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照护者顺应喂养潜在剖面分析及与 幼儿社会情绪能力间的关系

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摘要: **目的** 分析照护者顺应喂养的潜在类别,并探讨其与幼儿社会情绪能力发展的关系,为改善照护者顺应喂养水平,提高幼儿社会情绪能力提供参考。**方法** 采用便利抽样法于 2024 年 11 月—2025 年 3 月选取青岛市 2 所三甲医院儿保科进行健康体验的 310 名幼儿主要照护者为研究对象,采用一般资料调查表、照护者顺应喂养量表及幼儿社会情绪能力评估量表作为调查工具,以照护者顺应喂养量表的 3 个维度作为外显指标进行潜在剖面分析,通过单因素分析、多元 logistic 回归分析识别不同剖面照护者的影响因素,采用单因素方差分析探讨不同类别幼儿的社会情绪能力发展差异。**结果** 照护者的顺应喂养可分为低顺应-低互动喂养组 49 例(15.8%)、中顺应喂养组 192 例(61.9%)、高顺应-高互动喂养组 69 例(22.3%)。祖辈为主要照护者更可能进入低顺应-低互动喂养组($OR=4.779, 95\%CI: 2.164\sim 10.553, P<0.001$),进入高顺应-高互动组的可能较小($OR=0.393, 95\%CI: 0.180\sim 0.856, P<0.05$);城市家庭的照护者更可能进入高顺应-高互动喂养组($OR=2.976, 95\%CI: 1.354\sim 6.540, P=0.007$)。不同类别的幼儿社会情绪能力总分及依从性、注意力、求精动机、移情、亲社会的同伴关系 5 个维度得分差异有统计学意义($F=6.253\sim 47.834, P<0.01$)。**结论** 照护者顺应喂养水平存在明显的异质性,不同类别的幼儿社会情绪能力发展存在差异。儿童保健人员应针对顺应喂养的异质性采取针对性的干预策略,帮助照护者提升顺应喂养水平从而促进幼儿社会情绪能力发展。

关键词: 顺应喂养; 社会情绪能力; 潜在剖面分析; 潜在类别; 幼儿

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Latent profile analysis of caregiver responsive feeding practices and the relationship with social-emotional development of toddlers

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Abstract: **Objective** To analyze the latent profiles of responsive feeding among caregivers of toddlers and their relationship with children's social-emotional development, so as to provide a reference for improving caregivers' responsive feeding practices and enhancing toddlers' social-emotional competence. **Methods** A convenience sampling method was used to select 310 primary caregivers of toddlers from the child healthcare departments of two tertiary hospitals in Qingdao between November 2024 and March 2025. The General Information Questionnaire, Caregiver Responsive Feeding Scale, and Infant-Toddler Social-Emotional Assessment were used as survey tools. Latent profile analysis was performed using the three dimensions of the Caregiver Responsive Feeding Scale as indicators. Univariate analysis and multivariate logistic regression analysis were conducted to identify factors influencing caregiver profiles, while one-way ANOVA was used to examine differences in toddlers' social-emotional development across different categories. **Results** Caregivers' responsive feeding patterns were classified into three groups: a low responsiveness-low interaction feeding group (49, 15.8%), a moderate-responsiveness feeding group (192, 61.9%), and a high responsiveness-high interaction feeding group (69, 22.3%). Caregivers who were grandparents were significantly more likely to be classified into the low-responsiveness-low-interaction feeding group ($OR=4.779, 95\%CI: 2.164\sim 10.553, P<0.001$) and less likely to be classified into the high-responsiveness-high-interaction group ($OR=0.393, 95\%CI: 0.180\sim 0.856, P<0.05$). Caregivers from urban families

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were more likely to belong to the high-responsiveness-high-interaction feeding group ($OR = 2.976$, 95% CI : 1.354 ~ 6.540, $P = 0.007$). Significant differences were observed among feeding pattern groups in total social-emotional competence scores and in five specific domains—compliance, attention, mastery motivation, empathy, and prosocial peer relations ($F = 6.253 \sim 47.834$, $P < 0.01$). **Conclusions** There is marked heterogeneity in caregivers' levels of responsive feeding, accompanied by differences in social-emotional development across groups of young children. Child healthcare professionals should implement targeted intervention strategies tailored to the heterogeneous characteristics of responsive feeding, supporting caregivers in improving responsive feeding practices and thereby promoting children's social-emotional development.

Keywords: responsive feeding; social and emotional abilities; latent profile analysis; latent class; toddlers

婴幼儿社会情绪能力指儿童调节情绪、适应环境及建立良好人际关系的能力^[1],不仅直接影响其认知与语言的发展,更会通过情绪调节模式内化,影响其成年后的职业发展与社会适应^[2]。当前我国部分地区婴幼儿社交情绪异常检出率为 24.44% ~ 57.9%^[3-4],显著高于国际水平^[5]。照护者的喂养行为作为早期发展关键枢纽,不仅承担营养供给,更是通过喂养双向互动构建情感交流平台^[6]。顺应喂养结合儿童早期发展理论与喂养实践,强调照护者在喂养过程中与婴幼儿动态响应:既要求照护者捕捉到婴幼儿饥饿/饱足信号,又强调通过恰当的情感回应建立安全依恋关系^[7]。依恋理论认为二者双向互动,有助于婴幼儿社交情感发展^[8]。然而,目前照护者顺应喂养现状多依据总体得分判断,忽略个体异质性,且其与婴幼儿社会情绪能力的关系也尚未探究^[9]。潜在剖面分析是指通过识别连续变量数据中的潜在剖面分类,探讨其内部异质性^[10]。12~24 月龄是幼儿认知能力与社会情感快速发展阶段,这一关键成长期亟需照护者具备敏锐的观察力并及时作出回应^[11]。因此,本研究以此阶段幼儿为研究对象,采用潜在剖面分析,探讨照护者顺应喂养的潜在类别特征及不同类别幼儿社会情绪能力间的差异,为制定个性化干预方案,改善照护者顺应喂养水平,提高幼儿社会情绪能力提供参考。

1 对象和方法

1.1 对象 采用便利抽样法于 2024 年 11 月—2025 年 3 月选取青岛市 2 所三甲医院儿保科 310 名儿童照护者进行调查。纳入标准:1)12~24 月龄幼儿主要照护者(负责儿童日常饮食起居);2)具有一定的读写能力,沟通能力良好;3)自愿参加本研究。排除标准:1)患有影响食欲的消化系统疾病幼儿的照护者;2)患有精神疾病幼儿的照护者;3)存在发育行为问题幼儿的照护者。根据样本量粗略估计法计算样本量至少为自变量个数的 10~15 倍,本研究共纳入 16 个变量,考虑 20% 的无效应答,样本量至少

200 份。最终纳入符合标准的照护者 310 名。本研究已通过青岛大学医学部伦理委员会审批(QDU-HEC-2024431)。

1.2 方法

1.2.1 一般资料调查表 一般资料调查表内容包括照护者类型、家庭平均月收入、幼儿月龄及喂养方式等。

1.2.2 照护者顺应喂养量表 该量表由 Liu 等^[12]编制,包括 3 个维度,共 23 个条目。采用 Likert 5 级计分法,总分越高说明照护者越频繁采用顺应喂养。本研究照护者顺应喂养量表的 Cronbach's α 系数为 0.859。

1.2.3 幼儿社会情绪能力评估量表 该量表由张建端^[13]翻译并修订。本研究采用其中的能力阈量表。该量表包括 6 个维度,共 35 个条目。采用 Likert 3 级计分,总分越高表示幼儿的社会情绪能力发展水平越好。本研究幼儿社会情绪能力评估量表的 Cronbach's α 系数为 0.882。

1.3 质量控制 采用纸质版问卷方式作答,为保证问卷真实作答,所有问卷均由照护者独立作答,研究者检查作答的完整性并当场回收。

1.4 统计学方法 采用 SPSS 28.0 和 Mplus 8.3 软件进行统计分析和处理。1)以照护者顺应喂养量表的 3 个维度得分为外显变量,初始模型从“1”开始,逐渐增加潜在类别数目,直至达到最佳模型拟合度。2)采用 χ^2 检验分析不同照护者顺应喂养类别的人口学差异,采用多元 logistic 回归分析其顺应喂养潜在剖面影响因素。采用单因素方差分析比较不同顺应喂养类别的幼儿社会情绪能力,再采用最小显著差异法进行事后多重比较。检验水准 $\alpha = 0.05$ 。

2 结果

2.1 照护者顺应喂养潜在剖面模型拟合情况及分类 基于该量表 3 个维度得分划分 1~4 个潜在剖面模型。当保留 3 个剖面时,Entropy 指标值最高,为 0.843,且 LMRT 和 BLRT 的 P 值均 < 0.001 ,达

到显著水平,故选取模型 3 为最佳拟合模型。根据顺应喂养 3 个维度得分特点,剖面 1 的照护者在各维度上得分均较低,尤其是积极参与维度最低,表明这类人群顺应喂养水平偏低,且在喂养过程中缺乏互动,为低顺应-低互动喂养组,共 49 例(15.8%);

剖面 2 在各维度中得分介于剖面 1 和 3 之间,处于中间水平,为中顺应喂养组,共 192 例(61.9%);剖面 3 在各维度得分均较高,尤其是积极参与维度得分最高,表明该类人群注重喂养互动,为高顺应-高互动喂养组,共 69 例(22.3%)。见表 1、图 1。

表 1 照护者顺应喂养潜在剖面拟合情况
Tab. 1 Fit indices for latent profiles of responsive feeding in caregivers

类别	AIC	BIC	aBIC	P 值(LMRT)	P 值(BIRT)	Entropy	类别概率(%)
1	1 394.249	1 416.669	1 397.639				
2	1 222.879	1 260.245	1 228.529	<0.001	<0.001	0.786	0.716 / 0.284
3	1 145.100	1 197.412	1 153.010	<0.001	<0.001	0.843	0.158 / 0.619 / 0.223
4	1 137.758	1 205.016	1 147.927	0.381	0.013	0.829	0.595 / 0.176 / 0.165 / 0.064

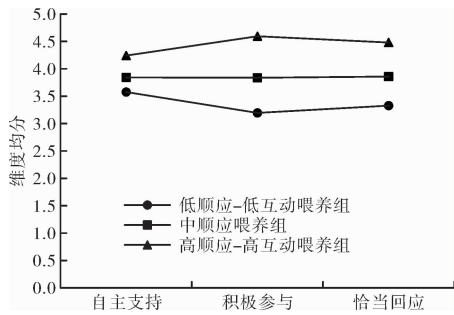


图 1 照护者顺应喂养潜在类别维度得分分布

Fig. 1 Score distribution across latent classes of responsive feeding among caregivers

2.2 照护者顺应喂养潜在剖面的影响因素

2.2.1 照护者顺应喂养潜在剖面的单因素分析

不同照护者类型、文化程度、幼儿月龄、居住地在照护者顺应喂养 3 个类别上差异有统计学意义($\chi^2 = 6.374 \sim 26.315, P < 0.05$)。见表 2。

2.2.2 照护者顺应喂养潜在剖面的多因素分析

以照护者顺应喂养类型为因变量(以中顺应喂养组为参考),将单因素分析中差异有统计学意义的变量作为自变量。同时,基于社会生态理论^[14],虽然家庭平均月收入在单因素分析中差异无统计学意义($P = 0.282$),仍将其纳入多因素模型控制潜在混杂效应,进行多元 logistic 回归分析结果显示,祖辈为主要照护者更可能进入低顺应-低互动喂养组,进入高顺应-高互动组的可能较小($P < 0.05$),城市家庭照护者更可能进入高顺应-高互动喂养组($P < 0.05$)。见表 3。

表 2 照护者顺应喂养潜在剖面的单因素分析(例,%)

Tab. 2 Univariate analysis of latent profiles in responsive feeding among caregivers(n, %)

项目	分组	低顺应-低互动喂养组(n=49)	中顺应喂养组(n=192)	高顺应-高互动喂养组(n=69)	χ^2 值	P 值
幼儿月龄	12~18	18(36.73)	83(43.23)	18(26.09)	6.374	0.041
	19~24	31(63.27)	109(56.77)	51(73.91)		
幼儿性别	男	23(46.94)	97(50.52)	34(49.28)	0.206	0.902
	女	26(53.06)	95(49.48)	35(50.72)		
主要照护者	父辈	16(32.65)	124(64.58)	54(78.26)	26.315	<0.001
	祖辈	33(67.35)	68(35.42)	15(21.74)		
照护者文化程度	初中及以下	16(32.65)	42(21.88)	13(18.84)	15.655	0.016
	高中或中专	6(12.24)	37(19.27)	17(24.64)		
	大专	18(36.73)	47(24.48)	10(14.49)		
	本科及以上学历	9(18.37)	66(34.37)	29(42.03)		
家庭月收入(元)	<5 000	2(4.08)	4(2.08)	2(2.90)	7.437	0.282
	5 000~7 999	20(40.82)	61(31.77)	19(27.54)		
	8 000~10 000	20(40.82)	87(45.31)	26(37.68)		
	10 000 以上	7(14.28)	40(20.84)	22(31.88)		
喂养方式	母乳喂养	5(10.20)	34(17.71)	7(10.14)	3.287	0.193
	非母乳喂养	44(89.80)	158(82.29)	62(89.86)		
居住地	城市	24(48.98)	117(60.94)	59(85.51)	19.521	<0.001
	城镇及农村	25(51.02)	75(39.06)	10(14.49)		
是否祖父母同住	是	33(67.35)	136(70.83)	50(72.46)	0.370	0.831
	否	16(32.65)	56(29.17)	19(27.54)		

表 3 照护者顺应喂养潜在剖面的多元 logistic 回归分析

Tab. 3 Multivariable logistic regression analysis of latent profiles in responsive feeding among caregivers

项目	参照	低顺应-低互动喂养组(<i>n</i> =49)				高顺应-高互动喂养组(<i>n</i> =69)			
		β 值	OR 值	95%CI	<i>P</i> 值	β 值	OR 值	95%CI	<i>P</i> 值
常数项		-1.626			0.102	-1.312			0.191
主要照护者:祖辈	父辈	1.564	4.779	2.164~10.553	<0.001	-0.934	0.393	0.180~0.856	0.019
居住地:城市	城镇及农村	-0.166	0.847	0.412~1.741	0.652	1.090	2.976	1.354~6.540	0.007

2.3 不同顺应喂养类别的幼儿社会情绪能力差异比较 单因素方差分析显示,不同顺应喂养类别幼儿的社会情绪能力总分及依从性等 5 个维度得分比较,差异均有统计学意义($F=6.253\sim47.834, P<0.01$)。见表 4。

表 4 不同顺应喂养类别的幼儿社会情绪能力评分比较($n=310, \bar{x}\pm s$)

Tab. 4 Comparison of social-emotional competence scores across different responsive feeding categories ($n=310, \bar{x}\pm s$)

变量	低顺应-低互动喂养组 ^① (<i>n</i> =49)	中顺应喂养组 ^② (<i>n</i> =192)	高顺应-高互动喂养组 ^③ (<i>n</i> =69)	<i>F</i> 值	<i>P</i> 值	两两比较
依从性	7.18±1.63	8.31±2.54	8.74±2.52	6.253	0.002	③>①,②>①
注意力	5.90±2.00	6.16±2.28	7.71±1.99	14.797	<0.001	③>①,③>②
模仿/游戏	9.41±1.10	9.43±1.15	9.29±1.31	0.375	0.688	
求精动机	8.98±1.61	10.05±1.68	10.49±2.00	11.185	<0.001	③>①,②>①
移情	3.12±2.20	5.75±2.92	8.17±2.74	47.834	<0.001	③>②>①
亲社会同伴关系	2.51±1.84	3.88±1.90	5.28±1.88	31.472	<0.001	③>②>①
总分	37.10±6.72	43.59±8.37	49.68±8.58	34.281	<0.001	③>②>①

3 讨 论

3.1 照护者顺应喂养潜在剖面及特点 本研究将照护者顺应喂养分为 3 个类别。中顺应喂养组占比最大,为 61.9%;高顺应-高互动喂养组次之,为 22.3%;低顺应-低互动喂养组占比最少,仅为 15.8%,提示照护者顺应喂养目前处于中等水平。针对不同类别可开展差异化指导。低顺应-低互动喂养组在各维度得分均较低,尤其在积极参与维度得分最低,喂养过程中更加关注幼儿的进食量而忽略情感互动,易形成单向喂养模式的恶性循环^[15]。建议可借助社交媒体宣传等方式,增强其互动喂养意识,并鼓励在喂养中采取回应性策略,例如与幼儿讨论食物特征来提升互动质量^[16]。中顺应喂养组顺应喂养处于中等水平,实践性可进一步加强。研究显示将家庭压力模型应用于喂养实践能有效提升其顺应喂养行为^[17]。因此建议在未来干预中,应关注照护者的家庭,注重整体化的指导,减轻照护者负担。高顺应-高互动喂养组的顺应喂养得分处于较高水平,但自主支持相对不足,应在保持积极互动的同时,逐渐增加对幼儿自主进食的支持。

3.2 照护者顺应喂养潜在剖面的影响因素分析 照护者类型、居住地是顺应喂养潜在类别的影响因素。祖辈照护者较父辈更可能归为低顺应-低互动喂养组和中顺应喂养组。这一差异或与喂养观念有关。祖辈常对幼儿体重存在认知偏差,更关注进食量而忽略其自主意愿^[18]。建议未来喂养干预中应

纳入祖辈,加强幼儿健康体重认知教育,引导其建立科学喂养观。地域方面,城市照护者因医疗资源丰富、信息获取便利,更易进入高顺应-高互动喂养组;城镇及农村照护者受经济条件及营养教育不足影响,喂养水平较低,部分甚至缺乏对食物多样性认知,导致婴幼儿饮食结构单一^[19]。提示可通过基层医疗单位开展针对性培训,以重点普及食物多样性、顺应喂养原则。

3.3 照护者顺应喂养的潜在剖面与幼儿社会情绪能力的关系 本研究显示,3 个不同潜在类别幼儿社会情绪能力总分及依从性等 5 个维度得分差异有统计学意义($P<0.01$),仅模仿/游戏得分差异无统计学意义($P>0.05$)。这可能是由于照护者影响幼儿发展的情境特异性所致。模仿/游戏能力的形成主要依赖自由游戏情境中即时、积极的情感互动^[20],而顺应喂养模式刻画的是饮食互动情境下的长期行为特征。由于照护者在喂养与游戏两种情境中的行为模式可能具有相对独立性,因此直接影响模仿/游戏能力的近端因素——即游戏互动中的情感质量并未随喂养模式的不同而分化,导致该维度未呈现组间差异。

单因素方差分析显示,不同类别照护者的幼儿社会情绪能力存在显著差异,且顺应喂养水平与幼儿社会情绪能力总分呈正向关联。支持了积极养育行为能够保护幼儿社会情感发展^[21]。依恋理论认为幼儿在与照护者的互动中塑造认知、社交和情感能力。温暖、敏锐的回应易使幼儿形成安全型依恋,

促进社交情感发展。顺应喂养作为一种动态支持策略,通过近端支持(如建立进食常规)与远端支持(如回应需求)结合,提升照护者对幼儿需求的识别与响应能力,进而促进安全型依恋形成,推动幼儿社会情感能力发展^[22]。因此,在制定提高幼儿社会情绪能力的干预方案时,应注重帮助照护者与幼儿建立稳定、安全的依恋关系。如借助亲子活动提升照护者识别与回应幼儿需求的能力^[23]。还可基于回应性照护框架,针对不同喂养类别照护者特点实施分层干预^[24],重点提升其对饥饿饱足信号的识别与响应能力,以改善依恋质量,促进幼儿社会情绪发展。

综上所述,幼儿照护者顺应喂养存在异质性,可分为 3 个类别,不同类别的幼儿社会情绪能力存在差异。后期可根据不同类别所对应的问题,采取针对性的干预措施。本研究仅纳入青岛市两所医院,样本代表性有限,且低顺应-低互动及高顺应-高互动喂养组例数较少,可能存在信息偏倚;未纳入婴幼儿不良生产结局及照护者心理状态等混杂因素,未来可增加样本量,开展多中心调查,以提升统计推断的稳健性,同时可整合相关变量,更全面探讨顺应喂养与健康结局的关联。

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