

# 儿童青少年体型自我评价与抑郁症状关系的研究

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**【摘要】** 目的 了解儿童青少年体型自我评价和体重指数(BMI)评价结果的一致性,分析体型与抑郁症状的关系。方法 以2010年全国学生体质与健康调研安徽省池州市5555名9~18岁儿童青少年为研究对象,比较体型自我评价和BMI评价结果的一致性及其与抑郁症状的关系。结果 男女生体型自我评价和BMI评价结果具有轻度一致性( $Kappa=0.217, P=0.000; Kappa=0.203, P=0.000$ )。43.0%的男生和37.5%的女生错误估计了自己的体型,男女生体型低估率分别为35.9%和23.3%,高估率分别为7.1%和14.2%,差异有统计学意义( $\chi^2=145.223, P=0.000$ )。logistic多因素回归分析结果显示,体型自我评价和体型错估均与抑郁症状存在统计学关联。与自我评价正常组比较,自我评价消瘦、超重和肥胖的抑郁症状检出率比值比分别为1.255(95%CI: 1.066~1.478)、1.538(95%CI: 1.275~1.856)和1.713(95%CI: 1.035~2.834),体型高估和低估学生抑郁症状的风险分别是一致组的1.705倍(95%CI: 1.382~2.105)和1.241倍(95%CI: 1.059~1.454)。结论 儿童青少年体型自我评价与BMI评价结果一致性轻微,体型错估是抑郁症状的危险因素。应开展以生活技能为核心的综合性干预措施,促进儿童青少年身心健康。

**【关键词】** 体型; 体重指数; 抑郁; 自我评价; 儿童青少年

**Association between self-assessed somatotypes and symptom depression among children and adolescents** ZU Ping, ZHAO Yu-qiu, XU Shao-jun, HAO Jia-hu, SU Pu-yu, ZHU Peng, TAO Fang-biao. Department of Child and Maternal Health Care, Anhui Medical University, Hefei 230032, China  
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**【Abstract】 Objective** To examine the association between self-assessed somatotypes and depression related symptoms. **Methods** The study sample included 5555 students aged 9 to 18 years who had attended the Physical Fitness and Health Surveillance of Chinese School Students (2010) in Chizhou city, Anhui province. Association between self-assessed somatotypes, body mass index (BMI) and depression symptom were examined. **Results** There was a slight consistency between self-assessed somatotypes and BMI in both boys and girls ( $Kappa=0.217, P=0.000; Kappa=0.203, P=0.000$ ). Significant difference in the prevalence of depression was found among weight misperception groups in both genders ( $\chi^2=145.223, P=0.000$ ). The prevalence of underestimation of somatotypes was significantly higher in boys than in girls, while the result was reverse on the prevalence of overestimation. Additionally, the prevalence of depression was higher in girls than in boys ( $\chi^2=5.199, P=0.023$ ). Through logistic regression, data showed that self-assessed somatotypes and miscalculated groups were significantly associated with depressive symptoms. Compared to the group that self-assessment as being normal, those students when self-assessed as being slim, overweight or obesity were more likely to be depressive, with odds ratio (ORs) as 1.255 (95%CI: 1.066-1.478), 1.538 (95%CI: 1.275-1.856) and 1.713 (95%CI: 1.035-2.834), respectively. Overestimated and underestimated somatotypes appeared to be risk factors causing symptoms of depression ( $OR=1.705, 95\%CI: 1.382-2.105; OR=1.241, 95\%CI: 1.059-1.454$ ). **Conclusion** Slight consistency was found between self-assessed somatotypes and BMI, while the misjudged somatotypes were the risk factor related to depressive symptoms. It was suggested that life skills education should be carried out as preventive intervention approach, to improve the physical and mental health well-being of children and adolescents.

**【Key words】** Somatotypes; Body mass index; Depression; Self-assessment; Children and adolescents

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儿童青少年肥胖已成为全球高度关注的公共卫生问题<sup>[1,2]</sup>。近年来,儿童青少年肥胖与社会心理学问题的关联研究越来越受到关注,超重和肥胖与同伴欺负、抑郁、不正常的饮食行为等社会心理健康问题相关<sup>[3-5]</sup>。越来越多的儿童青少年关注自己的体重和体型,对体型的不满可导致诸多不良减肥行为,如催吐、禁食、滥用减肥药或泻药等,甚至自杀<sup>[6,7]</sup>。本研究对参加 2010 年全国学生体质与健康调研的安徽省池州市 5555 名 9~18 岁中小学生进行体型和抑郁症状评定,探讨儿童青少年体型自我评价(自评)和体重指数(BMI)评价的一致性及其与抑郁症状的关系,为儿童青少年心理干预提供科学依据。

### 对象与方法

1. 对象:采用分层、随机整群抽样方法抽取安徽省池州市 12 所中小学 9~18 岁汉族城乡男女学生,有效样本量为 5555 人,男生 2750 人,女生 2805 人。剔除残疾或有严重慢性疾病(如心脏病、肾病等疾病)的学生。调查得到每名对象的同意,签订知情同意书。

#### 2. 方法:

(1) 体型评定:①自评:采用自编《中国儿童生长发育自评调查表》,由儿童青少年对体型进行自评,分为消瘦、正常、超重和肥胖组。②BMI 评定:严格按照《2010 年全国学生体质健康调研工作手册》的要求进行身高、体重指标的测量,计算 BMI [体重(kg)/身高(m)<sup>2</sup>]。按照中国肥胖问题工作组(WGOC)推荐的中国学龄儿童青少年 BMI 超重、肥胖评价分类标准,以不同年龄和性别的 BMI 值将研究对象评价出超重组和肥胖组;再用 WHO 2007 年推荐的 BMI 标准评价出消瘦组,其余则全部纳入正常组。

(2) 抑郁症状评定:采用儿童抑郁症状量表(Children's Depression Inventory, CDI)中文版进行抑郁症状评定,该量表包括 27 个项目,采用 0~2 级评分,19 分为抑郁症状的划界分。调查前对调查员统一进行培训,统一调查方法和指导语。以班级为单位,采用无记名的方式由学生独立填写问卷,并当场收回。

(3) 统计学分析:应用《2010 年全国学生体质健康调研数据录入统计系统》进行数据录入。应用 SPSS 16.0 软件对数据进行  $\chi^2$ 、Kappa 检验

和多元 logistic 回归分析。

### 结 果

1. 体型自评和 BMI 评价:32.5%和 23.4%的男、女生自评为消瘦,51.9%和 57.5%的男、女生自评为正常,13.7%和 17.9%的男、女生自评为超重,1.9%和 1.2%的男、女生自评为肥胖。男女生体型自评的差异有统计学意义( $\chi^2=67.637, P=0.000$ ),其中 14~18 岁各年龄组男女生间差异均有统计学意义,表现为初、高中男生自评为消瘦的比例高于女生,而小学阶段相反。

BMI 评价男女生消瘦检出率为 4.6%和 3.7%,正常检出率为 81.1%和 88.8%,超重检出率为 10.3%和 5.5%,肥胖检出率为 4.0%和 1.9%。男女生体型 BMI 评价差异有统计学意义( $\chi^2=72.455, P=0.000$ ),除 9、13 和 14 岁组,其余各年龄组男女生差异均有统计学意义,表现为各年龄组男生超重、肥胖率高于女生。

2. 体型自评和 BMI 评价的一致性比较:男女生体型自评和 BMI 评价结果具有一致性,但程度均为轻(Kappa=0.217, 95%CI: 0.191~0.244,  $P=0.000$ ); Kappa=0.203, 95%CI: 0.177~0.230,  $P=0.000$ ),见表 1。43.0%的男生和 37.5%的女生都错误估计了自己的体型,男女生体型低估率分别为 35.9%(986/2750)和 23.3%(654/2805),高估率分别为 7.1%(196/2750)和 14.2%(397/2805),差异有统计学意义( $\chi^2=145.223, P=0.000$ )。

3. 不同性别及体型评估组间抑郁症状检出比较:男女生抑郁症状检出率分别为 16.1%(444/2750)和 18.7%(524/2850),女生高于男生,差异有统计学意义( $\chi^2=6.204, P=0.013$ )。不同体型估计组抑郁症状检出率的差异有统计学意义( $\chi^2=7.796, P=0.020$ ;  $\chi^2=22.086, P=0.000$ ),以高估组抑郁症状检出最高,一致组最低(表 2)。

4. 体型自我评价与抑郁症状的关系:分别以性

表 1 儿童青少年体型自我评价与 BMI 评价结果的一致性比较

BMI 评价	自 评							
	男 生				女 生			
	消瘦	正常	超重	肥胖	消瘦	正常	超重	肥胖
消瘦	98(77.8)	24(19.0)	4(3.2)	0(0)	79(76.0)	22(21.2)	3(2.8)	0(0)
正常	791(35.5)	1281(57.4)	138(6.2)	21(0.9)	577(23.1)	1553(62.3)	348(14.0)	14(0.6)
超重	1(0.4)	107(37.7)	167(58.8)	9(3.1)	0(0)	34(21.9)	111(71.6)	10(6.5)
肥胖	3(2.8)	15(13.8)	69(63.3)	22(20.2)	0(0)	4(7.4)	39(72.2)	11(20.4)

注:括号外数据为人数,括号内数据为构成比(%);男性各体型组间 Kappa=0.217, 95%CI: 0.191~0.244,  $P=0.000$ ;女性各体型组间 Kappa=0.203, 95%CI: 0.177~0.230,  $P=0.000$

表 2 儿童青少年不同性别及体型评估组间抑郁症状检出情况比较

自评与 BMI 的一致性	抑郁症状检出						$\chi^2$ 值	P 值
	男生			女生				
	人数	阳性	阴性	人数	阳性	阴性		
低估	986	172(17.4)	814(82.6)	654	127(19.4)	527(80.6)	6.204	0.013
一致	1568	230(14.7)	1338(85.3)	1754	291(16.6)	1463(83.4)		
高估	196	42(21.4)	154(78.6)	397	106(26.7)	291(73.3)		
$\chi^2$ 值	7.796			22.086				
P 值	0.020			0.000				

注:括号外数据为人数,括号内数据为构成比(%)

别、年龄、城乡、BMI 评价体型、自评体型和体型误判为自变量,以抑郁症状为因变量的单因素 logistic 回归分析结果表明,除 BMI 评价体型外,性别、年龄、城乡、自评体型和体型误判均与抑郁症状有关( $P$  值均  $< 0.05$ ),见表 3。以抑郁症状为因变量,以年龄、性别、城乡为控制变量,分别以体型自我评价和体型错估情况为自变量建立多因素 logistic 回归模型(表 4)。分析结果显示,体型自评和体型错估均与抑郁症状存在统计学关联。与体型自评正常组相比,自评消瘦、超重和肥胖抑郁症状的风险分别为 1.255 倍(95% CI: 1.066 ~ 1.478)、1.538 倍(95% CI: 1.275 ~ 1.856)和 1.713 倍(95% CI: 1.035 ~ 2.834);与正确评价自己体型的一致组相比,体型高估和低估儿童青少年抑郁症状的风险分别是 1.705 倍(95% CI: 1.382 ~ 2.105)和 1.245 倍(95% CI: 1.060 ~ 1.454)。

表 3 儿童青少年抑郁症状单因素 logistic 回归分析

变量	$\beta$	Wald 值	P 值	OR 值	95%CI
性别					
男	-	-	-	1	-
女	0.177	6.195	0.013	1.193	1.038 ~ 1.371
年龄	0.047	14.922	0.000	1.048	1.023 ~ 1.073
城乡					
城镇	-	-	-	1	-
乡村	-0.252	12.666	0.000	0.777	0.676 ~ 0.893
BMI 评价体型					
正常	-	-	-	1	-
消瘦	-0.099	0.291	0.590	0.906	0.632 ~ 1.298
超重	-0.011	0.007	0.935	0.989	0.764 ~ 1.281
肥胖	0.064	0.096	0.757	1.066	0.712 ~ 1.595
自评体型					
正常	-	-	-	1	-
消瘦	0.206	6.184	0.013	1.229	1.045 ~ 1.445
超重	0.456	22.830	0.000	1.577	1.308 ~ 1.901
肥胖	0.559	4.783	0.029	1.749	1.060 ~ 2.885
体型误判					
一致	-	-	-	1	-
低估	0.181	5.160	0.023	1.199	1.025 ~ 1.402
高估	0.581	29.937	0.000	1.788	1.452 ~ 2.202

## 讨 论

本研究显示,儿童青少年男女生间体型自评和 BMI 评价差异均有统计学意义。51.9% 和 57.5% 的男女生自评体型为正常,而 BMI 评价男女生体型正常检出率为 81.1% 和 88.8%,表明儿童青少年对体型的自评倾向于太瘦或太胖。

14 ~ 18 岁年龄组女生自评超重及男生自评消瘦的比例明显增多,提示青春期女生对体型的自评更多倾向于太胖,而男生对体型的自评则更多倾向于太瘦。青春期正处在一个特殊的转变时期,其生理、心理和情绪等各方面均发生快速的变化<sup>[8]</sup>。尤其是处于青春期的女生,对自己的体型比男生更为关注。ter Bogt 等<sup>[9]</sup>研究结果表明,青春期女生比男生更有可能对自己的体型不满。

Cheung 等<sup>[10]</sup>研究结果表明,青少年体型自评与 BMI 评价结果并不相符。根据 Kappa 值的解释标准<sup>[11,12]</sup>,结合本研究结果,认为男女生体型自评和 BMI 评价结果具有一致性,但其程度均为轻( $Kappa=0.217, P=0.000; Kappa=0.203, P=0.000$ )。43.0% 的男生和 37.5% 的女生都错误估计了自己的体型,其中 35.9% 和 23.3% 的男女生低估自己的体型,7.1% 和 14.2% 男女生高估自己的体型,提示男生更易低估自己的体型,而女生更易高估自己的体型。受影视和出版物等传媒影响,女生多追求苗条的理想体型,而男生多追求强壮的理想体型<sup>[13]</sup>。廖艳辉等<sup>[14]</sup>研究结果也表明,女性体象关注者比无体象关注者更关注体重和体型,而男性体象关注者比无体象关注者更关注肌肉感和强壮感。

本研究结果显示,儿童青少年抑郁症状的检出率女生高于男生,与 Figueras 等<sup>[15]</sup>的研究结果相一

表 4 儿童青少年抑郁症状多因素 logistic 回归分析

变量	抑郁症状[OR 值(95%CI)]	
	模型 1	模型 2
体型自评		
正常	1	-
消瘦	1.255(1.066 ~ 1.478) <sup>a</sup>	-
超重	1.538(1.275 ~ 1.856) <sup>a</sup>	-
肥胖	1.713(1.035 ~ 2.834) <sup>a</sup>	-
体型错估		
一致	-	1
低估	-	1.245(1.060 ~ 1.454) <sup>a</sup>
高估	-	1.705(1.382 ~ 2.105) <sup>a</sup>

注:模型 1 以年龄、性别、城乡为控制变量引入体型自评;模型 2 以年龄、性别、城乡为控制变量引入体型错估;<sup>a</sup>  $P < 0.01$ , <sup>b</sup>  $P < 0.05$

致。在不同体型评估组中,体型高估组抑郁症状检出率最高,低估组其次,一致组最低。logistic回归分析显示,体型BMI评价与抑郁症状无统计学关联,体型自评与体型错估均与抑郁症状存在统计学关联。Huang等<sup>[16]</sup>对中国8市10403名青少年研究结果也表明,控制性别、年龄、城乡等因素后,体型BMI评价与心理病理症状无统计学关联,而自评体型消瘦或肥胖与较高的情绪问题、品行问题和社会适应困难的风险相关联。与自评体型正常组相比,自评消瘦、超重和肥胖的抑郁症状风险分别为1.255倍(95%CI: 1.066~1.478)、1.538倍(95%CI: 1.275~1.856)和1.713倍(95%CI: 1.035~2.834),这与Tang等<sup>[17]</sup>的研究结果相一致;与正确评价自己体型的一致组相比,体型高估和低估儿童青少年抑郁症状的风险分别是1.705倍(95%CI: 1.382~2.105)和1.245倍(95%CI: 1.060~1.454)。Kim和Lee<sup>[18]</sup>对韩国首尔的女大学生研究显示,体型高估组的抑郁量表评分显著高于一致组。本研究结果提示,体型自评特别是错误评价可增加儿童青少年抑郁症状发生的危险。体型错估是一种自我认知偏差,而后者是抑郁的一种易感因素,可导致临床躯体障碍、动力减退、情绪低落等抑郁症状,而抑郁症状反过来又可导致自我认知偏差增多,二者形成恶性循环,并呈螺旋或上升的趋势<sup>[9]</sup>。体型的自我认知偏差既可以与负性生活事件相互作用增加抑郁的可能,也可经过负性情感而增加抑郁的发生。

昆士兰大学怀孕母亲队列研究(Mater-University of Queensland Study of Pregnancy, MUSP)结果表明,青春期自评超重是成年期抑郁症状的危险因素,应该对青春期自评超重进行干预<sup>[20]</sup>。体型高估和低估是一种对自我的消极认知方式,对这种导致抑郁的消极认知方式越早干预其效果越好。应及早对儿童青少年开展以生活技能为核心的综合性干预措施,帮助他们正确认识自我,接纳自我,建立健康的饮食行为和生活方式,坚持体育锻炼,以积极的心态面对学习和生活,促进儿童青少年身心健康和发展。

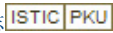
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