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· 儿童青少年同伴欺凌防控专栏 ·

同伴欺凌和父母手机冷落与中小学生执行功能的关联

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【摘要】 目的 探讨同伴欺凌和父母手机冷落与中小学生执行功能的关联及其联合效应,为促进中小学生执行功能的健康发展提供科学依据。**方法** 2024 年 11 月,采用方便与整群抽样相结合的方法抽取深圳市 3 547 名中小学生为研究对象,使用中文版特拉华欺凌受害量表-学生卷(DBVS-S)、父母低头行为量表(PPS)和青少年执行功能量表(TEXI)对同伴欺凌、父母手机冷落和中小学生执行功能情况进行调查。运用广义线性回归模型分析同伴欺凌和父母手机冷落与中小学生执行功能的关联及其联合效应,并基于年龄、性别进行亚组分析,采用相乘交互项检验交互作用。**结果** 中小学生同伴欺凌得分为(15.27±5.67)分,言语欺凌、身体欺凌、关系欺凌分别为(5.64±2.77)(4.70±1.62)(4.93±2.07)分;父母手机冷落得分为(13.98±5.00)分;执行功能得分为(47.35±15.89)分,抑制控制、工作记忆得分分别为(26.44±9.00)(20.91±7.49)分。广义线性回归模型分析结果显示,校正年龄、性别、自评家庭关系、自评家庭经济状况、父母文化程度等混杂因素后,同伴欺凌(β=0.75,95%*CI*=0.67~0.84)、言语欺凌(β=1.41,95%*CI*=1.23~1.58)、身体欺凌(β=2.18,95%*CI*=1.87~2.49)、关系欺凌(β=1.78,95%*CI*=1.54~2.01)及父母手机冷落(β=0.88,95%*CI*=0.79~0.98)均与中小学生执行功能损伤程度增加相关(*P* 值均<0.01)。联合效应分析结果表明,与"无欺凌-低冷落"组相比,其他联合暴露组的执行功能总分均升高(β=6.78~15.96,*P* 值均<0.01)。其中,同伴欺凌中,"有欺凌-高冷落"组的执行功能损伤程度最高(β=14.17,95%*CI*=12.61~15.73,*P*<0.01)。亚组分析结果显示,言语欺凌与年龄在执行功能总分、抑制控制和工作记忆交互作用均有统计学意义($P_{交互}$值均<0.01);言语欺凌对<13 岁中小学生(β=1.80,95%*CI*=1.45~2.16)的执行功能相关效应略高于≥13 岁中小学生(β=1.25,95%*CI*=1.05~1.45)(*P* 值均<0.01)。其他欺凌类型和父母手机冷落与年龄或性别在执行功能、抑制控制、工作记忆交互作用均无统计学意义($P_{交互}$值均>0.05)。**结论** 同伴欺凌与父母手机冷落与中小学生执行功能受损呈显著关联,且二者存在联合效应;其中,言语欺凌与低龄中小学生执行功能受损之间的关联更为突出。

【关键词】 暴力;法定监护人;便携式电话;精神卫生;执行功能;回归分析;学生

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Association of peer bullying and parental phubbing with executive function among primary and secondary school students

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【Abstract】 Objective To examine the associations between peer bullying and parental phubbing with executive function and their combined effect among primary and secondary school students, so as to provide scientific evidence for promoting healthy development of executive function among primary and secondary school students. **Methods** In November 2024, a combining convenience with clustering method was used to select 3 547 primary and secondary school students in Shenzhen City. The Chinese versions of the Delaware Bullying Victimization Scale-Student (DBVS-S), the Parental Phubbing Scale (PPS), and the Teenage Executive Functioning Inventory (TEXI) were used to assess peer bullying, parental phubbing, and executive function, respectively. Generalized linear regression models were applied to analyze the associations of peer bullying and parental phubbing with executive function, and to assess their joint effects. Subgroup analyses were performed by ages and genders, and multiplicative interaction terms were used to test for interactions. **Results** The score for peer bullying among primary and secondary school students was (15.27±5.67), with verbal bullying, physical bullying, and relational bullying scores being (5.64±2.77) (4.70±1.62) (4.93±2.07), respectively. The score for parental phubbing was (13.98±5.00). Executive function score was (47.35±15.89), while inhibitory control and working memory scores were (26.44±9.00) (20.91±7.49), respectively. After adjusting for confounding factors such as age, gender, self-reported family relationship, self-reported family economic status, parental education level, both peer bullying (β=0.75, 95%*CI*=0.67-0.84), verbal bullying(β=1.41, 95%*CI*=1.23-1.58), physical bullying (β=2.18, 95%*CI*=1.87-

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2.49), relational bullying (β=1.78, 95%*CI*=1.54-2.01) and parental phubbing (β=0.88, 95%*CI*=0.79-0.98) were significantly positively associated with the degree of executive function impairment (all P<0.01). Joint effect analysis showed that, compared with the "no bullying-low phubbing" group, the total executive function scores in other combined exposure groups were all higher (β=6.78-15.96, all P<0.01). Among them, the "bullying-high phubbing" group exhibited the highest level of executive function impairment (β=14.17, 95%*CI*=12.61-15.73, P<0.01). Subgroup analysis indicated significant interactions between verbal bullying and age on total executive function, inhibitory control, and working memory (all $P_{interaction}$<0.01). The association of verbal bullying with executive function was slightly higher in primary and secondary school students younger than 13 years (β=1.80, 95%*CI*=1.45-2.16) than in those aged 13 years or older (β=1.25, 95%*CI*=1.05-1.45) (both P<0.01). Other types of bullying and parental phone neglect showed no statistically significant interaction with age or gender in executive function, inhibitory control, and working memory(all $P_{interaction}$>0.05). **Conclusion** Both peer bullying and parental phubbing are significantly associated with impaired executive function among primary and secondary school students, and there is a combined effect between them; among these, the association between verbal bullying and executive function impairment in younger primary and secondary school students is more pronounced.

【Keywords】 Violence; Legal guardians; Cellular phone; Mental health; Executive function; Regression analysis; Students

执行功能是个体在目标导向行为中涉及的一系列高级认知控制过程,其神经基础主要位于前额叶皮层[1],包括抑制控制、工作记忆等核心成分[2]。儿童期是执行功能神经基础形成的关键时期[3];而青少年正处于前额叶皮层发育与功能成熟的关键阶段,其执行功能系统具有高度可塑性[4]。研究表明,执行功能与中小学生的学业成就及社会适应密切相关[5-6]。因此,识别中小学生执行功能发展相关的关键因素对促进其健康成长至关重要。

同伴欺凌指在学校等环境中由同伴实施的攻击性行为,是我国中小学生中常见的社会心理应激源之一[7-8]。同伴欺凌不仅会导致儿童的身体伤害与认知功能损害[9-10],还会引发青少年的社会排斥[11],其产生的持续心理压力还可能影响儿童青少年的心理健康[12]。此外,随着智能手机的普及,父母手机冷落行为(即亲子互动中因过度使用手机而忽视子女情感需求[13])日益普遍。现有研究虽已证实父母手机冷落不仅与儿童的社交退缩及攻击行为有关[14],还会导致青少年的学习倦怠[15],但其对执行功能的潜在影响仍有待深入探讨。为此,本研究整合学校与家庭双重视角,探讨同伴欺凌和父母手机冷落与中小学生执行功能的关联,并分析上述关联在不同年龄和性别间的差异,为制定促进中小学生执行功能健康发展的多层次、精准化干预策略提供科学依据。

1 对象与方法

1.1 对象 2024 年 11 月,根据各学部参与意愿,在深圳市方便选取配合度良好的 2 所学校,其中 1 所为同时设有初中部和高中部的中学,另 1 所为涵盖小学和初中部的九年一贯制学校,将其所有班级学生均纳入调查。共收集问卷 4 203 份,剔除关键变量缺失的问卷后,最终收回有效问卷 3 547 份,有效率为 84.4%。其中男生 2 002 名(56.4%),女生 1 545 名(43.6%);年龄 6~19 岁,<13 岁 1 495 名(42.1%),≥13 岁 2 052 名(57.9%),平均年龄(12.61±3.04)岁。调查前已取得学校、学生及家长的知情同意。本研究已通过中山大学公共卫生学院生物医学研究伦理审查委员会批准,批号为中大公卫医伦(2024)第 034 号。

1.2 方法

1.2.1 人口学因素 包括年龄、性别、自评家庭关系(比较融洽、一般、不太融洽)、自评家庭经济状况(较差、中等、较好)、父母文化程度(小学及以下、初中、高中或中专、大专及以上)等。

1.2.2 同伴欺凌 采用中文版特拉华欺凌受害量表—学生卷(Delaware Bullying Victimization Scale - Student, DBVS-S)评估自入学以来中小学生遭受同伴欺凌的情况[16]。该量表涵盖言语欺凌、身体欺凌、关系欺凌 3 个维度,各维度均为 4 个条目。各条目采用 6 点计分法,“从未发生”至“每天发生”分别计 1~6 分,各维度得分均为 4~24 分,总分范围为 12~72 分,得分越高表示遭受欺凌程度越严重。若调查对象在任一条目上得分≥3 分判定其为欺凌受害者[17]。DBVS-S 在我国青少年群体中具有良好的信、效度[16],本研究中该量表的 Cronbach α 系数为 0.90。

1.2.3 父母手机冷落 采用丁倩等[18]修订的父母低头行为量表(Parental Phubbing Scale, PPS)评估父母手机冷落行为。PPS 共 9 个条目,每个条目采用 5 点计分法,“从不”至“总是”分别计 1~5 分,其中条目 7 为反向计分,总分 9~45 分,总分越高表示中小学生感知到的冷落程度越严重。根据 PPS 得分中位数,将调查对象父母手机冷落分为低水平(<14 分)与高水平(≥14 分)两组[19]。PPS 已在我国青少年群体中得到广泛应用,具有良好的信、效度[20],本研究中该量表的 Cronbach α 系数为 0.83。

1.2.4　执行功能　使用青少年执行功能量表(Teenage Executive Functioning Inventory, TEXI)评估中小学生的执行功能[21]。该量表涵盖工作记忆(11 个条目)与抑制控制(9 个条目)2 个维度。所有条目均采用 Likert 5 点计分(1="完全不符合"至 5="完全符合"),工作记忆维度得分 11~55 分,抑制控制得分 9~45 分,总分 20~100 分,总分越高代表执行功能损伤程度越严重。TEXI 在我国青少年群体中具有良好的信、效度[22]。本研究中该量表的 Cronbach α 系数为 0.95。

1.3　质量控制　调查前对调查员进行统一培训;调查过程中,由调查员说明填写规范,调查对象自主填写;调查结束后,调查员当场审核问卷,重点核查是否存在漏填、错填等问题。所有问卷在唯一编码后,采用双人平行录入,并进行数据一致性检验与逻辑检验。

1.4　统计学分析　运用 EpiData 3.1 软件进行数据录入,使用 Excel 2021 和 R 4.4.2 软件进行数据整理与统计分析。连续变量符合正态分布以($\bar{x}\pm s$)表示;分类变量以频数和率表示。采用广义线性回归模型探讨同伴欺凌和父母手机冷落行为与中小学生执行功能的关联,因变量为执行功能及其各维度得分,自变量为父母手机冷落与同伴欺凌及其各维度得分。进一步构建同伴欺凌与父母手机冷落的联合暴露变量,以执行功能为因变量,以联合暴露分组(以"无欺凌-低冷落"为参照)为自变量,分析不同风险组合对学生执行功能的联合影响。随后,基于年龄(<13, ≥13 岁)与性别(男、女)进行亚组分析,并通过构建乘积项评估同伴欺凌和父母手机冷落与亚组变量间的相乘交互作用。双侧检验水准 $\alpha=0.05$。

2　结果

2.1　中小学生同伴欺凌、父母手机冷落及执行功能得分　中小学生同伴欺凌得分为(15.27±5.67)分,其中言语欺凌、身体欺凌、关系欺凌分别为(5.64±2.77)(4.70±1.62)(4.93±2.07)分;父母手机冷落为(13.98±5.00)分;执行功能为(47.35±15.89)分,其中抑制控制、工作记忆得分分别为(26.44±9.00)(20.91±7.49)分。

2.2　中小学生同伴欺凌与高水平父母手机冷落检出率　中小学生同伴欺凌的总检出率为 18.2%(644 名),其中言语欺凌、身体欺凌、关系欺凌分别为 14.4%(510 名),6.7%(236 名),8.8%(313 名)。52.1%(1 847 名)的中小学生处于高水平父母手机冷落的家庭环境。

2.3　同伴欺凌和父母手机冷落与中小学生执行功能的关联　广义线性回归模型结果显示,在校正混杂因素后,同伴欺凌($\beta=0.75$, 95%$CI=0.67\sim0.84$)和父母手机冷落($\beta=0.88$, 95%$CI=0.79\sim0.98$)均与中小学生执行功能总分升高相关(P 值均<0.01)。在不同欺凌亚型中,身体欺凌对执行功能的不良影响最为显著($\beta=2.18$, 95%$CI=1.87\sim2.49$, $P<0.01$)。见表 1。

表 1　同伴欺凌和父母手机冷落与中小学生执行功能关联的线性回归分析[β 值(95%CI), $n=3\,547$]

Table 1　Linear regression analysis of association of peer bullying and parental phubbing with executive function among prmairy and secondary school students[β(95%CI), $n=3\,547$]

模型	自变量	执行功能总分	抑制控制	工作记忆
1	同伴欺凌	0.83(0.75~0.92)	0.46(0.41~0.51)	0.37(0.33~0.41)
	言语欺凌	1.62(1.44~1.80)	0.90(0.80~1.00)	0.72(0.63~0.81)
	身体欺凌	2.19(1.87~2.50)	1.18(1.01~1.36)	1.00(0.86~1.15)
	关系欺凌	2.01(1.77~2.25)	1.13(1.00~1.27)	0.88(0.76~0.99)
	父母手机冷落	0.98(0.88~1.08)	0.56(0.50~0.61)	0.43(0.38~0.47)
2	同伴欺凌	0.75(0.67~0.84)	0.42(0.37~0.47)	0.33(0.29~0.38)
	言语欺凌	1.41(1.23~1.58)	0.78(0.68~0.88)	0.63(0.54~0.71)
	身体欺凌	2.18(1.87~2.49)	1.18(1.01~1.36)	1.00(0.85~1.14)
	关系欺凌	1.78(1.54~2.01)	1.01(0.87~1.14)	0.77(0.66~0.88)
	父母手机冷落	0.88(0.79~0.98)	0.50(0.45~0.56)	0.38(0.33~0.43)

注:模型 1 未调整变量,模型 2 调整变量为年龄、性别、自评家庭关系、自评家庭经济状况、父母文化程度;P 值均<0.01。

2.4　同伴欺凌和父母手机冷落对中小学生执行功能的联合效应　联合效应分析显示,与"无欺凌-低冷落"组相比,其他同伴欺凌和各类欺凌与父母手机冷落联合暴露组的中小学生执行功能总分均升高(P 值均<0.01)。其中,同伴欺凌中,"有欺凌-高冷落"组的执行功能损伤程度最高($\beta=14.17$, 95%$CI=12.61\sim15.73$, $P<0.01$);类似的模式在抑制控制和工作记忆维度中均得到体现。见表 2。

表 2　同伴欺凌与父母手机冷落对中小学生执行功能的联合效应分析[β 值(95%CI), $n=3\,547$]

Table 2　Joint effects of peer bullying and parental phubbing with executive function among prmairy and secondary school students[β(95%CI), $n=3\,547$]

自变量	执行功能总分	抑制控制	工作记忆
同伴欺凌与父母手机冷落			
无欺凌-高冷落	6.78(5.72~7.84)	3.76(3.16~4.36)	3.02(2.51~3.52)
有欺凌-低冷落	8.75(6.62~10.89)	4.73(3.52~5.94)	4.02(3.00~5.04)
有欺凌-高冷落	14.17(12.61~15.73)	7.94(7.06~8.83)	6.23(5.48~6.97)
言语欺凌与父母手机冷落			
无欺凌-高冷落	6.97(5.93~8.01)	3.86(3.27~4.46)	3.11(2.61~3.61)
有欺凌-低冷落	8.16(5.77~10.54)	4.55(3.19~5.90)	3.61(2.47~4.75)
有欺凌-高冷落	13.76(12.05~15.47)	7.85(6.88~8.82)	5.91(5.10~6.73)
身体欺凌与父母手机冷落			
无欺凌-高冷落	7.23(6.22~8.23)	4.04(3.47~4.61)	3.19(2.71~3.66)
有欺凌-低冷落	7.91(4.60~11.22)	3.92(2.04~5.80)	3.99(2.42~5.57)
有欺凌-高冷落	14.38(11.96~16.80)	7.79(6.42~9.16)	6.59(5.44~7.74)
关系欺凌与父母手机冷落			
无欺凌-高冷落	6.89(5.88~7.90)	3.83(3.26~4.40)	3.06(2.58~3.54)
有欺凌-低冷落	10.75(7.50~13.99)	5.95(4.11~7.79)	4.79(3.25~6.34)
有欺凌-高冷落	15.96(13.93~17.98)	9.09(7.94~10.24)	6.87(5.90~7.84)

注:模型调整变量均为年龄、性别、自评家庭关系、自评家庭经济状况、父母文化程度;P 值均<0.01。

2.5　同伴欺凌和父母手机冷落与中小学生执行功能的亚组分析　亚组分析结果显示,父母手机冷落、同

伴欺凌及其各维度在不同年龄和性别亚组中与中小学生执行功能损伤的关联均有统计学意义（P 值均<0.01）。其中言语欺凌与年龄（<13，≥13 岁）在执行功能总分、抑制控制和工作记忆交互作用均有统计学意义（$P_{交互}$值均<0.01）。具体而言，言语欺凌与<13 岁中小学生的执行功能损伤程度相关（β=1.80，95%CI=1.45~2.16），而对≥13 岁中小学生的执行功能损伤程度略低（β=1.25，95%CI=1.05~1.45）（P 值均<0.01）。其他欺凌类型和父母手机冷落与年龄或性别在执行功能、抑制控制、工作记忆交互作用均无统计学意义（$P_{交互}$值均>0.05）。见表 3，4。

表 3 同伴欺凌和父母手机冷落与中小学生执行功能的年龄亚组分析[β 值（95%CI）]

Table 3 Subgroup analysis by ages of the association of peer bullying and parental phubbing with executive function among primary and secondary school students[β(95%CI)]

年龄/岁	自变量	执行功能总分	抑制控制	工作记忆
<13	同伴欺凌	0.84(0.68~1.00)	0.47(0.38~0.56)	0.37(0.30~0.45)
(n=1 495)	言语欺凌	1.80(1.45~2.16)	1.00(0.80~1.20)	0.80(0.64~0.97)
	身体欺凌	2.13(1.62~2.63)	1.19(0.91~1.47)	0.94(0.70~1.17)
	关系欺凌	1.88(1.42~2.34)	1.05(0.80~1.31)	0.82(0.61~1.04)
	父母手机冷落	0.91(0.75~1.07)	0.52(0.43~0.61)	0.39(0.31~0.47)
≥13	同伴欺凌	0.70(0.60~0.80)	0.39(0.33~0.45)	0.31(0.27~0.36)
(n=2 052)	言语欺凌	1.25(1.05~1.45)	0.69(0.58~0.81)	0.55(0.46~0.65)
	身体欺凌	2.17(1.78~2.56)	1.14(0.92~1.36)	1.03(0.85~1.21)
	关系欺凌	1.70(1.43~1.97)	0.96(0.81~1.12)	0.73(0.60~0.86)
	父母手机冷落	0.83(0.71~0.96)	0.48(0.40~0.55)	0.36(0.30~0.42)

注：模型校正性别、自评家庭关系、自评家庭经济状况、父母文化程度；P 值均<0.01。

表 4 同伴欺凌和父母手机冷落与中小学生执行功能的性别亚组分析[β 值（95%CI）]

Table 4 Subgroup analysis by genders of the association of peer bullying and parental phubbing with executive function among primary and secondary school students[β(95%CI)]

性别	自变量	执行功能总分	抑制控制	工作记忆
男	同伴欺凌	0.77(0.66~0.88)	0.42(0.35~0.48)	0.35(0.30~0.41)
(n=2 002)	言语欺凌	1.37(1.14~1.59)	0.73(0.60~0.86)	0.64(0.53~0.74)
	身体欺凌	2.28(1.91~2.64)	1.21(1.01~1.42)	1.06(0.89~1.23)
	关系欺凌	1.96(1.62~2.30)	1.10(0.91~1.29)	0.86(0.70~1.02)
	父母手机冷落	0.88(0.74~1.02)	0.51(0.44~0.59)	0.37(0.30~0.43)
女	同伴欺凌	0.70(0.57~0.84)	0.41(0.33~0.49)	0.30(0.23~0.36)
(n=1 545)	言语欺凌	1.48(1.18~1.77)	0.87(0.70~1.04)	0.61(0.47~0.75)
	身体欺凌	1.80(1.22~2.38)	1.02(0.69~1.35)	0.78(0.51~1.06)
	关系欺凌	1.52(1.19~1.86)	0.88(0.69~1.07)	0.65(0.49~0.81)
	父母手机冷落	0.85(0.70~0.99)	0.47(0.39~0.55)	0.38(0.31~0.45)

注：模型校正年龄、自评家庭关系、自评家庭经济状况、父母文化程度；P 值均<0.01。

3 讨论

本研究发现，中小学生同伴欺凌受害总检出率为 18.2%，低于 2022 年在安徽省中小学生中的调查结果（30.0%）[23]。此外，本研究进一步表明，同伴欺凌与中小学生执行功能受损关联有统计学意义，与在美国中小学生中的研究结论一致[12,24]。同伴欺凌作为慢性社会应激源，可能通过引发持续反刍思维[25]，消耗大量认知资源[26]，进而损害执行功能。值得注意的是，身体欺凌的负面效应强于言语和关系欺凌，可能与其直接侵害个体安全感与身体完整性，进一步激活应激系统并损害前额叶功能有关[27]。

父母手机冷落对中小学生执行功能也具有独立损害作用。作为一种情感忽视，父母手机冷落可能通过双重路径损害中小学生的执行功能：第一，减少高质量亲子互动[28]，剥夺中小学生通过观察、模仿学习情绪管理与行为抑制等核心技能的机会；第二，持续诱发负面情绪[29]，迫使中小学生动用认知资源进行调节，导致资源耗竭。这两种机制共同构成“技能习得受阻”与“认知资源耗竭”的双重困境，从而阻碍执行功能的正常发展。

本研究还发现，同伴欺凌与父母手机冷落对执行功能损害存在联合效应。在神经生物学层面，双重压力可协同激活下丘脑-垂体-肾上腺轴，使前额叶皮层长期暴露于高水平皮质醇的神经毒性环境[30]，导致灰质体积减小及突触可塑性受损[31]，加重执行功能损伤。在社会心理学层面，依据生态系统理论，个体发展嵌套于由微观、中间系统等构成的层级环境中[32]。学校与家庭作为关键微观系统，其功能失调可通过微观系统间互动关系形成风险联动[32]。具体而言，当中小学生同时暴露于两种风险时，双重支持系统的失效不仅消耗了情绪调节所需的认知资源，还阻断了支持资源获取途径，导致认知缓冲机制崩溃、从而加重执行功能损害。

性别和年龄亚组分析结果显示，言语欺凌与年龄在执行功能上的交互作用有统计学意义，其对<13 岁中小学生执行功能的损害效应略高于≥13 岁中小学生。这一差异可从心理与神经机制两个层面进行解释。在心理层面，言语欺凌主要通过侮辱等方式直接攻击个体的自我认知概念，对中小学生人格发展及心理健康构成潜在而持久的伤害[33]。<13 岁中小学生处于情境感知能力发展的关键阶段，对社会评价具有较高敏感性[34]，更易将言语欺凌内化为消极自我认知，从而加重执行功能负担。在神经机制层面，青春期中后期前额叶的髓鞘化与功能连接的稳定化，是高级认知控制环路趋于成熟的重要基础[35]。这一神经系统的成熟可能为≥13 岁中小学生形成更复杂的认知策略以缓解言语欺凌的消极影响提供了内在基础。

综上所述，本研究表明同伴欺凌与父母手机冷落及二者联合效应均与中小学生执行功能受损存在关联。其中，言语欺凌与<13 岁中小学生执行功能受损的关联尤为明显。提示干预策略应同时关注家庭与学校环境，通过优化亲子互动和校园支持体系减少同

伴欺凌和父母手机冷落行为;同时,对<13 岁中小学生实施针对性干预,促进中小学生执行功能的健康发展。然而,本研究也存在一定局限性:首先,横断面研究设计限制了因果关系的推断;其次,自我报告数据可能存在共同方法偏差,客观性不足,且量表对行为多维特征的捕获有限;再者,尽管已控制多个混杂因素,但仍不能排除未测量因素的影响,如抑郁症状等;此外,研究样本局限于深圳市中小学生,限制了结果的外推性。未来研究可采用纵向设计,结合客观测量指标与更全面的变量控制,并纳入多中心样本,进一步探讨同伴欺凌和父母手机冷落与中小学生执行功能的关联及其机制。

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