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## **Prevalence of Child Screen Media Use and Adherence to 24-hr WHO Guidelines in Preschool Children**

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International Ipschooler Surveillance Study Among Asians and otheRs (IISSAAR):

Screen media use and off-screen behaviours among preschool children living in selected urban cities in some countries in Asia and elsewhere

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## Prevalence of Child Screen Media Use and Adherence to 24-hr WHO Guidelines in Preschool Children

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### KEY IMPLICATIONS

- Preschool children exceeded international screen time guidelines.
- In Singapore, South Korea, Finland, and Spain, screen time was negative and weakly correlated with child behavior, while Indonesia showed a positive correlation. Cultural context is crucial for tailoring interventions.
- More children failed to meet all three WHO guidelines (screen time, physical activity and sleep) than those who did. Adherence was highest for sleep, followed by physical activity, and then screen time. Balancing screen time with other activities is essential.

### BACKGROUND

Children learn media use by observing their parents. Increased individual media consumption can influence children's media habits (Chia et al., 2022). For optimal health, preschoolers should meet daily recommendations for physical activity, sedentary behavior, and sleep (WHO, 2019).

### FOCUS OF STUDY

The focus of the study was to examine the screen media and non-screen media habits of preschool children across nine countries and the adherence to 2019 World Health Organisation (WHO) 24-hr movement guidelines.

### KEY FINDINGS

- *Child screen media use by year and by country*

Table 1 shows child daily screen time by year and by country.

In 2020 (COVID-19 pandemic), Singapore and Indonesia had the highest screen time at 2.7 hours. Thailand, South Korea, and Japan averaged 2.5, 2.3, and 1.9 hours respectively.

2021 and 2022 were the endemic years of COVID-19 which might have led to a decrease in screen time due to more opportunities for physical activities as COVID-19 restrictions were lifted.

In 2021, Singapore had the highest child screen time at 2.6 hours, with Italy and Finland at 1.8 and 1.9 hours.

In 2022, Thailand led with 2.7 hours, while Singapore and Spain had 2.4 hours.

Singapore's screen time decreased from 2.7 hours in 2020 to 2.4 hours in 2022.

Table 1. Child daily screen time by year and by country

Country	Child Daily Screen Time (hrs)			n by year
	2020 (mean±SD)	2021 (mean±SD)	2022 (mean±SD)	
Singapore	2.7 ± 2.1	2.6 ± 2.0	2.4 ± 2.1	2536; 1087; 1148
China	-	-	2.0 ± 2.2	308
Indonesia	2.7 ± 2.9	-	-	540
Japan	1.9 ± 1.2	-	2.2 ± 1.4	376; 502
South Korea	2.3 ± 2.0	-	-	504
Thailand	2.5 ± 1.9	-	2.7 ± 2.5	1051; 2001
Finland	2.0 ± 1.2	1.9 ± 1.1	-	3527; 3122
Italy	-	1.8 ± 1.4	-	269
Spain	-	-	2.4 ± 2.0	104

- *Adherence to WHO guidelines by country*

Table 2 shows the adherence to the WHO 24-hr guidelines by country. Of the three movement behaviours, adherence to sleep guideline was the highest, followed by screen time and physical activity.

**Table 2.** Proportion of preschool children (1 year to under 5 years of age) who met the 2019 WHO 24-hour guidelines by country

Country	Valid <i>n</i>	Most recent year collected	WHO 2019 24-hour guidelines for children 1 year to under 5 years of age				
			Met screen time guideline (%)	Met physical activity guideline (%)	Met sleep guideline (%)	Met all 3 guidelines (%)	Met none of the guidelines (%)
Singapore	784	2022	23.2	40.2	73.9	6.6	11.4
China	168	2022	43.5	37.5	76.8	11.9	9.5
Japan	330	2022	18.2	19.4	60.3	3.0	31.5
Thailand	993	2022	30.7	41.0	57.5	5.2	15.1
Spain	53	2022	22.6	67.9	75.5	15.1	5.7

o *Correlation between child screen time and household income*

Table 3 shows the correlation between income level and child screen media use by country. Child screen media use was negative and weakly correlated to household income for Singapore, South Korea, Finland, and Spain while a positive correlation was detected for Indonesia.

**Table 3.** Correlation between child screen time and household income by country

Country	<i>n</i>	Child daily ST – Household income correlation
Singapore	1075	-0.20***
China	299	-0.02
Indonesia	531	0.15***
Japan	496	-0.03
South Korea	459	-0.11*
Thailand	1695	-0.01
Finland	3270	-0.08***
Italy	262	-0.03
Spain	83	-0.39***
<b>Overall</b>	<b>8170</b>	Not computed as different countries have different number of income levels

*Note.* Most recent year of data were used for each country. Spearman’s rho coefficient was reported, \*\*\*  $p = .001$ , \*  $p < .05$

## **SIGNIFICANCE OF FINDINGS**

**Implications for policy and research:** Educational policies and initiatives should encourage parents to monitor both content and duration of children's screen engagement, advocating for a balanced approach that incorporates diverse activities (e.g., outdoor play with parental involvement) to foster holistic child development.

**Implication for parents:** Parents should monitor their child's screen media use and use non-screen based activities to create memorable, meaningful memories that add up to significant milestones for development.

## **POPULATION/PARTICIPANTS/SUBJECTS (IF ANY)**

Nine countries participated in the IISSAAR research. Survey responses were collected from parents of preschool-aged children. Table 1 shows the response numbers for each country.

## **RESEARCH DESIGN**

This was a cross-sectional study examining screen media use and non-screen media behaviours of preschool children using a lifestyle questionnaire called Surveillance of digital Media in earLy chiLdhood (SMALLQ®).

## **REFERENCES**

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