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# Recognition of Temporomandibular Disorders

## Validity and outcome of three screening questions (3Q/TMD)

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### Akademisk avhandling

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Avhandlingen kommer att försvaras på engelska.

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**Title**

Recognition of Temporomandibular Disorders.  
Validity and outcome of three screening questions (3Q/TMD).

**Abstract**

**Background**

Pain and dysfunction in the temporomandibular region (Temporomandibular Disorders, TMD) are common conditions in the general population with an estimated treatment need of 5-15% in the general population. However, in Sweden, traceable performed treatments are significantly lower. The reasons for this indicated under-treatment are not known. To easily detect patients with a potential TMD related condition, three screening questions, 3Q/TMD, have been introduced. The aim with this project was to evaluate the validity and outcome of the 3Q/TMD with the objective to recognize individuals with TMD and potential treatment need in the Public Dental Health service (PDHS).

**Methods**

The thesis is based on four study samples; three from the PDHS in the county of Västerbotten, Sweden and one sample from the specialized orofacial pain clinic at the Academic Centre for Dentistry, ACTA, Amsterdam, the Netherlands. The bases for all studies are individuals' answers to the 3Q/TMD. Quantitative approaches were used in the analyses. The prevalence of affirmative answers was evaluated in a large cross-sectional study over the lifespan. The validity of the 3Q/TMD in relation to the Diagnostic Criteria for TMD (DC/TMD) as reference standard was established in two case-control studies. The outcome of the 3Q/TMD on TMD treatment within general practice was evaluated in a cohort study.

**Results**

Affirmative answers to the 3Q/TMD increased during adolescence. Women answered affirmatively to the 3Q/TMD significantly more often compared to men for all age groups except for the first and last parts of a one hundred-year lifespan. The highest prevalence was reported by women during their fertile period in life. In a general population sample, 74% of individuals with an affirmative answer qualified for a DC/TMD pain or dysfunctional diagnosis, as compared to 64% in a specialist patient sample. In the general population sample, for the individual 3Q/TMD questions, as well as combinations of questions, the negative predictive values were high (0.92-0.99). For the specialist sample, when at least one question was answered affirmatively the negative predictive value was high (0.90). The positive predictive value was high (0.89) when all three questions were positive. There was significantly more treatment performed or recommended for 3Q-positives (21.5%) compared to 3Q-negatives (2.2%) ( $P < 0.001$ ). The odds ratio for TMD-related treatment for 3Q-positives versus 3Q-negatives was 12.1 (95% CI: 6.3-23.4).

**Conclusion**

The 3Q/TMD is a convenient and valid tool to recognize individuals who would benefit from a further TMD examination within an adult, general population. Within specialized orofacial pain clinics, the questions are useful as guidance for further diagnostics. Although the 3Q/TMD was a factor related to TMD treatment, the majority of individuals with self-reported symptoms of TMD still did not receive traceable assessment or treatment. Factors associated with dentists' clinical decision-making in relation to TMD warrants further research. The utilization of the 3Q/TMD as a part of a decision tree for the clinician can improve the health care for patients with TMD and is therefore recommended within dentistry.

**Keywords**

Temporomandibular disorders, orofacial pain, screening methods, diagnostic accuracy, public health

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