Alat ukur dan indeks prediksi risiko gangguan sendi temporomandibula pasien pascaperawatan ortodonti. Kajian kemampuan operator, kondisi klinis, radiograf sefalometri, dan biomarker inflamasi = Measuring instrument and risk prediction index of temporomandibular disorders in orthodontic patients. A study of operator capability, clinical conditions, cephalometric radiographs, and inflammatory biomarkers

Nada Ismah, author

Abstrak

Gangguan sendi temporomandibula (GSTM) adalah istilah untuk Temporomandibular Disorders (TMD), yaitu kumpulan gangguan yang melibatkan sendi temporomandibula, otot, dan struktur di sekitarnya. Dokter gigi dan dokter gigi spesialis merasakan hambatan dalam menangani pasien GSTM. Saat ini belum diketahui bagaimana pengetahuan, sikap, dan perilaku dokter gigi dan dokter gigi spesialis di Indonesia dalam menangani pasien GSTM. Etiologi GSTM multifaktorial dan salah satu penanganannya adalah perawatan ortodonti. Namun di sisi lain perawatan ortodonti diduga menjadi salah satu penyebab GSTM akibar perubahan posisi gigi, mandibula, dan letak kondil. Hal ini dapat dilihat melalui kondisi klinis dan radiograf sefalometri. Gangguan sendi temporomandibula dapat menjadi suatu inflamasi sehingga biomarker inflamasi banyak diteliti. Tujuan: Penelitian ini terdiri dari dua tahap. Penelitian tahap I (Kualitatif) bertujuan mendapatkan alat ukur/kuesioner kemampuan operator (dokter gigi dan dokter gigi spesialis) tentang pengetahuan, sikap, dan perilaku terhadap pasien dengan GSTM, yang valid dan reliabel. Penelitian tahap II (Kuantitatif) bertujuan memperoleh indeks prediksi risiko GSTM berdasarkan kemampuan operator (skor kuesioner), kondisi klinis terkait faktor klinis (usia, jenis maloklusi, overjet, overbite, dan indeks etiologi GSTM), kondisi klinis terkait faktor mekanis (jenis bracket, kasus ekstraksi, dan alat tambahan), radiograf sefalometri (sudut ANB, SN-MP, Go Angle, I-I dan Y-Axis), dan biomarker inflasi (IL-1 dan CRP) Metode: Penelitian disetujui Komite Etik Kedokteran Gigi, FKG-UI, No: 11/Ethical Approval/FKGUI/III/2022 dan dilakukan di Klinik Ortodonti dan Laboratorium Biologi Oral, RSKGM, FKG UI, Jakarta, Indonesia, pada November 2021-Januari 2024. Penelitian tahap I, pembuatan kuesioner melalui telaah pustaka, observasi, dan diskusi kelompok terarah (FGD) oleh 10 orang dokter gigi dan dokter gigi spesialis. Hasil FGD dianalisis menggunakan metode Framework dilanjutkan uji face dan content validity menggunakan analisis Aiken’s V, I-CVI, dan I-CVR. Kuesioner juga dilakukan uji validitas (korelasi Spearman) dan uji reliabilitas (Cronbach’s Alpha dan CITC). Setiap tahap pengujian dilakukan diskusi dan revisi terkait substansi oleh pakar. Kuesioner akhir (Kuesioner PSP-GSTM) diujikan pada 370 responden dan PPDGS Ortodonti (operator) yang merawat subjek pada penelitian tahap II. Penelitian tahap II, dilakukan pada 105 subjek pasien pascaperawatan ortodonti yang dipanggil kembali untuk menandatangani informed consent, mengisi indeks etiologi GSTM, dilakukan pemeriksaan DC/ TMD, dan swab mukosa bukal. Data lainnya dilengkapi dari skor kuesioner, rekam medis, dan radiograf sefalometri. Dilakukan analisis bivariat untuk melihat hubungan setiap variabel dengan GSTM dan multivariat regresi logistik berganda. Hasil: Alat ukur/kuesioner PSPGSTM berisi 73 pernyataan, terdiri dari 50 pernyataan domain pengetahuan, 14 pernyataan domain sikap, dan sembilan pernyataan domain perilaku. Domain pengetahuan terdiri dari 12 pernyataan subdomain tanda dan gejala, 14 pernyataan subdomain etiologi, 11

pernyataan subdomain diagnosis, dan 13 pernyataan subdomain perawatan. Kuesioner PSP-GSTM memiliki validitas dan reliabilitas yang baik. Dihasilkan indeks prediksi risiko GSTM dengan empat faktor prediktor yaitu indeks etiologi GSTM, alat tambahan, SN-MP, dan Go Angle. Kesimpulan: Kemampuan dokter gigi dan dokter gigi spesialis terkait pengetahuan, sikap, dan perilaku terhadap pasien dengan GSTM dapat diukur menggunakan kuesioner PSP-GSTM. Indeks prediksi risiko GSTM yang terdiri dari indeks etiologi GSTM, alat tambahan, SN-MP, dan Go Angle dapat digunakan untuk memprediksi faktor risiko terjadinya GSTM.

.....The temporomandibular disorders (TMD) are a group of disorders involving the temporomandibular joint, muscles, and surrounding structures. Dentists or dental specialists often encounter challenges when dealing with TMD patients. It is unknown how the knowledge, attitudes, and behavior of dentists and dental specialists in Indonesia are in dealing with TMD patients. The etiology of TMD is multifactorial and one of the treatments is orthodontic treatment. On the other hand, orthodontic treatment is thought to be one of the causes of TMD due to changes in the position of the teeth, mandibles, and the location of the condyle. This can be seen through clinical conditions and cephalometric radiographs. Temporomandibular joint disorders can become inflammatory so inflammatory biomarkers are widely studied. Objective: The research consists of two stages. Phase I (Qualitative) aims to obtain a measurement/questionnaire of operator's ability (dentists and dental specialists) about knowledge, attitudes, and behavior towards patients with TMD (PSP-TMD Questionnaire), which is valid and reliable. Phase II (Quantitative) aims to obtain TMD risk prediction index based on operator capability (PSP-TMD questionnaire score), clinical conditions related to clinical factors (age, malocclusion type, overjet, overbite, and TMD etiology index), clinical conditions related to mechanical factors (bracket type, extraction case, and auxiliary tools), cephalometric radiographs (ANB, SN-MP, Go Angle, I-I and Y-Axis angles), and biomarkers of inflammation (IL-1 and CRP) Method: The research was approved by the Dental Ethics Committee, FKG-UI, No: 11/Ethical Approval/FKGUI/III/2022 and conducted at the Orthodontics Clinic and Oral Biology Laboratory, RSKGM, FKG UI, Jakarta, Indonesia, in November 2021-January 2024. Phase I involves creating questionnaires through literature review, observation, and focus group discussion (FGD) by 10 dentists and dental specialists. The FGD results were analyzed using the Framework method followed by face and content validity tests using Aiken's V, I-CVI, and I-CVR analysis. Questionnaires were tested using validity tests (Spearman correlation) and reliability tests (Cronbach's Alpha and CITC). Every stage and testing related to the substance is discussed and revised by experts. The final questionnaire (PSPGSTM Questionnaire) was tested on 370 respondents and Orthodontics residents (operators) who treated subjects in phase II research. The phase II study was conducted on 105 subjects of orthodontic post-treatment patients who were called back to sign an informed consent and fill in the TMD etiology index, DC/TMD examination, and buccal mucosal swabs. Other data were supplemented from questionnaire scores, medical records, and cephalometric radiographs. Bivariate analysis was performed to see the relationship of each variable with TMD and multivariate multiple logistic regression. Results: The PSP-TMD measurement tool/questionnaire contained 73 statements, consisting of 50 knowledge domain statements, 14 attitude domain statements, and nine behavior domain statements. The knowledge domain consists of 12 sign and symptom subdomain statements, 14 etiology subdomain statements, 11 diagnosis subdomain statements, and 13 treatment subdomain statements. The PSP-TMD questionnaire has good validity and reliability. The TMD risk prediction index was generated with four predictor factors, namely the TMD etiology index, auxiliary tools, SN-MP, and Go Angle. Conclusion: The capability of dentists and dental specialists regarding knowledge, attitudes, and behavior towards patients

with TMD can be measured using the PSP-TMD questionnaire. The TMD risk prediction index consisting of the TMD etiology index, auxiliary tools, SN-MP, and Go Angle can be used to predict risk factors for TMD