilot study, no revisions were made, so the readability and comprehensibility of the Turkish version of the MEPA-20 were considered adequate. Parents who took part in the pilot study were excluded from the study sample.

Statistical analysis

The data were analyzed with IBM SPSS 26.0 software, the LISREL

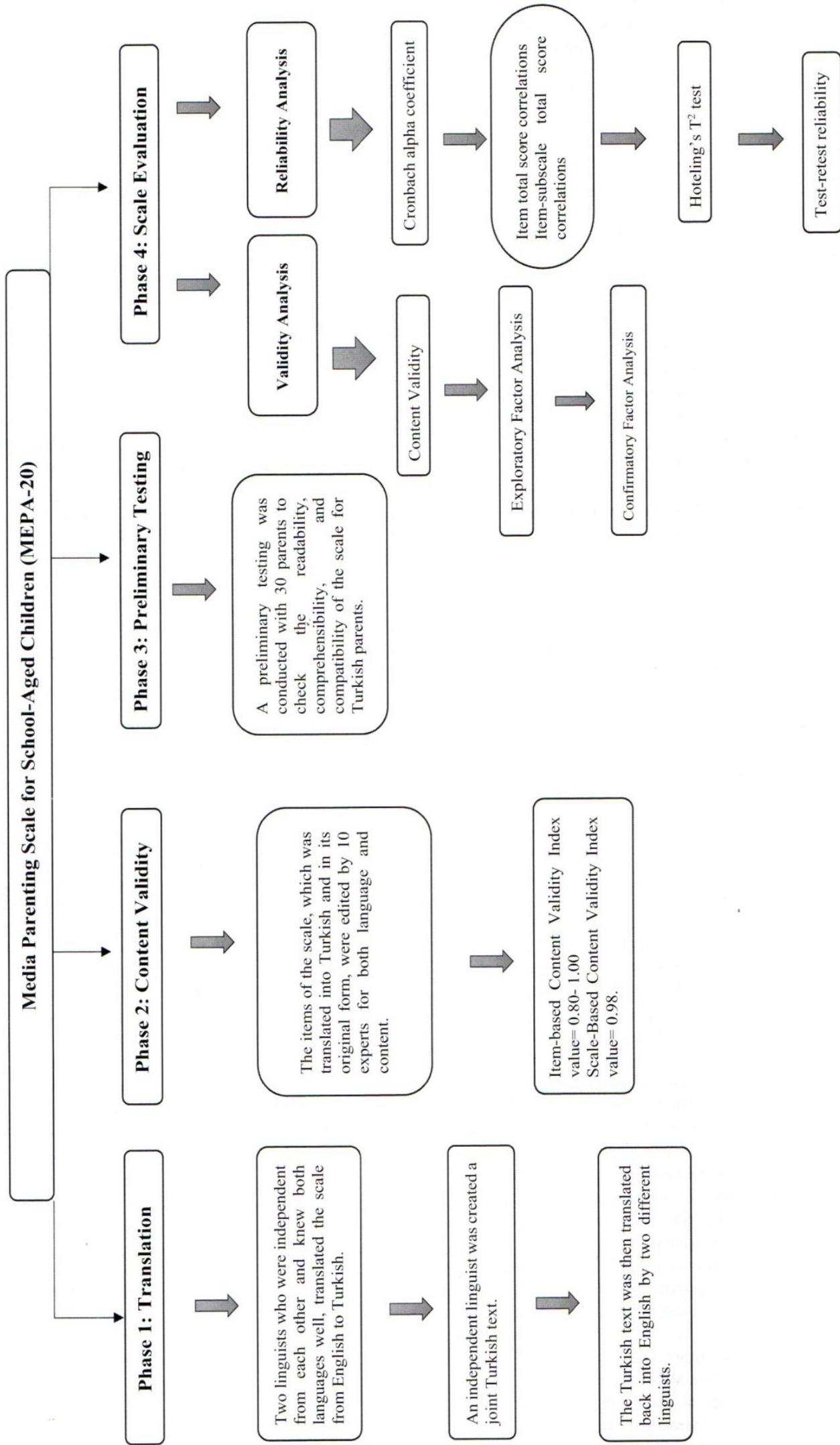


Fig. 1. Research process.

program, and the AMOS 23.0 statistical programs. The normal distribution of the data was determined by the Kolmogorov-Smirnov test. Sociodemographic data for parents and children was calculated using numbers, percentages, mean, and the standard deviation. Content validity and construct validity were used to determine the validity of the Turkish version of MEPA-20. For content validity, I-CVI and S-CVI were calculated using the Davis technique.

Validity

To determine the construct validity of the Turkish version of MEPA-20, the sample was randomly divided into two halves, EFA was performed in the first half, and CFA was performed in the second half (Swami & Barron, 2019). The Bartlett sphericity test and Kaiser-Meyer-Olkin (KMO) coefficient were performed to assess the adequacy of the sample and the suitability of the items for factor analysis (Hayran, 2011; Jonhson & Christensen, 2014). A significant Bartlett sphericity test and a KMO coefficient above 0.80 indicate that the sample is adequate (Hayran, 2011; Jonhson & Christensen, 2014). In the EFA phase, principal axis factoring with ProMax rotation was used to investigate the factor structure of MEPA-20 and determine the items to be deleted (DeVellis, 2016). A CFA was conducted to evaluate whether the model created by EFA explained the original scale structure. Model fit was evaluated with chi-square (χ^2), degrees of freedom (df), χ^2/df , Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (sRMR), Comparative Fit Index (CFI), Incremental Fit Index (IFI) and Tucker-Lewis Index (TLI) (DeVellis, 2016; Jonhson & Christensen, 2014; Karagöz, 2019; Marsh et al., 2020).

Reliability

To test the reliability of the scale and its sub-dimensions, Cronbach's alpha internal consistency coefficient (split-half method and Cronbach's α value, Spearman-Brown, Guttman split-half, and the correlation coefficient between the two halves) and item-total correlation values were calculated. The temporal stability of the scale was determined by test-retest reliability, and response bias was determined by Hotelling's T^2 test. In addition, the 95% confidence interval and statistical significance level were accepted as $p < 0.05$ in this study (DeVellis, 2016; Jonhson & Christensen, 2014; Karagöz, 2019; Marsh et al., 2020; Nunnally & Bernstein, 2010; Seçer, 2018).

Ethics considerations

For the Turkish version of the scale, permission was obtained via e-mail from Katerina Lukavsk, author of the scale. Then, ethical approval of the research was obtained from the Clinical Research Ethics Committee of a university (date = 28/07/2022, number = 2022/5), and institutional permission was obtained from the provincial Directorate of National Education for the relevant primary schools. In the introductory section of the Google form generated prior to data collection, parents who met the inclusion criteria were informed about the research, an informed consent form was presented, and their written consent was obtained. Then, parents filled out the Parent-Child Descriptive Information Form and the Media Parenting Scale for School-Aged Children (MEPA-20). They were also informed that they could withdraw from the study at any time. This study adhered to the principles of the Declaration of Helsinki adopted by the Declaration of the World Medical Association.

Results

According to the results, the mean age was 38.29 ± 4.40 for the parents and 8.45 ± 1.32 for the children. Parents had an average of 2.48 ± 0.88 children. Among the participants, 51.1% were mothers, 39.3% were high school graduates, and 51.7% of the fathers had an associate degree or higher. In this study, the gender ratio of mother / father was 127:135 in EFA and 141:121 in CFA. About 53% of the children of the

participants were male (Table 1). The daily time spent with technological devices is 1–2 h for 49.8% of parents and 3 h or more for 35.9% of children.

Content validity

For the assessment of content validity indices in this study, ten experts were consulted to evaluate each item on the draft scale. The evaluation, conducted using the Davis technique, resulted in an I-CVI range of 0.80–1.00 and an S-CVI range of 0.98, indicating a high level of agreement among the experts.

Exploratory factor analysis

In the process of adapting the scale for the Turkish sample, the suitability of the factor structure was assessed using the Kaiser-Meyer-Olkin (KMO) measure, and the Bartlett sphericity test. The KMO value in this study was 0.863, and the Bartlett sphericity test yielded a significant result as $X^2 = 2711.716, p < 0.001$, indicating that the data from the Turkish sample is highly suitable for factor analysis (see Table 2).

Following the Exploratory Factor Analysis (EFA), it was observed that the Turkish version of MEPA-20 could be categorized into three distinct factors, accounting for a total variance of 50.241%. The first sub-dimension accounted for 32.829% of the total variance, the second sub-dimension explained 12.021%, and the third sub-dimension accounted for 5.391% of the total variance. The eigenvalues for the first, second, and third sub-dimensions were found to be 7.017, 2.902, and 1.482, respectively. Upon conducting factor loading analysis, it was identified that the factor loading values of the Turkish version of MEPA-20 ranged from 0.344 to 0.917. The items within the sub-dimensions of

Table 1
Sociodemographic characteristics of children and parents (n = 524).

Characteristics		Participants	
Parent Age (Mean \pm SD)		38.29 \pm 4.40	
Child Age (Mean \pm SD)		8.45 \pm 1.32	
Number of children in the family (Mean \pm SD)		2.48 \pm 0.88	
		Frequency	Percentage
Parents	Mother	268	51.1
	Father	256	48.9
	Primary school	48	9.2
	Secondary school	81	15.5
Maternal Education Level	High school	206	39.3
	Associate degree + Bachelor's degree + Post graduate Degree	189	36.1
	Primary school	11	2.1
	Secondary school	74	14.1
Paternal Education Level	High school	168	32.1
	Associate degree + Bachelor's degree + Post graduate Degree	271	51.7
	Girl	247	47.1
Sex of the child	Boy	277	52.9
	Smart Phone	394	51.0
The technological tool your child uses the most ^a	Laptop	136	17.6
	Tablet	115	14.9
	Game Console	80	10.3
	Desktop computer	48	6.2
	0–30 min	73	13.9
Daily time you spend with technological tools	30–60 min	94	17.9
	1–2 h	261	49.8
	2–3 h	83	15.8
	3 h and more	13	2.5
Daily time your child spends with technological tools	0–30 min	41	7.8
	30–60 min	71	13.5
	1–2 h	76	14.5
	2–3 h	148	28.2
	3 h and more	188	35.9

Abbreviations: M, mean; SD, standard deviation.

^a More than one answer.

Table 2
Exploratory Factor Analysis: Factor loadings of Turkish version the MEPA-20 (n = 262).

Item Number	Items	Factor 1 (Active Mediation)	Factor 2 (Restrictive Mediation)	Factor 3 (Over-protective Mediation)
Item 1	I chat with my child about time that s/he spends using screens.	0.709		
Item 2	My child sees that I am able to regulate my screen time.	0.710		
Item 3	I explain to my child which content is suitable for her/him (e.g., which videos, games, apps, websites, texts, and pictures)	0.711		
Item 4	I help my child to find suitable content (e.g., videos, games, apps, websites, texts, and pictures).	0.793		
Item 6	In front of my child, I consume only such content (e.g., videos, games, apps, websites, texts, and pictures) that is also suitable for him/her.	0.578		
Item 7	I chat with my child about how s/he uses screens (e.g., before going to bed, during meals, and during studying).	0.566		
Item 8	I explain to my child in what situations the use of screens is in/appropriate.	0.564		
Item 9	I help my child to find suitable situations for watching/using screens.	0.496		
Item 11	We have agreed rules about screen time.		0.594	
Item 12	I do not let my child use screens longer than agreed.		0.691	
Item 13	I notice what content my child consumes through screens (e.g., what videos s/he watches, what games s/he plays, what apps s/he uses, and what text and pictures).		0.530	
Item 14	We have agreed rules about what my child may and may not watch/do on screens (e.g., which videos, games, apps, texts, and pictures).		0.640	
Item 16	I do not let my child consume other content than agreed.		0.344	
Item 17	I notice in which situations my child watches and uses screens.		0.917	

Table 2 (continued)

Item Number	Items	Factor 1 (Active Mediation)	Factor 2 (Restrictive Mediation)	Factor 3 (Over-protective Mediation)
Item 18	We have rules specifying situations in which my child is or is not allowed to watch/use screens.		0.829	
Item 19	I do not let my child consume other content than agreed.		0.538	
Item 5	I secretly check my child's screen activities (when and what my child was watching or what apps s/he was using).			0.862
Item 10	I let my child know that watching/using screens is a waste of time.			0.553
Item 15	I constantly check my child's screen activities.			0.916
Item 20	In our family, we set rules, which almost never allow children to use screens for entertainment.			0.646
Explained variance		32.829%	12.021%	5.391%
Eigenvalues		7.017	2.902	1.482
KMO coefficient		0.863		
Bartlett's test		2711.716 (p < 0.001)		

Abbreviations: KMO, Kaiser-Meyer-Olkin.

the MEPA-20 Turkish version exhibited factor loadings ranging from 0.496 to 0.793 in the first sub-dimension, 0.344 to 0.917 in the second sub-dimension, and 0.553 to 0.916 in the third sub-dimension (Table 2).

Confirmatory factor analysis

As a result of the CFA performed on the second half of the data (n = 262) to confirm the three-factor construct validity of the Turkish version of the MEPA-20, the factor loadings of the 20 items were found to be between 0.42 and 0.88 (Fig. 2). The fit indices of the Turkish version of MEPA-20; $\chi^2 = 322.234$, $\chi^2 / df = 2.029$, RMSEA = 0.063, sRMR = 0.034; GFI = 0.90; CFI = 0.94; IFI = 0.94 and TLI values are at acceptable standards with 0.92 (Table 3).

Reliability analysis

Internal consistency reliability

To assess the reliability of the MEPA-20 Turkish version and its three factors, internal consistency reliability was evaluated in this study. The analysis revealed that the Cronbach's alpha values for the total scale and each of its sub-dimensions, including active mediation, restrictive mediation, and over-protective mediation, were 0.88, 0.85, 0.82, and 0.86, respectively, indicating acceptable levels of internal consistency reliability for the MEPA-20 Turkish version (see Table 4). Further reliability analyses were conducted, including split-half analyses. The Cronbach's alpha value for the first half was found to be 0.80, and for the second half, it was 0.73. Moreover, the Spearman-Brown coefficient and Guttman-split-half coefficient were calculated to be 0.91, indicating high reliability. Additionally, the correlation coefficient between the two halves was determined to be 0.84, further supporting the reliability of the scale (Table 4).

The analysis of item-total score correlations for the Turkish version

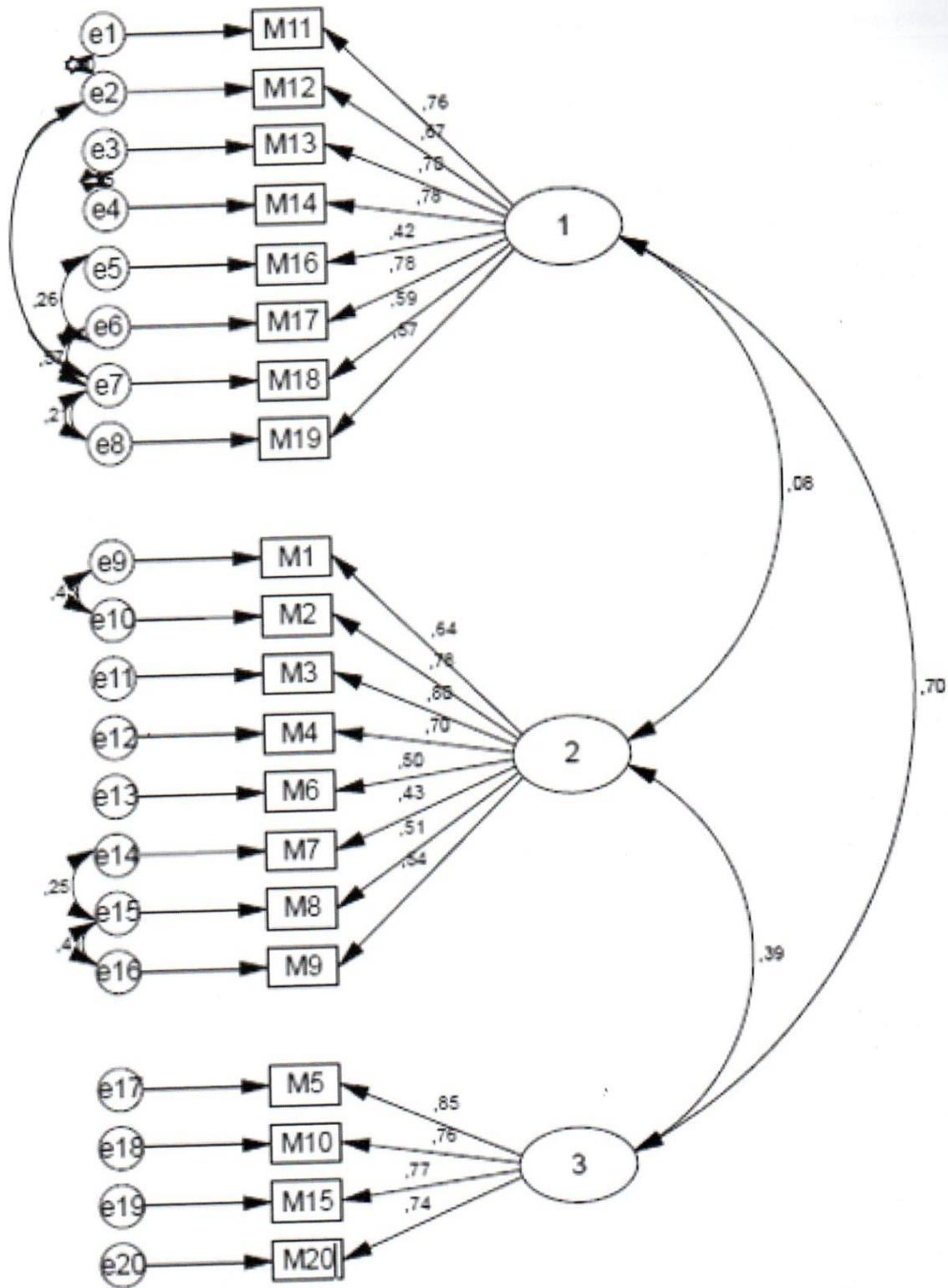


Fig. 2. Confirmatory factor analysis of Turkish version of The Media Parenting Scale for School-Aged Children (MEPA). *M: Item.

Table 3

Goodness of Fit Indices (n = 262).

Models/Data-model fit indices	χ^2	df	χ^2/df	RMSEA	GFI	sRMR	CFI	IFI	TLI
Three-factor model	322.234	158	2.029	0.063	0.90	0.034	0.94	0.94	0.92

Notes: χ^2 , Chi-square; df, Degrees of Freedom; RMSEA, Root Mean Standard Error Approximation; GFI, Goodness of Fit; sRMR, Standardized Root Mean Square Residual; CFI, Comparative Fit Index; IFI, Incremental Fit Index; TLI, Tucker-Lewis Index.

of MEPA-20 showed that the total score correlations ranged from 0.339 to 0.773 for active mediation, 0.466 to 0.670 for restrictive mediation, 0.339 to 0.773 for restrictive mediation, and 0.651 to 0.758 for over-protective mediation, which were statistically significant ($p < 0.001$) (Table 5). Additionally, Hotelling's T^2 value for the Turkish version of MEPA-20 was calculated as 1282.212, with a p -value of 0.0001.

Test-retest reliability

The test-retest reliability analysis was conducted on a sample of 30

selected parents who completed the MEPA-20 scale twice, with a 4-week interval between the administrations. The test-retest correlation between the scale items was calculated and found to be $r = 0.963$, with a p -value of 0.0001. This indicates a strong and significant positive correlation, suggesting that the MEPA-20 maintains stability and consistency over time.

Table 4
Results of reliability analysis of scale and sub-dimensions (n = 524).

	Cronbach α	Split into Two Halves		Spearman-Brown	Guttman split half	Correlation between two halves
		First half Cronbach α	Second half Cronbach α			
Scale Total	0.872	0.799	0.730	0.913	0.910	0.840
Factor 1: Active Mediation	0.847					
Factor 2: Restrictive Mediation	0.818					
Factor 3: Over-protective Mediation	0.857					

Table 5
Correlations of Turkish version the MEPA-20 (n = 524).

Sub-Dimensions	Item number	Item-Sub-dimension Total Score Correlation*	Corrected Item Total Score Correlation*
Active Mediation (Factor 1)	Item 1	0.609	0.432
	Item 2	0.647	0.454
	Item 3	0.670	0.463
	Item 4	0.636	0.438
	Item 6	0.528	0.326
	Item 7	0.466	0.257
	Item 8	0.597	0.424
	Item 9	0.578	0.501
	Item 11	0.659	0.619
Restrictive Mediation (Factor 2)	Item 12	0.647	0.558
	Item 13	0.551	0.494
	Item 14	0.661	0.624
	Item 16	0.339	0.289
	Item 17	0.773	0.619
	Item 18	0.654	0.543
	Item 19	0.494	0.464
	Item 5	0.758	0.668
Over-protective Mediation (Factor 3)	Item 10	0.651	0.577
	Item 15	0.724	0.589
	Item 20	0.680	0.613

* $p < 0.001$.

Scoring of the scale

On the MEPA-20 scale, each item is scored on a scale from 1 to 5. The scale does not include any reverse items, and scoring is done separately for each sub-dimension: active mediation, restrictive mediation, and over-protective mediation. The score is calculated as the average of the responses to the items. Active mediation (Item 1, Item 2, Item 3, Item 4, Item 6, Item 7, Item 8, and Item 9), restrictive mediation (Item 11, Item 12, Item 13, Item 14, Item 16, Item 17, Item 18, and Item 19), and over-protective mediation (Item 5, Item 10, Item 15, and Item 20). The score range to be obtained from MEPA-20 sub-dimensions is 1–5. Mean scores yield information about parents' media parenting practices toward children's screen/media use.

Discussion

In the last decade, the number of internet users has increased significantly thanks to technological advances and reached 4 billion users (McDonald, 2018). In a study conducted by Karakuş et al. (2014) in Turkey back [in 2010], it was revealed that 45.9% of children aged 9–16 reported initiating Internet usage between the ages of 7 and 10. Another study conducted by Apaydın Cırık and Aksoy (2023) indicated that during the COVID-19 pandemic, 63.5% of parents reported an increase in their children's social media usage, 72.2% reported an increase in internet usage, and 58.2% noted a rise in television viewing time among children aged 3–12 years. Additionally, in a study carried out in the USA, it was found that children's screen time escalated by 1.11 h per day compared to the period before the pandemic (Hedderson et al., 2023). In a study involving children aged 9–10 years, it was observed

that these children spent an average of 3.99 h daily in front of screens, with television programs/movies (1.31 h), video games (1.06 h), and watching/sharing videos (1.05 h) being the most prevalent screen activities (Nagata et al., 2022). Excessive screen use among children has been linked to various physical, behavioral, and psychosocial health indicators like obesity (Li et al., 2020), reduced sleep duration (Hale & Guan, 2015; Li et al., 2020; Martin et al., 2021), sleep problems (Hale & Guan, 2015), language and vocabulary development issues (Madigan et al., 2020), dietary habits, eye health, mental health, physical activity, parental health, physiology, sleep disturbances, and problematic behaviors (Trott et al., 2022).

Parents play a pivotal role in shaping and overseeing their children's screen usage. Media parenting encompasses the specific methods, strategies, and practices that parents employ to manage and regulate their children's screen time and media engagement (Lukavská et al., 2021; O'Connor et al., 2013; Tang et al., 2018). Given that the practices of both mothers and fathers have been demonstrated to influence children's screen time (Lukavská et al., 2021; O'Connor et al., 2013; Tang et al., 2018), it becomes imperative to measure media parenting practices concerning children's screen and media usage. The Media Parenting Scale for School-Aged Children (MEPA-20) is a valuable measurement tool designed to assess media parenting practices, including active, restrictive, and over-protective mediation, among parents with children aged 6–10 years. The MEPA-20 has been established as an appropriate, valid, and reliable instrument for evaluating media parenting practices among parents with children aged 6–10 years in the Turkish population. This scale effectively measures the media parenting practices associated with screen and media use among school-age children. The study under consideration presents the findings pertaining to the Turkish psychometric properties of the "Media Parenting Scale for Parents of School-Aged Children" (MEPA-20).

The validity of the MEPA-20 scale in the Turkish version was assessed using the language and content validity method. Content validity was evaluated through the Davis technique, which examines the appropriateness of the items on the scale. Both the item-level and scale-level Content Validity Index (CVI) scores exceeded 0.80, indicating a consensus among experts that the items align well with Turkish culture and adequately represent the intended domain (DeVellis, 2016; Jonhson & Christensen, 2014; Polit & Beck, 2018). The KMO value obtained in this study ranged from 0.80 to 0.89, and the Bartlett sphericity test resulted in a p -value of <0.001 . These findings indicate that the data are suitable for factor analysis and that the sample size is sufficient (Yong & Pearce, 2013). However, the KMO and Bartlett sphericity tests for the original MEPA-20 scale were not provided in Lukavská et al.'s study (2021), making direct comparisons challenging.

Based on exploratory factor analysis (EFA), the Turkish version of the MEPA-20 demonstrated strong construct validity as it explained $>50\%$ of the total variance, and all the factor loadings surpassed the threshold of 0.30 (Hayran, 2011; Jonhson & Christensen, 2014; Karagöz, 2019). Notably, no items were removed during the adaptation process of the MEPA-20 to Turkish, indicating that the items remained conceptually consistent with the original scale (DeVellis, 2016; Jonhson & Christensen, 2014; Seçer, 2018). However, it is worth noting that a direct comparison with the original study by Lukavská et al. (2021) regarding

specific information on total variance and factor loadings could not be made, as these details were not provided in their study.

To confirm the three-factor structural validity that was determined by EFA, a Confirmatory Factor Analysis (CFA) was conducted using AMOS 23.0 on the second half of the data. According to the CFA results, the Turkish version of the MEPA-20 successfully confirms the three-factor structure established in the EFA, and the factor loadings reflect the strength (DeVellis, 2016; Jonhson & Christensen, 2014; Marsh et al., 2020). In CFA, χ^2/df ratio, RMSEA, sRMR, GFI, CFI, IFI, and TLI values, which indicate whether the model provides an appropriate fit to the data, were evaluated as fit. In this study, χ^2/df ratio < 3 , sRMR < 0.05 , GFI, CFI, IFI, and TLI values ≥ 0.90 and RMSEA value < 0.08 indicate acceptable model fit (DeVellis, 2016; Jonhson & Christensen, 2014; Karagöz, 2019; Marsh et al., 2020). Lukavská et al. (2021) reported factor loadings of all items ($p < 0.001$), χ^2/df ratio 3.35, CFI 0.76, TLI 0.72, and RMSEA < 0.08 in their study. According to the CFA results, the model fit of the Turkish version of the MEPA-20 was quite good, the scale retained its original three-factor structure and had a robust factor structure (DeVellis, 2016; Jonhson & Christensen, 2014; Seçer, 2018).

Cronbach's alpha, a measure of internal consistency and reliability, determines the degree to which all items within a scale measure the same underlying concept or construct (Tavakol & Dennick, 2011). Also, Cronbach's alpha coefficient indicates the homogenous structure of the items that make up the scale. In this study, the Cronbach's alpha coefficient for the total and sub-dimensions of the Turkish version of MEPA-20 was above 0.80. Lukavská et al. (2021) noted that the Cronbach's α values of the MEPA-20 sub-dimensions were below 0.80 in their study. Based on this value, the fact that Cronbach's alpha coefficient of our study is between 0.80 and 1.00 indicates that it has a high level of internal consistency (Karagöz, 2019; Tavakol & Dennick, 2011). The split-half analysis conducted in this study revealed that the first and second halves of the scale exhibited Cronbach's alpha values > 0.70 , and a robust and significant relationship was observed between the two halves. In addition, Spearman-Brown and Guttman-split-half coefficients were > 0.90 . In line with these findings, it was concluded that the Turkish version of MEPA-20 has a high level of internal consistency and has strong content potential in assessing parents' media parenting practices toward children's screen/media use (Nunnally & Bernstein, 2010; Seçer, 2018). In addition, these findings could not be compared since the original study did not include a two-half analysis (Lukavská et al., 2021).

Item-total correlation analysis, which is a separate dimension of scale reliability, shows the relationship between the scores obtained from each scale item and the total score of the scale. In this study, the item-total correlation value exceeding 0.30 suggests that the item effectively measures the intended behavior or construct being assessed by the scale (DeVellis, 2016; Jonhson & Christensen, 2014; Karagöz, 2019; Nunnally & Bernstein, 2010; Seçer, 2018). In this study, test-retest reliability analysis was conducted to assess the consistency and stability of the scale over time. The analysis revealed a highly significant relationship between the scores obtained from these two measurements ($r = 0.96$, $p < 0.001$), indicating the temporal stability and consistency of the MEPA-20 Turkish version (Marsh et al., 2020). Hotelling's T^2 test shows whether the responses given by individuals when rating the items on the scale are equal (Seçer, 2018). It was detected that there was no response bias in the Turkish version of the scale, and the responses given by the parents were different ($p \leq 0.001$), suggesting that the Turkish version of MEPA-20 is reliable (Marsh et al., 2020; Seçer, 2018).

Strengths

The concept of media parenting strategies encompasses various regulations, controls, rules, and restrictions that parents implement concerning their children's media use (Collier et al., 2016; Coyne et al., 2017; Lukavská et al., 2021; Nagy et al., 2023; O'Connor et al., 2013). These strategies are tailored based on the diverse effects of media

content on children, taking into consideration their ages (Collier et al., 2016; Coyne et al., 2017; Lukavská et al., 2021; Nagy et al., 2023; Nikken & Jansz, 2013; O'Connor et al., 2013). Nikken and Jansz (2013) observed that parents tended to apply supervision and co-mediation styles for children aged 0–8 years, more active and more restrictive mediation/monitoring strategies for older children. Livingstone et al. (2017) discovered that parents independently employed facilitative and restrictive mediation practices, but they would choose either one or a combination of both strategies depending on specific circumstances. Parental mediation strategies that emerged in the literature for television have started to be oriented toward the use of digital media tools and the internet over time (Ergin & Kapçı, 2019; Ho et al., 2020; Livingstone et al., 2017; Livingstone & Helsper, 2008; Lwin et al., 2008; Nielsen et al., 2019; Rodríguez-de-Dios et al., 2018; Valkenburg et al., 1999; Valkenburg et al., 2013).

Regarding the measurement tools available in the literature, most of them focus solely on a particular type of screen (e.g., tablet, smartphone) or a specific media type (e.g., internet, TV). Consequently, these tools might not adequately reflect media parenting practices that encompass the use of "screens/all media" universally (Ergin & Kapçı, 2019; Ho et al., 2020; Livingstone et al., 2017; Livingstone & Helsper, 2008; Lwin et al., 2008; Nielsen et al., 2019; Rodríguez-de-Dios et al., 2018; Valkenburg et al., 1999; Valkenburg et al., 2013). Furthermore, most existing measurement tools lack the ability to differentiate between media parenting practices that may be effective and those that could be counter effective. Addressing these limitations, the Media Parenting Practices Toward Children's Use of Screens (MEPA) scale possesses significant strengths. Firstly, it focuses on assessing the general use of screen devices and media by parents with school-age children (ages 6–10). Secondly, the MEPA scale provides a clear differentiation between positive (effective) and negative (counterproductive or potentially harmful) practices of both active and restrictive mediation.

The MEPA-20 tool evaluates active, restrictive, and overprotective mediation strategies used by parents concerning their children's use of screens and media. This instrument is founded on facets theory (Guttman & Greenbaum, 1998), which aids in the conceptualization and classification of media parenting practices (Guttman & Greenbaum, 1998). Unlike alternative scales, the MEPA-20 distinguishes between beneficial mediation approaches and potentially risky or overprotective practices in regulating a child's media and screen interactions. Moreover, the study design demonstrates another strength. The dataset was divided into two subsets for factor analysis, with exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) performed on separate halves of the data.

Limitations

This study has four limitations. Initially, the data collection relied on convenience sampling, targeting parents of 6–10-year-old children attending six primary schools, who possessed internet access, were able to access the online survey link, and expressed willingness to participate. Secondly, due to the nature of anonymity, it was not feasible to analyze potential discrepancies when parents provided information about multiple children or when data was collected from both parents regarding the same child. Thirdly, the study did not assess the parallel form, concurrent/convergent, or divergent validity of the scale used. Fourthly, the generalizability of the scale to different cultural contexts is limited since there is a lack of scales specifically developed for diverse cultures.

Implications to practice

Given the impact of screen/media usage on children's physical, developmental, and psychosocial well-being, assessing parents' media parenting practices is crucial. The MEPA-20 instrument offers valuable insights for pediatric nurses regarding parental practices concerning children's media use. Recognizing that children's screen/media usage is

influenced by parental beliefs and attitudes, pediatric nurses should offer educational and counseling services aimed at enhancing parental awareness and equipping them with effective media parenting strategies and skills. In light of the influence of parenting practices on child health, family well-being, and child development, nurses play a pivotal role in promoting awareness and assisting parents in understanding the significance and appropriate methods of fostering healthy screen usage in children. The development of guidelines for parents and children is crucial to promoting healthy, safe, and productive screen and social media use among children. Additionally, it is of utmost importance for pediatric nurses to strike a balance between modern technology and compassionate care while establishing, maintaining, and enhancing their relationship with children (Fortuno et al., 2017). By leveraging children's inclination toward screens and social media, pediatric nurses can seize an opportunity to deliver higher-quality care and support to their young patients. Pediatric nurses are instrumental in the early identification and mitigation of adverse effects associated with screen/media use on children's health and development, as well as in formulating effective media parenting strategies. It is advisable for further studies to conduct validity and reliability assessments of this scale across different age groups, as these strategies may vary depending on children's age and developmental stages.

Conclusion

The Media Parenting Scale for School-Aged Children (MEPA-20) has been established as a valid and reliable measurement tool specifically designed to assess parents' media parenting practices concerning the screen/media use of children aged 6–10 years. Within Turkish society, MEPA-20 has demonstrated its reliability in evaluating the media parenting practices of parents with children in this age group. What makes MEPA-20 particularly advantageous is its comprehensive evaluation of both effective practices (such as active and restrictive mediation) and risky practices (such as overprotective mediation). By utilizing this scale, pediatric nurses can provide valuable insight to guide parents in preventing the adverse effects of screen/media use on their children's health and development. Furthermore, MEPA-20 enables the identification of specific media parenting strategies employed by parents. Conducting studies to determine effective media parenting strategies can offer support to children who exhibit problematic screen/media use.

Author contributions

Conception and design: BA, VAC, MB.
 Data collection: BA.
 Analysis and interpretation: MB, BA, VAC.
 Writing the manuscript: BA, VAC, MB.
 Critical revision of the manuscript: BA, VAC, MB.
 All authors approved the final version for submission.

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Bahar Aksoy: Conceptualization, Methodology, Visualization, Writing – original draft, Writing – review & editing. **Vildan Apaydin Cirik:** Conceptualization, Methodology, Supervision, Visualization, Writing – original draft, Writing – review & editing. **Murat Bektaş:** Conceptualization, Methodology, Visualization, Writing – original draft, Writing – review & editing, Data analysis and Supervision.

Declaration of Competing Interest

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.pedn.2023.08.023>.

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