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· 健康教育与健康促进 ·

中国学龄前儿童屏幕暴露发生率及影响因素 Meta 分析

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【摘要】 **目的** 系统评价中国学龄前儿童屏幕暴露发生率及影响因素,为制定科学的干预策略提供循证证据。**方法** 检索 PubMed、Web of Science、Embase、Cochrane Library、中国生物医学文献数据库、中国知网、维普、万方数据库中从建库至 2025 年 6 月 29 日,关于学龄前儿童屏幕暴露发生情况的相关研究。使用 Stata 16.0 软件进行 Meta 分析。**结果** 共纳入 43 项研究。Meta 分析显示,中国学龄前儿童屏幕暴露发生率为 46.0%(95%*CI*=38.9%~53.1%,*P*<0.01);女童、非独生子女、父亲年龄<35 岁、父亲文化程度为高中及以下、母亲文化程度为高中及以下、祖辈带养、农村、父母无锻炼习惯、家长支持使用视屏设备和父母每天视屏时间>1 h 均是学龄前儿童屏幕暴露的影响因素[*OR* 值(95%*CI*)分别为 0.85(0.78~0.92),1.09(1.04~1.15),1.45(1.22~1.71),1.38(1.24~1.54),1.78(1.32~2.40),1.39(1.16~1.65),1.38(1.13~1.69),1.67(1.40~1.98),1.70(1.38~2.10)和 1.59(1.04~2.43),*P* 值均<0.05]。**结论** 中国学龄前儿童屏幕暴露发生率较高,应制定相关健康促进策略以降低发生率。

【关键词】 注视,眼;健康促进;Meta 分析;数据库,文献型;儿童,学龄前

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Meta-analysis on the prevalence and influencing factors of screen exposure among preschool children in China

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【**Abstract**】 **Objective** To systematically evaluate the prevalence and influencing factors of screen exposure among preschool children in China, so as to provide evidence for formulating scientific intervention strategies. **Methods** Retrieve relevant studies on screen exposure among preschool children from PubMed, Web of Science, Embase, Cochrane Library, China Biomedical Literature Database, CNKI, VIP, and Wanfang databases from the time of estaldishment to June 29, 2025. Meta-analysis was performed using Stata 16.0 software. **Results** A total of 43 studies were included. Meta-analysis showed that the prevalence of screen exposure among preschool children in China was 46.0% (95%*CI*=38.9%-53.1%, *P*<0.01). Girls, non-only child, father's age<35 years, both parents having an educational level of high school or below, being cared for by grandparents, rural residence, parents having no exercise habit, parental support for the use of screen devices, and parental screen time>1 h/d were influencing factors for screen exposure among preschool children [*OR*(95%*CI*) were 0.85(0.78-0.92), 1.09(1.04-1.15), 1.45(1.22-1.71), 1.38(1.24-1.54), 1.78(1.32-2.40), 1.39(1.16-1.65), 1.38(1.13-1.69), 1.67(1.40-1.98), 1.70(1.38-2.10), 1.59(1.04-2.43), all *P*<0.05]. **Conclusion** The prevalence of screen exposure among preschool children in China is relatively high, and relevant child health promotion strategies should be formulated to reduce its occurrence.

【**Keywords**】 Fixation, ocular; Health promotion; Meta-analysis; Databases, bibliographic; Child, preschool

随着数字媒体技术的快速发展,学龄前儿童屏幕暴露呈现低龄化趋势,已成为全球公共卫生领域的重要问题[1]。屏幕暴露是指儿童接触电视、移动终端、电子游戏设备等屏幕媒介的行为[2]。适当接触高质量教育内容可促进儿童的认知发展[3],但过早或过度的屏幕暴露易导致近视、语言发育迟缓、肥胖等生理问题以及注意缺陷多动障碍、焦虑抑郁等心理行为异常[4-8],并对个体成年期的生活方式产生持久影响[9]。本研究通过 Meta 分析探讨中国学龄前儿童屏幕暴露发生率及影响因素,为制定科学的干预策略提供循证证据。

1 资料来源与方法

1.1 资料来源 检索 PubMed、Web of Science、Embase、Cochrane Library、中国生物医学文献数据库、中国知网、维普、万方 8 个数据库,检索时间从建库截至

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2025 年 6 月 29 日。中文检索词包括屏幕暴露、视屏暴露、视屏时间、视屏行为、屏幕时间,学龄前儿童、学前儿童、幼儿、幼童、儿童,危险因素、风险因素、影响因素、相关因素;英文检索词包括 screen time, screen exposure, screen behavior, video time, video exposure, video behavior; child, preschool, preschool child, preschooler, infants; risk factors, cause, influence factors, predictor, risk factor, clinical predictors, influencing factor 等。

1.2　方法

1.2.1　纳入与排除标准　纳入标准:研究对象为 3~6 岁中国学龄前儿童[10];明确定义屏幕暴露为每天使用视屏设备超过指南规定时间[10-16];结局指标为屏幕暴露发生率和影响因素。排除标准:会议、综述类文献;研究对象为患病人群(如孤独症谱系障碍患者等);无法获取数据、重复发表或低质量文献。

1.2.2　文献筛选与资料提取　由 2 位研究者独立完成文献筛选及数据提取,如有分歧,与第三人协商解决。提取内容包含第一作者、发表时间、地区、平均每天屏幕暴露时间、样本量、屏幕暴露定义、发生率及影响因素等。

1.2.3　偏倚风险评价　采用美国卫生保健质量和研究机构(Agency for Healthcare Research and Quality, AHRQ)进行偏倚风险评价[17],由 2 位研究者分别执行并交叉核对。

1.3　统计学分析　应用 Stata 16.0 软件进行 Meta 分析。通过 Q 检验和 I^2 值评估研究间异质性:当 $I^2 \leqslant 50\%$ 且 $P \geqslant 0.1$ 时表明无异质性,选择固定效应模型;反之选择随机效应模型并通过亚组分析探讨异质性来源。采用逐一剔除法和转换效应模型进行敏感性分析,采用 *Egger's* 检验评估发表偏倚。检验水准 $\alpha = 0.05$。

2　结果

2.1　文献筛选流程及结果　经检索共得到 1 485 篇文献,逐层筛选后最终纳入 43 篇文献[18-60],具体筛选过程见图 1。

2.2　学龄前儿童屏幕暴露发生率的 Meta 分析　纳入研究均报道了发生率,各研究间存在异质性,选择随机效应模型,结果显示学龄前儿童屏幕暴露发生率为 46.0%(95%*CI* = 38.9%~53.1%)。见图 2。逐一剔除文献后,合并结果无显著变化,说明结果较稳定。按地区、屏幕暴露定义和发表年份进行亚组分析,结果显示东部地区、每天视屏时间>1 h 和调查时间在 2019 年以后的发生率较高(P 值均<0.01)。见表 1。

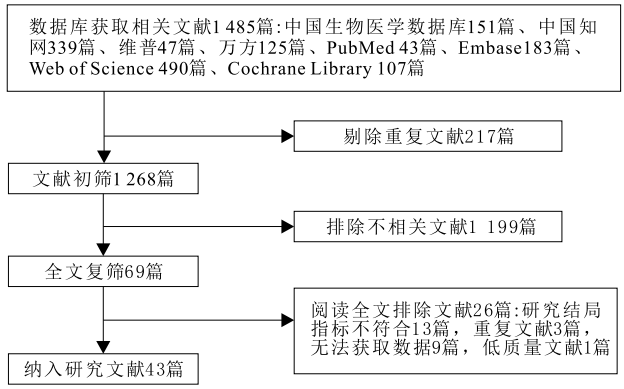


图 1　学龄前儿童屏幕暴露的文献筛选流程

Figure 1　Literature screening flowchart for screen exposure among preschool children

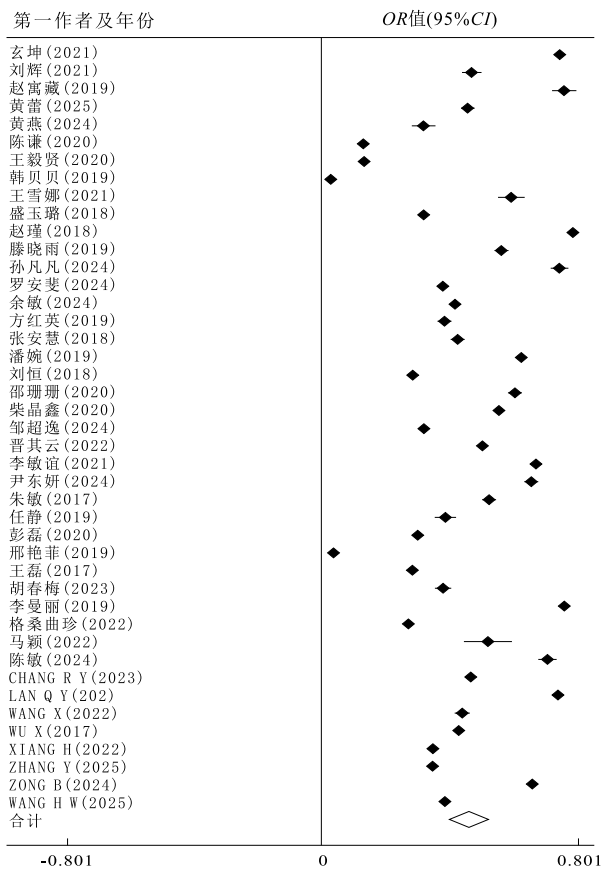


图 2　学龄前儿童屏幕暴露发生率的 Meta 分析

Figure 2　Meta-analysis on prevalence of screen exposure among preschool children

2.3　学龄前儿童屏幕暴露影响因素的 Meta 分析　相比男生,女生屏幕暴露的风险较低;相比其他各变量参照组,非独生子女、父亲年龄<35 岁、父母文化程度均为高中及以下、祖辈带养、农村、父母无锻炼习惯、家长支持使用视屏设备和父母每天视屏时间>1 h 的学龄儿童屏幕暴露风险均增加(P 值均<0.05)。见表 2。

2.4　学龄前儿童屏幕暴露影响因素敏感性分析和发表偏倚　通过改变效应模型进行敏感性分析,效应值未发生显著变化,表明结果较稳定。见表 3。对纳入

研究数量较多的指标(性别)进行偏倚检验,漏斗图较对称,Egger's 检验显示 $P=0.55$,提示无发表偏倚。

表 1 学龄前儿童屏幕暴露发生率 Meta 亚组分析

Table 1 Meta subgroup analysis of the prevalence of screen exposure among preschool children

组别	选项	文献数	I^2 值/%	发生率(95%*CI*)/%
地区	东部	25	99.9	48.0(38.4~57.6)
	中部	8	99.9	42.9(21.4~64.4)
	西部	6	99.0	38.5(31.5~45.4)
	多地	3	99.8	54.7(39.3~70.1)
每天视屏时间/h	>1	21	99.9	55.9(49.1~62.7)
	≥1	7	99.9	45.9(29.8~62.0)
	>2	8	99.8	28.1(16.6~39.5)
	≥2	7	99.9	36.9(23.2~50.6)
研究年份	2019 年以前	7	99.9	43.4(24.0~62.9)
	2019 年及以后	36	99.9	46.5(39.0~53.9)

注:I^2 值和发生率的 P 值均<0.01;东部地区涵盖北京、上海、江苏、浙江等经济较发达省份;中部地区包括安徽、湖北等省份;西部地区涉及甘肃、贵州、四川、新疆等省、市、自治区。

表 2 学龄前儿童屏幕暴露影响因素的 Meta 分析

Table 2 Meta-analysis of factors influencing screen exposure in preschool children

影响因素	文献数	I^2 值/%	效应模型	*OR* 值(95%*CI*)
女童	8	63.0 *	随机	0.85(0.78~0.92) * *
非独生子女	5	0.0	固定	1.09(1.04~1.15) * *
父亲年龄<35 岁	2	0.0	固定	1.45(1.22~1.71) * *
父亲文化程度高中及以下	4	2.0	固定	1.38(1.24~1.54) * *
母亲文化程度高中及以下	3	84.4 * *	随机	1.78(1.32~2.40) * *
祖辈带养	3	62.4	随机	1.39(1.16~1.65) * *
农村	3	28.7	固定	1.38(1.13~1.69) * *
父母无锻炼习惯	4	64.3 *	随机	1.67(1.40~1.98) * *
家长支持使用视屏设备	4	65.0 *	随机	1.70(1.38~2.10) * *
父母每天视屏时间>1 h	2	79.5 *	随机	1.59(1.04~2.43) *

注: * P<0.05, * * P<0.01;各变量分别以男生、独生子女、父亲年龄≥35 岁、父/母亲文化程度高中以上、父母带养、城镇、父母有锻炼习惯、家长不支持使用视屏设备、父母每天视屏时间≤1 h 为参照组。

表 3 学龄前儿童屏幕暴露影响因素的敏感性分析[*OR* 值(95%*CI*)]

Table 3 Sensitivity analysis of factors influencing screen exposure among preschool children[*OR*(95%*CI*)]

影响因素	随机效应模型	固定效应模型
女童	0.85(0.78~0.92)	0.86(0.82~0.89)
非独生子女	1.09(1.04~1.15)	1.09(1.04~1.15)
父亲年龄<35 岁	1.45(1.22~1.71)	1.45(1.22~1.71)
父亲文化程度高中及以下	1.38(1.24~1.54)	1.38(1.24~1.54)
母亲文化程度高中及以下	1.78(1.32~2.40)	1.72(1.53~1.93)
祖辈带养	1.39(1.16~1.65)	1.39(1.25~1.54)
农村	1.35(1.04~1.75)	1.38(1.13~1.69)
父母无锻炼习惯	1.67(1.40~1.98)	1.62(1.48~1.78)
家长支持使用视屏设备	1.70(1.38~2.10)	1.57(1.43~1.73)
父母每天视屏时间>1 h	1.59(1.04~2.43)	1.67(1.39~2.01)

注:P 值均<0.05;各变量分别以男生、独生子女、父亲年龄≥35 岁、父/母亲文化程度高中以上、父母带养、城镇、父母有锻炼习惯、家长不支持使用视屏设备、父母每天视屏时间≤1 h 为参照组。

3 讨论

本研究显示,中国学龄前儿童屏幕暴露发生率为46.0%,略高于其他国家的相关研究[61-62],可能与不同国家的儿童早期教育理念、家庭教养方式、公共卫生干预措施以及屏幕媒介普及密切相关。亚组分析结果显示,东部地区、每天视屏时间>1 h 和 2019 年及以后的发生率更高。东部地区的高发生率可能与该区域经济水平、信息技术普及有关[63]。儿童每天视屏时间>1 h 发生率较高,与儿童日常接触场景的屏幕较多、较易达到该标准有关。2019 年以前屏幕暴露率略低于 2019 年及以后,与美国的一项研究结果一致[64],可能是新型冠状病毒感染疫情期间,居家生活改变了家庭视屏环境,父母及儿童对屏幕依赖程度增加,并将更多时间用于视屏娱乐。

本研究发现,男童比女童更易发生屏幕暴露,可能与性别间的兴趣爱好相关,男童更倾向于电子游戏等屏幕娱乐活动,而女童则偏好看书、绘画等非电子形式的娱乐活动[65]。多子女家庭父母监管精力分散,导致对儿童电子设备的使用缺乏监督;而独生子女通常能获得更多的家庭关注与资源投入,减少了屏幕暴露的风险[66]。此外,年轻父亲对电子游戏等更感兴趣,在视屏设备上花费的时间较多[18],而儿童会模仿父母行为,进而增加屏幕暴露的风险。文化程度较低的父母缺乏对屏幕暴露危害的认知和科学的教育理念,不能有效限制儿童电子设备的使用[67]。城镇家长通常具备较高教育水平,能更充分认知屏幕暴露危害并主动采取限制措施[42],且可提供多样化线下活动;而农村家长受限于教育水平和资源条件,其认知及干预能力相对不足。因此,应针对性别实施差异化干预策略,多子女家庭应鼓励兄弟姐妹共同参与非屏幕活动以弥补监管精力不足,同时通过提升父母媒介素养以优化其自身屏幕使用行为,并制定科学的屏幕管理策略。

此外,祖辈因传统育儿观念,常将电子设备用作安抚工具,而"隔代亲"所致的情感溺爱与规则执行松弛,进一步弱化了对屏幕时间的管控力度[68]。学龄前儿童处于模仿关键期,易通过观察学习父母行为而形成屏幕使用习惯[69],父母无锻炼习惯且自身视屏时间长,会潜移默化地增加儿童屏幕暴露。为提供早期教育,部分父母会支持子女使用电子设备,但并未制定相应的屏幕使用规则和有效监督,导致学龄前儿童屏幕暴露的机会增多[52]。因此,应通过健康教育推广科学教养方式,引导家庭开展非屏幕类亲子活动与高质量陪伴,以减少学龄前儿童屏幕暴露。

本研究存在一定的局限性:(1)纳入研究存在较大异质性;(2)只纳入了中、英文公开发表的横断面研究,论证强度受限;(3)部分影响因素纳入研究数量较少,可能对结果造成一定影响。未来需要更大样本、高质量的研究,进一步探索学龄前儿童屏幕暴露发生率及影响因素,为开展早期预防和干预提供客观的循证依据。

利益冲突声明 所有作者声明无利益冲突。

参考文献

[1] KUSHIMA M, KOJIMA R, SHINOHARA R, et al. Association between screen time exposure in children at 1 year of age and autism spectrum disorder at 3 years of age: the Japan environment and children's study[J]. JAMA Pediatr, 2022, 176(4):384-391.

[2] OSWALD T K, RUMBOLD A R, KEDZIOR S G E, et al. Psychological impacts of "screen time" and "green time" for children and adolescents: a systematic scoping review[J]. PLoS One, 2020, 15(9): e0237725.

[3] MALLAWAARACHCHI S, BURLEY J, MAVILIDI M, et al. Early childhood screen use contexts and cognitive and psychosocial outcomes: a systematic review and Meta-analysis[J]. JAMA Pediatr, 2024, 178(10):1017-1026.

[4] ZHAO J, YU Z, SUN X, et al. Association between screen time trajectory and early childhood development in children in China[J]. JAMA Pediatr, 2022, 176(8):768-775.

[5] ZONG Z, ZHANG Y, QIAO J, et al. The association between screen time exposure and myopia in children and adolescents: a Meta-analysis [J]. BMC Public Health, 2024, 24(1):1625.

[6] RAYCE S B, OKHOLM G T, FLENSBORG-MADSEN T. Mobile device screen time is associated with poorer language development among toddlers: results from a large-scale survey[J]. BMC Public Health, 2024, 24(1):1050.

[7] WANG H, ZHAO J, YU Z, et al. Types of on-screen content and mental health in kindergarten children[J]. JAMA Pediatr, 2024, 178(2):125-132.

[8] WANG X, ZHANG Y. Intergenerational care and rural childhood obesity in the digital era: based on screen exposure perspective[J]. SSM Popul Health, 2024, 27:101694.

[9] DAHLGREN A, SJÖBLOM L, EKE H, et al. Screen time and physical activity in children and adolescents aged 10-15 years[J]. PLoS One, 2021, 16(7):e0254255.

[10] 关宏岩, 赵星, 屈莎, 等. 学龄前儿童(3~6岁)运动指南[J]. 中国儿童保健杂志, 2020, 28(6):714-720.
GUAN H Y, ZHAO X, QU S, et al. Physical activity guideline for Chinese preschoolers aged 3-6 years[J]. Chin J Child Health Care, 2020, 28(6):714-720. (in Chinese)

[11] 中华人民共和国教育部, 中华人民共和国国家卫生健康委员会, 国家体育总局, 等. 综合防控儿童青少年近视实施方案[J]. 中国学校卫生, 2018, 39(9):1279-1280.
Ministry of Education of the PRC, National Health Commission of the PRC, General Administration of Sport of China, et al. Implementation plan of comprehensive prevention and control of myopia in children and adolescents[J]. Chin J Sch Health, 2018, 39(9):1279-1280. (in Chinese)

[12] 妇幼健康研究会儿童早期发展专业委员会. 新型冠状病毒肺炎流行期间0~6岁居家儿童运动指导建议(第一版)[J]. 中国儿童保健杂志, 2020, 28(4):366-369.
Maternal and Child Health Research Association Professional Committee on Early Childhood Development. Suggestions on sports guidance for children aged 0-6 at home during COVID-19 (first edit)[J]. Chin J Child Health Care, 2020, 28(4):366-369.(in Chinese)

[13] 李丽红, 刘虎. 儿童眼病筛查[M]. 2版. 北京:科学出版社, 2017:89.
LI L H, LIU H. Screening of children's ophthalmopathy[M]. 2nd ed. Beijing:Science Press, 2017:89.(in Chinese)

[14] Education Committee on Public. Media education[J]. Pediatrics, 1999, 104(2):341-343.

[15] Council on Communications and Media. Media and young minds[J]. Pediatrics, 2016, 138(5):e20162591.

[16] WHO Guidelines Approved by the Guidelines Review Committee. Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age[M]. Geneva:WHO,2019.

[17] MA L L, WANG Y Y, YANG Z H, et al. Methodological quality (risk of bias) assessment tools for primary and secondary medical studies:what are they and which is better? [J]. Mil Med Res, 2020, 7(1):7.

[18] 玄坤. 安徽省农村学龄前儿童视屏时间现状及其对焦虑症状影响的研究[D]. 合肥:安徽医科大学, 2021.
XUAN K. The status of screen time and its influence on anxiety symptoms among preschool children in rural Anhui Province[D]. Hefei: Anhui Medical University, 2021.(in Chinese)

[19] 刘辉, 赵艳芳, 邵歌, 等. 北京市丰台区幼儿园儿童视屏时间现况及影响因素分析[J]. 现代预防医学, 2021, 48(5):833-835, 924.
LIU H, ZHAO Y F, SHAO G, et al. Screen time status and risk factors analysis among kindergarten children in Fengtai District, Beijing [J]. Mod Prev Med, 2021, 48(5):833-835, 924.(in Chinese)

[20] 赵寓藏, 吴旭龙, 杨菁菁, 等. 北京市学龄前儿童视屏时间现状及影响因素分析[J]. 中国学校卫生, 2019, 40(3):344-346.
ZHAO Y C, WU X L, YANG J J, et al. Screen time and associated factors among preschool children in Beijing[J]. Chin J Sch Health, 2019, 40(3):344-346.(in Chinese)

[21] 黄蕾, 李佳樾, 马政源, 等. 甘肃省中部地区学龄前儿童视屏时间及影响因素分析[J]. 中国儿童保健杂志, 2025, 33(1):49-54.
HUANG L, LI J Y, MA Z Y, et al. Status quo of screen time and influencing factors of excessive screen time in preschool children from central Gansu Province[J]. Chin J Child Health Care, 2025, 33 (1):49-54.(in Chinese)

[22] 黄燕, 雷玥, 黄垂灿, 等. 海口市学龄前儿童屏幕暴露影响因素及其对夜间睡眠的影响分析[J]. 中国社会医学杂志, 2024, 41 (5):569-574.
HUANG Y, LEI Y, HUANG C C, et al. Analysis of screen exposure chronotype, influencing factors and its impact on sleep of preschool children in Haikou City[J]. Chin J Soc Med, 2024, 41(5):569-574.(in Chinese)

[23] 陈谦, 张俊飞. 家庭相关因素对学龄前儿童周末视屏时间的影响[J]. 中国学校卫生, 2020, 41(2):194-196.
CHEN Q, ZHANG J F. Influence of family related factors on the weekend screen time of preschool school[J]. Chin J Sch Health, 2020, 41(2):194-196.(in Chinese)

[24] 王毅贤, 韩小盛. 南京市学龄前儿童周末视屏时间与家庭环境因素的关联[J]. 中国学校卫生, 2020, 41(10):1488-1490.
WANG Y X, HAN X S. Parental influences on weekend screen time among preschool children in Nanjing[J]. Chin J Sch Health, 2020, 41(10):1488-1490.(in Chinese)

[25] 韩贝贝, 黄惠萍, 姚星, 等. 鄂州市学龄前儿童视屏时间与情绪行为问题的关系[J]. 中国学校卫生, 2019, 40(11):1669-1671.
HAN B B, HUANG H P, YAO X, et al. Association of screen time with emotional and behavioral problems in preschool children[J].

Chin J Sch Health, 2019, 40(11):1669-1671.(in Chinese)

[26] 王雪娜, 杜雯雯, 张萌, 等. 新型冠状病毒肺炎期间学龄前儿童屏幕暴露与心理健康[J]. 中国健康心理学杂志, 2021, 29(4):564-568.
WANG X N, DU W W, ZHANG M, et al. Investigation on screen time and psychosocial problems of preschoolers during the prevalence of COVID-19[J]. China J Health Psychol, 2021, 29(4):564-568.(in Chinese)

[27] 盛玉璐, 何晓燕, 孙蕾, 等. 学龄前儿童视屏时间对情绪和行为问题的影响[J]. 中国妇幼卫生杂志, 2018, 9(5):1-5.
SHENG Y L, HE X Y, SUN L, et al. Effect of the screen time on emotional and behavioral problems among preschool children[J]. Chin J Women Child Health, 2018, 9(5):1-5.(in Chinese)

[28] 赵瑾. 屏幕暴露对儿童早期发展的影响研究[D]. 上海:上海交通大学, 2018.
ZHAO J. Effects of screen exposure on early childhood development[D]. Shanghai:Shanghai Jiao Tong University, 2018.(in Chinese)

[29] 滕晓雨, 丁磊, 邵静, 等. 山东省 4~6 岁儿童电子屏幕暴露现况及影响因素研究[J]. 中国儿童保健杂志, 2019, 27(12):1300-1303, 1307.
TENG X Y, DING L, SHAO J, et al. Research on the current status and influencing factors of electronic screen exposure in children aged 4 to 6 years in Shandong[J]. Chin J Child Health Care, 2019, 27(12):1300-1303, 1307.(in Chinese)

[30] 孙凡凡, 刘美燕, 霍言言, 等. 上海市学龄前儿童屏幕时间现状及影响因素分析[J]. 中国社会医学杂志, 2024, 41(2):205-209.
SUN F F, LIU M Y, HUO Y Y, et al. Current status and influencing factors of screen time among preschool children in Shanghai[J]. Chin J Soc Med, 2024, 41(2):205-209.(in Chinese)

[31] 罗安斐, 莫淳淇, 陈文盛, 等. 深圳市龙华区学龄前中班儿童电子屏幕暴露现况及其影响因素[J]. 中国儿童保健杂志, 2024, 32(1):108-112.
LUO A F, MO C Q, CHEN W S, et al. Prevalence and associated factors of electronic screen exposure in preschool children in Longhua District, Shenzhen[J]. Chin J Child Health Care, 2024, 32(1):108-112.(in Chinese)

[32] 余敏, 朱敏, 何海燕, 等. 芜湖市城区父母教养方式对学龄前儿童视屏时间的影响[J]. 实用预防医学, 2024, 31(1):21-24.
YU M, ZHU M, HE H Y, et al. Influence of parental rearing styles on time spent watching videos among preschoolers in urban areas of Wuhu City[J]. Pract Prev Med, 2024, 31(1):21-24.(in Chinese)

[33] 方红英, 徐成恒, 汤银霞, 等. 学龄前儿童屏幕暴露与家庭养育环境的相关性分析[J]. 中国儿童保健杂志, 2019, 27(1):101-103.
FANG H Y, XU C H, TANG Y X, et al. Correlation analysis of electronic screen exposure and family rearing environment in preschool children[J]. Chin J Child Health Care, 2019, 27(1):101-103.(in Chinese)

[34] 张安慧, 王睿, 朱敏, 等. 学龄前儿童视屏时间对睡眠行为的影响[J]. 现代预防医学, 2018, 45(14):2551-2553, 2562.
ZHANG A H, WANG R, ZHU M, et al. Influence of screen time on sleep patterns and sleep problems among preschool children[J]. Mod Prev Med, 2018, 45(14):2551-2553, 2562.(in Chinese)

[35] 潘婉, 江流, 耿梦龙, 等. 学龄前儿童视屏时间及户外活动对情绪的影响[J]. 中华流行病学杂志, 2019, 40(12):1569-1572.
PAN W, JIANG L, GENG M L, et al. The influence of preschool children's video time and outdoor activities on emotion[J]. Chin J Epidemiol, 2019, 40(12):1569-1572.(in Chinese)

[36] 刘恒, 石韬, 李小东. 新疆乌鲁木齐市 3~6 岁学龄前儿童视屏时间状况及影响因素研究[J]. 现代预防医学, 2018, 45(6):1012-1015, 1025.
LIU H, SHI T, LI X D. Research of 3-6 years old preschool children's screen time status and influencing factors in Urumqi, Xinjiang[J]. Mod Prev Med, 2018, 45(6):1012-1015, 1025.(in Chinese)

[37] 邵珊珊, 江澜, 章琴, 等. 新型冠状病毒肺炎疫情控制期无锡市学龄前儿童视屏行为及影响因素分析[J]. 中国学校卫生, 2020, 41(5):661-663, 667.
SHAO S S, JIANG L, ZHANG Q, et al. Screen time and associated factors among preschoolers in Wuxi during COVID-19 outbreak[J]. Chin J Sch Health, 2020, 41(5):661-663, 667.(in Chinese)

[38] 柴晶鑫, 曹远, 于彤, 等. 新型冠状病毒肺炎疫情期间北京市 3~6 岁儿童视屏时间调查[J]. 首都公共卫生, 2020, 14(6):294-297.
CHAI J X, CAO Y, YU T, et al. Investigation on screen time of children aged 3-6 years old in Beijing during the epidemic period of coronavirus disease 2019[J]. Cap J Public Health, 2020, 14(6):294-297.(in Chinese)

[39] 邹超逸, 屠文娟, 高月霞, 等. 学龄前儿童屏幕暴露的家庭环境影响因素及对策研究[J]. 南京医科大学学报(社会科学版), 2024, 24(1):60-67.
ZOU C Y, TU W J, GAO Y X, et al. A study of family environment influences and countermeasures on preschool children's screen exposure[J]. J Nanjing Med Univ(Soc Sci), 2024, 24(1):60-67.(in Chinese)

[40] 晋其云, 梁一, 刘志军. 遵义市学龄前儿童屏幕时间与超重及肥胖关系研究[J]. 现代医药卫生, 2022, 38(6):916-919.
JIN Q Y, LIANG Y, LIU Z J. Study on the relationship between screen time and overweight/obesity in preschool children in Zunyi City[J]. J Mod Med Health, 2022, 38(6):916-919.(in Chinese)

[41] 李敏谊, 崔雨芳, 王诗棋, 等. 屏幕时间、户外活动时间与学龄前儿童身体健康的相关性研究[J]. 教育生物学杂志, 2021, 9(2):96-101.
LI M Y, CUI Y F, WANG S Q, et al. Correlations among screen time, outdoor activity time, and physical health of preschoolers[J]. J Biol Educ, 2021, 9(2):96-101.(in Chinese)

[42] 尹东妍. 学龄前儿童屏幕暴露现状及影响因素的混合性研究[D]. 延吉:延边大学, 2024.
YIN D Y. A mixed study on the current status and influencing factors of screen exposure in preschool children[D]. Yanji:Yanbian University, 2024.(in Chinese)

[43] 朱敏, 张安慧, 曹臻, 等. 学龄前儿童视屏暴露状况及其影响因素调查[J]. 中国妇幼保健, 2017, 32(4):833-836.
ZHU M, ZHANG A H, CAO Z, et al. Investigation on the exposure status of electronic screen in preschool children and the influencing factors[J]. Chin J Matern Child Health Care, 2017, 32(4):833-836.(in Chinese)

[44] 任静, 冯蕾, 宫媛, 等. 学龄前儿童视屏行为及影响因素[J]. 济宁医学院学报, 2019, 42(2):101-104.
REN J, FENG L, GONG Y, et al. Video behavior of preschool children and its influencing factors[J]. J Jining Med Univ, 2019, 42

(2):101-104.(in Chinese)

[45] 彭磊, 徐耿, 宫相君, 等. 学龄前儿童视屏时间与心理行为的关联性[J]. 中国学校卫生, 2020, 41(1):62-65, 69.
PENG L, XU G, GONG X J, et al. Correlation between video time and psychological behavior of preschool children[J]. Chin J Sch Health, 2020, 41(1):62-65, 69.(in Chinese)

[46] 邢艳菲, 蒋琳, 马颖, 等. 学龄前儿童移动媒体设备使用与家长行为的关系[J]. 中国妇幼保健, 2019, 34(13):3064-3066.
XING Y F, JIANG L, MA Y, et al. Relationship between preschool children's use of mobile media devices and parents' behavior[J]. Chin J Matern Child Health Care, 2019, 34(13):3064-3066.(in Chinese)

[47] 王磊, 左笑宇, 董雷, 等. 扬州市学龄前儿童视屏现况及其影响因素分析[J]. 中国学校卫生, 2017, 38(4):505-508.
WANG L, ZUO X Y, DONG L, et al. Prevalence and risk factors of screen time among preschool children in Yangzhou[J]. Chin J Sch Health, 2017, 38(4):505-508.(in Chinese)

[48] 胡春梅, 吕晓, 何玲玲. 幼儿屏幕时间与父母因素关系[J]. 中国公共卫生, 2023, 39(5):577-580.
HU C M, LÜ X, HE L L. Associations of parental factors with screen time among preschool-age children:a cross-sectional survey[J]. Chin J Public Health, 2023, 39(5):577-580.(in Chinese)

[49] 李曼丽, 金龙涛, 陈佳, 等. 镇江市学龄前儿童视屏产品使用状况及其影响因素研究[J]. 现代预防医学, 2019, 46(18):3319-3322.
LI M L, JIN L T, CHEN J, et al. Study on the use and influencing factors of video screen products for preschool children in Zhenjiang City[J]. Mod Prev Med, 2019, 46(18):3319-3322.(in Chinese)

[50] 格桑曲珍, 郭孟兰, 肖琛嫦, 等. 学龄前儿童父母教养方式和视屏时间对其睡眠状况的影响[J]. 广西医科大学学报, 2022, 39(9):1493-1499.
GESAN G Z, GUO M L, XIAO C C, et al. Effects of parenting style and screen time on sleep status of preschool children[J]. J Guangxi Med Univ, 2022, 39(9):1493-1499.(in Chinese)

[51] 马颖, 焦婷, 黄亚深, 等. 学龄前儿童屏幕暴露对睡眠的影响及户外活动的调节作用[J]. 中国儿童保健杂志, 2022, 30(6):664-668.
MA Y, JIAO T, HUANG Y S, et al. Association between screen time and sleep duration and the moderating effect of outdoor activity among preschoolers[J]. Chin J Child Health Care, 2022, 30(6):664-668.(in Chinese)

[52] 陈敏, 张红梅, 康淑蓉, 等. 上海市闵行区 3~6 岁儿童屏幕暴露现况及影响因素研究[J]. 中国儿童保健杂志, 2024, 32(1):26-30.
CHEN M, ZHANG H M, KANG S R, et al. Status quo of screen exposure and its determinants in 3- to 6-year-old children in Minhang District, Shanghai[J]. Chin J Child Health Care, 2024, 32(1):26-30.(in Chinese)

[53] CHANG R Y, CHEN T L, YEH C C, et al. Risk of obesity among children aged 2-6 years who had prolonged screen time in Taiwan:a nationwide cross-sectional study[J]. Clin Epidemiol, 2023, 15:323-324.

[54] LAN Q Y, CHAN K C, YU K N, et al. Sleep duration in preschool children and impact of screen time[J]. Sleep Med, 2020, 76:48-54.

[55] WANG X, WU Y, YAO C, et al. Correlates of preschoolers' screen time in China:parental factors[J]. BMC Pediatr, 2022, 22(1):417.

[56] WU X, TAO S, RUTAYISIRE E, et al. The relationship between screen time, nighttime sleep duration, and behavioural problems in preschool children in China[J]. Eur Child Adolesc Psychiatry, 2017, 26(5):541-548.

[57] XIANG H, LIN L, CHEN W, et al. Associations of excessive screen time and early screen exposure with health-related quality of life and behavioral problems among children attending preschools[J]. BMC Public Health, 2022, 22(1):2440.

[58] ZHANG Y, LUO S, CHEN W, et al. Maternal adverse childhood experiences were associated with early screen exposure and prolonged daily screen time in preschool children[J]. BMC Public Health, 2025, 25(1):1802.

[59] ZONG B, LI L, CUI Y, et al. Effects of outdoor activity time, screen time, and family socioeconomic status on physical health of preschool children[J]. Front Public Health, 2024, 12:1434936.

[60] 王海娃,赵瑾,林崟,等.屏幕暴露行为与 3~4 岁儿童发展风险的关联性研究[J].中华儿科杂志,2025,63(5):484-490.
WANG H W, ZHAO J, LIN Y, et al. Relationship between screen exposure behaviors and developmental risks in children aged 3-4 years[J].Chin J Pediatr, 2025, 63(5):484-490.(in Chinese)

[61] ERAT N M, ÇAYLAN N, YALÇLN S S. Video gaming is associated with maternal overprotective parenting style:a cross-sectional study in preschool children[J]. Pediatr Int, 2025, 67(1):e70056.

[62] FELIX E, SILVA V, CAETANO M, et al. Excessive screen media use in preschoolers is associated with poor motor skills[J]. Cyberpsychol Behav Soc Netw, 2020, 23(6):418-425.

[63] LIU Y, FAILLER P, DING Y. Enterprise financialization and technological innovation: mechanism and heterogeneity[J]. PLoS One, 2022, 17(12):e0275461.

[64] KWON S, ARMSTRONG B, WETOSKA N, et al. Screen time, sociodemographic factors, and psychological well-being among young children[J]. JAMA Netw Open, 2024, 7(3):e2354488.

[65] DAVIS J T M, HINES M. How large are gender differences in toy preferences? A systematic review and Meta-analysis of toy preference research[J]. Arch Sex Behav, 2020, 49(2):373-394.

[66] VELUGURI S S S, SATAPATHY D, ARUN BABU T, et al. Adherence of children to the Indian academy of pediatrics (IAP) guidelines on permissible daily screen exposure:a hospital-based cross-sectional study from southern India[J]. Indian Pediatr, 2025, 62(7):528-530.

[67] LEHTO E, LEHTO R, RAY C, et al. Are associations between home environment and preschool children's sedentary time influenced by parental educational level in a cross-sectional survey? [J]. Int J Equity Health, 2021, 20(1):27.

[68] BEKTAS G, BOELSMA F, GÜNDÜZ M, et al. A qualitative study on the perspectives of Turkish mothers and grandmothers in the Netherlands regarding the influence of grandmothers on health related practices in the first 1 000 days of a child's life[J]. BMC Public Health, 2022, 22(1):1364.

[69] STENGELIN R, BALL R, MAURITS L, et al. Children over-imitate adults and peers more than puppets[J]. Dev Sci, 2023, 26(2):e13303.

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