

Lit Review - March 11th, 2019

Characteristics of dental patients determining their compliance level in dentistry: relevance for predictive, preventive, and personalized medicine

Introduction

- “Compliance” used by physicians in context of medication therapy
- Synonymous with “adherence to therapy”
- WHO defines as: degree to which patient is willing to take a medicine, follow recommendations on nutrition or lifestyles, and comply with doctor’s instructions
- Not much focus given to patients’ personality traits, values, lifestyles, social status
- Failure to comply with doctor’s recommendations and prescriptions may be stipulated by different factors: social and economic factors, factors related to disease, factors related to therapy, factors related to healthcare system, and factors related to patient
- It is evident that a new way of treatment is required to go from “reactive” to “predictive, preventative, and personalized medicine.”
- Around 10% of all hospitalizations result from failure to comply with doctor’s recommendations
- Establishment of constructive relationships in the doctor-patient system is key to high compliance
- Adherence to three main constituents:
 - Timely intake of medication
 - Intake of medication in prescribed dose
 - Compliance with nutritional and lifestyle recommendations
- Individual approach may help in detection of early signs of dental disease, and thus, it may help in contributing in early disease prevention
- Several factors determining patient’s ability to follow instructions of a dentist
- One more important factor affecting compliance is patient’s personality
- Individual approach to the patient, ensuring their comfort and safety during the attendance, is key to successful work
- Doctor-patient system is prioritized in development of individualized prevention and treatment programs in dentistry
- The psychological characteristics of patients and their attitude to their dental health and hygiene of oral cavity are in close relationship
- Behaviour of the dental patient after the exam and conversation with the doctor is influenced by such characteristics with a high probability

Methods

- Total of 45 people (25 women, 20 men) from 19-67 years of age participated in survey
- Indexes of periodontal treatment needs (gingival bleeding, dental plaque) defined for study participants
- Study was carried out with use of following psychodiagnostics methods:
 - Multidimensional Health Locus of Control Scales - allows for determining externality or internality of control locus
 - Interpersonal Relations Diagnostic test - aims to study human relations and enables to define prevailing type of attitude to other people
 - Leonhard-Smishek Characterological Questionnaire - designed to diagnose type of accentuation of personality traits
 - Individual Typological Questionnaire - contributes to defining such personality traits as extraversion-introversion, spontaneity-sensitivity, agreeableness-anxiety, rigidity-lability

- Self-Assessment Questionnaire - enables patients to assess their well-being and identify if they have physical complaints
- Personality Questionnaire - diagnose types of attitude to the disease
- Study carried out to define oral care and periodontal health indexes, as well as index of treatment needs
 - CPITN - measure treatment needs
 - PMA (Papillary marginal alveolar index) - assess severity of gingivitis
 - Saxer and Muhlemann index - index of gingival bleeding
 - Silness and Loe - thickness of plaque close to gingival margin
 - OHI-S index - measure area of tooth surface affected by plaque or tartar
- All patients examined by dentist
- Each patient exposed to objective assessment of status of teeth and oral cavity by indices
- Afterwards, conversation with dentist on recommendations on proper oral care, explained importance of complying for improving periodontal health
- Interview followed by professional oral hygiene
- Repeated exam scheduled for 4 weeks

Results

- Study findings show that maximal value of dental indexes obtained at primary and repeated exams do not exceed 1.3 for both men and women
- Objective status of oral cavity of study participants was good - meaning patients have good oral care
- Indexes of gingival bleeding, inflammation, and dental plaque were normal in the study participants
- Based on obtained data, status of patients' periodontium was improved with repeated dental visits

Table 1 Mean values of dental indexes

Dental indexes	Primary examination		Repeated examination	
	<i>M</i> (SD)		<i>M</i> (SD)	
	Men (<i>n</i> = 20)	Women (<i>n</i> = 25)	Men (<i>n</i> = 20)	Women (<i>n</i> = 25)
CPITN	0.968	1.198	0.609	0.917
PMA	0.383	0.367	0.244	0.200
Saxer and Muhlemann	1.295	1.309	0.65	0.727
OHI-S	0.973	0.947	0.423	0.442
Silness and Loe	1.215	1.292	0.506	0.783

- Found that sample of respondents included patients with good periodontal care
- Afterwards, analyzed personality characteristics of patients with inflammation and poor periodontal hygiene
- Patients divided into groups with positive and negative dynamics in status of oral cavity
- Group 1 - positive dynamics - comprised patients whose dental indexes decreased by second exam
- Group 2 - negative dynamics - comprised patients with increased indexes

Discussion

- Important that the leading principle of personalized healthcare is attentive and thorough communication with the patient
- A review made about interventions used in periodontal treatment had the cognitive behavioural approach backgrounds, including motivational interviewing and a patient self-care commitment model
- Groups provided with psychological interviewing procedures showed slightly better result than control groups when clinical outcome measures such as presence of plaque or number of Perio pockets were used
- Psychological interviewing procedures increased patient-reported compliance
- Study of patients' compliance who underwent periodontal therapy and needed some maintenance procedures revealed that adherence to treatment and following doctor's prescriptions differed in various social groups
- Non-working class groups had poor level of compliance and in the same time working people were more accurate in following doctor's recommendations
- A retrospective study carried out to assess compliance of periodontal patients in a private practice to investigate "risk profile" of non-compliant patient
- Results showed low compliance of patients with mean period of supportive periodontal therapy attendance of 20 months
- Some investigations revealed compliance could be increased with motivating procedures, such as reminders, information regarding disease and importance of maintenance, and motivating patient showing improvements
- The personalized psychological interviewing is more helpful for patient adherence and may therefore improve initial periodontal treatment success
- Patient's self-reports can provide doctor the information that can help in early detection of symptoms of syndromes and co-existing and snowballing health-health-threatening conditions
- Can help doctors select individuals at high risk
- Psychological factors play an important role in clinical manifestation and deterioration of the disease, especially "dry mouth" syndrome, which can lead to other oral pathology
- In the present study, psychological characteristics of patients adherent and not adherent to periodontal treatment were obtained
- Female patients with good dental health status have an internal locus of control
 - Altruistic in interpersonal relationships and emotive in character
 - Such patients perform a harmonious type of attitude to the disease
 - A woman with good status of oral cavity and teeth is characterized by high internal responsibility
 - An introvert, she is emotionally vulnerable and impressionable
 - She is attentive and caring in relations, and has strong views on health and treatment
 - The doctor needs to build relationships with such type of patient in account of their increased responsibility
 - These should be relationships of emotional support, understanding, and comfort
- Male patients with good status of teeth and oral cavity have an external locus of control
 - They shift responsibility for their health to the doctor
 - Authoritarian in interpersonal relationships, hyperthymic in temperament, and anosognosic in attitude toward disease
 - Men more often than women leave things to chance, rather than take much care of their health
 - Extraverts
 - Also requires an individualized approach from the doctor
 - Doctor's argumentation should be strong and well-structured to explain need to monitor health and comply with recommendations

- Established that women from positive dynamics group has higher internal locus of control - relied only on themselves in taking care of health
- However, group 1 also included patients with stuck-up temperament, and group 2 representatives of a dependent type
 - Women performing improvement of oral cavity status are more introverted, whereas women with deteriorating status are more sensitive
- Established that men from group 1 had a higher internal locus of control than group 2
 - Group 1 was characterized by authoritarian type of interpersonal relationships
 - Aggressive type prevailed in group 2
 - Patients that are accurate in following doctor's recommendations are more confident and independent and more active in achieving their goals
 - Whereas patients with negative dynamics are distrustful and hostile to others
 - Demonstrative type prevailed in positive dynamics group
- Should be noted that both men and women from group 1 remain more optimistic regarding their treatment
- Group 2 patients are intolerant to the pain and unable to endure and wait until the feeling of discomfort disappears

Conclusions

- By degree of compliance with doctor's recommendations, patients were divided into two groups: 1. patients with good oral care and lack of periodontal inflammation; 2. Patient with poor oral care and periodontal. Inflammation, complying and noncomplying with advice
- Women and men with good periodontal status differed in personality characteristics
 - Women properly assessed their situation and relied on themselves in taking care about their health
 - Men more often left things to chance regarding their health
- Female patients adherent to fulfillment of doctor's recommendations were more introverted, more "meticulous", and diligent
 - Women with negative dynamics were less emotionally stable, had deflated self-esteem, and were more vulnerable and dependent on environment
- Male patients with positive dynamics relied on themselves in taking care of their health and were more optimistic, goal oriented, and independent, trying to make positive impression
 - Men with negative dynamics were more distrustful, aggressive, and reserved and fearful and intolerant to physical pain, feeling discomfort

Reference

Tachalov, VV; Orekhova, LY; Isaeva, ER; Kudryavtseva, TV; Loboda, ES; Sitkina, EV.
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