· 儿少卫生与妇幼保健 ·

山西省中小学生校园欺凌受害与自杀行为的关联：社会资本和焦虑的链式中介作用

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摘要：目的 探讨社会资本和焦虑在校园欺凌与欺凌受害者自杀行为间的链式中介作用，为防范中小学生自杀提供理论依据。**方法** 采用横断面调查设计，于 2024 年 6 - 7 月，采用多阶段整群随机抽样方法，对山西省大同市、吕梁市和临汾市 36 所学校 8 854 名学生调查，使用特拉华欺负受害量表、欧洲网络欺凌干预问卷、青少年学生社会资本量表、广泛性焦虑量表和自杀行为问卷调查。采用 Pearson 相关分析变量间关联，使用 *Wald* 检验传统/网络欺凌对自杀行为标准化路径系数的差异性，并通过结构方程模型检验校园欺凌受害与自杀行为的链式中介效应。**结果** 传统与网络欺凌均与欺凌受害者自杀行为呈正相关，且两类欺凌与自杀行为的关联存在显著差异（$W = 115.26$，$P < 0.001$）。社会资本仅在网络欺凌与自杀行为间起中介作用，效应值为 0.016（95% *CI*：0.010 ~ 0.025），焦虑在传统/网络欺凌与自杀行为间均起中介作用，效应值分别为 0.061（95% *CI*：0.046 ~ 0.077）、0.060（95% *CI*：0.045 ~ 0.078）。社会资本、焦虑在传统/网络欺凌与自杀行为间均存在链式中介效应，效应值分别为 0.030（95% *CI*：0.024 ~ 0.037）、0.010（95% *CI*：0.007 ~ 0.014），分别占总效应的 8.0%、2.0%（P 均 < 0.01）。**结论** 社会资本和焦虑在校园欺凌与自杀行为间起链式中介作用。应关注欺凌受害者，提高其社会资本，缓解焦虑以减少自杀行为。

关键词：传统欺凌；网络欺凌；社会资本；焦虑；自杀行为

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Association between school bullying victimization and suicidal behavior among primary and middle school students, Shanxi: chain mediation role of social capital and anxiety

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Abstract: Objective To explore the chain mediating role of social capital and anxiety between school bullying and suicidal behavior of bullying victims, and to provide a theoretical basis for preventing the suicidal behavior among primary and middle school students. **Methods** A cross - sectional survey design was employed. A total of 8 854 school students from 36 schools in Datong, Lvliang, and Linfen cities of Shanxi province were included as study participants in June - July 2024 using a multi - stage whole cluster random sampling method, and questionnaires were administered using the Delaware Bullying Victimization Scale - Student, European Cyberbullying Intervention Project Questionnaire, Adolescent Students' Social Capital Scale, Generalized Anxiety Disorder Scale - 7 Item, and the Suicidal Behavior Questionnaire. Pearson correlation analysis was used to examine associations between variables. *Wald* tests assessed differences in standardized path coefficients for standardized bullying and cyberbullying on suicidal behavior. Structural equation modeling examined the chained mediating effects of school bullying victimization on suicidal behavior. **Results** Both traditional and cyberbullying were positively correlated with suicidal behavior among bullying victims, and the associations between these two types of bullying and suicidal behavior exhibits significant differences ($W = 115.26$, $P < 0.001$). Social capital mediated only between cyberbullying and suicidal behavior, with an effect value of 0.016 (95% *CI*: 0.010 - 0.025), and anxiety mediated between both traditional bullying/cyberbullying and suicidal behavior, with effect values of 0.061 (95% *CI*: 0.046 - 0.077), 0.060 (95% *CI*: 0.045 - 0.078). Social capital and anxiety all had a chain - mediated effects between traditional bullying/cyberbullying and suicidal behavior, with

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effect values of 0.030 (95% *CI*: 0.024 – 0.037) and 0.010 (95% *CI*: 0.007 – 0.014), which accounted for 8.0% and 2.0% of the total effect, respectively ($P < 0.01$). **Conclusion** Social capital and anxiety have chain – mediated effects between school bullying and suicidal behavior. Attention should be paid to bullying victims to improve their social capital and reduce anxiety, which can help prevent suicidal behaviors among primary and middle school students.

Keywords: Traditional bullying; Cyberbullying; Social capital; Anxiety; Suicidal behavior

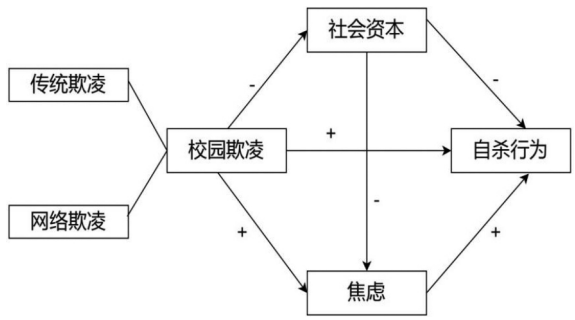
自杀是全球性公共卫生问题,是 15 ~ 19 岁青少年的第四大死因[1]。自杀行为分为自杀意念、自杀计划和自杀企图[2]。校园欺凌指一名或多名学生对同龄人反复故意的攻击行为[3],包括传统欺凌和网络欺凌[4],两者均会危害中小学生健康[5],引发受害者焦虑[6]、自杀[7]。

传统欺凌包括身体欺凌、言语欺凌、关系欺凌,多以面对面身体攻击、言语侮辱等直观形式呈现,易被周围人察觉且能够对受害者进行疏导干预。网络欺凌是欺凌在网络虚拟世界的扩展[8],因匿名性、持续性及不受空间限制等特点,受害者无法在短时间内溯源与控制网络欺凌行为,这可能对受害者心理健康造成更为隐匿、长期且严重影响[9],增加心理健康问题外化行为可能。因此,本研究假设两类欺凌对欺凌受害者自杀行为的影响可能存在差异。

研究发现,青少年遭遇校园欺凌会降低他们对社会关系的信任,损害其社会资本[10]。社会资本是自杀行为的重要保护因素[11-12]。科尔曼(Coleman)将社会资本定义为一种存在于社会关系结构中的资源,通过促进个体或集体目标实现而产生价值[13]。社会资本理论强调青少年可从家庭、学校和社区的关系网络获取资源和支持[13]。研究表明,社会资本可以抑制青少年自杀行为发生,社会资本水平越高,青少年自杀风险越低,反之,风险增加[14]。

焦虑是青少年中最常见的心理健康疾病之一[15],也是受欺凌后常见心理后果[16],并在欺凌与受害者自杀行为间起中介作用[17],已有研究显示社会资本水平与焦虑存在显著关联[18],因此两者可能形成先后作用机制。欺凌受害者学校归属感越低,其焦虑症状越严重[19];而有较多社会支持的个体,往往能获得更多的社会支持和资源,面临困境时易获得问题解决的资源,从而降低焦虑发生[20-21]。同时,社会支持缓冲器理论模型认为社会支持在高压情境下才会发挥保护作用[22]。因此,本研究假设当青少年遭受欺凌时,社会资本作为一种保护性资源,缓冲欺凌带来的焦虑,进而降低自杀风险。

现研究多将社会资本[10]和焦虑[17]作为单独中介路径,鲜有研究揭示校园欺凌→社会资本→焦虑→自杀行为之间的作用机制,因此本文对其之间的关系作出假设,见图 1。



注:图中的“+”与“-”用于标示本研究理论模型中各变量间的假设相关关系。其中“-”表示假设变量间的负相关关系,具体为:校园欺凌受害(传统欺凌与网络欺凌)与个体的社会资本水平呈负相关,其社会资本水平分别与焦虑、自杀行为呈负相关。“+”表示假设变量间的正相关关系,具体为:校园欺凌受害(传统欺凌与网络欺凌)分别与焦虑、自杀行为呈正相关;焦虑与自杀行为呈正相关。

图 1　链式中介效应假设框架

Fig. 1　Hypothetical framework for chained intermediation effects

1　对象与方法

1.1　*对象*　2024 年 6—7 月,采用多阶段整群随机抽样,选取山西省 3 个市(大同市、吕梁市、临汾市),再从 3 个市中各抽取 2 个县;采用抽签法,每个县按城乡分层随机抽取小学、初中各 1 所,由于城镇化进程与农村教育“空心化”问题[23],多数抽样农村地区未建高中,或将原有高中与城镇高中进行迁址合并,故从抽样县统一随机抽取 2 所高中进行问卷调查。最终共纳入 36 所学校 4 ~ 12 年级在校生作为被试对象[24]。共发放问卷 9 410 份,有效问卷 8 854 份,有效率为 94.1%。本研究通过山西医科大学伦理委员会批准(批号:2024007),获取受访对象或其监护人知情同意后开展后续调查。

1.2　*方法*　采用自编问卷收集被试对象的人口统计学信息,主要包括性别、年级、是否独生子女、生源地、学校类型等。

特拉华欺负受害量表(Delaware Bullying Victimization Scale – Student, DBVS – S)中文版由谢家树等[25]修订,共 13 个条目,使用身体欺凌、言语欺凌、关系欺凌三个维度,按 6 点 Likert 计分法(1 ~ 6 分),其中条目 13 不记分,即“我在这所学校被欺凌了”,总分为 12 ~ 72 分,分数越高,受欺凌程度越严重。本研究该量表 Cronbach α 系数为 0.936。

采用中文版欧洲网络欺凌干预问卷(European Cyberbullying Intervention Project Questionnaire, ECIPQ)[26]的 4 个条目反应青少年网络受欺凌程度。按 5 点 Likert 计分法(0 ~ 4 分),总分为 0 ~ 16 分,分数越高,受网络欺凌程度越高。本研究该问卷 Cronbach α 系数为 0.910。

使用 Paiva 等[27]人修订的青少年学生社会资本量表(Social Capital Questionnaire for Adolescent Students, SCQ - AS)测评,该量表共 12 个条目,按 3 点 Likert 计分法(1 ~ 3 分),其中条目 9 和 10 采用反向计分方式。总分为 12 ~ 36 分,总分越高,社会资本水平越高。本研究该量表 Cronbach α 系数为 0.834。

采用广泛性焦虑量表(Generalized Anxiety Disorder Scale - 7 Item, GAD - 7)[28]评估青少年焦虑水平,该量表共 7 个条目,按 4 点 Likert 计分法(0 ~ 3 分),总分 0 ~ 21 分,得分越高,焦虑症状越严重。本研究该量表 Cronbach α 系数为 0.951。

参考既往研究[17],选取“最近一年,您认真地考虑过自杀吗?”“最近一年,您是否制定过自杀计划?”“最近一年,您是否真正尝试过自杀?”三个条目分别测量自杀意念、自杀计划、自杀尝试。按 5 点 Likert 计分法(0 ~ 4 分),总分为 0 ~ 12 分,得分越高,自杀倾向越严重。本研究该问卷 Cronbach α 系数为 0.925。

1.3 *质量控制* 按照统一工作方案、问卷和工作流程开展调查工作。调查前,培训并考核工作人员,合格后上岗;调查阶段,调查员全程监督并指导调查对象独立完成问卷填写,并实时解答疑问;调查后,质控员检查问卷,核对纠正问题,确保数据准确完整。

1.4 *统计分析* 使用 SPSS 26.0 进行共同方法偏差检验,描述统计和 Pearson 相关分析。使用 Mplus 8.3 构建结构方程模型检验链式中介效应,效应值选用偏差校正百分位 Bootstrap 法估计,重复抽样 5 000 次提高统计推断稳健性。并通过 *Wald* 检验传统欺凌与网络欺凌对自杀行为的标准化路径系数进行差异性比较。检验水准 $\alpha = 0.05$。

2 结 果

2.1 *共同方法偏差* 纳入传统欺凌、网络欺凌、社会资本、焦虑、自杀行为全部条目。结果显示,特征根大于 1 的因子共 7 个,其中第一个因子解释率为 32.3%(<40%),因此本研究数据不存在明显的共同方法偏差[29]。

2.2 *研究对象基本情况* 研究对象中男生 4 550 人(51.4%),女生 4 304 人(48.6%);小学 3 348 人(37.8%),初中 1 887 人(21.3%),高中 3 619 人(40.9%);农村学生 5 259 名(59.4%),城市学生 3 595名(40.6%);平均年龄(13.83 ± 2.46)岁。

2.3 *描述性统计及相关分析* Pearson 相关分析结果显示,传统欺凌、网络欺凌、焦虑、自杀行为两两之间均呈正相关($P < 0.01$),社会资本与传统欺凌、网络欺凌、焦虑、自杀行为均呈负相关($P < 0.01$)。见表 1。

表 1 各变量之间的平均数、标准差和相关系数(r 值,$n = 8\ 854$)

Table 1 Mean, standard deviation and correlation coefficient between variables(r, $n = 8\ 854$)

变量	得分($\bar{x} \pm s$)	1	2	3	4	5
1 传统欺凌	15.06 ± 6.18	1.00				
2 网络欺凌	0.46 ± 1.72	0.50[a]	1.00			
3 社会资本	32.39 ± 4.37	-0.34[a]	-0.24[a]	1.00		
4 焦虑	3.10 ± 4.21	0.40[a]	0.46[a]	-0.38[a]	1.00	
5 自杀行为	0.43 ± 1.59	0.36[a]	0.51[a]	-0.26[a]	0.39[a]	1.00

注:a: $P < 0.01$。

2.4 *社会资本和焦虑在传统欺凌与自杀行为间的链式中介效应检验* 模型拟合指标:$\chi^2/df = 19.38$, $SRMR = 0.038 < 0.08$, $CFI = 0.975 > 0.90$, $TLI = 0.970 > 0.90$, $RMSEA = 0.046 < 0.08$。虽然 $\chi^2/df > 5$,但在样本量大的时候是可以接受的[30]。由于多个项目易造成潜变量的膨胀测量误差,因此将变量按照不同维度进行打包处理[31],将社会资本量表的四个维度[27]:学校凝聚力(4 个题目)、学校友谊(3 个题目)、邻里社会凝聚力(2 个题目)、学校/社区信任(3 个题目)打包处理。控制性别和年龄,对各个变量进行中介效应检验。标准化结果显示,传统欺凌→社会资本→自杀行为路径系数 95% *CI* 为(-0.002 ~ 0.021),说明该中介效应不显著。传统欺凌→焦虑→自杀行为路径系数 95% *CI* 为(0.046 ~ 0.077),占总效应的 16.2%($P < 0.05$),提示中介效应显著。传统欺凌→社会资本→焦虑→自杀行为路径系数 95% *CI* 为(0.024 ~ 0.037),说明中介效应显著,占总效应的 8.0%($P < 0.05$)。见表 2。

2.5 *社会资本和焦虑在网络欺凌与自杀行为间的链式中介效应检验* 模型拟合指标:$\chi^2/df = 23.94$,

SRMR = 0.046 < 0.08, *CFI* = 0.969 > 0.90, *TLI* = 0.963 > 0.90, *RMSEA* = 0.051 < 0.08。标准化结果显示,网络欺凌→社会资本→自杀行为和网络欺凌→焦虑→自杀行为路径系数 95% *CI* 分别为(0.010 ~ 0.025)、(0.045 ~ 0.078),提示中介效应显著,分别占总效应的 3.1%、11.5%。网络欺凌→社会资本→焦虑→自杀行为路径系数 95% *CI* 为(0.007 ~ 0.014),说明社会资本和焦虑在网络欺凌和自杀行为间链式中介效应有统计学意义,占总效应的 2.0%(P < 0.05)。见表 2。

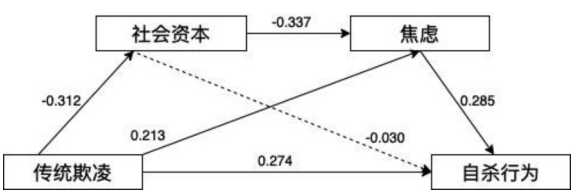
表 2　中介效应显著性检验 Bootstrap 分析(n = 8 854)

Table 2　Bootstrap analysis of significance tests for mediated effects (n = 8 854)

路径	标准化的间接效应值(95% *CI*)
传统欺凌→社会资本→自杀行为	0.009(−0.002 ~ 0.021)
传统欺凌→焦虑→自杀行为	0.061(0.046 ~ 0.077)[a]
传统欺凌→社会资本→焦虑→自杀行为	0.030(0.024 ~ 0.037)[a]
网络欺凌→社会资本→自杀行为	0.016(0.010 ~ 0.025)[a]
网络欺凌→焦虑→自杀行为	0.060(0.045 ~ 0.078)[a]
网络欺凌→社会资本→焦虑→自杀行为	0.010(0.007 ~ 0.014)[a]
传统欺凌与自杀行为的总间接效应	0.100(0.084 ~ 0.117)[a]
网络欺凌与自杀行为的总间接效应	0.087(0.069 ~ 0.106)[a]

注:a P < 0.01。

2.6　*传统欺凌和网络欺凌对自杀行为路径系数的差异性检验*　如图 2、图 3 所示,传统欺凌和网络欺凌对自杀行为的直接效应显著,标准化效应值分别为 0.274 和 0.437。本研究通过 *Wald* 检验对两类欺凌行为的效应值进行差异比较,结果显示,传统欺凌与网络欺凌对自杀行为的路径系数差异显著(W = 115.26, P < 0.001)。结果表明,网络欺凌与自杀行为的关联强度显著高于传统欺凌。



注:图中实线表示路径显著(P < 0.001);虚线表示路径不显著(P > 0.05)。

图 2　社会资本和焦虑在传统欺凌与自杀行为间的链式中介效应路径

Fig. 2　Chain – mediated effect paths of social capital and anxiety in traditional bullying and suicidal behavior

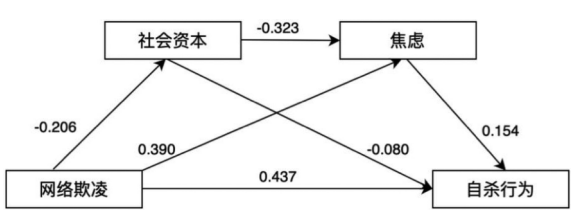


图 3　社会资本和焦虑在网络欺凌与自杀行为间的链式中介效应路径

Fig. 3　Chain – mediated effect paths of social capital and anxiety in cyberbullying and suicidal behavior

3　讨　论

本研究探讨了社会资本和焦虑在校园欺凌与欺凌受害者自杀行为的作用机制。研究发现,校园欺凌与自杀行为存在正向关联,其中网络欺凌对受害者危害更大;社会资本和焦虑在传统/网络欺凌与自杀行为间均起链式中介作用;社会资本仅在网络欺凌与自杀行为间起部分中介作用,焦虑在传统/网络欺凌与自杀行为间均起部分中介作用。

3.1　*校园欺凌与欺凌受害者自杀行为的关系*　与既往研究一致,两类欺凌均与自杀行为呈正相关[32-33]。本研究发现,传统/网络欺凌与受害者自杀行为的关联存在差异,网络欺凌对青少年的危害比传统欺凌更严重。以往研究发现,网络欺凌受害者产生内化行为的风险更高[34]。传统欺凌受害者在校可能受教师保护,在家也能免受欺凌。而网络欺凌使欺凌者不受时空限制,受害者即便脱离学校环境仍可能持续遭受攻击,使其处于难以躲避欺凌的状态[8],这可能会削弱个体对社会支持的感知[10],焦虑程度高于传统欺凌受害者[35],进而使其产生自杀行为。

3.2　*社会资本的中介作用*　本研究发现,社会资本仅在网络欺凌与自杀行为间起中介作用。与既往研究一致,网络欺凌削弱了青少年社会资本,欺凌受害者的学校归属感较低,缺乏家庭支持[36]。欺凌受害者易对周围环境不信任,因此被同伴孤立或主动孤立同伴[37],社会资本积累较少。社会资本与网络欺凌受害者自杀行为存在负向关联。有研究显示,家庭支持水平和信任水平较低的青少年,其自杀意念比率更

高[38]。社会资本在传统欺凌与欺凌受害者自杀行为间的中介作用不显著。相较于网络欺凌,传统欺凌与面对面身体冲突、言语侮辱相关,可能通过内化行为如焦虑来影响受害者自杀行为[16, 39]。因此,传统欺凌与自杀行为的关联,可能与内化症状相关,而非社会资本的中介作用。

3.3 *焦虑的中介作用* 焦虑在传统/网络欺凌和自杀行为间起部分中介作用。遭受传统或网络欺凌均属于负性生活事件,可能引发焦虑、抑郁等不良情绪反应。一项研究表明,遭受传统欺凌和网络欺凌的青少年患焦虑症的可能性大约是未参与校园欺凌学生的 3 到 3.7 倍[16]。自杀的自我逃避理论认为[40],有焦虑症状的青少年如果得不到他人的支持和帮助,会感到无助,进而产生自杀行为。

3.4 *社会资本和焦虑在校园欺凌和自杀行为间的链式中介作用* 本研究进一步揭示了社会资本与焦虑在校园欺凌与欺凌受害者自杀行为间起链式中介作用,即受到校园欺凌的青少年,其社会资本可能会减少,进而引发焦虑情绪,从而增加其自杀行为风险。青少年面对压力性事件时,会降低对周围人的信任水平,产生消极认知,导致其采用消极回避的应对方式[38],社会支持感知降低[41]。缺少来自父母、老师、同伴的支持,可能进一步降低受害者的安全感[42]并增加孤独感[43],从而提升焦虑的风险。资源保存理论认为,个体有持有、保护和获取资源的动机,社会资本是个体应对逆境的资源,当这些资源受损时,个体会产生压力和紧张[44]。因此,社会资本的缺失会直接破坏青少年的安全感,进而导致焦虑情绪。有研究表明,社区凝聚力低下可能导致儿童出现抑郁和焦虑,而高社区凝聚力能缓冲带来的不良情绪[45-46],从而减少自杀行为的发生。

综上所述,社会资本和焦虑在校园欺凌与欺凌受害者自杀行为间起链式中介作用。这提示,学校、社区、同伴和家庭可以通过提高欺凌受害者社会资本水平,减轻其焦虑症状,从而改善心理健康,减少自杀行为发生。本研究存在一定局限性,本研究基于自填式问卷,可能存在数据偏倚,且横断面设计无法确定变量间因果关系。此外,本研究未分析同时遭受传统欺凌与网络欺凌的群体,未来的研究可重点分析。

利益冲突声明 本研究不存在任何利益冲突

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