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Comparison of the efficacy of a questionnaire, oral history and clinical examination in detecting signs and symptoms of occlusal and temporomandibular joint dysfunction.
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Purpose of study:

Method:

Results:

Discussion:

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Comments:
Comparison of the efficacy of a questionnaire, oral history, and clinical examination in detecting signs and symptoms of occlusal and temporomandibular joint dysfunction

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Various epidemiologic studies relating to mandibular dysfunction have recently been reported in the literature. These studies have relied on different methods of acquiring data, some of which admittedly cannot be measured objectively. The limitations of both verbal and nonverbal communication as well as the anamnestic variables present in the self-administered questionnaire and the oral history have been described by many authors. Others, however, have supported the overall reliability of the self-administered questionnaire.

This article provides a comparison and evaluation of three different methods of data accumulation presently used in an occlusal and temporomandibular joint (TMJ) examination system.

POPULATION

This group of 323 adult patients was similar to the population of a previous study. Age distribution was between 20 and 70 years and almost two thirds of the subjects were women. Sixty-eight per cent of the population were married, 81 per cent attended college, 30 per cent were housewives, and 31 per cent were employed in a professional capacity.

SELECTION OF DATA

Two groupings of data were selected. The first group comprised four signs and symptoms commonly related to TMJ dysfunction. These were referred to in three different media: a self-administered questionnaire, an oral history, and a clinical examination. The second group consisted of six factors commonly related to occlusal dysfunction. These were included in two media: a self-administered patient questionnaire and a routine oral history.

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Fig. 1. The prevalence of TMJ hypomobility or limitation in opening the jaws as found for 323 patients by the use of questionnaire, oral history, and clinical examination.

Fig. 2. The prevalence of TMJ crepitus in 323 patients as found by the use of questionnaire, oral history, and clinical examination.

GROUP I

The four selected TMJ dysfunction symptoms were (1) difficult or limited opening of the jaws; TMJ noise as represented by (2) crepitus or (3) clicking and/or popping; and (4) pain or soreness in the TMJ region.

Questionnaire. The following questions were included in a self-administered questionnaire (Form 117): 16

1. Do you have difficulty in opening your mouth widely?
2. Do you ever hear grating sounds from your jaw joint?
3. Do you ever hear clicking or popping sounds from your jaw joint?
4. Have you ever had pain in your jaw joint?

History. Using Section M of the “Occlusal and Temporomandibular Joint Examination” (Form 116) questions similar to the aforementioned ones were asked of the patient. (Most frequently the oral history was taken some days subsequent to the patient’s completion of the questionnaire.)

Clinical examination. The interincisal distance was measured at the midline with the jaws at maximum opening; from this measurement the examiner made a judgment (1) as to whether the opening was normal, limited, or very restricted (Section N). With the aid of a stethoscope the examiner listened during opening and
Methods of detecting TMJ dysfunction

Fig. 3. The prevalence of TMJ clicking and/or popping in 323 patients as found by the use of questionnaire, oral history, and clinical examination.

Fig. 4. The prevalence of TMJ pain or soreness in 323 patients as found by the use of questionnaire, oral history, and clinical examination.

closing of the jaws as well as during lateral mandibular movements for (2) crepitus or (3) clicking and/or popping sounds (Section P). The examiner palpated both the lateral aspect of the TMJ region and the posterior aspect from the external auditory canal during opening and closing of the jaws as well as during lateral movements and he noted any evidence of (4) pain or soreness (Section R).

Results. (1) The incidence of hypomobility (limitation of or difficulty in jaw opening) found through each method of inquiry was as follows: 12.4 per cent of the patients stated in the questionnaire that they had difficulty in opening the jaws widely; during the oral history 5.3 per cent described limitation of opening; and 6.2 per cent were judged by the examiner to have limited opening upon measurement (Fig. 1).

(2) Crepitus was detected as follows: 12.4 per cent of the patients claimed that they heard grating sounds from the jaw joint; only 2.5 per cent described this during the history; and 19.8 per cent had auscultative evidence of crepitus (Fig. 2).

(3) Clicking and/or popping was the most common symptom and the one most easily discerned by the patient. Thirty per cent acknowledged clicking or popping sounds on the questionnaire, 19.5 per cent reported the same for the oral history, and 29.1 per cent were able to demonstrate it to the examiner (Fig. 3).
Fig. 5. The prevalence of clenching in 323 patients as found by the use of patient questionnaire and oral history.

Fig. 6. The prevalence of bruxism in 323 patients as found by the use of patient questionnaire and oral history.

(4) The presence of TMJ pain or soreness was described on the questionnaire by 20.4 per cent of the patients, 10.5 per cent reported these symptoms during history taking, and 27.6 per cent exhibited these during active palpation (Fig. 4).

GROUP II

The six selected occlusal habits and their sequelae were (1) clenching (habitual clenching of jaw muscles), (2) bruxism (gnashing or grinding of teeth), (3) morning awareness (awareness of jaws on awakening), (4) resultant sore mouth (any expression of oral discomfort resulting from the above-described habits), (5) headaches, and (6) neckaches.

Questionnaire. The following questions were included in the questionnaire (Form 117)¹⁶:

1. Are you aware of clenching your teeth during the day?
2. Have you ever been told that you grind your teeth during sleep?
3. Do you ever awaken with awareness of your teeth or jaws?
4. Do your teeth hurt from biting?
5. Do you have “tension” headaches? Do you ever have “migraine” headaches?
6. Do you frequently have neckaches or stiff neck muscles?
Fig. 7. The prevalence of morning awareness in 323 patients as found by the use of questionnaire and oral history.

Fig. 8. The prevalence of resultant sore mouth in 323 patients as found by the use of questionnaire and oral history.

History. Using Sections T and U of the "Occlusal and Temporomandibular Joint Examination" (Form 116) verbal questions similar to those just described were asked of the patient during the clinical examination, which was usually conducted some days subsequent to the patient's completion of the questionnaire.

Results. (1) Of the 323 patients 21.4 per cent claimed an awareness of clenching on the questionnaire whereas 30 per cent responded positively on verbal questioning (Fig. 5).

(2) For bruxism 16.4 per cent indicated in the questionnaire that they had been told that they grind their teeth at night; 15.2 per cent reported this in an oral history (Fig. 6).

(3) Morning awareness was reported by 20.1 per cent in the questionnaire and 18.3 per cent in the history (Fig. 7).

(4) Resultant sore mouth was indicated by 10.8 per cent in the questionnaire and only 7.1 per cent in the history (Fig. 8).

(5) Headaches were common for 34.4 per cent as shown on the questionnaire; 42.4 per cent reported these during the history (Fig. 9).

(6) Neckaches were indicated as a symptom by 21.1 per cent in the questionnaire and by 17.6 per cent in the history (Fig. 10).
DISCUSSION

The efficacy of the three methods of data accumulation varied dramatically. Most notable was the inadequacy of the oral history as taken by this examiner; in comparison the self-administered questionnaire was far more reliable. This observation has also been made by McCarthy, Feinstein, and Collen and associates, who have suggested that the routine use of a written questionnaire ensures that certain essential data are obtained and recorded.

Certain specific hypotheses might be made from this study. Hypomobility (difficult or limited jaw opening) is a subjective observation and a patient’s appraisal may vary greatly from the examiner’s judgment. The other symptoms may be detected more objectively and the questionnaire, although decidedly inferior to direct clinical examination, serves as a fairly reliable means of detection. It becomes apparent that all patients are not aware of their symptoms as demonstrated with TMJ pain and crepitus.

The data recorded for Group II habits also indicate that the self-administered questionnaire is the best method of detecting various occlusal habits and their sequelae, with the exception of clenching and headaches. An explanation of this discrepancy might be that some patients are unaware of the clenching habit and the
initial questionnaire tends to bring it to their attention. Regarding headaches the
difficulty is probably due to the specificity of the questions in the questionnaire. One
question which refers to “tension” headaches may have a psychological implication
for some patients. The other question on headaches uses the word “migraine,” which
implies a specific medical diagnosis. This “harshness of alternatives” has been dis-
cussed by Payne.9

The taking of an oral history demonstrates a host of potential variables such as:
varying ways of phrasing the question, nonverbal communication, patient timidity,
examiner authoritarianism, time limitations, preoccupation with other concerns, the
ability to listen, and the examiner’s experience in conducting effective interviews.3-11
The manner in which the clinician asks the questions, his preconceptions or biases,
and his approach and vocabulary all may evoke incomplete, inaccurate, or evasive
answers.

Although the questionnaire carries no nonverbal communicative factors, which
may easily interfere with an accurate oral history, it is, however, certainly subject to
the psychology of the written question, a fact that may easily alter the results of a
survey or the accuracy of information for diagnosis.

SUMMARY

A comparison of three methods of obtaining information relating to some TMJ
signs and symptoms has been made. The taking of an oral history by this examiner
was shown to be the least reliable. The acquisition of data by this verbal process is
a clinically sophisticated and difficult medical procedure and a major source of error
is the bias or preconception that a clinician brings to his observations.

Far more effective was a written, self-administered patient questionnaire, which
proved quite reliable in detecting the presence of some occlusal habits. This study
indicates that the initial use of a self-administered patient questionnaire, even in the
hands of an inexperienced dentist, will ensure that certain essential data are obtained
and recorded and will result in the discovery that a substantial number of patients
have signs and symptoms of occlusal and TMJ dysfunction.

The most objective method is of course the direct clinical examination. A combina-
tion of these three methods of obtaining information is recommended as an im-
portant part of routine occlusal and TMJ examinations.

References
2. Agerberg, G.: On Mandibular Dysfunction and Mobility, Umea University Odontological
Distribution of Symptoms According to Age and Sex as Judged From Investigation by
Symptoms in Relation to Impaired Mobility of the Mandible as Judged From Investiga-
Company.

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