

· 临床研究 ·

## 社区老年人群口腔健康相关生活质量及其影响因素

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**【摘要】目的** 调查社区老年人群口腔健康状况及相关生活质量水平, 并分析其影响因素。**方法** 采用多阶段随机抽样法, 抽取海口市 5 个社区中 1 020 例老年人作为被调查对象, 按照第四次全国口腔健康流行病学调查标准, 对老年人群口腔健康状况进行检查, 采用口腔健康评价指数(GOHAI) 评估其口腔健康相关生活质量(OH-QoL)。采用 SPSS 20.0 软件进行数据分析。根据数据类型, 组间比较分别采用 *t* 检验、方差分析及  $\chi^2$  检验。以单因素分析有意义的指标作为自变量, GOHAI 指数得分作为因变量, 采用多元线性回归模型分析影响社区老年人群 OH-QoL 的相关因素。**结果** 本研究共发放 1 020 份调查问卷, 共回收 920 份(95.25%) 有效问卷, 老年人人群 GOHAI 总平均得分(53.79±11.17) 分。多元线性回归分析提示, 缺牙数量、缺牙修复、深牙周袋、冠龋、根龋、就医方便程度、每日刷牙次数、使用牙签或牙线以及牙医就诊习惯等 9 个变量可能影响老年人 OH-QoL( $P<0.05$ ), 该拟合模型可解释总变异的 54.30%。**结论** 口腔健康状况是影响老年人群 OH-QoL 的重要因素, 而良好的口腔清洁习惯可提高老年人 OH-QoL。

**【关键词】** 老年人群; 社区; 口腔健康状况; 口腔健康评价指数; 影响因素分析

**【中图分类号】** R780.1

**【文献标志码】** A

**【DOI】** 10.11915/j.issn.1671-5403.2023.10.162

## Oral health-related quality of life in community-dwelling elderly population and its influencing factors

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**【Abstract】Objective** To investigate the oral health status and related quality of life in community-dwelling elderly population and analyze the related influencing factors. **Methods** Totally 1020 elderly people from 5 communities in Haikou City were selected as the subjects of investigation by multi-stage random sampling method. According to the standards of the Fourth National Oral Health Epidemiological survey, the oral health status of the elderly population was examined, and Geriatric Oral Health Assessment Index (GOHAI) was used to evaluate the oral health-related quality of life (OH-QoL). SPSS statistics 20.0 was used for statistical analysis. Data comparison between two groups was performed using *t* test, analysis of variance or  $\chi^2$  test depending on data type. The meaningful indicators in univariate analysis were used as independent variables and the GOHAI index score was used as the dependent variable, and multivariate linear regression model analysis was applied to analyze the related factors affecting the OH-QoL in community elderly population. **Results** Among 1020 questionnaires distributed, 920(95.25%) valid questionnaires were collected in this study, and the total average score of GOHAI in the elderly was (53.79±11.17) points. Multivariate linear regression analysis showed that 9 variables such as the number of missing teeth, status of missing teeth deep periodontal pocket, the number of crown caries, the number of root caries, the convenience of medical treatment, the number daily teeth brushing frequency, the use of toothpick or dental floss, and the habit of dental visit might affect the OH-QoL of the elderly( $P<0.05$ ), and the fitting model could explain 54.30% of the total variation. **Conclusion** Oral health status is an important factor affecting OH-QoL in elderly population, and good oral hygiene habits can enhance the OH-QoL in the elderly.

**【Key words】** aged, community-dwelling; oral health status; geriatric oral health assessment index; analysis of influencing factors

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口腔作为机体的重要组成部分, 行使着多种功能, 口腔健康与否也直接决定了全身健康。随着年龄的增长, 个体的口腔生理功能不断衰减, 加上口腔疾病的影响, 老年人群的口腔健康问题较其他年龄

段人群更为严重, 其多合并牙痛、牙齿松动、脱落等<sup>[1-3]</sup>。此外, 口腔健康问题还与老年痴呆、骨质疏松症、心血管疾病等相关, 严重影响人们的生活质量<sup>[4,5]</sup>。调查老年人群口腔健康状况, 并分析影响

收稿日期: 2023-01-31; 接受日期: 2023-03-20

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其口腔健康相关生活质量(oral health-related quality of life, OH-QoL)的相关因素,在指导老年人群防治口腔疾病、改善其生活质量中具有重要意义<sup>[6,7]</sup>。海口市 65 岁及以上老年人占比为 7.12%,已超过世界卫生组织的标准,属于老龄化地区。本研究以口腔健康评价指数(geriatric oral health assessment index, GOHAI)作为调查工具,对海口市老年人群的 OH-QoL 进行调查,并分析其相关影响因素,旨在为该地区的老年口腔问题的防治提供参考。

1 对象与方法

1.1 研究对象

本研究对象为海口市年龄≥60 岁、在社区生活的老年人。(1)纳入标准:调查对象神志清楚,理解能力良好,可配合相关调查;(2)排除标准:张嘴困难及口腔外伤,合并认知功能障碍。

1.2 方法

1.2.1 抽样方法 采用多阶段分层随机抽样法,第 1 阶段随机抽取海口市 5 个城区,第 2 阶段在每个城区中随机抽取 1 个居委会,第 3 个阶段在每个居委会中采用简单随机抽样法共发放 1 020 份问卷。

1.2.2 口腔健康检查方法 按照第四次全国口腔健康流行病学中的相关标准<sup>[8]</sup>,邀请 5 名临床工作年限≥3 年的口腔执业医师进行口腔检查,观察被调查者牙列、牙列缺失、义齿及牙周健康等情况。

1.2.3 调查问卷 (1)问卷内容。参照全国卫生服务调查量表及第四次全国口腔健康流行病学调查量表编制问卷调查项目。(2)口腔健康相关生活质

量评估。采用 GOHAI 中文版量表<sup>[9]</sup>评估被调查者口腔健康相关生活质量,量表共包含口腔生理功能、疼痛与不适、心理功能状态等 3 个维度,共含有 12 个项目,各项目得分 1~5 分,针对每个条目,将得分 1~2 分定义为对口腔健康有负面影响<sup>[10]</sup>。量表内部一致性 Cronbach's  $\alpha$  系数为 0.81。(3)质量控制。本次问卷调查由经统一培训的调查人员完成,向被调查者简要介绍问卷内容及填写方法后,要求其现场填写问卷,并剔除填写质量差、信息前后矛盾的问卷。

1.3 统计学处理

采用 SPSS 20.0 统计软件进行数据分析。符合正态分布的计量资料用均数±标准差( $\bar{x}\pm s$ )表示,2 组间比较采用独立样本  $t$  检验,多组间比较采用方差分析;计数资料用例数(百分率)表示,采用 $\chi^2$  检验。采用多元线性回归分析了解老年人群 OH-QoL 的影响因素。 $P<0.05$  为差异有统计学意义。

2 结 果

2.1 老年人群口腔健康相关生活质量调查结果

本研究共发放调查问卷 1 020 份,共回收 920 份(95.25%)有效问卷。老年人群 GOHAI 总平均得分(53.79±11.17)分,其中口腔生理功能维度得分(17.90±2.74)分,疼痛与不适维度得分(12.83±2.96)分,心理功能维度得分(23.06±3.77)分,其中“咬或咀嚼食物困难”、“所吃东西的种类或数量受限”两项目对老年人所造成的负面影响占比最高,分别为 43.59%(401/920)与 33.70%(310/920)。详见表 1。

表 1 老年人群口腔健康相关生活质量调查结果

| Table 1 Investigation results of oral health-related quality of life in the elderly population (n=920) |                                                       |                                 |                               |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------|-------------------------------|
| Dimension                                                                                              | Item                                                  | Score (points, $\bar{x}\pm s$ ) | Negative impact ratio[ n(%) ] |
| Oral physiological function                                                                            |                                                       | 17.90±2.74                      |                               |
|                                                                                                        | Difficulty in biting or chewing food                  | 4.41±0.63                       | 401(43.59)                    |
|                                                                                                        | Unable to swallow food smoothly                       | 4.46±0.71                       | 65(7.07)                      |
|                                                                                                        | Affecting pronunciation or speech                     | 4.89±1.07                       | 127(13.80)                    |
|                                                                                                        | Restriction of the type or amount of food eaten       | 4.14±0.79                       | 310(33.70)                    |
| Pain and discomfort                                                                                    |                                                       | 12.83±2.96                      |                               |
|                                                                                                        | Taking drugs to relieve oral pain or discomfort       | 4.57±0.84                       | 65(7.07)                      |
|                                                                                                        | Sensitive to hot, cold, sweet and sour                | 3.69±0.76                       | 139(15.11)                    |
|                                                                                                        | Uncomfort while eating                                | 4.57±0.69                       | 90(9.78)                      |
| Psychological function                                                                                 |                                                       | 23.06±3.77                      |                               |
|                                                                                                        | Dissatisfaction with the appearance of teeth and gums | 4.56±1.07                       | 101(10.98)                    |
|                                                                                                        | Concerns about oral problems                          | 4.29±1.09                       | 186(20.22)                    |
|                                                                                                        | Uncomfortable eating in front of others               | 4.91±0.86                       | 20(2.17)                      |
|                                                                                                        | Nervous or uncomfortable feeling                      | 4.51±0.79                       | 10(1.09)                      |
|                                                                                                        | Restricted communication with others                  | 4.79±1.15                       | 28(3.04)                      |

GOHAI: geriatric oral health assessment index.

2.2 老年人群口腔健康状况与相关生活质量的关系

缺牙数量、缺牙修复状况、深牙周袋、冠龋牙数以及根龋牙数对老年人 GOHAI 总得分均有影响 ( $P<0.05$ ); 牙附着丧失情况对老年人 GOHAI 总得分无影响(表 2)。

| 表 2 老年人群口腔健康状况与其相关生活质量的关系                                                                             |                   |         |         |
|-------------------------------------------------------------------------------------------------------|-------------------|---------|---------|
| Table 2 Relationship between oral health status and related quality of life in the elderly population |                   |         |         |
| (points, $\bar{x}\pm s$ )                                                                             |                   |         |         |
| Oral health status                                                                                    | Total GOHAI score | F/t     | P value |
| Number of missing teeth                                                                               |                   | 231.381 | <0.001  |
| 0-5 teeth                                                                                             | 60.36±12.43       |         |         |
| 6-10 teeth                                                                                            | 48.31±10.74       |         |         |
| ≥11 teeth                                                                                             | 41.30±9.96        |         |         |
| Repair status of missing teeth                                                                        |                   | 12.000  | <0.001  |
| Unrepaired                                                                                            | 49.08±11.31       |         |         |
| Repaired                                                                                              | 57.66±10.36       |         |         |
| Attachment loss≥4 mm                                                                                  |                   | 1.923   | 0.055   |
| Yes                                                                                                   | 52.98±10.78       |         |         |
| No                                                                                                    | 54.39±11.36       |         |         |
| Deep periodontal pocket                                                                               |                   | 3.729   | <0.001  |
| Yes                                                                                                   | 50.21±9.93        |         |         |
| No                                                                                                    | 54.32±10.04       |         |         |
| Number of crown caries                                                                                |                   | 13.070  | <0.001  |
| 0-3 teeth                                                                                             | 57.11±11.36       |         |         |
| ≥4 teeth                                                                                              | 47.23±9.86        |         |         |
| Number of root caries                                                                                 |                   | 5.529   | <0.001  |
| 0-1                                                                                                   | 54.65±12.15       |         |         |
| ≥2                                                                                                    | 48.49±11.58       |         |         |

GOHAI; geriatric oral health assessment index.

2.3 人口学资料及口腔健康习惯与口腔相关生活质量的关系

就医方便程度、家庭收入、自身慢性病、每日刷牙次数、每次刷牙时间、使用牙签或牙线、牙刷更换频率、每年至少看 1 次牙医对老年人 GOHAI 总得分均有影响 ( $P<0.05$ ); 其余指标对老年人 GOHAI 总得分均无影响(表 3)。

2.4 影响老年口腔相关生活质量的多元回归分析

以老年人 GOHAI 总得分为因变量, 将  $P<0.05$  的因素作为自变量纳入多元回归方程。行多元线性回归分析提示, 影响老年人口腔相关生活质量的主要因素包括: 缺牙数量、缺牙修复状况、深牙周袋、冠龋牙数、根龋牙数、就医方便程度、每日刷牙次数、使用牙签或牙线以及牙医就诊习惯 ( $P<0.05$ ), 决定系数  $R^2=0.552$ , 调整决定系数  $R^2=0.543$ , 表明拟合模型可解释总变异的 54.30%(表 4)。

表 3 人口学资料及口腔健康习惯与口腔相关生活质量的关系

| Table 3 Relationship of demographic data, and oral health habits with oral-related quality of life |                   |        |         |
|----------------------------------------------------------------------------------------------------|-------------------|--------|---------|
| (points, $\bar{x}\pm s$ )                                                                          |                   |        |         |
| Indicator                                                                                          | Total GOHAI score | F/t    | P value |
| Gender                                                                                             |                   | 0.884  | 0.377   |
| Male                                                                                               | 54.07±11.58       |        |         |
| Female                                                                                             | 53.41±11.02       |        |         |
| Age                                                                                                |                   | 0.681  | 0.496   |
| 60-70 years                                                                                        | 53.89±11.85       |        |         |
| >70 years                                                                                          | 53.43±12.17       |        |         |
| Education level                                                                                    |                   | 0.701  | 0.484   |
| Junior high school and below                                                                       | 53.84±10.46       |        |         |
| College and above                                                                                  | 53.26±11.33       |        |         |
| Place of residence                                                                                 |                   | 1.715  | 0.087   |
| Rural area                                                                                         | 54.86±13.48       |        |         |
| Urban area                                                                                         | 53.36±12.66       |        |         |
| Convenience of medical treatment                                                                   |                   | 11.112 | <0.001  |
| Convenient                                                                                         | 58.25±11.88       |        |         |
| Inconvenient                                                                                       | 50.15±10.21       |        |         |
| Family monthly income                                                                              |                   | 11.193 | <0.001  |
| <3 000 yuan                                                                                        | 52.11±10.77       |        |         |
| 3 000-5 000 yuan                                                                                   | 54.52±10.63       |        |         |
| >5 000 yuan                                                                                        | 56.19±10.79       |        |         |
| Chronic disease                                                                                    |                   | 9.315  | <0.001  |
| Yes                                                                                                | 51.34±11.94       |        |         |
| No                                                                                                 | 59.33±11.84       |        |         |
| Anxiety                                                                                            |                   | 1.349  | 0.179   |
| Yes                                                                                                | 51.01±11.36       |        |         |
| No                                                                                                 | 54.03±11.79       |        |         |
| Depression                                                                                         |                   | 1.944  | 0.052   |
| Yes                                                                                                | 51.04±11.67       |        |         |
| No                                                                                                 | 53.99±12.01       |        |         |
| Daily teeth brushing frequency                                                                     |                   | 6.737  | <0.001  |
| 0-1 times                                                                                          | 50.13±13.64       |        |         |
| 2-3 times                                                                                          | 56.07±12.66       |        |         |
| Every brushing time                                                                                |                   | 10.175 | <0.001  |
| ≥3 min                                                                                             | 58.41±10.74       |        |         |
| <3 min                                                                                             | 51.09±10.37       |        |         |
| Use of toothpick or dental floss                                                                   |                   | 67.090 | <0.001  |
| Often                                                                                              | 61.08±11.25       |        |         |
| Occasionally                                                                                       | 55.30±12.12       |        |         |
| Never                                                                                              | 50.17±11.67       |        |         |
| Frequency of toothbrush replacement                                                                |                   | 5.888  | <0.001  |
| 1-3 months                                                                                         | 56.47±11.25       |        |         |
| >3 months                                                                                          | 52.11±10.64       |        |         |
| Dental visit at least once a year                                                                  |                   | 7.567  | <0.001  |
| Yes                                                                                                | 59.16±11.44       |        |         |
| No                                                                                                 | 52.27±11.43       |        |         |

GOHAI; geriatric oral health assessment index.

表 4 影响老年人口腔相关生活质量的多元回归分析  
Table 4 Multivariate regression analysis of oral-related quality of life in the elderly

| Variable                                                 | <i>B</i> | <i>SE</i> | $\beta$ | <i>t</i> | <i>P</i> value |
|----------------------------------------------------------|----------|-----------|---------|----------|----------------|
| Constant term                                            | 50.366   | 13.667    | –       | 17.854   | <0.001         |
| Number of missing teeth( control: 0–5 teeth)             |          |           |         |          |                |
| 6–10 teeth                                               | 2.466    | 0.511     | 0.379   | 7.889    | <0.001         |
| ≥11 teeth                                                | 3.678    | 0.461     | 0.433   | 9.678    | <0.001         |
| Repair status of missing teeth( control: repaired)       |          |           |         |          |                |
| Unrepaired                                               | 2.631    | 0.636     | 0.411   | 6.115    | <0.001         |
| Deep periodontal pocket( control: no)                    |          |           |         |          |                |
| Yes                                                      | 2.513    | 0.662     | 0.183   | 4.494    | 0.013          |
| Number of crown caries( control: none)                   |          |           |         |          |                |
| Yes                                                      | 1.711    | 0.543     | 0.172   | 2.878    | 0.022          |
| Number of root caries( control: no)                      |          |           |         |          |                |
| Yes                                                      | 4.547    | 1.142     | 0.676   | 11.734   | <0.001         |
| Convenience of medical treatment( control: convenient)   |          |           |         |          |                |
| Inconvenient                                             | 1.446    | 0.369     | 0.253   | 4.215    | 0.011          |
| Family monthly income( control: < 3 000 yuan)            |          |           |         |          |                |
| 3 000–5 000 yuan                                         | 1.346    | 0.516     | 0.217   | 2.333    | 0.184          |
| >5 000 yuan                                              | 1.436    | 0.379     | 0.259   | 2.211    | 0.176          |
| Chronic disease( control: no)                            |          |           |         |          |                |
| Yes                                                      | 1.611    | 0.516     | 0.176   | 2.243    | 0.226          |
| Daily teeth brushing frequency( control: 0–1)            |          |           |         |          |                |
| 2–3                                                      | –2.799   | 0.533     | –0.136  | –2.974   | 0.021          |
| Every brushing time( control: < 3min)                    |          |           |         |          |                |
| ≥3min                                                    | –1.261   | 0.446     | –0.169  | –2.237   | 0.213          |
| Use of toothpick or dental floss( control: never)        |          |           |         |          |                |
| Occasionally                                             | –0.231   | 0.110     | –0.081  | –1.946   | 0.276          |
| Often                                                    | –0.676   | 0.115     | –0.302  | –6.436   | <0.001         |
| Frequency of toothbrush replacement( control: >3 months) |          |           |         |          |                |
| 1–3 months                                               | –0.486   | 0.177     | –0.126  | –1.741   | 0.263          |
| Dental visit at least once a year( control: no)          |          |           |         |          |                |
| Yes                                                      | –2.243   | 0.544     | –0.271  | –6.317   | <0.001         |

$R=0.743$ ,  $R^2=0.552$ , adjusted  $R^2=0.543$ ,  $F(4,910)=40.669$ ,  $P<0.001$ . –: no datum.

### 3 讨 论

老年口腔健康问题直接关乎其全身健康,而受到饮食习惯、地方口腔保健工作普及力度、经济水平等因素的影响,各区域的老年 OH-Qo1L 状况可能存在差异。本研究采用 GOHAI 量表调查发现,海口市老年人 OH-QoL 平均得分为(53.79±11.17)分,处于较好水平,高于于虹等<sup>[11]</sup>报道的石家庄老年人 OH-QoL 得分,这可能与两研究样本量、调查地区等因素差异相关。此外,本研究发现,“咬或咀嚼食物困难”“所吃东西的种类或数量受限”两项目对老年人所造成的负面影响占比最高,说明口腔问题对老年人进食所造成的影响最大。

进一步研究发现,口腔健康状况、就医方便程

度、口腔清洁习惯是影响老年人 OH-QoL 的相关因素。(1)口腔健康状况:第三次全国口腔健康流行病学抽样调查显示,内地 65 岁及以上的老年人龋齿患病率高达 98.4%,且有相当比例的龋齿未得到有效治疗。龋齿会引起牙齿敏感、压痛等症状,也是导致老年人牙齿脱落的主要原因之一<sup>[12]</sup>。李安迪等<sup>[13]</sup>研究称,广西中老年人 OH-QoL 主要受龋患的影响。本研究证实冠龋牙数、根龋牙数均是影响老年人 GOHAI 量表得分的相关因素,与本研究结论一致。此外,本研究还发现深牙周袋形成也是影响老年人 GOHAI 得分的相关因素,与 Fischer 等<sup>[14]</sup>研究结论相似。(2)就医方便程度:本研究中,就医方便的老年人 GOHAI 得分明显高于就医不方便者,且就医的方便程度直接影响老年人的 OH-QoL。就医方

便者能在早期及时发现口腔疾病并给予治疗,避免疾病恶化,保障患者生活质量。(3)口腔清洁习惯:本研究发现,每日刷牙 2~3 次、经常使用牙签或牙线以及每年至少看 1 次牙医患者的 GOHAI 得分更高。提示良好的口腔清洁习惯及牙医就诊习惯可有效预防口腔病变,提高 OH-QoL。

综上,老年人整体 OH-QoL 处于较好水平,口腔健康状况是影响海口市老年人 OH-QoL 的重要因素,而方便就医、良好的口腔清洁习惯及牙医就诊习惯可提高老年 OH-QoL。

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(编辑:温玲玲)