

## INTISARI

### Latar Belakang

*Autism Spectrum Disorder* (ASD) adalah gangguan neurodevelopmental kompleks hasil interaksi genetik dan lingkungan. *Screen time* usia dini mungkin berhubungan dengan perilaku mirip ASD (*ASD-like behavior*). Skrining, diagnosis, dan intervensi dini sangat penting. Penelitian ini bertujuan mengeksplorasi hubungan antara *screen time* usia dini dengan munculnya *ASD-like behavior* dan tingkat risiko ASD pada anak.

### Metode

Penelitian ini adalah studi *cross-sectional* pada anak usia 16-30 bulan di Jawa Tengah, menggunakan metode *two-stages cluster sampling*. Semua data diperoleh secara *online* menggunakan *Google form* yang dikirim kepada orang tua anak melalui akun whatsapp. Penilaian *ASD-like behavior* dilakukan dengan menggunakan kuesioner *modified checklist for autism in toddlers-revised* (M-CHAT-R). Anak dengan skor positif M-CHAT-R dianggap memiliki *ASD-like behavior*. Tingkat risiko ASD dibagi menjadi rendah (skor 0-2) dan sedang-tinggi (3-20). Analisis statistik menggunakan uji *Chi-square* dengan  $p < 0,05$ . *Ethical approval* diperoleh sebelum penelitian.

### Hasil

Sebanyak 903 responden berpartisipasi dalam penelitian ini, dengan prevalensi paparan ST anak adalah 98,4%. Sebanyak 636 (70,4%) anak menunjukkan *ASD-like behavior*, dan 95 (10,5%) berada pada risiko sedang-tinggi ASD. Anak berusia  $\leq 24$  bulan dengan materi ST yang dipilih sendiri (terserah anak) memiliki prevalensi *ASD-like behavior* lebih tinggi daripada dipilhkan orang tua. (rasio prevalensi, RP: 1,14; IK95%: 1,02-1,27;  $p = 0,027$ ). Prevalensi risiko sedang-tinggi ASD ditemukan lebih tinggi pada anak usia 0-1 tahun dengan ST  $> 2$  jam/hari (RP: 2,51; IK95%: 1,22-5,16;  $p = 0,031$ ) dan anak usia 1-2 tahun dengan ST  $> 4$  jam per hari (RP: 3,66; IK95%: 1,89-7,11;  $p = 0,004$ ). Anak tanpa pendampingan selama ST memiliki risiko sedang-tinggi ASD 2,23 kali lebih tinggi (RP: 2,23; IK95%: 1,45-3,41;  $p < 0,001$ ).

### Kesimpulan

Paparan ST usia dini, terutama dengan materi yang dipilih sendiri oleh anak, berhubungan positif dengan prevalensi *ASD-like behavior*. Paparan ST di usia dini tanpa pendampingan berhubungan positif dengan prevalensi tingkat risiko sedang-tinggi ASD. Studi ini menunjukkan selain usia dan durasi, konten serta pendampingan penting dalam manajemen ST pada anak.

**Kata kunci:** *screen time*, skrining, *ASD-like behavior*, tingkat risiko ASD

## ABSTRACT

### Background

Autism spectrum disorder (ASD) is a complex neurodevelopmental disorder resulting from genetic and environmental interactions. Early screen time may be associated with clinically ASD-like behavior. Early screening, diagnosis, and intervention are crucial. This study aims to investigate the association between early childhood screen exposure and the emergence of ASD-like behaviors and the risk level of ASD in children.

### Methods

A cross-sectional study was conducted in children aged 16-30 months in Central Java Province, using the two-stage cluster sampling approach. All relevant data were collected using Google forms, which was sent online to their parents through the Whatsapp account or email. The modified checklist for autism in toddlers-revised (M-CHAT-R) was used to screen the ASD-like behavior and classify the risk level for ASD. Children with M-CHAT-R scores  $\geq 1$  were considered to have ASD-like behaviors. The ASD risk level was categorized into low (score 0-2) and moderate-high (3-20). Statistical analysis was performed using the Chi-square test. Ethical approval was obtained prior to the study.

### Results

A total of 903 respondents participated in this study. The prevalence of screen exposure among children was 98.4%. ASD-like behaviors were found in 70.4%, including 10.5% with a moderate-high risk of ASD. The prevalence of ASD-like behavior was higher in children aged  $\leq 24$  months whose screen contents were selected by themselves, compared to those selected by parents (prevalence ratio, PR: 1.14; 95%CI: 1.02-1.27;  $p=0.027$ ). The prevalence of moderate-high risk of ASD was 2.5 times higher in children aged 0-1 year with screen exposure  $>2$  hours/day (PR: 2.51; 95%CI: 1.22-5.16;  $p=0.031$ ) and 3.66 higher in those aged 1-2 years with screen exposure  $>4$  hours/day (PR: 3,66; IK95%:1,89-7,11;  $p=0,004$ ). Children without supervision during screen time had a 2.23 times higher prevalence of moderate-high ASD risk (PR: 2.23; 95%CI: 1.45-3.41;  $p<0.001$ ).

### Conclusion

Early childhood screen time exposure, especially with self-selected content by the child, is positively associated with the prevalence of ASD-like behavior. Early childhood screen time exposure without supervision is positively associated with the prevalence of moderate-to-high risk levels of ASD. This study suggested the importance of the content and supervision, besides the age and screen time duration, in managing screen exposure in early childhood.

**Keywords:** screen time, screening, ASD-like behavior, ASD risk level