OPEN ACCESS
[DOI]10.12016/j.issn.2096-1456.202550595

·防治实践·

慢性牙周炎患者龈上洁治术后复诊行为的影响因素分析

严静[1,2]，　刘玉[2]，　刘雪妍[1,2]，　唐佳丽[2]，　王晓燕[1,3]
1.东南大学医学院护理学系，江苏 南京（210009）；　2.南京大学医学院附属口腔医院，南京市口腔医院，南京大学口腔医学研究所，江苏 南京（210008）；　3.东南大学附属中大医院护理部，江苏 南京（210009）

【摘要】 **目的**　探讨慢性牙周炎患者龈上洁治术后复诊行为的影响因素，为早期识别脱落风险人群、提升治疗延续性提供依据。**方法**　本研究已通过单位医学伦理委员会审查批准，并获得患者书面知情同意。对2022年7月至2023年7月于南京大学医学院附属口腔医院门诊接受龈上洁治术后需行牙周序列治疗的572例慢性牙周炎患者进行回顾性分析。收集患者性别、年龄、学历、月收入、口腔健康素养、就诊原因及就诊满意度。根据12个月内是否按计划复诊分为复诊组与脱落组。采用卡方检验和独立样本t检验进行单因素组间比较，分析两组之间差异，将结果中P<0.05的变量（性别、学历、月收入、就诊原因、口腔健康素养、就诊满意度）与年龄（作为校正变量），共同纳入多因素Logistic回归模型，分析复诊行为的影响因素。**结果**　572例慢性牙周炎患者中，复诊239例，脱落333例，复诊脱落率58.22%。单因素组间比较显示，两组在性别、学历、月收入、就诊原因、口腔健康素养、就诊满意度方面差异有统计学意义（P<0.05）。多因素Logistic回归分析显示，就诊原因为转诊的患者复诊依从性较差（OR=0.241，95%CI：0.154～0.377，P<0.001），而口腔健康素养得分每增加1分（OR=1.159，95%CI：1.056～1.272，P=0.002）和对治疗满意（OR=4.090，95%CI：1.732～9.656，P=0.001）的患者复诊依从性较好。**结论**　龈上洁治术后慢性牙周炎患者的复诊行为主要受就诊原因、口腔健康素养及就诊满意度影响，临床可将上述因素作为降低该类患者复诊脱落率的干预靶点。

【关键词】 牙周炎；　龈上洁治术；　复诊行为；　治疗依从性；　影响因素；　口腔健康素养；　就诊动机；　患者满意度；　Logistic回归
【中图分类号】 R78　【文献标志码】 A　【文章编号】 2096-1456（2026）08-0791-08
【引用著录格式】 严静，刘玉，刘雪妍，等. 慢性牙周炎患者龈上洁治术后复诊行为的影响因素分析[J]. 口腔疾病防治，2026，34(8)：791-798. doi:10.12016/j.issn.2096-1456.202550595.

微信公众号

Analysis of the factors influencing follow-up visit behavior after supragingival scaling in patients with chronic periodontitis

YAN Jing[1,2], LIU Yu[2], LIU Xueyan[1,2], TANG Jiali[2], WANG Xiaoyan[1,3].　1. Department of Nursing, School of Medicine, Southeast University, Nanjing 210009, China;　2. Nanjing Stomatological Hospital, Affiliated Hospital of Medical School, Institute of Stomatology, Nanjing University, Nanjing 210008, China;　3. Department of Nursing, Affiliated Zhongda Hospital of Southeast University, Nanjing 210009, China
Corresponding author: WANG Xiaoyan, Email:xywangseu@163.com

【Abstract】 **Objective**　To investigate the factors influencing follow-up visit behavior among patients with chronic periodontitis after supragingival scaling, and to provide evidence for early identification of high-risk dropouts and improvement of treatment continuity. **Methods**　This study was approved by the Institutional Medical Ethics Committee, and written informed consent was obtained from all participants. A retrospective analysis was conducted on 572 patients with chronic periodontitis who received supragingival scaling at the Outpatient Department of The Affiliated Stomato-

【收稿日期】2025-12-23；　【修回日期】2026-07-06
【基金项目】江苏省医学重点学科建设单位基金（JSDW202246）；江苏省干部保健科研课题（BJ21006）
【作者简介】严静，护师，在读研究生，Email：b_yanjing@163.com
【通信作者】王晓燕，主任护师，博士，Email：xywangseu@163.com

logical Hospital of Nanjing University School of Medicine from July 2022 to July 2023 and required subsequent periodontal sequential therapy. Data regarding sex, age, monthly income, education level, oral health literacy, reason for visit, and satisfaction with care were collected. Patients were divided into a follow-up group and a dropout group based on whether they adhered to the scheduled appointments within 12 months. Chi-square tests and independent samples t-tests were used for univariate comparisons between the groups. Variables with $P < 0.05$ in the univariate analysis (gender, education level, monthly income, reason for visit, oral health literacy, and satisfaction with care), along with age (as a covariate), were included in a multivariate logistic regression model to analyze the factors influencing follow-up behavior. **Results**　Among the 572 patients, 239 attended follow-up visits, while 333 dropped out, resulting in a dropout rate of 58.22%. Univariate analysis revealed statistically significant differences between the two groups in terms of gender, education level, monthly income, reason for visit, oral health literacy, and satisfaction with care ($P < 0.05$). Multivariate logistic regression analysis showed that patients referred for treatment had significantly lower compliance ($OR = 0.241$, 95% *CI*: 0.154-0.377, $P < 0.001$). Conversely, higher oral health literacy scores ($OR = 1.159$, 95% *CI*: 1.056-1.272, $P = 0.002$) and higher satisfaction with care ($OR = 4.090$, 95% *CI*: 1.732-9.656, $P = 0.001$) were associated with better follow-up adherence. **Conclusion**　Follow-up behavior in patients with chronic periodontitis after supragingival scaling is primarily influenced by the reason for visit, oral health literacy, and satisfaction with care. These factors can serve as intervention targets to reduce dropout rates in clinical practice.

【Key words】 periodontitis; supragingival scaling; follow-up visits behavior; treatment adherence; influencing factors; oral health literacy; consultation motivation; patient satisfaction; Logistic regression
J Prev Treat Stomatol Dis, 2026, 34(8): 791-798.

慢性牙周炎是以牙周炎症及牙槽骨破坏为特征的慢性炎症性疾病，最终可导致牙齿松动甚至脱落，是我国成年人牙齿缺失的主要原因之一[1]。其治疗需患者定期来院复诊进行专业维护，慢性牙周炎患者的治疗依从性直接影响远期疗效及健康相关生活质量[2-3]。然而，临床数据显示慢性牙周炎患者治疗脱落率居高不下，复诊率低下已成为制约疗效的核心问题[4-5]。

龈上洁治术是多数患者首次接触牙周专业治疗的起点，并常作为修复、种植、正畸等治疗前的必要准备[6-7]。目前，大量研究聚焦于已进入维护期患者的长期依从性，而对于龈上洁治术后这一最早期的治疗起始阶段，慢性牙周炎患者的复诊行为及其驱动机制尚缺乏系统探讨[8-9]。且现有研究多局限于人口学特征的描述性分析，未能充分整合如口腔健康素养、就诊动机、即时满意度等可干预的认知与行为因素，难以全面揭示影响其治疗决策的内在机制，限制了早期、精准干预策略的制定[10-12]。

为弥补上述研究不足，本研究分析龈上洁治术后慢性牙周炎患者的复诊行为的影响因素，旨在识别此阶段中的可干预脱落风险因素，为临床早期实施针对性干预以提升治疗延续性提供依据。

1　资料和方法

本研究为回顾性研究，已获得南京大学医学院附属口腔医院伦理委员会批准（审批号：NJSH-2023NL-022-1），获得患者书面知情同意，研究实施严格遵守《赫尔辛基宣言》。

1.1　研究对象

选取2022年7月至2023年7月于南京大学医学院附属口腔医院门诊就诊并符合纳入标准的全部患者为研究对象。

纳入标准：①年龄≥18周岁；②龈上洁治术后患者；③临床诊断为慢性牙周炎，且需要进行牙周序列治疗。排除标准：①伴有严重系统性疾病、精神疾病；②无法理解和配合调查或治疗；③资料不全者。

根据患者实际治疗复诊情况分为复诊组和脱落组，复诊组为在1年内按治疗计划在本院或外院完成复诊的患者，脱落组为未在1年内按治疗计划完成复诊的患者。

1.2　调查内容

研究者通过调阅医院信息系统及既往调查随访资料统一获取数据。对既有调查记录进行整理与分析。

调查内容包括：①人口学资料：性别、年龄、月收入水平、学历水平。②临床资料：复诊结局。③口腔健康素养：采取成人口腔健康素养量表（oral health literacy adults questionnaire，OHL-AQ）进行评估，其Cronbach′s alpha测量的内部一致性为0.72，

组内相关系数(intraclass correlation coefficient,ICC)为0.84。共17个条目,各条目有5个选项,答题正确得1分,答错为0分,总分范围0~17分,得分越高代表口腔健康素养水平越高[13]。④就诊满意度:采取Likert 5级评分法(1=非常不满意,2=不满意,3=一般,4=满意,5=非常满意)[14]。⑤就诊原因:根据病历记录与问询明确分为两类。主动就诊指患者主诉为牙龈出血、肿胀、疼痛、口腔异味等牙周相关症状,或为常规口腔维护而直接挂号至牙周科;转诊指患者因修复、种植、正畸、牙体牙髓等其他口腔治疗需要,经他科医师评估后,为控制牙周风险而转介至牙周科行龈上洁治术。

1.3　调查方法

研究中,患者的性别、年龄、学历水平、月收入水平、口腔健康素养量表得分、就诊原因及就诊满意度均通过护士指导患者就诊时在候诊区完成的自填式问卷获取;洁治术后即刻收集就诊满意度评分。复诊结局以术后12个月内医院病历系统中的复诊记录为主要判定依据,病历中无明确记录者进一步追溯诊疗护理电话回访记录获取。

1.4　质量控制

本研究在数据获取与整理的各个环节均实施了严格的质量控制。在病例筛选与纳入环节,由两名研究者独立依据纳入与排除标准筛选病例,出现分歧时由第三位高年资医师仲裁判定,以控制选择偏倚。在数据提取与录入环节,性别、年龄、学历水平、月收入水平、就诊满意度评分、口腔健康素养量表得分、就诊原因及复诊结局等全部变量均执行双人独立录入并交叉核对,不一致之处通过查阅原始记录予以校正;对口腔健康素养量表得分与就诊满意度评分进行重点核查,确保主观评价数据的录入准确性;在复诊结局判定环节,统一依据医院病历系统中术后12个月内的复诊记录进行判定,病历中无明确记录者进一步追溯护理电话回访记录予以补充,确保判定标准一致,控制信息偏倚。录入后执行全面的一致性校验与逻辑检查,以确保最终分析数据的准确性与完整性。

1.5　统计学分析

应用SPSS 29.0进行统计学分析。计量资料采用Kolmogorov-Smirnov法对数据进行正态性检验和方差齐性检验后:若服从正态分布且方差齐,则用均数±标准差表示,组间比较采用独立样本t检验;若服从正态分布但方差不齐,采用t'检验;若不服从正态分布,采用Mann-Whitney U检验。分类变量用n(%)表示,组间比较采用卡方检验。

为筛选与复诊行为相关的候选变量,先使用独立样本t检验和卡方检验对各变量进行单因素组间比较,将比较结果中$P<0.05$的变量(性别、学历、月收入、就诊原因、口腔健康素养、就诊满意度)以及年龄(作为校正变量)一并纳入多因素Logistic回归模型。计算比值比(odds ratio,OR)及其95%置信区间(confidence interval,CI)。所有检验均为双侧,检验水准$\alpha=0.05$。

以是否复诊为因变量(复诊=1,脱落=0)。自变量:就诊原因为二分类(转诊=0,主动就诊=1);就诊满意度为三分类(不满意、一般、满意),以不满意为参照,设置2个哑变量;口腔健康素养得分和年龄为连续变量;性别(男=1,女=0);学历为四分类(高中以下、高中/中专、大专、本科及以上),以高中以下为参照,设置3个哑变量;月收入(≥5 000元=1,<5 000元=0)。

采用Hosmer-Lemeshow检验评估模型校准度;绘制受试者工作特征曲线(receiver operating characteristic curve,ROC)并计算曲线下面积(area under the curve,AUC)评价模型区分能力;通过线性回归中的共线性诊断,使用方差膨胀因子(variance inflation factor,VIF)评估自变量之间的共线性,通常认为VIF>10表示存在严重共线性。

基于Peduzzi等[15]提出的每个变量事件数(events per variable,EPV)法则,本研究多因素Logistic回归模型纳入10个自变量,至少需要100~150例阳性事件。本研究实际阳性事件为239例,远大于最低要求,样本量充足。

2　结　果

2.1　患者基线特征及单因素分析

本研究初筛患者632例,其中因资料不全排除40例,因不符合纳入标准排除20例,最终纳入572例,其中男性190例(33.2%),女性382例(66.8%),年龄范围18~72岁,平均(38.5±10.7)岁。患者口腔健康素养得分为(12.15±2.85)分。截至龈上洁治术后12个月的随访期末,共有333例患者未按计划复诊,总体复诊脱落率为58.22%。单因素组间比较结果(表1)显示,复诊组与脱落组在性别、学历、月收入、就诊原因、口腔健康素养、就诊满意度方面差异均有统计学意义($P<0.05$),年龄差异无统计学意义($P=0.424$)。

表1　龈上洁治术后慢性牙周炎患者复诊行为的单因素组间比较

Table 1　Univariate comparison of follow-up visit behavior between the groups of patients with chronic periodontitis after supragingival scaling　*n* (%)

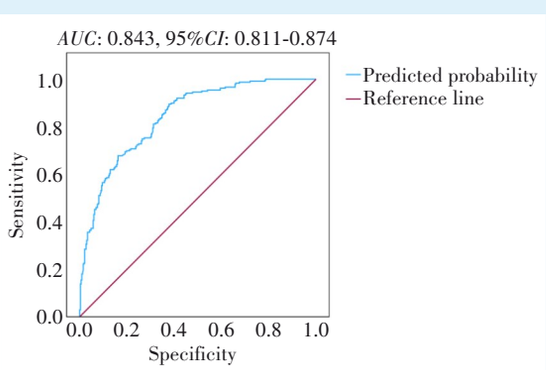
Variables	Groups		t/χ^2	*P*
	Follow-up visit (*n*=239)	Dropout visit (*n*=333)		
Sex			12.179	<0.001
Female	179(74.9)	203(61.0)		
Male	60(25.1)	130(39.0)		
Age/years, $x\pm s$	38.2 ± 10.5	38.9 ± 10.7	−0.801	0.424
Education level			44.559	<0.001
Below high school	29 (12.1)	110 (33.0)		
High school / vocational	44 (18.4)	72 (21.6)		
College degree	36 (15.1)	48 (14.4)		
Bachelor's degree or above	130 (54.4)	103 (30.9)		
Monthly income			10.419	0.001
<5 000 RMB	67 (28.0)	137 (41.1)		
≥5 000 RMB	172 (72.0)	196 (58.9)		
Reason for consultation			84.564	<0.001
Active seeking	147 (61.5)	78 (23.4)		
Referred	92 (38.5)	255 (76.6)		
Oral health literacy/scores, $x\pm s$	13.12 ± 2.56	10.86 ± 2.57	−5.058	<0.001
Satisfaction			144.77	<0.001
Dissatisfied	22 (9.2)	143 (42.9)		
Neutral	24 (10.0)	101 (30.3)		
Satisfied	193 (80.8)	89 (26.7)		

Satisfaction categories were derived from the 5-point Likert scale: "very dissatisfied" and "dissatisfied" were combined into "Dissatisfied"; "satisfied" and "very satisfied" were combined into "Satisfied". RMB: Renminbi

2.2　影响复诊行为的多因素Logistic回归分析

将单因素组间比较中*P*<0.05的变量(性别、学历、月收入、就诊原因、口腔健康素养、就诊满意度)以及年龄(作为校正变量)一并纳入多因素Logistic回归模型。模型整体拟合良好(Omnibusχ^2=228.941，*df*=10，*P*<0.001；Nagelkerke R^2=0.444；总体分类准确率为76.6%)；Hosmer-Lemeshow检验显示χ^2=15.058，*df*=8，*P*=0.058，提示模型校准度可接受；AUC为0.843(95%*CI*：0.811～0.874，*P*<0.001)，表明模型具有较好的区分能力(见图1)。多重共线性诊断显示所有自变量VIF在1.031~1.149之间，不存在严重共线性。

回归分析结果(表2)显示，就诊原因为转诊的患者依从性更差，其复诊概率仅为主动就诊者的24.1%(*OR*=0.241，95%*CI*：0.154～0.377，*P*<0.001)。口腔健康素养得分每增加1分，复诊概率提高15.9%(*OR*=1.159，95%*CI*：1.056～1.272，*P*=0.002)；就诊满意度总体效应显著。与不满意组相比，满意组复诊显著升高(*OR*=4.090，95%*CI*：1.732～9.656，*P*<0.001)；一般组复诊概率低于不满意组(*OR*=0.333，95%*CI*：0.117～0.949，*P*=0.040)。



ROC: receiver operating characteristic. AUC: area under the roc curve

Figure 1　ROC curve of the multivariate Logistic regression model

图1　多因素Logistic回归模型的ROC曲线

其他变量中，女性复诊概率显著高于男性（*OR*=0.528，95%*CI*：0.333～0.838，*P*=0.007）；以高中以下为参照，大专（*OR*=2.391，95%*CI*：1.175～4.863，*P*=0.016）和本科及以上（*OR*=2.715，95%*CI*：1.495～4.930，*P*=0.001）复诊概率均显著更高。年龄及月收入水平未显示独立关联（*P*>0.05）。

表2　影响慢性牙周炎患者龈上洁治术后复诊行为的多因素Logistic回归分析

Table 2　Multivariate Logistic regression analysis of factors associated with follow-up visit behavior in patients with chronic periodontitis after supragingival scaling

Variables	*β*	*SE*	*Wald*	*P*	*OR*	*95%CI*
Gender	−0.638	0.235	7.352	0.007	0.528	0.333-0.838
Age	0.015	0.010	2.366	0.124	1.016	0.996-1.036
Education (reference: below high school)						
High school / vocational	0.594	0.340	3.052	0.081	1.812	0.930-3.528
College degree	0.872	0.362	5.788	0.016	2.391	1.175-4.863
Bachelor's degree or above	0.999	0.304	10.770	0.001	2.715	1.495-4.930
Monthly income	0.186	0.231	0.649	0.421	1.205	0.766-1.896
Reason for consultation	−1.422	0.228	38.799	<0.001	0.241	0.154-0.377
Oral health literacy	0.148	0.048	9.636	0.002	1.159	1.056-1.272
Satisfaction (reference: dissatisfied)						
Neutral	−1.100	0.535	4.233	0.040	0.333	0.117-0.949
Satisfied	1.408	0.438	10.326	0.001	4.090	1.732-9.656

OR, odds ratio; *CI*, confidence interval

3　讨　论

3.1　龈上洁治术后早期是患者不复诊的高风险阶段

牙周炎患者不能坚持定期复诊，是临床中常见的问题。本研究中，572例接受龈上洁治术的慢性牙周炎患者中，有333例在12个月内未按计划进入后续治疗，脱落率为58.22%，与Jiang等[16]报告的同阶段慢性牙周炎患者64.48%脱落率一致处于高位。有研究者在回顾性研究中报告，支持性牙周治疗阶段慢性牙周炎患者的脱落率达32.4%，其中最大比例的脱落发生在治疗完成后的第一年内[17]。部分患者在初次治疗后认为症状已缓解，加上缺乏系统的随访提醒，容易中断复诊[18]。

由此表明，龈上洁治术后是慢性牙周炎患者整个治疗环节中的高脱落风险环节，其脱落率不低于已进入维护期的长期脱落水平，关注龈上洁治术后早期的复诊情况与关注维护期长期依从性同等重要。临床上可将龈上洁治术作为加强干预的关键切入点。

3.2　影响复诊行为的核心可干预因素分析

在纳入性别、学历、月收入并校正年龄后，本研究发现就诊原因、口腔健康素养及首次就诊满意度为影响复诊行为的3个独立可干预相关因素。

就诊原因关联最强，就诊原因为转诊的患者复诊可能性仅为主动就诊者的24.1%。这可能源于当前多学科协作中的衔接脱节，因修复、种植、正畸等需求转诊的患者，常将牙周治疗视为其首要治疗目标的“术前准备”，对后续系统性治疗缺乏认知与内在动机[18]。因此，针对这一高脱落风险群体，临床需建立结构化的衔接干预路径。例如，在转诊单或电子病历系统中嵌入标准化提示，引导牙周专科医生以患者可理解的方式，明确阐释牙周炎症控制与其核心治疗目标（如种植体长期稳定、正畸疗效维持、修复体使用寿命）以及口腔相关健康之间的直接关联[19-21]；在洁治术前或术后即时开展可视化健康教育，借助菌斑显示剂、牙周探诊记录等工具，直观呈现患者的感染状况及治疗带来的改善，强化治疗必要性认知[22-24]；术后建立定期电话随访机制，以延续健康教育、巩固行为改变[25]。

口腔健康素养方面，其得分每增加1分，复诊概率提高15.9%，是另一独立影响因素。该结果与文献一致：患者对口腔健康信息的理解与运用能力直接影响其对疾病长期性及维护治疗必要性的认知[26-27]。素养较低者可能因缺乏自我效能或社会支持而中断复诊[28-29]。因此，健康宣教应避免复杂术语，采用图示化材料、演示关键护理技能，注重提升患者的理解力与决策参与感，同时鼓励家

庭成员参与监督，综合促进健康行为的形成与维持[30]。

此外，就诊满意度方面，总体效应显著（$P<0.001$）。以不满意组为参照，满意组复诊概率显著升高，而一般组复诊概率降低。这一发现凸显了首次治疗体验中高满意度的重要性：满意的体验包括清晰的病情解释、有效的疼痛控制、充分的沟通时间以及被尊重的感觉[31]。当患者感到被关心、治疗过程舒适且信息透明时，对医疗团队的信任感显著增强，更愿意遵从后续复杂的牙周序列治疗计划。至于一般组复诊概率低于不满意组，可能反映了两类患者的心理差异，不满意者可能因症状持续或者治疗未达预期而主动寻求复诊，而一般者则处于可复诊可不复诊的模糊状态，缺乏内在动机[18]。因此，临床应系统优化首次治疗的全程体验，而非仅关注技术操作[32]。

其他变量中，性别和学历亦呈显著关联。女性复诊概率高于男性，可能与女性更关注口腔健康、健康素养较高或社会角色中更倾向维护健康行为有关。高学历患者复诊依从性更好，这与既往研究一致，可能源于高学历者信息获取能力更强、对疾病长期管理理解更深刻[33]。虽然这些不是本研究的核心变量，但它们为识别高危人群提供了补充指标，低学历男性患者尤其需要加强干预。

3.3　研究局限性

本研究存在以下局限：虽采用多因素回归校正了主要人口学混杂，但受回顾性研究设计限制，未能纳入牙周炎临床严重程度（探诊深度、疾病分期分级）以及牙科焦虑程度、就医便利性等与口腔健康行为相关的因素[34-35]。前者可能直接影响患者的就诊动机及意愿，后者则可能与已识别的就诊原因、口腔健康素养、满意度产生混杂或交互作用[36]。例如牙科焦虑可能降低患者对就诊体验的评价[37]，就医便利性差可能削弱复诊意愿，社会支持不足可能阻碍健康素养向实际行为的转化[38]。上述混杂因素未能控制，可能导致对核心因素效应的估计偏差；第二，单中心方便抽样的样本来自高水平专科医院，疾病认知水平与经济状况与基层患者存在差异，结论的外推性受到一定限制；最后，本研究仅观察了一年内的复诊行为，未能反映更长期的治疗维持模式。未来研究应开展多中心、前瞻性队列研究，延长随访时间以揭示依从性的动态变化轨迹，并纳入更全面的临床与心理测量指标。

本研究聚焦龈上洁治术后这一被忽视的早期关键窗口期，突破现有研究多关注牙周维护期患者的局限，并证实了龈上洁治术后是慢性牙周炎患者脱离牙周治疗序列的关键风险窗口，就诊原因、口腔健康素养及就诊满意度应作为临床干预龈上洁治术后复诊脱落的重点靶点。临床应构建系统性的干预路径：建立转诊患者的动机激发与衔接教育机制，促进治疗目标的认知整合；实施基于健康素养评估的差异化口腔健康教育，提升患者的自我管理能力；同时持续优化首次治疗全程体验，巩固医患信任。通过在关键窗口期实施整合性干预，有望显著提高牙周序列治疗的转化率与长期疗效。

【Author contributions】 Yan J conceived and designed the study, collected and collated the data, and drafted the manuscript. Liu Y participated in study design, organized data collection and analysis, and revised the manuscript. Liu XY participated in data collection, literature search, and manuscript revision. Tang JL participated in study design and data collection, and assisted in data analysis. Wang XY supervised the study, revised the study design, and critically revised the manuscript. All authors read and approved the final manuscript as submitted.

【Ethics statement】 The study adhered to the tenets of the Declaration of Helsinki and was approved by the Ethics Committee of Nanjing Stomatological Hospital, Medical School of Nanjing University (No. NJSH-2023NL-022-1), and written informed consent was obtained from all patients.

【Funding】 This study was supported by the grants from the Key Medical Discipline Construction Unit Fund of Jiangsu Province (No. JSDW202246), the Cadre Health Research Project of Jiangsu Province (No. BJ21006). The funder had no role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript.

【Competing interests】 All authors have completed the ICMJE uniform disclosure form at www.icmje.org/disclosure-of-interest/ and declare: support from the Key Medical Discipline Construction Unit Fund of Jiangsu Province (No. JSDW202246), the Cadre Health Research Project of Jiangsu Province (No. BJ21006) for the submitted work, no financial relationships with any organisations that might have an interest in the submitted work in the previous three years; no other relationships or activities that could appear to have influenced the submitted work.

【Data availability statement】 The original contributions presented in this study are included in the article. Further inquiries can be directed to the corresponding author upon reasonable request.

【Generative AI statement】 The authors declared that generative AI was not used in the creation of this manuscript.

参考文献

[1]　Pihlstrom BL, Michalowicz BS, Johnson NW. Periodontal diseases

[J]. Lancet, 2005, 366(9499): 1809-1820. doi: 10.1016/S0140-6736(05)67728-8.

[2] Bush Gissler B, Kroeger A, Würfl G, et al. Does patient adherence influence the ability of supportive periodontal therapy to maintain stability around teeth and dental implants - a systematic review[J]. Oral Health Prev Dent, 2025, 23: 615-627. doi: 10.3290/j.ohpd.c_2314.

[3] Broomhead T, Gibson B, Parkinson C, et al. Gum health and quality of life-subjective experiences from across the gum health-disease continuum in adults[J]. BMC Oral Health, 2022, 22(1): 512. doi: 10.1186/s12903-022-02507-5.

[4] Navarro-Pardo M, Márquez-Arrico C, Pallarés-Serrano A, et al. Adherence to supportive periodontal treatment in relation to patient awareness[J]. J Clin Exp Dent, 2022, 14(1): e1-e8. doi: 10.4317/jced.59035.

[5] Campos ISO, de Freitas MR, Costa FO, et al. The effects of patient compliance in supportive periodontal therapy on tooth loss: a systematic review and meta-analysis[J]. J Int Acad Periodontol, 2021, 23(1): 17-30.

[6] Sanz M, Herrera D, Kebschull M, et al. Treatment of stage I-III periodontitis-the EFP S3 level clinical practice guideline[J]. J Clin Periodontol, 2020, 47(Suppl 22): 4-60. doi: 10.1111/jcpe.13290.

[7] 闫福华, 陈发明. 牙周病学[M]. 6版. 北京: 人民卫生出版社, 2025.
Yan FH, Chen FM. Periodontology[M]. 6th ed. Beijing: People's Medical Publishing House, 2025.

[8] Kwon T, Lamster IB, Levin L. Current concepts in the management of periodontitis[J]. Int Dent J, 2021, 71(6): 462-476. doi: 10.1111/idj.12630.

[9] Marín-Jaramillo R, Agudelo-Suárez A. Factors related to compliance with periodontal disease treatment appointments: a literature review[J]. J Clin Exp Dent, 2022, 14(11): e967-e971. doi: 10.4317/jced.59752.

[10] Sonnenschein SK, Kohnen R, Ruetters M, et al. Adherence to long-term supportive periodontal therapy in groups with different periodontal risk profiles[J]. J Clin Periodontol, 2020, 47(3): 351-361. doi: 10.1111/jcpe.13252.

[11] Leggett H, Vinall-Collier K, Csikar J, et al. A scoping review of dental practitioners' perspectives on perceived barriers and facilitators to preventive oral health care in general dental practice[J]. BMC Oral Health, 2024, 24(1): 249. doi: 10.1186/s12903-024-04022-1.

[12] Abbinante A, Antonacci A, Antonioni M, et al. Concordance and clinical outcomes improvement following oral hygiene motivation: a systematic review and report of the workshop of the Italian societies of dental hygiene[J]. Int J Dent, 2024, 2024: 8592336. doi: 10.1155/2024/8592336.

[13] Naghibi Sistani MM, Montazeri A, Yazdani R, et al. New oral health literacy instrument for public health: development and pilot testing[J]. J Investig Clin Dent, 2014, 5(4): 313-321. doi: 10.1111/jicd.12042.

[14] 吴永泽, 王文绢. 不同应答等级对likert式量表特性的影响[J]. 中国慢性病预防与控制, 2010, 18(2): 215-217. doi: 10.16386/j.cjpccd.issn.1004-6194.2010.02.003.
Wu YZ, Wang WJ. Effect of different response levels on the characteristics of likert-type rating scale[J]. Chin J Prev Control Chronic Dis, 2010, 18(2): 215-217. doi: 10.16386/j.cjpccd.issn.1004-6194.2010.02.003.

[15] Peduzzi P, Concato J, Kemper E, et al. A simulation study of the number of events per variable in logistic regression analysis[J]. J Clin Epidemiol, 1996, 49(12): 1373-1379. doi: 10.1016/s0895-4356(96)00236-3.

[16] Jiang J, Shi X, Ge S, et al. Current status and influencing factors of missing appointments in patients with periodontitis: a cross-sectional study[J]. BMC Oral Health, 2024, 24(1): 1504. doi: 10.1186/s12903-024-05283-6.

[17] Park WK, Lee JK, Chang BS, et al. A retrospective study on patients' compliance with supportive periodontal therapy[J]. J Korean Acad Periodontol, 2009, 39(1): 59-70. doi: 10.5051/jkape.2009.39.1.59.

[18] Wong LB, Kunnasegaran SG, Yap AU, et al. A qualitative study of dental professionals' and patients' knowledge and perceptions of the impact of periodontal disease on systemic health and quality of life[J]. Community Dent Oral Epidemiol, 2022, 50(5): 375-383. doi: 10.1111/cdoe.12679.

[19] Lind KH, Bunaes DF, Lie SA, et al. Periodontal referral patterns in Norway: 2003 versus 2018[J]. Clin Exp Dent Res, 2022, 8(1): 402-409. doi: 10.1002/cre2.491.

[20] Gupta S, Das N, Amaranath-Bj J, et al. Knowledge and awareness about systemic effects of periodontal disease among medical, dental and alternate medical practitioners and their referral practice to periodontists[J]. Mymensingh Med J, 2022, 31(4): 1153-1161.

[21] Chan CCK, Chan AKY, Chu CH, et al. Theory-based behavioral change interventions to improve periodontal health[J]. Front Oral Health, 2023, 4: 1067092. doi: 10.3389/froh.2023.1067092.

[22] Mishra D, Jalaluddin M, Singh DK, et al. Evaluation of the effectiveness of conventional and technology-based oral health education tools in the improvement of periodontal health[J]. J Contemp Dent Pract, 2025, 26(7): 688-692. doi: 10.5005/jp-journals-10024-3894.

[23] Suvan JE, Sabalic M, Araújo MR, et al. Behavioral strategies for periodontal health[J]. Periodontol 2000, 2022, 90(1): 247-261. doi: 10.1111/prd.12462.

[24] 张玉革, 刘均娥, 刘宇, 等. 菌斑可视化干预对成人正畸伴牙周炎患者牙周组织健康的影响[J]. 北京口腔医学, 2024, 32(1): 44-49. doi: 10.20049/j.bjkqyx.1006-673X.2024.01.010.
Zhang YG, Liu JE, Liu Y, et al. Effect of plaque visualization intervention on periodontal health in adult orthodontic patients with periodontitis[J]. Beijing J Stomatol, 2024, 32(1): 44-49. doi: 10.20049/j.bjkqyx.1006-673X.2024.01.010.

[25] He Y, Tang F, Liao R, et al. The efficacy of telephone follow-up frequencies on clinical parameters post non-surgical periodontal therapy: a randomized controlled trial[J]. Front Oral Health, 2025, 6: 1568252. doi: 10.3389/froh.2025.1568252.

[26] Yu S, Huang S, Song S, et al. Impact of oral health literacy on oral health behaviors and outcomes among the older adults: a scoping

review[J]. BMC Geriatr, 2024, 24(1): 858. doi: 10.1186/s12877-024-05469-1.

[27] Flynn PM. Oral health literacy: be part of the change![J]. J Dent Hyg, 2022, 96(5): 4-5.

[28] Li J, Liu R, Zhang H, et al. Relationships between oral health-related self-efficacy, oral health literacy, social support, and illness perception among patients with periodontitis: a moderated mediation model[J]. Acta Odontol Scand, 2026, 85: 75-83. doi: 10.2340/aos.v85.45416.

[29] van der Gaag M, Heijmans M, Spoiala C, et al. The importance of health literacy for self-management: a scoping review of reviews[J]. Chronic Illn, 2022, 18(2): 234-254. doi: 10.1177/17423953211035472.

[30] Luo ZN, Li K, Chen AQ, et al. The influence of family health on self-efficacy in patients with chronic diseases: the mediating role of perceived social support and the moderating role of health literacy[J]. BMC Public Health, 2024, 24(1): 3398. doi: 10.1186/s12889-024-20906-x.

[31] Weinert L, El Sayed N, Wensing M, et al. Exploring barriers to periodontal treatment adherence in patients with periodontitis to inform development of a digital companion: a qualitative study[J]. J Clin Periodontol, 2026, 53(1): 58-71. doi: 10.1111/jcpe.70044.

[32] Modin C, Abadji D, Adler L, et al. Treatment compliance in patients with aggressive periodontitis-a retrospective case-control study[J]. Acta Odontol Scand, 2017, 75(2): 94-99. doi: 10.1080/00016357.2016.1259497.

[33] 张芮, 刘怡, 李善红. 慢性牙周炎患者牙周维护治疗依从性调查及影响因素分析[J]. 华南预防医学, 2024, 50(8): 736-738, 742. doi: 10.12183/j.scjpm.2024.0736.
Zhang R, Liu Y, Li SH. Compliance survey and influencing factors analysis of periodontal maintenance treatment in patients with chronic periodontitis[J]. South China J Prev Med, 2024, 50(8): 736-738, 742. doi: 10.12183/j.scjpm.2024.0736.

[34] Flores KJA, Garcia MCU, Pacete-Estrera KRR. Factors affecting patient referral to periodontists from general dental practitioners in the city of Manila: a descriptive cross-sectional study[J]. Acta Med Philipp, 2025, 59(12): 60-67. doi: 10.47895/amp.vi0.11278.

[35] Atarbashi-Moghadam F, Talebi M, Mohammadi F, et al. Recurrence of periodontitis and associated factors in previously treated periodontitis patients without maintenance follow-up[J]. J Adv Periodontol Implant Dent, 2020, 12(2): 79-83. doi: 10.34172/japid.2020.010.

[36] Dolińska E, Milewski R, Pietruska MJ, et al. Periodontitis-related knowledge and its relationship with oral health behavior among adult patients seeking professional periodontal care[J]. J Clin Med, 2022, 11(6): 1517. doi: 10.3390/jcm11061517.

[37] Stein Duker LI, Grager M, Giffin W, et al. The relationship between dental fear and anxiety, general anxiety/fear, sensory over-responsivity, and oral health behaviors and outcomes: a conceptual model[J]. Int J Environ Res Public Health, 2022, 19(4): 2380. doi: 10.3390/ijerph19042380.

[38] Liss A, Wennström JL, Welander M, et al. Patient-reported experiences and outcomes following two different approaches for non-surgical periodontal treatment: a randomized field study[J]. BMC Oral Health, 2021, 21(1): 645. doi: 10.1186/s12903-021-02001-4.

（编辑　张琳，房付春）

Open Access
This article is licensed under a Creative Commons Attribution 4.0 International License.
Copyright © 2026 by Editorial Department of Journal of Prevention and Treatment for Stomatological Diseases

官网