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• 临床研究 •

上海地区孕妇牙科焦虑症及其影响因素分析

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【摘要】 目的 调查孕妇牙科焦虑症的发生情况并对其影响因素进行分析。方法 采用问卷调查和口腔检查的方法对上海地区2 638名孕妇的人口社会学资料、口腔健康行为习惯、牙齿数量等情况进行调查,并指导其填写改良牙科焦虑量表(modified dental anxiety scale, MDAS)。量表中5个问题的总分为MDAS分值, MDAS ≤ 11为无牙科焦虑症, MDAS ≥ 12为牙科焦虑症。运用电子数据捕获系统(electronic data capture system, EDC)系统建立数据库录入资料, SPSS 22.0分析焦虑程度及其影响因素。结果 共收集有效问卷2 638份, 孕妇的牙科焦虑症发生率为34.9%。单因素分析结果显示随着年龄、家庭年收入、文化程度、刷牙频率、刷牙频率和牙齿数量的增加, 孕妇牙科焦虑症的患病率($P < 0.001$)和MDAS分值有所下降($P < 0.05$); 随着孕次和刷牙出血频率的增加, 孕妇牙科焦虑症的患病率($P < 0.05$)和MDAS分值有所上升($P < 0.05$)。Logistic分析结果显示: 文化程度“大专”($P = 0.003$)和“本科及以上”($P < 0.001$)、刷牙频率“半年或一年一次”($P = 0.021$)和“两年一次”($P < 0.001$)、刷牙频率“≥每天两次”($P < 0.001$)与孕妇牙科焦虑症显著相关且为其保护因素($OR < 1$); 刷牙出血频率“有时或偶尔”($P < 0.001$)和牙齿数量“≤27”($P < 0.001$)也与孕妇牙科焦虑症显著相关且为其危险因素($OR > 1$)。MDAS的负二项回归分析结果表明: 刷牙频率和牙齿数量与MDAS得分显著相关, 刷牙频率“半年或一年一次”($P < 0.001$)是孕妇牙科焦虑症的保护因素($OR < 1$); 牙齿数量“≤27”($P < 0.001$)是孕妇牙科焦虑症的危险因素($OR > 1$)。结论 文化程度、刷牙频率、刷牙频率、刷牙出血、牙齿数量是孕妇牙科焦虑症的影响因素, 临床医生在临床实践中应予以高度重视, 通过宣讲相关保健知识, 增强孕妇的口腔卫生维护意识, 以有效降低牙科焦虑症的患病率。

【关键词】 牙科焦虑症; 孕妇; 刷牙频率; 刷牙出血; 口腔健康行为; 牙齿数量; 年龄; 孕次; 影响因素; 文化程度

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【Abstract】 Objective To investigate the incidence of dental anxiety in pregnant women and its influencing factors.

Methods A total of 2 638 pregnant women in Shanghai were included in this study. Data on demographic and social



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factors, oral health behaviors and the number of teeth were collected. Participants completed the modified dental anxiety scale (MDAS), and an MDAS score greater than 12 was defined as a dental anxiety disorder. An electronic data capture system (EDC) was used to establish a database, and SPSS 22.0 was used to analyze the degree of anxiety and its influencing factors. **Results** A total of 2 638 valid questionnaires were received. The incidence of dental anxiety in pregnant women was 34.9%. The results of a univariate analysis showed that the prevalence of dental anxiety in pregnant women ($P < 0.001$) and MDAS score decreased ($P < 0.05$) with increasing age, annual family income, educational level, frequency of cleaning, frequency of brushing and number of teeth. Conversely, the prevalence of dental anxiety in pregnant women ($P < 0.05$) and MDAS score increased ($P < 0.05$) as the number of pregnancies and gingival bleeding increased. Logistic analysis showed that education level "college" ($P = 0.003$) and "bachelor and above" ($P < 0.001$), frequency of dental cleaning "semiannually or annually" ($P = 0.021$) and "biennial" ($P < 0.001$), and frequency of brushing "twice a day" ($P < 0.001$) were significantly associated with dental anxiety in pregnant women and were protective factors ($OR < 1$). The frequency of gingival bleeding "Sometimes" ($P < 0.001$) and the number of teeth " ≤ 27 " ($P < 0.001$) were also significant risk factors for dental anxiety in pregnant women ($OR > 1$). The results of a negative binomial regression analysis of MDAS showed that the frequency of dental cleaning and the number of teeth were significantly associated with dental anxiety. The frequency of dental cleaning "semiannually or annually" ($P < 0.001$) was a protective factor ($OR < 1$) for pregnant women's dental anxiety. The number of teeth ≤ 27 ($P < 0.001$) was a risk factor ($OR > 1$) for dental anxiety in pregnant women. **Conclusion** Educational level, teeth cleaning frequency, teeth brushing frequency, gingival bleeding, and the number of teeth influence dental anxiety in pregnant women. To effectively reduce the prevalence of dental anxiety, dentists should attach great importance to it in clinical practice and enhance pregnant women's awareness of oral hygiene maintenance by disseminating relevant health care knowledge.

【Key words】 dental anxiety; pregnant women; frequency of teeth brushing; gingival bleeding; oral health behaviors; number of teeth; age; number of pregnancies; influence factors; education

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牙科焦虑症(dental anxiety, DA)又称牙科畏惧症(dental fear, DF),是指患者对牙科诊治过程或对其中某些环节怀有不同程度的害怕和紧张心理^[1]。孕妇怀孕后由于体内雌、孕激素水平显著增高,牙龈血管水肿扩张,易发生妊娠期龈炎、牙周炎等口腔疾病^[2];既往研究显示女性更易出现高牙科焦虑水平^[3]。一些孕妇口腔疾病患者由于存在牙科焦虑症而不愿就诊或定期检查,导致口腔健康状况进一步恶化,形成恶性循环,甚至影响到全身健康和胎儿的正常生长发育。在国内针对孕妇牙科焦虑症的研究尚处于起步阶段,相应的调查数据也较缺乏。本研究对上海市各社区卫生中心建卡孕妇进行问卷调查和口腔检查,旨在了解牙科焦虑症的患病情况和影响因素,为今后针对孕妇这一特殊人群制定口腔疾病防治策略提供依据。

1 资料和方法

1.1 研究对象

于2021年3月至2021年6月在上海16个区采

用随机抽样方法各选取4个社区卫生服务中心建小卡的孕早期妇女,每个区200名。本研究经上海市口腔医院医学伦理委员会批准(沪口防伦[2021]003号),全体受试者均签署了知情同意书。

纳入标准:①孕早期妇女;②无严重妊娠合并症;③无认知障碍和视力疾患;④知情同意,自愿接受调查。排除标准:①有精神疾病史;②近2周内服用抗焦虑药物或镇静剂者;③因外伤或正畸导致缺牙的孕妇;④有肝肾功能不全、严重的心血管疾病、恶性肿瘤等全身系统性疾病者。

1.2 研究方法

向孕妇解释本研究的目的与程序,征得其同意后,指导其填写调查问卷并进行口腔检查。

1.2.1 问卷调查 对纳入的孕早期妇女进行一对一问卷,问卷内容包括年龄、文化程度、家庭年收入等一般情况。并填写改良牙科焦虑量表^[4](modified dental anxiety scale, MDAS)评估牙科焦虑情况。

改良牙科焦虑量表(MDAS)是根据Corah's牙

科焦虑量表^[5]作适当调整后形成的适用于我国人群的牙科焦虑量表,具有良好的效度和信度^[6],在妊娠期女性的调查中应用广泛^[7]。该量表包括以下5个问题:①如果你明天要做口腔治疗,感觉如何?②当你坐在医生候诊室里,感觉如何?③如果你的牙齿要被钻孔,感觉如何?④如果你的牙齿要被打磨抛光,感觉如何?⑤要在你的牙龈内注射麻醉时,感觉如何?每个问题有5个备选回答:A,不焦虑(1分);B,轻微焦虑(2分);C,焦虑(3分);D,非常焦虑(4分);E,高度焦虑(5分)。5个问题的分值总和为MDAS分值(5~25分),MDAS ≤ 11为无牙科焦虑症,MDAS ≥ 12可诊断为牙科焦虑症。

1.2.2 口腔检查 由1名经过培训的高年资口腔科主治医师进行口腔检查记录功能牙数量,不包括第三磨牙。

1.2.3 质量控制 在研究开始前对参与研究的社区口腔医生进行孕妇口腔健康管理培训和标准一致性检验。培训标准参照第四次全国口腔健康流行病学调查的质量控制标准,在项目实施的过程中通过日常的督导监测进行质量监测。

1.3 统计学分析

运用电子数据捕获系统(electronic data capture system, EDC)系统建立数据库录入资料,所有数据使用SPSS 22.0软件进行统计和分析。对个人情况中各分组因素的牙科焦虑症患病率采用卡方检验进行统计学比较;计数资料以频数和百分率(%)表示;计量资料用均数 ± 标准差表示,两组之间的均数比较采用 t 检验,三组及三组以上的均数比较采用单因素方差分析。并对单因素分析中有统计学意义的因素进行Logistic回归分析,探讨与牙科焦虑症显著相关的因素。 $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 受试者一般情况及牙科焦虑症患病情况

本研究共发出3 200份问卷,最终收集有效问卷2 638份,平均年龄(31.24 ± 4.75)岁,最小20岁,最大45岁。结果发现,920例(34.9%)的MDAS ≥ 12分,患有牙科焦虑症,平均得分 15.04 ± 4.18 ;1 718例(65.1%)的MDAS ≤ 11分,无牙科焦虑症,平均得分 8.25 ± 2.09 (表1)。

2.2 牙科焦虑症影响因素及MDAS得分的单因素分析结果

卡方分析结果显示,高年龄组、高家庭年收入

表1 2 638名入组孕妇的基本信息及牙科焦虑症情况
Table 1 Basic information and prevalence of dental anxiety in 2 638 enrolled pregnant women

Variable		Number	Percentage (%)
Age/year	≤ 25	236	8.9
	26-30	1 022	38.7
	≥ 31	1 380	52.4
Annual income/RMB	≤ 50 000	210	8.0
	50 000-150 000	858	32.5
	150 000-300 000	635	24.1
	≥ 300 000	409	15.5
	Not answered	526	19.9
Education	Junior high school and below	272	10.3
	High school or technical secondary school	270	10.2
	College	500	19.0
	Bachelor and above	1 596	60.5
Number of pregnancies	1	1 409	53.4
	≥ 2	1 229	46.6
Dental anxiety	Yes	920	34.9
	No	1 718	65.1

组、高文化程度组、高洗牙频率组、高刷牙频率组和高牙齿数量组孕妇的牙科焦虑症患病率较低($P < 0.001$)。而高孕次组、高刷牙出血频率组孕妇的牙科焦虑症患病率较高($P < 0.05$)。单因素方差分析和 t 检验结果显示,低年龄组、低家庭收入组、低文化程度组、高孕次组、低洗牙频率组、低刷牙频率组、高刷牙出血频率组和低牙齿数量组的MDAS得分更高($P < 0.05$)(表2)。

2.3 牙科焦虑症影响因素的Logistic回归分析结果

Logistic回归分析结果显示,孕妇牙科焦虑症与年龄、家庭年收入、孕次无相关性($P > 0.05$),文化程度“大专”($P = 0.003$)和“本科及以上”($P < 0.001$)、洗牙频率“半年或一年一次”($P = 0.021$)和“两年一次”($P < 0.001$)、刷牙频率“≥每天两次”($P < 0.001$)与孕妇牙科焦虑症显著相关且为其保护因素($OR < 1$);刷牙出血频率“有时或偶尔”($P < 0.001$)和牙齿数量“≤27”($P < 0.001$)也与孕妇牙科焦虑症显著相关为其危险因素($OR > 1$)(表3)。

2.4 MDAS得分影响因素的负二项回归分析

负二项回归分析结果显示,孕妇牙科焦虑症MDAS得分与洗牙频率和牙齿数量显著相关($P < 0.001$)。其中洗牙频率“半年或一年一次”是孕妇牙科焦虑症的保护因素($OR < 1$);牙齿数量“≤27”

表2 牙科焦虑症影响因素及MDAS得分的单因素分析

Table 2 Univariate analysis of influencing factors of dental anxiety and the MADS score

Variable		Dental anxiety group (n/%)	χ^2	P	MDAS	F/t	P
Age/year	20-25	111 (47.03)	17.217	< 0.001	11.44 ± 3.95	3.872	0.021
	26-30	351 (34.30)			10.57 ± 3.86 ¹⁾		
	≥ 31	458 (33.19)			10.52 ± 4.78 ¹²⁾		
Annual income/RMB	≤ 50 000	96 (45.71)	42.986	< 0.001	11.82 ± 8.24	8.233	< 0.001
	50 000-150 000	335 (39.04)			10.91 ± 4.04 ¹⁾		
	150 000-300 000	181 (28.50)			10.12 ± 3.46 ¹²⁾		
	≥ 300 000	109 (26.65)			10.13 ± 3.99 ²⁾		
	Not answered	199 (37.83)			10.61 ± 4.03		
Education	Junior high school and below	152 (55.88)	90.012	< 0.001	12.21 ± 4.07	23.521	< 0.001
	High school or technical secondary school	118 (43.70)			11.43 ± 4.12		
	College	190 (38.00)			10.93 ± 6.02 ¹⁾		
	Bachelor and above	460 (28.82)			10.61 ± 4.41 ¹²³⁾		
Number of pregnancies	1	465 (33.00)	4.670	0.031	10.50 ± 4.49	2.814	0.005
	≥ 2	455 (37.02)			11.12 ± 4.03		
Frequency of dental cleaning	Semiannually or annually	116 (16.71)	155.550	< 0.001	9.09 ± 3.24	66.638	< 0.001
	Biennially	160 (33.20)			10.47 ± 3.71 ¹⁾		
	Never	644 (44.05)			11.38 ± 4.90 ¹²⁾		
Frequency of teeth brushing	≥ 2 times/day	757 (32.96)	28.808	< 0.001	10.49 ± 4.21	3.647	< 0.001
	≤ 1 time/day	163 (47.80)			11.40 ± 4.29		
Frequency of gingival bleeding	Never	397 (31.09)	15.642	< 0.001	10.30 ± 4.88	6.287	0.002
	Sometimes	489 (38.47)			10.90 ± 3.87 ¹⁾		
	Often	34 (37.78)			10.94 ± 4.40		
Number of teeth	28	786 (32.04)	123.561	< 0.001	10.37 ± 3.85	5.582	< 0.001
	≤ 27	134 (72.43)			13.84 ± 8.39		

Age: 1) means statistically significant compared with "20-25", $P < 0.05$; 2) means statistically significant compared with "26-30", $P < 0.05$. Annual income: 1) means statistically significant compared with "≤ 50 000", $P < 0.05$; 2) means statistically significant compared with "50 000-150 000", $P < 0.05$. Education: 1) means statistically significant compared with "≤ Junior high school", $P < 0.05$; 2) means statistically significant compared with "High school or technical secondary school", $P < 0.05$; 3) means statistically significant compared with "College", $P < 0.05$. Frequency of dental cleaning: 1) means statistically significant compared with "Semiannually or annually", $P < 0.05$; 2) means statistically significant compared with "Biennially", $P < 0.05$. Frequency of gingival bleeding: 1) means statistically significant compared with "Never", $P < 0.05$. MDAS: modified dental anxiety scale

是孕妇牙科焦虑症的危险因素($OR > 1$)(表4)。

3 讨论

对孕产妇来说,从妊娠到分娩是经历一次非常强烈的身体和情感体验,会产生各种生理和心理的改变。焦虑和抑郁便是孕产妇最常见的心理和行为异常,并且影响着胎儿的生长发育以及口腔健康^[8]。国外流行病学调查显示,牙科焦虑症患者率在一般人群中达到 20% ~ 30%,在口腔门诊患者中相对较普遍,发生率为 27.0% ~ 74.3%^[9]。近些年甚至有调查结果显示超过 90% 的孕妇表现出不同程度的牙科焦虑^[10]。有研究者发现,随着牙科治疗预约时间的接近,患者牙科焦虑的程度会增加^[11]。国内关于孕妇牙科焦虑的研究较少^[12],

本研究中孕妇牙科焦虑的发生率为 34.9%,略高于姚缨等^[7]的研究结果(27.6%),这可能与研究人群的孕周不同有关。本研究人群为在社区卫生服务中心建卡的孕早期孕妇,而后者研究人群为在医院妇产科就诊的孕妇,其中孕早期孕妇仅占总人数的 7.6%。一般认为,妊娠期的前 3 个月易发生流产,且此时孕妇可能有恶心、呕吐等反应,增加了焦虑的情绪。在国外的相关研究中,一些孕妇由于各种原因无法得到有效且及时的牙科护理,从而加剧了孕妇的牙科焦虑症状^[13]。另外,由于口腔科在新冠疫情期间受影响较大,前来建卡的孕妇其焦虑情绪也有可能因为疫情的不确定性而增加。国外研究表明,注射过新冠疫苗的牙科就诊患者其牙科焦虑水平显著降低^[14]。

表3 牙科焦虑症影响因素的Logistic回归分析
Table 3 Logistic regression of influencing factors of dental anxiety

Variable		P	OR (95%CI)
Age/year	20-25	-	1
	26-30	0.075	0.75 (0.55-1.09)
	≥ 31	0.096	0.77 (0.56-1.05)
Annual income/RMB	≤ 50 000	-	1
	50 000-150 000	0.775	1.05 (0.75-1.47)
	150 000-300 000	0.180	0.78 (0.54-1.13)
	≥ 300 000	0.495	0.87 (0.58-1.30)
	Not answered	0.944	1.01 (0.71-1.44)
Education	Junior high school and below	-	1
	High school or technical secondary school	0.053	0.70 (0.50-1.00)
	College	0.003	0.61 (0.44-0.85)
	Bachelor and above	< 0.001	0.52 (0.38-0.71)
Number of pregnancies	1	-	1
	≥ 2	0.406	1.10 (0.88-1.39)
Frequency of dental cleaning	Never	-	1
	Biennially	0.021	0.32 (0.25-0.41)
	Semiannually or annually	< 0.001	0.76 (0.60-0.96)
Frequency of teeth brushing	≤ 1 time/day	-	1
	≥ 2 times/day	< 0.001	0.62 (0.48-0.79)
Frequency of gingival bleeding	Never	-	1
	Sometimes	0.001	1.33 (1.11-1.59)
	Often	0.339	1.26 (0.79-2.02)
Number of teeth	28	-	1
	≤ 27	< 0.001	5.38 (3.80-7.63)

表4 MDAS得分影响因素的负二项回归分析
Table 4 Negative binomial regression analysis of influencing factors of MDAS

Variable		P	OR (95%CI)
Age/year	20-25	-	1
	26-30	0.683	0.97 (0.83-1.13)
	≥ 31	0.794	0.98 (0.84-1.14)
Annual income/RMB	≤ 50 000	-	1
	50 000-150 000	0.821	0.98 (0.83-1.16)
	150 000-300 000	0.527	0.95 (0.79-1.13)
	≥ 300 000	0.780	0.97 (0.80-1.18)
	Not answered	0.638	0.96 (0.81-1.14)
Education	Junior high school and below	-	1
	High school or technical secondary school	0.687	0.96 (0.81-1.15)
	College	0.367	0.93 (0.79-1.09)
	Bachelor and above	0.181	0.90 (0.77-1.05)
Number of pregnancies	1	-	1
	≥ 2	0.957	1.00 (0.90-1.12)
Frequency of dental cleaning	Never	-	1
	Biennially	0.362	0.95 (0.85-1.06)
	Semiannually or annually	0.001	0.84 (0.76-0.93)
Frequency of teeth brushing	≤ 1 time/day	-	1
	≥ 2 times/day	0.416	0.95 (0.84-1.07)
Frequency of gingival bleeding	Never	-	1
	Sometimes	0.292	1.05 (0.96-1.13)
	Often	0.690	1.05 (0.84-1.31)
Number of teeth	28	-	1
	≤ 27	0.001	1.34 (1.14-1.56)

MDAS: modified dental anxiety scale

数据统计结果提示孕妇的牙科焦虑与文化程度显著相关,文化程度越高的孕妇牙科焦虑患病率越低。受过良好教育的孕妇知识面较广,主动获取知识的能力更强,对妊娠期口腔保健和牙科治疗有比较正确且全面的认识。Levin等^[15]指出牙科焦虑水平与年龄无显著差异^[16],但与受教育程度呈负相关,与本文研究结果一致。

统计分析结果表明,洗牙频率低的孕妇牙科焦虑程度较高,提示孕妇的牙科焦虑水平与洗牙频率有关,洗牙频率越低牙科焦虑患病率越高。Coolidge等^[17]的研究显示,没有看过牙医的患者比近期看过牙医的患者拥有较高的牙科焦虑水平。研究同样表明,与近一年内看过牙医者相比较,从未看过牙医者的牙科焦虑程度更高^[18]。由于较高的牙科焦虑水平,口腔健康状况较差的患者恐惧牙科就诊,从而导致牙科就诊率下降。也有研究发现牙科就诊经历会影响孕妇的牙科就诊意愿,牙科医生良好的表现有助于改善孕妇的牙科焦虑,而糟糕的就诊体验会加剧牙科焦虑^[19]。

本研究显示缺牙与孕妇牙科焦虑症显著相关,牙齿数量较少的孕妇患牙科焦虑症的可能性是未缺牙孕妇的5倍。缺牙也是孕妇牙科焦虑症中重要的危险因素,这一结果验证了其恶性循环现象。Silveira等^[20]研究表明患有焦虑症的孕妇牙齿脱落几率是无焦虑者的3倍,不使用口腔保健服务的几率增加了2倍,Coolidge等^[17]指出牙科焦虑水平较高者龋坏程度更严重。以上均说明患者牙科焦虑水平越高其牙科就诊率和口腔保健服务利用率就越低,其口腔健康状况较差。

在分析中也显示刷牙频率与牙科焦虑症显著相关,研究表明患者牙科就诊次数越多,其刷牙和使用牙线的频率也越高,其口腔保健习惯就越好,口腔保健意识也更强,说明患者牙科焦虑水平与口腔保健意识、口腔保健习惯相关^[21]。因此提高孕妇口腔保健意识,使孕妇定期进行口腔检查能有效降低对牙科治疗的焦虑,这提示医生需要在临床上对于焦虑患者进行口腔卫生宣教,或在治疗过程中采用一些辅助手段从而减少患者的牙科焦虑^[22]。

本研究的目的是调查孕妇的牙科焦虑,但没有区分原因,在下一步的研究中,可对不同的原因进行调研并统计,细分牙科焦虑的真正原因。

综上所述,牙科焦虑症在孕妇群体中患病率较高,影响因素也较多,文化程度、口腔保健意识、

口腔保健习惯、口腔健康状况等均与牙科焦虑症显著相关,牙科焦虑水平一定程度上影响着牙科就诊率,也反过来影响口腔保健意识和习惯。此外,孕妇的口腔保健习惯和意识直接影响着下一代的口腔健康,必须引起医生重视。因此,需加强向孕产妇进行口腔保健知识的讲解,特别是对文化程度较低、牙科就诊经历较少、口腔健康状况较差的孕妇,应指导其养成良好的口腔保健习惯,提升其口腔保健意识,这对全面提高孕妇口腔保健服务水平,更好地保障孕妇和胎儿健康以及优生优育具有积极的促进作用。

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