

# Oral potentially malignant disorders – an assessment of knowledge and attitude to future education in undergraduate dental students

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**Introduction:** Oral potentially malignant disorders (OPMDs) are defined as “any oral mucosal abnormality that is associated with a statistically increased risk of developing oral cancer”(1). Current literature suggests general dental practitioners (GDPs), as well as future GDPs, often lack knowledge on aetiology, risk factors, clinical appearance and treatment modalities, as well as the skills and experience to perform clinical examination of the oral mucosa (2).

**Aim:** To assess knowledge of OPMDs in undergraduate dental students in six European countries (Croatia, France, Italy, Portugal, Spain, United Kingdom) and to assess student attitude and preference to future education on the topic. A secondary aim was to identify gaps in student knowledge and clinical practice.

**Methodology:** Ethical approval was obtained by the study coordinator (University of Zagreb, Croatia) and internal ethics was approved in the remaining universities involved. An online questionnaire was distributed to all final-year students in six partner universities consisting of four domains assessing: 1) knowledge on OPMDs, 2) clinical experience with this group of patients, 3) self-rated competence in management of OPMDs and 4) preferences to future education.

The survey consisted of 23 questions in multiple choice, modified Likert scales and single best answer format. SPSS® software was used for statistical analysis. Kolmogorov-Smirnov test was used to assess the normality of distribution. Due to non-normal distribution of the data, non-parametric methods were used. Nominal variables were expressed as proportions and continuous variables were expressed as median (interquartile range, IQR). Differences between nominal variables were assessed by chi-square test and differences between continuous variables were assessed by Kruskal-Wallis or Mann-Whitney test, where appropriate. P value <0.05 was considered statistically significant.

**Results:** Two hundred and sixty (260) final year dental students from six partner universities responded to the questionnaire. Response rates varied from 12%-92% between partner universities.

**1) Self-rated knowledge:** Students with more clinical exposure to OPMDs rated their knowledge and competence in management higher than students with less clinical experience (Figure 1). One third (33%) were not clinically exposed to OPMDs. Knowledge on the malignant transformation of OPMDs was found to be homogenously deficient. Students were familiar with the malignant transformation rate (MTR) of OLP, however, tended to overestimate annual MTR of oral leukoplakia and underestimate PVL.

**2) Clinical Experience:** Clinical experience is presented in Figure 2. Almost all students (257/260; 98.8%) learned about OPMDs during undergraduate dental education. Significant differences in clinical experience and knowledge were found between universities.

**3) Self-rated competence on management of OPMDs:** Students with more clinical exposure rated their knowledge and competence in the management than students with less clinical experience. Those who routinely performed examination of soft tissues, examined a patient with OPMD, examined a patient with oral cancer, had observed, assisted or performed an oral biopsy, rated their knowledge and competence significantly higher.

**4) Preferences to future education:** The majority of students were interested in future education on OPMDs, preferably via short (up to 5 minute) educational videos. Significant differences between countries was observed (p=0.046). No significant difference in preferred modes of learning was observed among students from different countries (p=0.096).

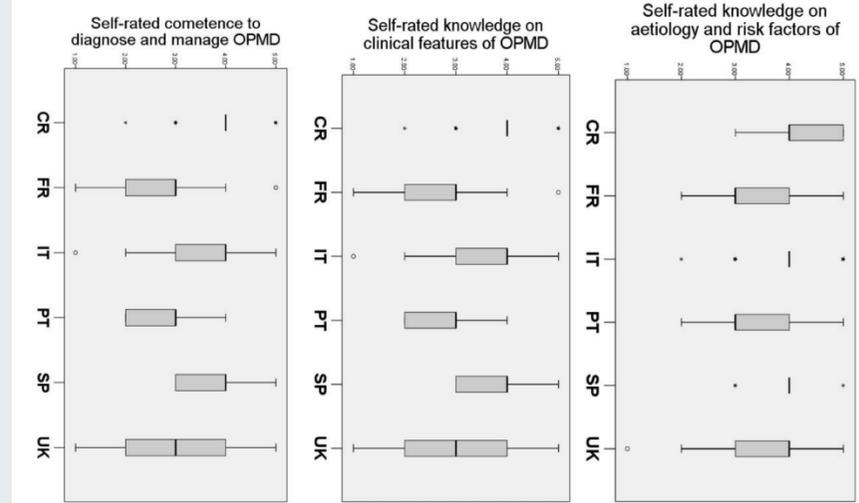


Figure 1: Self-rated knowledge and competence on OPMD (Box and whisker plot)

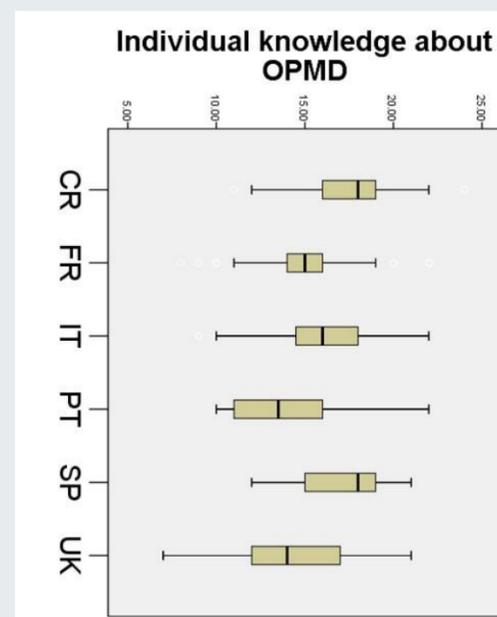


Figure 2: Individual knowledge on OPMD (Box and whisker plot)

**Discussion:** To our knowledge, this is the first international study assessing knowledge, competence and educational preference on OPMDs. In this study, students with more clinical experience rated their competence to diagnose and manage OPMDs higher than students who did not take part in these clinical activities. Our results demonstrate the need to emphasize the importance of routine oral soft tissue examination as this was performed by only 67.3% (175/260) of students.

In addition, students were knowledgeable on aetiology and risk factors for OPMDs. Tobacco smoking and alcohol consumption were identified as risk factors for OPMDs by 100% and 93.3%, respectively. This is not surprising due to their well-known carcinogenic effects on the oral cavity (3). Similar results were obtained in a study by Carter et al (4). Chronic trauma was identified as a risk factor for OPMDs by a significant proportion of the students (41.2%) and also as a main etiological factor of OSF by 27% of the students, though there is no evidence of an association between chronic trauma and any OPMDs (1).

**Conclusion:** This study shows that while dental undergraduate curriculums in Europe incorporate teaching on OPMDs, not all students have clinical experience in assessing this cohort of patients. There is a need for dental schools to increase clinical exposure to OPMDs as this greatly influences student confidence in OPMD detection and management. Students are keen for further education, preferably with the use of modern technologies to enhance the learning process and facilitate content adaptation. Important deficiencies in knowledge were identified that will be addressed in the e-learning platform as part of the Erasmus + programme on OPMDs.

#### References:

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