

## Medical students' clinical skill rate in diagnosis of oral mucosal diseases at Ahvaz Jundishapur University of Medical Sciences

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### ABSTRACT

**Background and Aim:** In rural areas of Iran, Family physicians are the primary care professionals in whom patients seek treatment for their medical issues as well as oral lesions. The aim of this study was to evaluate medical students' skill in diagnosis and treatment of oral mucosal lesions in Ahvaz Jundishapur University of medical sciences in 2012.

**Materials and Methods:** This descriptive study was conducted on Eighty medical interns that were asked to complete the study questionnaire. The questionnaire consisted of 18 questions validated by using other similar valid studies. Five experts in the field of oral disease assessed the reliability of the questionnaire. Data were analyzed using SPSS software.

**Results:** 42.5% of interns were male and 57.5 % were female ranging from 24 to 26 years of age. The mean score for diagnostic skills was  $3.97 \pm 0.25$  in male interns and  $3.83 \pm 0.16$  in female participants. The mean score for treatment approach-related skills in male and female interns was  $1.94 \pm 0.17$  and  $1.96 \pm 0.13$  respectively. There was no statistically significant difference between the male and female subjects in terms of qualities such as diagnostic competence or treatment approach pertaining to oral diseases. ( $p = 0.23$ )

**Conclusion:** Medical students do not possess proper knowledge and skills required for treatment of patients with oral mucosal lesions. Therefore, proper educational proceedings pertaining to the diagnosis and treatment of oral diseases should be considered for medical students. Educational authorities also need to be informed in this regard.

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## Introduction:

It is believed that oral cavity reflects healthiness of the body. In addition to local diseases which affect only oral cavity, many systemic diseases also have oral manifestations including Behcet's syndrome, pemphigus vulgaris, multiform erythema, tuberculosis, syphilis, celiac disease, lupus erythematosus and crohn's disease.<sup>1-4</sup> immune suppressant diseases and hematological malignancies also cause specific lesions and signs in the oral cavity.<sup>5</sup>

In one hand, some diseases that affect oral cavity are of high prevalence including xerostomia and recurrent aphthous stomatitis<sup>1,2</sup> and some others including leukoplakia and erythroplakia have lower prevalence but in absence of early diagnosis and treatment can cause serious complications.<sup>6</sup> Later lesions cause no pain, swelling or bleeding and have a benign appearance with the potential of turning into malignancies over time. On the other hand, similarity between different oral lesions and difficulty in distinguishing them (due to specific condition of oral cavity) increases the need for proper education of medical personnel.<sup>3</sup> Diagnosis and treatment of these lesions are among the responsibilities of experts in the field of oral disease which is one of the specialties in the field of dentistry.

Considering the availability of family physicians in rural areas, most patients refer to them for treatment of oral lesions and these physicians can have a key role in the process of diagnosis and treatment of oral diseases.<sup>7</sup>

In medical education curriculum, only a limited and disperse amount of information is presented to students in ENT, dermatology, rheumatology and internal medicine departments about oral mucosal lesions without presenting any separate educational unit on condition of oral cavity and teeth.<sup>1,7</sup>

In several studies the amount of awareness of medical society of a variety of issues have been investigated.

In one study awareness level of students of all universities in Iran regarding teeth and oral cavity health care services in health and treatment networks of Iran was investigated.<sup>7</sup> In another study

students' awareness of ecstasy pills was assessed.<sup>8</sup> Awareness level and performance of dentistry students of Mashhad in regard of infection control was also investigated.<sup>9</sup> In another study information needs of nurse students in regard of emergencies were evaluated.<sup>10</sup> But considering the amount of awareness of medical students of oral mucosal lesions expect for a limited number, no other study is available.<sup>11,12</sup> knowledge and performance of medical interns regarding common oral diseases gained 3.65 points from total score of 6 and the mean diagnostic ability score from maximum of 9 scores was 5.7.<sup>11</sup> In another study the mean awareness score was 3.05 from total score of 4 for medical students and for dental students this score was 3.18. The Mean diagnostic skill of medical interns was 1.73 and for dental interns was 2.94 from maximum of 4.<sup>14</sup> Considering the significance of oral diseases, assessing the awareness of medical students regarding different oral lesions in universities of medical sciences in Iran seems necessary. Therefore, the present study was performed to determine the clinical competence of medical students in detection of oral mucosal lesions and their approach to treatment of these lesions in Jundishapur Ahvaz University of medical sciences.

## Materials and Methods:

In this descriptive study, diagnostic skill rate of medical interns of Jundishapur Ahvaz University of medical sciences in detection of oral mucosal lesions and their treatment approach was assessed. The Investigation had two main variables: diagnosis of oral mucosal lesions and treatment approach of interns. The relation between demographic characteristics of interns with the two above variables was evaluated. 80 medical interns of Jundishapur Ahvaz University of medical sciences participated in this study. They were selected based on a name list presented by medical education organization from interns in university of Ahvaz. Data were collected using a questionnaire consisting of 18 questions prepared by researchers using other valid similar studies.<sup>7,11</sup> Validity of the questionnaire was determined by 5 experts in the field of oral diseases. This questionnaire consisted of three parts; first part covered

individual characteristics of participants along with seven questions regarding their awareness of oral mucosal diseases and field of oral medicine. Second part consisted of eight questions for assessing the diagnostic skills in detection of oral lesions and third part consisted of three questions which assessed the treatment approach of interns. Questions of the first part were not scored and the answers were separately statistically analyzed. To each question of the second part, if answered correctly, one point was given. Maximum score achievable in the second part was 8. In the third part each question had 2 points and maximum score achievable in case of correct answers was 6. Also each question in part three was separately statistically analyzed. Questionnaires were filled out anonymously by interns while they attended different departments of educational hospitals of Ahvaz province. Data gathered from questionnaires were statistically analyzed with SPSS 15 software and student T test and Pearson correlation coefficient.

### Results:

42.5% of interns were male and 57.5% female. Mean age of participants was 24.9. Age range was 23-29 while 87% of the participants ranged between 24 and 26 years of age. The score of male and female interns in diagnostic skill was  $3.97 \pm 0.25$  and  $3.83 \pm 0.16$  respectively. In treatment approach, the score of male and female interns was  $1.94 \pm 0.17$  and  $1.96 \pm 0.13$  respectively. No significant statistical difference was detected in diagnostic skill and treatment approach regarding oral lesions between male and female students. ( $p=0.23$ ) 90% (72) of interns had no familiarity with the field of oral medicine and approximately 74% (59) of interns were in agreement on presentation of this field as an educational course. Mean score of interns from total of 8 regarding detection of anatomic landmarks and oral mucosal lesions was 5.33 and 5% (4) of interns achieved the total score of 8. 30% (25) of interns when encountered an aphthous lesion, referred the patient to a specialist and 41% (32) followed an incorrect procedure (symptomatic treatment or performing biopsy) for treatment of the patient. Only 29% (23) of interns proposed a correct treatment plan (CBC and other tests). 20% (16) of interns prescribed oral penicillin for treatment of cellulitis

in buccal space with dental origin while 4% (3) prescribed gentamycin, 33% (26) prescribed injection of penicillin and 43% (35) prescribed metronidazole.

**Table 1 – level of skill deficiency in diagnosis of oral lesions based on lesion type (n=80)**

Questions and answers	Number and percentage of incorrect answers
Detection of incisive papilla	17(21.2)
Detection of circumvallate taste buds	36(45)
Detection of linea alba	42(52.5)
Diagnosis of oral lichen planus	11(13.8)
Diagnosis of pemphigus	23(28.8)
Detection of oral sign of lupus erythematosus	24(30)
Diagnosis of leukoplakia	23(28.8)
Diagnosis of salivary gland tumor	39(48.8)

### Discussion:

This study showed agreement of most students on the necessity of presentation of an educational course to medical students regarding oral diseases. This result is in agreement with the results of studies by Chamani and Sarabadani.<sup>11, 12</sup> This study also showed that although medical students were not directly educated for detection of oral mucosal lesions, they possess suitable skills for detection of these lesions. In a study by Chamani et al. the mean score of diagnostic skill of participants from total of 9 was 5.7 (slightly higher than half of the total score) which is in accordance with our results.<sup>11</sup> But in a study by Sarabadani et al. the mean score of medical interns in diagnostic skill was less than half of the total score of 4 which is not in agreement with our results and the results reported by Chamani et al.<sup>12</sup> This can be due to differences among universities providing different facilities and instructors with different manners of course presentation. Also these three studies were performed differently considering time, location, researchers and type of questionnaires thus comparing the results of these studies

is not free of error. This study is superior to the other two mentioned studies due to assessment of treatment approach of medical students in treating oral mucosal lesions.<sup>11, 12</sup>

This study revealed that although students can diagnose oral diseases according to their clinical manifestations and signs observed in other body parts, they show no inclination for treatment of these lesions and prefer to refer their patients and if they decide to treat the disease, in 60-70% of cases they choose an incorrect treatment approach. To justify this, lack of direct education of these students regarding oral diseases can be mentioned, so that they have no exact familiarity with the unique environment of oral cavity and its specific conditions and are unfamiliar with treatment methods suitable for oral diseases. Also, because there is no place for diagnosis of oral lesions in their educational curriculum, they feel to have no responsibility for diagnosis and treatment of such lesions. In this regard, the results of this study is in agreement with the study of Kahui et al. which used a questionnaire to assess information gaps of nurse students in clinical education of emergency departments.<sup>10</sup> They found that few students (9.2%) were inclined to gain information regarding legal authorities because they erroneously believed it not to be their responsibility. Researchers proposed that teaching of legal issues be added to educational curriculum of nurse students.

Familiarity of medical interns with the field of oral diseases is very limited. One of the reasons for this issue is the one way relationship between medical and dental universities, in a way that dental students use the educational services provided by medical universities to some extent but this is not the case for medical students.

This study showed that only 10% of interns referred their patients with oral mucosal lesions to oral medicine specialists while in the study by Chamani et al. approximately 50 % of medical interns of Kerman and Zahedan universities referred their patients to these specialists.<sup>11</sup> This shows the higher familiarity of medical interns of cities of Zahedan and Kerman with the field of oral medicine which can be due to attendance of oral medicine residents in different departments of medicine and familiarizing with interns. This relationship is not feasible in Ahvaz University

because it has no oral medicine resident. Based on a study by Delavarian, 9% of all patients are referred to oral medicine department of dental university of Mashhad by general physicians and specialists which is in accordance with the results of the present study which approximates 10%.<sup>13</sup> But a significant difference exists between this study and a study performed by Haberland et al. in Ohio. In their study 45% of referral cases were from general physicians.<sup>14</sup> This difference worth contemplating. According to the statistics, problems in referral system caused a time delay of 17 months for patients, from the time they discover a lesion in oral cavity till they are referred to oral medicine department<sup>11</sup> which can cause serious complications and irreversible consequences for the patients. Naturally, general physicians can have a key role in preventing these problems by proper referral of patients to dental specialists. This goal cannot be achieved without familiarizing medical interns with practical and scientific capabilities of dentists.

### Conclusion

It seems that medical interns are not competent in treatment of patients with oral mucosal lesions and are inclined to take a course on oral diseases. This should be considered by educational authorities of medical universities.

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### Conflict of interests

Authors report no conflict of interest related to this study.

### Ethical considerations

According to the Iran law, approval from an Ethics Committee was not required (survey).

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