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Adapting the Media Exposure Survey to Measure Parental Attitude and Screen Use of Filipino Children: A Psychometric Study

Paulin Grace Morato-Espino[1], Maria Patricia Josefina Berceno[1], Elijah Miguel Guiao[1], Elyssa Manuel[1], Dana Marie Salo[1], Catherine Anne Tan[1], Julie Franz Tanchuling[1]

[1]Department of Occupational Therapy, College of Rehabilitation Sciences University of Santo Tomas, Manila, NCR, Philippines

Correspondence should be addressed to: Paulin Grace Morato-Espino[1]; pmespino@ust.edu.ph

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Abstract

Background: There are various attitudes regarding their child's screen usage. However, there are no existing Filipino-translated and culturally appropriate questionnaires or assessment tools that can measure a child's media exposure, screen use, and parental attitude. The Media Exposure Survey is an assessment tool that measures a child's media exposure, screen use, and parental attitudes regarding their child's screen usage. **Objectives**: The study aims to contextualize and translate the questionnaire into Filipino, determine its content validity and internal consistency, and check the translated questionnaire's compatibility and applicability. **Methods:** The study involves four steps: 1) content validity testing, 2) forward and backward translation and equivalence, 3) pilot testing of the pre-final version, and 4) reliability resting. Data analysis was done to evaluate the content validity and internal consistency of the questionnaire. Thirty-six parents of children aged 0-5 in Metro Manila pilot tested the tool. **Results:** A cross-culturally adapted version of the Media Exposure Survey has been produced with good content validity. The S-CVI of the questionnaire is 95%, which is excellent. The parental attitude towards childhood media use subscale has an acceptable internal consistency with a Cronbach's alpha of 0.77. **Conclusion:** The translated and adapted Media Exposure Survey has good content validity and acceptable internal consistency and can be used to assess Filipino children's media exposure, screen use, and parental attitudes toward media use.

Key Words*: questionnaire, parent attitudes, screen time, psychometric*

INTRODUCTION

Children in this generation are deeply engaged in both traditional and new forms of digital media[1], increasing media use and exposure among young children. According to the American Academy of Pediatrics (AAP), a high percentage of infants begin to watch television within the first two years of their lives, with the time spent watching being inversely related to the age of screen introduction [2]. Because of this alarming trend, several organizations have released recommendations and guidelines related to screen time, physical activity, and sleep during early childhood, such as the World Health Organization's (WHO) guidelines on physical activities (PA), sedentary behaviors, and sleep for children under five years,[3] the New Zealand Ministry of Health and the Australian Department of Health's guidelines to promote healthy growth and development of children under five years old.[4,5] Physical Activity can be described as activities that involve bodily movements that induce energy consumption. Evidence confirms that having regular PA, limited screen time, or time spent in front of screen-based entertainment, and media use or using broadcast or digital media devices such as television, mobile phones, computers, or tablets, and adequate sleep in toddlers correlate with health and well-being.[3,4] The WHO recommends engaging in moderate-to-vigorous-intensity PA instead of sedentary screen time, and sufficient sleep would provide additional benefits.[3]

Sedentary behaviors are activities characterized by an energy expenditure of ≤ 1.5 metabolic equivalents (METs). Sedentary behaviors could be non-screen-based sedentary time and sedentary screen time, where the former includes lying down, sitting on a high chair or stroller, or reading a book, while the latter includes the time spent passively watching screen-based entertainment (TV, computer, mobile devices). Children aged 0-2 should not be exposed to sedentary screen time, and no more than one hour for children 3-4 years old.[3] However, sedentary activities such as reading and storytelling with caregivers are encouraged for all ages.[3]

Excess media exposure and screen time can be a threat to a child's health, especially during early childhood, increasing the risk of childhood obesity and causing emotional, sleep, and behavioral problems that impede a child's development.[6, 7, 8] Approximately 2.6% of children aged 2 to 5 years old in the United States have severe obesity, and this group of children had higher levels of screen time compared to other children.[9] TV viewing negatively affects a child's sleep onset, duration, and quality by displacing sleep time and increasing mental or emotional arousal,[10] which puts the children at risk of hypertension, coronary heart disease, and stroke in adulthood.[11] Furthermore, a systematic review of 85 studies published from 2000 to 2020 found that increased screen time is associated with poorer development of children ages nine years old and below, specifically in social-emotional functions, executive functions, cognition, and motor skills.[12] Although new forms of digital media have their benefits, such as early learning and exposure to new ideas and knowledge in school-aged children, there is also a higher risk of experiencing adverse health effects on sleep, attention, and learning, a higher incidence of obesity and depression, and exposure to inaccurate, inappropriate, or unsafe content.[1]

Despite the WHO recommendations on children's PA, sedentary behavior, and sleep, the increase in media exposure has become more prevalent in the younger population. Globally, only one in 20 children in the United States meets the guidelines on sleep, physical activity, and screen time, and nearly a third are outside recommendations for all three.[13] 39.3% of Korean toddlers watched TV almost every day, while 12.0% used smartphones daily.[14] In the summary of the results for estimating the prevalence of excessive screen time of 14 cross-sectional studies from countries such as Australia, Canada, UK, USA, Japan, Korea, China, India, Thailand, and Malaysia, screen time varies from 10% to 93.7% across high-income countries, and 21% to 98% in middle-income countries.[8] It has also been reported that approximately 75% of young children own gadgets, while most parents allow their children to use their smartphones, which leads to reports estimating that infants start using mobile devices in their first years of life.[15] Additionally, reports show increased media usage of children <2 years old from 10% in 2011 to 38% in 2013.[16] This means a range of 0.1-5 hours of screen time per day among children five and below. All studies measured screen time while watching TV, which was preferred over other media devices like smartphones or computers.

Various researchers have gathered evidence on the factors that can influence young children's screen time behavior. Some determinants of screen time behavior in young children include parenting practices, home environment, parental self-efficacy, parental cultural attitudes, and family media habits.[7,17,18] The evidence supports that parents play a critical role in influencing their child's behaviors. Considering these factors affect the screen time behavior of children, addressing the parental attitudes toward childhood media is a vital step in reducing the screen time of children under five years old.

Various assessment tools were established that can measure a child's media exposure, screen use, and parental attitudes regarding their child's screen usage.[18,19,20,21] Among the aforementioned tools, it was only the Media Exposure Survey that assesses sedentary behaviors, rather than screen time alone, of children below five years old. This instrument developed by Asplund et al. was adapted from two questionnaires, specifically Viner and Cole's child TV-viewing scale and Pearson's scale of restrictive practices regarding TV use.

The questionnaire is a pen-and-paper survey that consists of four subscales, which include the

child and parent screen time, the household media environment, sociodemographics, and the parental attitudes toward childhood media use. However, the psychometric properties of the questionnaire have yet to be assessed.[18] This assessment tool has been translated into Spanish by a bilingual team member trained in medical translation but has not undergone psychometric testing.[18]

The Media Exposure Survey takes a more comprehensive and holistic approach to assess and understand children's overall media exposure across demographics and different contexts in contrast to studies such as the Mothers' and fathers' media parenting practices associated with young children's screen-time: a cross-sectional study by Tang et al. which limits itself to measuring screen time[19], and Screen-related Sedentary Behaviors: Children's and Parents' Attitudes, Motivations, and Practices by He et al. which only measure sedentary behaviors.[20] Furthermore, when comparing the two studies to the media exposure survey, both are limited to parents' behaviors, attitudes, and practices regarding their child's screen time, while the latter assesses the duration across different digital media outlets, caregiver/parents media consumption, caregiver or parent's attitudes towards screen-time usage for their child as well as other qualitative aspects of the consumption. Because the Media Exposure Survey provides qualitative (e.g., demographics and attitudes) and quantitative results (frequency and duration), it can provide a broader and more comprehensive understanding of media consumption and its impacts rather than being limited to results based on sedentary behaviors or parent's attitudes towards screen time usage only.

Despite having identified that increased screen time is a global problem and that parent attitude influences preschool children's screen time, there is minimal data available on Filipino children five years old and below. As there are no existing Filipino translated and culturally appropriate questionnaires to assess the parental attitudes on the screen time of toddlers, this study aims to contextualize and translate the Media Exposure Survey into the Filipino language, determine its psychometric properties (content validity and internal consistency), and check the compatibility and applicability of the questionnaire for use with Filipino children.

METHODS

Ethical Considerations. The study has been reviewed and approved by the University of Santo Tomas College of Rehabilitation Sciences Ethics Review Committee (UST-CRS-ERC) with the protocol number SI-2020-002. The study adheres to the ethical principles set by the Declaration of Helsinki and Good Practice Guidelines of the Philippine Health Research Ethics Board.

Study Design. The study utilized a psychometric study design, which included contextualizing and translating the tool for use with Filipinos. Using a translation study in conjunction with this helped with the translation, interpretation of terms, and contextualization of the questionnaire in the Filipino setting. This study evaluated the psychometric properties (content validity and internal consistency) of the Media Exposure Survey after it was translated from English to Filipino and was pilot-tested with a small sample.

Participants

***Content Validity*.** An expert committee consisting of 10 content experts was invited to assess the content validity of the translated questionnaire.[22] The committee comprises three parents, four pediatric occupational therapists, one psychologist, and two pediatricians, with equal distribution of gender. The aforementioned committee has been deemed qualified for assessment given that parents of toddlers can ensure proper contextualization of concepts and terms for the targeted participants of the study; pediatric occupational therapists and psychologists can not only verify the relevance of each item to both children's and parents' occupations and psychosocial wellbeing, but also use the questionnaire as an assessment tool for pediatric occupational therapy, psychology, and other related fields; and finally, pediatricians can provide a holistic take on health and wellness, especially since they are usually the professionals who oversee child development.

Translation and equivalence. The translation process involved two forward translators who translated the Media Exposure Survey from English to Filipino. Both were bilingual, with Filipino as their first language, but only one was knowledgeable of the concepts regarding the questionnaire. They were followed by two backward translators, one with English as their first language and the other being an English major. During the final phase of the translation process, an expert committee consisting of a methodologist, an occupational therapist, an English major, and four translators created the pre-final version of the questionnaire for pilot testing. All translators served different purposes using their expertise and respective experiences: having two forward translators can allow comparison between Filipino translated in layman's and in healthcare jargon; backward translators can likewise verify whether content has been lost in translation between the original and translated versions using both native or casual English, and academic or formal English. This lessens potential biases in the translation process.

Pilot testing of the pre-final version. Convenience sampling was performed to recruit 36 participants for the pilot testing, which falls within the recommended number of participants (30-40) by Beaton, Bombardier, Gueillemin, and Ferraz.[23] The participants were parents (mother or father) of typically developing children aged 0-5 from Metro Manila. The participant (mother or father) is the individual who spends most of their time with the child and is a Filipino. The participants should also have a minimum educational background of primary school (elementary) to be able to understand the items included in the questionnaire.

Instruments. The contextualized Media Exposure Survey is a tool used to assess media use of typically developing children aged 0-5. It is administered through a questionnaire comprised of three sections: items 1-5 collect information about the child's media usage, items 6-10 constitute a subscale addressing parental attitudes toward childhood media use, and items 11-14 gather details about the parents and their media habits. For items 1-5 and 6-10, participants will be providing concise responses, such as yes or no, the duration of the child's media usage in minutes, hours, or days, the number of household gadgets, and the ages of both the child and the parent. Items 6-10 involve a Likert scale, requiring participants to indicate their level of agreement by selecting from options such as "very much agree," "agree," "disagree," or "very much disagree" for each item.

Data Gathering Procedures. The researchers secured permission from the authors to translate the questionnaire. The original author also provided copies of the English and Spanish versions of the questionnaire. Data collection consisted of four steps: content validity testing (Step 1), translation and equivalence (Step 2), pilot testing of the pre-final version (Step 3), and reliability testing (Step 4) (See Figure 1). This study was conducted in 2021 during the Covid-19 pandemic. All data collection methods were performed online in order to adhere to the health and safety protocols in place.

Step 1. Content validity testing. An expert committee consisting of ten content experts rated each item in terms of its relevance, simplicity, ambiguity, and clarity to the context using a 4-point scale, with 4 being the highest and 1 being the lowest.[22,24]

Step 2. Translation and equivalence. This study followed the Guidelines for the Process of Cross-Cultural Adaptation of Self-Report Measures by Beaton et al.[23] Since the Media Exposure Survey is used in another country and language, cross-cultural adaptation and translation were necessary. The process involved initial translation, synthesis of the translation, back translation, and review of the expert committee for equivalence.

Two translators produced their own translated versions of the questionnaire. The first translator (FT1) is a Filipino knowledgeable in rehabilitation, while the second translator is a Filipino (FT2) who does not know rehabilitation. A synthesis of the translations followed the forward translation. The FT1, FT2, and a recording observer produced one common translation of the questionnaire (FT-12) along with the written report on their synthesis process. The FT-12 questionnaire underwent backward translation; this step served as a validity check to ensure that the translated

version reflects the original version. The two backward translators produced their versions (BT1 and BT2). Lastly, the expert committee evaluated the equivalence of the different versions of the questionnaire by answering these questions: *Semantic Equivalence:* Do the words mean the same thing? Are there multiple meanings to a given item? Are there grammatical difficulties in the translation? *Idiomatic equivalence:* Are the colloquialisms and idioms adequately translated? *Experiential equivalence:* Does the target population experience the translated items? *Conceptual equivalence:* Do the concept of the items mean the same in both cultures?

Step 3. Pilot testing of the pre-final version. Thirty-six parents participated in the online survey.[23] Google Form was used to ask for the participant's consent and to answer the translated questionnaire. After consenting to participate in the study, the participants answered questions regarding demographic information such as age, relationship to the child (mother or father), educational attainment, and spoken languages. The participants were then asked to answer the translated and contextualized version of the questionnaire. A section for additional comments or suggestions to improve the item is provided in the survey.

Step 4. Reliability testing. The pre-final version of the questionnaire, specifically the parental attitudes toward childhood media use subscale (items 6-10), was tested for internal consistency using Cronbach's alpha to ensure its reliability. Only these items were assessed since these items were presented on a Likert-type scale; other items were open-ended questions that would only require single responses. Assessing the reliability of single items through Cronbach's alpha will have low results and will not provide reliable estimates.[25]

Data Analysis. Initial evaluation of the questionnaire's psychometric properties was conducted after the translation of the tool was accomplished and data results were collected. After data management, statistical analysis was performed using Microsoft Excel version 16.80 and SPSS version 23. Content validity was assessed using the content validity index (CVI) through Microsoft Excel. The item-CVI (I-CVI) was computed by dividing the number of experts who rated 3 or 4 by the total number of experts. The scale-level CVI/average (S-CVI/Ave) was measured as the average of all the I-CVIs. The researchers considered an 80% or higher intra-rater agreement for the I-CVI and used the following as a basis: items >79% are considered appropriate, items ≤ 79% or ≥ 70% are labeled as "needs revision," and items < 70% are eliminated.[26] For the S-CVI/Ave, a data threshold of 90% was utilized.[22]

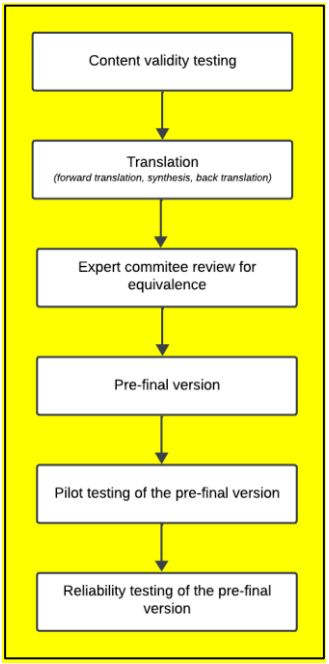

Figure 1. Steps of the translation and cross-cultural validation of the Media Exposure Survey

In terms of reliability, the researchers assessed the internal consistency of the questionnaire by measuring Cronbach's Alpha for the parental attitude toward childhood media use subscale using the SPSS software. This was done to determine the consistency of each item and whether the tool follows its stated purpose. The researchers considered these values as the data threshold: $\alpha \geq 0.9$ = excellent, $0.9 > \alpha \geq 0.8$ = good, $0.8 > \alpha \geq 0.7$ = acceptable, $0.7 > \alpha \geq 0.6$ = questionable, $0.6 > \alpha \geq 0.5$ = poor, $0.5 > \alpha$ = unacceptable.[27,28]

Participants' characteristics and responses in the pilot test were summarized and analyzed in Microsoft Excel by computing the frequency and percentage. The screen time of the child and the parent was assessed by getting the average and

standard deviation of the participants' input in minutes.

RESULTS

Content Validity. Table 1 shows that all I-CVI of each item has met the set criteria of > 79% except for item 8, which scored 70%. Items 1-7 and 9-18 are considered appropriate, while item 8 was revised according to the comments of the expert committee. It was reevaluated and met the set criteria after revision. Based on the guidelines, the computed S-CVI, 0.95 (95%), is considered excellent. Comments from the content experts were summarized and used to revise the questionnaire (see Supplement D). A contextualized English version of the questionnaire was also developed (see Supplement B).

Table 1. Content validity index results of the Media Exposure Survey – Filipino Version

Item	Content Validity				
	Relevance	Clarity	Simplicity	Ambiguity	I-CVI
1	1.00	1.00	1.00	1.00	1.00
2	1.00	1.00	1.00	1.00	1.00
3	1.00	0.90	0.90	0.70	0.90
4	1.00	1.00	1.00	1.00	1.00
5	1.00	1.00	1.00	1.00	1.00
6	0.50	1.00	0.90	0.90	0.83
7	0.70	1.00	1.00	0.90	0.90
8	1.00	0.60	0.70	0.50	0.70
9	1.00	1.00	1.00	1.00	1.00
10	1.00	1.00	1.00	1.00	1.00
11	1.00	1.00	1.00	1.00	1.00
12	1.00	1.00	1.00	1.00	1.00
13	1.00	1.00	1.00	1.00	1.00
14	1.00	1.00	1.00	1.00	1.00
15	1.00	1.00	1.00	0.90	0.98
16	1.00	1.00	1.00	1.00	1.00
17	0.50	1.00	0.90	0.90	0.83
18	0.70	1.00	1.00	0.90	0.90
Mean					**0.95**

Translation and equivalence. The table shows the translated versions of the questionnaire (see Supplement C). The second column shows the forward translation (FT12), which is the synthesis of forward translation 1 (FT1) and forward translation 2 (FT2) produced by the two forward translators. The backward translations of FT12 by the two backward translators are shown in the third and fourth columns. Unanimous consensus was sought among the expert committee for the equivalence of each item, which was achieved through a discussion. Forward translations of the title, instructions, and all items were accepted, except items 1, 2, 4, 9, 11, 12, and 13. The expert committee made the necessary changes to improve the items based on their discussion to produce the final version of the questionnaire (see Supplement A).

Pilot Testing of the pre-final version.

Participants Characteristics. Table 2 summarizes the characteristics of the 36 participants from Metro Manila. The characteristics were categorized into age, relationship to the child, educational attainment, and language used. The majority of the respondents are mothers of the child and are college graduates. Filipino is the common language used among the respondents.

Table 2. Participants' characteristics

Demographics	Percentage %(*n*)
Relationship to the child	
Mother	80.60%(29)
Father	19.40%(7)
Educational Attainment	
Elementary	0.00%(0)
Highschool	2.80%(1)
College	88.90%(32)
Vocational	8.30%(3)
Language used	
Filipino	58.30%(21)
English	5.60%(2)

English and Filipino	30.60%(11)
English, Filipino, and other dialects	5.60%(2)

Note: n=36. Participants' mean age is 32 (*SD*=5) years old, and the mean age of their child is 35 (*SD*=16) months old.

Comments from the respondents. Most respondents understood the translated questionnaire and did not have additional comments. However, one participant preferred the English version of the survey as it would be easier to understand. Other respondents also reported having difficulties answering the questions about the number of hours a parent or child uses the gadget since they mentioned that it depends heavily on the schedule of the toddler and the parent, which may vary daily.

Reliability testing. The parental attitude towards childhood media use subscale (questions 6-10) of the translated questionnaire has a Cronbach's alpha of 0.77, suggesting an acceptable internal consistency as indicated by the guidelines.

Table 3. Household Media Environment (*n*= 36)

Item number	Item & Response Options	Percentage% (*n*)
3	Eating in front of the TV	
	0 days	41.67%(15)
	1-3 days	36.11% (13)
	4-6 days	8.33% (3)
	7 days	13.89% (5)
4	Presence of TV in child's room	
	Yes	47.22% (17)
	No	52.78 %(19)
13A	Number of TVs	
	0 TV	11.11% (4)
	1 TV	55.56% (20)
	2 TV	25.00% (9)
	3 TV	8.33% (3)
13B	Number of iPad/tablets	
	0 iPad/tablet	38.89 %(14)
	1 iPad/tablets	52.78 %(19)
	2 iPad/tablets	8.33% (3)
13C	Number of laptop/PC	
	0 laptop/PC	13.89% (5)
	1 laptop/PC	36.11 %(13)
	2 laptop/PCs	33.33% (12)
	3 laptop/PCs	13.89%(5)
	4 laptop/PCs	2.78% (1)
13D	Number of cellphones	
	1 cellphone	13.89% (5)
	2 cellphones	22.22% (8)
	3 cellphones	38.89% (14)
	4 cellphones	19.44% (7)
	5 cellphones	5.56% (2)

Pilot survey results. Parents' screen time during weekdays has the longest duration with a mean of 339 (*SD*=249) minutes or approximately 5 hours and 39 minutes with a range of 30 to 960 minutes (30 minutes to 16 hours), followed by their screen time during weekends, which is 313 minutes (*SD*=250) or approximately 5 hours and 13 minutes with a range of 30 to 900 minutes (30 minutes to 15 hours). Children have significantly lower screen time, with an average of 186 (*SD*=154) minutes or approximately 3 hours and 6 minutes, with a range of 0 to 840 minutes (0 to 14 hours) during weekends, and 181 (*SD*=187) minutes or approximately 3 hours with a range of 0 to 1080 (0 to 18 hours) during weekdays.

There is no significant correlation between the parent and child's screen time during weekdays ($r(34) = 0.25$, $p= 0.14$) and weekends ($r(34) = -0.01$, $p= 0.95$).

The questionnaire also measured the household media environment. The results are shown in Table 3, wherein most children do not eat in front of the TV during meal times. Moreover, 52.78% of the children do not have TV in their

room, while the remaining 47.22% do. Respondents reported at least one TV, iPad or tablet, laptop or PC, and three mobile phones in their household.

Table 4. Parental Attitudes Toward Childhood Media Use (*n*= 36)

Item Number	Item & Response Options	Percentage%(*n*)
6	Children who never watch TV may miss out on learning	
	Very much agree	11.11% (4)
	Agree	41. 67% (15)
	Disagree	36.11% (13)
	Very much disagree	11.11% (4)
7	Watching TV is a way to keep the child entertained	
	Very much agree	16.67% (6)
	Agree	50.00% (18)
	Disagree	22.22% (8)
	Very much disagree	11.11% (4)
8	Limiting the child's TV usage	
	Very much agree	55.56% (20)
	Agree	38.89% (14)
	Disagree	2.78% (1)
	Very much disagree	2.78% (1)
9	Ensuring that the child's TV usage does not exceed	
	Very much agree	50.00% (18)
	Agree	47.22% (17)
	Disagree	0.00% (0)
	Very much disagree	2.78% (1)
10	Turning the TV off	
	Very much agree	66.67% (24)
	Agree	30.56% (11)
	Disagree	0.00% (0)
	Very much disagree	2.78% (1)

Table 4 shows the pilot survey results for parental attitudes toward childhood media use. More than half of the respondents very much agree (11.11%) and agree (41.67%) that children who do not watch TV greatly miss learning opportunities. Similarly, participants very much agree (16.67%) and agree (50.00%) that TVs serve as an avenue of entertainment for children. Most parents very much agree (55.56%) and agree (38.89%) on limiting their child's TV use. Parents also very much agree (50.00%) and agree (47.22%) in ensuring that their child's screen time does not exceed the allotted time. Respondents very much agree (66.67%) and agree (30.56%) with turning the TV off when they think their child is watching too much.

DISCUSSION

Research reveals a need for assessment tools for assessing parental attitudes on screen time of toddlers in the Philippines. In addition, considering the cultural context of the population when translating a tool is pivotal in garnering accurate results and data analysis.[29] Hence, a translated and contextualized assessment tool of the Media Exposure Survey has been produced in the Filipino language. Data analysis revealed that the questionnaire has good content validity and acceptable internal consistency. The participants of the pilot test expressed a good understanding of the questionnaire.

Translation and cross-cultural adaptation are not simple; they require a comprehensive process, including forward and backward translations, cross-validations, and adaptation. Completing all these steps is necessary to achieve an equivalence between the original version and the target version of the questionnaire.[25] Similarly, other studies that aim to produce a cross-culturally adapted questionnaire that occupational therapists can use utilize these steps. In the translation and cross-cultural adaptation of the Friedrich Short Form of the Questionnaire on Resources and Stress (QRS-F), and Spanish Translation of the Role Checklist,

their methods consist of forward and backward translations, committee review on equivalence, pilot testing, content validation, and reliability testing.[24,30] Psychometric testing of the modified tool was also implemented. This is important to produce a cross-culturally adapted questionnaire that is valid and reliable to provide quality care to the patients.[31]

Contextualizing a questionnaire may be extensive and time-consuming; however, the steps performed in the research and stated in various works of literature must be followed. This is crucial to ensure that the participants understand the language and thought being asked in each item and yield accurate results. Simply translating the original version of the questionnaire to the target version will not guarantee clear understanding from the participants since the direct translation of words does not have the same meaning across different languages and does not capture the complete thought of what is being asked. Item 6 of the original version of the questionnaire (young children who never watch TV miss a lot that is of value) is an example where the group of content experts felt confused as to what the item was referring to with "value." The experts interpreted the term as meaningful programs missed by children who do not watch TV after clarifying with the researchers and other experts. Also, item 15 of the original questionnaire only asked the number of TV/s a household has. The researchers and content experts agreed to add other types of electronic devices for a more accurate assessment of the parent's and children's screen time. Some respondents asked for clarifications regarding items, such as the number of hours they spend using gadgets (item 11 of the adapted version, see Supplement A), since it was not specific in some factors (e.g., working hours). Others had difficulty answering the Filipino version of the questionnaire. Hence, the steps for cross-cultural adaptation are vital before using the questionnaire in the Philippines.

The results of the pilot study show that the average screen time of the children is beyond the recommendations. Also, it shows that children have significantly less screen time than their parents and that there is no significant correlation between the parent and child's screen time during weekdays and weekends. This contradicts the findings of other studies that reported an association between these factors.[10,32.33] These warrant further investigation with a bigger sample.

A translated and culturally adapted assessment tool can now assess the parental attitude of parents toward their child's media usage. Family-centered care in pediatric rehabilitation emphasizes the importance of the partnership and involvement of the parents; thus, assessing parental attitudes toward their child's media use is aligned with this practice. Parents involved in the therapy process may be an effective exemplar in promoting healthy media usage to their children through providing strategies to reduce screen time usage.[7,18] Evaluating parental attitudes regarding the screen time of toddlers using the tool is essential in occupational therapy practice, along with other related healthcare fields, to have an objective measure. Not only can this study provide both contextualized and standard information about child development in relation to screen time and parenting, but it can also help pediatric practitioners develop an appropriate intervention program aimed at inactivity prevention of children,[9] guiding them in giving intervention that targets parents' beliefs, behaviors, and practices. As such, parents increase their autonomy in deciding for their children, especially since careful observation of the relationship between interactions with household media environment and parental attitudes is crucial to limiting the screen time of toddlers.[33] More specifically, occupational therapists can also educate clients on the effects of parental attitudes to the child's media usage and home instructions to ensure compliance at home since parents control their child's media use.

Based on the results of the study, it is recommended that a contextualized English version of the questionnaire be provided together with the Filipino version for easier understanding of those participants with English as their preferred language. Since the American colonization of the Philippines, English has become the medium of communication and has social privilege status attached to it.[34] This is the reason why some Filipinos, usually those from the middle and upper classes who have more

access to resources, inputs, and materials in the English language, are more proficient in the language than the mother tongue. Also, it should be noted that the questionnaire was no longer revised after pilot testing, and it is recommended when giving instructions to respondents to highlight that they are asked to provide the usual screen time of their children on a typical weekday/weekend. This will hopefully lessen the confusion on how to answer the question on the usual screen time of their children if there are variations. Future researchers may consider other factors related to the sedentary behavior of children, further testing the psychometric properties of the tool and checking the need to contextualize the questionnaire for children with disabilities.

CONCLUSION

The Media Exposure Survey has been culturally adapted and translated towards the target language, Filipino. It has also been reviewed to evaluate its equivalence. Furthermore, initial psychometric testing indicated that it is a valid tool with good content validity and acceptable internal consistency. Thus, it can be recommended to measure a Filipino child's media exposure, screen use, and parental attitudes regarding their child's screen usage.

This tool can be useful for occupational therapists as it can help engage parents in the therapeutic process and provide interventions to establish healthy media usage. Moreover, this questionnaire paves the way for a more family-centered practice in the Filipino pediatric setting since parents' beliefs and attitudes should be considered clients alongside their children, and is critical to the success of the intervention program.

Supplementary Files

Supplementary File A. Translated and Contextualized Media Exposure Survey

Supplementary File B. Contextualized Media Exposure Survey

Supplementary File C. Forward and Backward Translations

Supplementary File D. Summary of the content experts' comments

Acknowledgment

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Individual Author's Contributions

P.E; conceptualized the research topic, drafted and revised the proposal, implemented the study, supervised the research, and co-wrote the paper. M.B., E.G., E.M., D.S., C.T.,J.T.: drafted and revised the proposal, implemented the study, and co-wrote the paper.

Disclosure Statement

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Conflicts of interest

P.E. is a member of the journal's editorial board. Other than that, the authors of this paper declare no conflict of interest.

References

1. Reid Chassiakos YL, Radesky J, Christakis D, et al. Children and Adolescents and Digital Media. Pediatrics. 2016;138(5). DOI:10.1542/peds.2016-2593
2. Hish AJ, Wood CT, Howard J, et al. Infants who watch television become toddlers who watch more television: screen time patterns in the Greenlight Study. Pediatrics. 2020;146(1_MeetingAbstract):32-33. DOI:10.1542/peds.146.1ma1.32b
3. World Health Organization. Guidelines on physical activity, sedentary behavior and sleep for children

under 5 years of age. 2019. Accessed October 10, 2023. https://apps.who.int/iris/bitstream/handle/10665/325147/WHO-NMH-PND-2019.4-eng.pdf?sequence=1&isAllowed=y

4. Ministry of Health. Sit Less, Move More, Sleep Well: Active play guidelines for under-fives. Wellington: Ministry of Health. 2017. Accessed October 10, 23. https://www.health.govt.nz/system/files/documents/publications/active-play-guidelines-for-under-fives-may17.pdf
5. Australian Government Department of Health. Australian 24-Hour Movement Guidelines for the Early Years (Birth to 5 years): An Integration of Physical Activity, Sedentary Behaviour, and Sleep. 2021. Accessed October 10, 2023. https://www1.health.gov.au/internet/main/publishing.nsf/Content/npra-0-5yrs-brochure
6. Muppalla SK, Vuppalapati S, Reddy Pulliahgaru A, Sreenivasulu H. Effects of Excessive Screen Time on Child Development: An Updated Review and Strategies for Management. Cureus. 2023; 15(6):e40608. DOI:10.7759/cureus.40608
7. Goncalves WSF, Byrne R, Viana MT, Trost SG. Parental influences on screen time and weight status among preschool children from Brazil: a cross-sectional study. International Journal of Behavioral Nutrition and Physical Activity. 2019;16(1). DOI:10.1186/s12966-019-0788-3
8. Kaur N, Gupta M, Malhi P, Grover S. Screen Time in Under-five Children. Indian Pediatrics. 2019;56(9):773-788. DOI:10.1007/s13312-019-1638-8
9. Tester JM, Phan TLT, Tucker JM, et al. Characteristics of Children 2 to 5 Years of Age With Severe Obesity. Pediatrics. 2018;141(3). DOI:10.1542/peds.2017-3228
10. Cespedes EM, Gillman MW, Kleinman K, Rifas-Shiman SL, Redline S, Taveras EM. Television Viewing, Bedroom Television, and Sleep Duration From Infancy to Mid-Childhood. Pediatrics. 2014;133(5):e1163-e1171. DOI:10.1542/peds.2013-3998
11. Falbe J, Davison KK, Franckle RL, et al. Sleep Duration, Restfulness, and Screens in the Sleep Environment. Pediatrics. 2015;135(2):e367-e375. DOI:10.1542/peds.2014-2306
12. Streegan CJ, Lugue JP, Morato-Espino PG. Effects of screen time on the development of children under 9 years old: a systematic review. Journal of Pediatric and Neonatal Individualized Medicine (JPNIM). 2022;11(1):e110113-. DOI: 10.7363/110113
13. France-Presse, A. Too much screen time, too little horseplay for kids: study. ABS-CBN News. September 7, 2018. Accessed October 10, 2023 https://news.abs-cbn.com/life/09/27/18/too-much-screen-time-too-little-horseplay-for-kids-study
14. Chang HY, Park EJ, Yoo HJ, Lee J won, Shin Y. Electronic Media Exposure and Use among Toddlers. Psychiatry Investigation. 2018;15(6):568-573. DOI:10.30773/pi.2017.11.30.2
15. Radesky JS, Weeks HM, Ball R, et al. Young Children's Use of Smartphones and Tablets. Pediatrics. 2020;146(1). DOI:10.1542/peds.2019-3518
16. Kabali HK, Irigoyen MM, Nunez-Davis R, et al. Exposure and Use of Mobile Media Devices by Young Children. Pediatrics. 2015;136(6):1044-1050. DOI:10.1542/peds.2015-2151
17. Hamilton K, Thomson CE, White KM. Promoting Active Lifestyles in Young Children: Investigating Mothers' Decisions about their Child's Physical Activity and Screen Time Behaviours. Maternity and Child Health Journal. 2012;17(5):968-976. DOI:10.1007/s10995-012-1081-0
18. Asplund KM, Kair LR, Arain YH, Cervantes M, Oreskovic NM, Zuckerman KE. Early Childhood Screen Time and Parental Attitudes Toward Child Television Viewing in a Low-Income Latino Population Attending the Special Supplemental Nutrition Program for Women, Infants, and Children. Childhood Obesity. 2015;11(5):590-599. DOI:10.1089/chi.2015.0001
19. Tang L, Darlington G, Ma DWL, Haines J. Mothers' and fathers' media parenting practices associated with young children's screen-time: a cross-sectional study. BMC Obesity. 2018;5(1). DOI:10.1186/s40608-018-0214-4
20. He M, Piché L, Beynon C, Harris S. Screen-related Sedentary Behaviors: Children's and Parents' Attitudes, Motivations, and Practices. Journal of Nutrition Education and Behavior. 2010;42(1):17-25. DOI:10.1016/j.jneb.2008.11.011
21. Domoff SE, Radesky JS, Harrison K, Riley H, Lumeng JC, Miller AL. A Naturalistic Study of Child and Family Screen Media and Mobile Device Use. Journal of Child Family Studies. 2018;28(2):401-410. DOI:10.1007/s10826-018-1275-1
22. Polit DF, Beck CT. The content validity index: Are you sure you know what's being reported? critique and recommendations. Research in Nursing and Health. 2006;29(5):489-497. DOI:10.1002/nur.20147
23. Beaton DE, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the Process of Cross-Cultural Adaptation of Self-Report Measures. Spine. 2000;25(24):3186-3191. DOI:10.1097/00007632-200012150-00014
24. Morato-Espino PG, Medallon KG, Benzon R, Arroz MT, Buencamino CA, Ibay CA, Ko SA, Gomez INB. Translation and cross-cultural adaptation of the Friedrich Short Form of the Questionnaire on Resources and Stress (QRS-F) to measure the stress level of Filipino parents and other caregivers of children with disability. Philippine Journal of Allied Health Sciences. 2019; 3(1). DOI:10.36413/pjahs.0301.009
25. Adeniran, A. Application of Likert Scale Type and Cronbach's Alpha Analysis in an Airport Perception Study. Scholar Journal of Applied Sciences and Research V. 2019; 2(4):01-05.
26. Zamanzadeh V, Ghahramanian A, Rassouli M, Abbaszadeh A, Alavi-Majd H, Nikanfar AR. Design and Implementation Content Validity Study: Development of an instrument for measuring Patient-Centered

Communication. Journal of Caring Sciences. 2015;4(2):165-178. DOI:10.15171/jcs.2015.017

27. George, D, Mallery, P. *Using SPSS for windows step by step: A simple guide and reference.* 4th ed. London: Pearson Education; 2003
28. Wadkar SK, Singh K, Chakravarty R, Argade SD. Assessing the Reliability of Attitude Scale by Cronbach's Alpha. Journal of Global Communications. 2016;9(2):113. DOI:10.5958/0976-2442.2016.00019.7
29. Mushquash CJ, Bova DL. Cross-cultural assessment and measurement issues. Journal on Developmental Disabilities. Journal on Developmental Disabilities. 2007; 13(1), 53-65.
30. Colón H, Haertlein C. Spanish Translation of the Role Checklist. The American Journal of Occupational Therapy. 2002;56(5):586-589. DOI:10.5014/ajot.56.5.586
31. Sousa VD, Rojjanasrirat W. Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: a clear and user-friendly guideline. Journal of Evaluation in Clinical Practice. 2010;17(2):268-274. DOI:10.1111/j.1365-2753.2010.01434.x
32. Lauricella AR, Wartella E, Rideout VJ. Young children's screen time: The complex role of parent and child factors. Journal of Applied Developmental Psychology. 2015;36:11-17. DOI:10.1016/j.appdev.2014.12.001
33. Lee EY, Hesketh KD, Rhodes RE, Rinaldi CM, Spence JC, Carson V. Role of parental and environmental characteristics in toddlers' physical activity and screen time: Bayesian analysis of structural equation models. International Journal of Behavior Nutrition and Physical Activity. 2018;15(1). DOI:10.1186/s12966-018-0649-5
34. Manalastas, NE. The Good and the Bad: The Social Role and Position of English in the Philippines. UP Working Papers in Linguistics. 2022; 1(1).