Prevalence Evaluation of Tempromandibular Disorders in Students of Kermanshah City 2014-2015

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ABSTRACT

BACKGROUND AND AIM: Frequency of tempromandibular disorders (TMD) has been reported profoundly various based on age, sex, previous trauma, risk factors such as para functional habits and different populations. The aim of the study was to evaluate prevalence of tempromandibular disorders in students of Kermanshah city.

MATERIALS AND METHODS: This cross-sectional study was conducted on high school student’s demographic information and medical history was recorded for each subjects. All subjects were received clinical examination regarding tempromandibular joints (TMJ) and the associated structures. Prevalence rate was assessed according to age, gender, and previous trauma to head neckband TMJs. data were analyzed by SPSS using Chi-Square and Pearson, correlation coefficient tests(P<0.05).

RESULTS: Totally, 603 students including 290 boys (48.1%) and 313 girls (51.9%) aged 14-19 years were evaluated of the students, 301 (49.9%) presents at least one sign or symptom. TMD prevalence was significantly higher in boys (56.2%) than in girls (44.1%); (P=0.003). Frequency of TMD revealed a significant direct correlation with age (P=0.011). Subjects with previous trauma showed TMD frequency (86%) significantly higher than those without trauma (47.1%); (P<0.001).

Conclusion: this study concluded that tempromandibular disorders were a common condition among high school students.

KEYWORDS: tempromandibular; disorders; epidemiology; students

INTRODUCTION

Tempromandibular joint disease (TMD) is used to describe a group of disorders involves jaw set. This set includes: jaws, muscles, tempromandibular joint, ligaments, tendons and respective nerves. This disorder expanded in jaw set and may affected one or more of the components of the collection. Several factors are involved in tempromandibular joint disorders. Okeson proposed multiple truma as one of the important factors in outbreak of TMJ disorder. Atudies expressed that there is a relation between this disease and some of the risk factors includes: anxiety and depression, para-functional buccal habits, indigene economical-social conditions, genetic basis. TMJ disorders delineate with range of direct and indirect clinical symptoms and sign.

Clinical protests that directly related to joint includes: pain or tenderness in TMJ region and region around acoustic apparatus, movement limitation in opening the mouth and sounds of the TMJ during the movement. Also it is possible that patients complain of problems that relate with joint includes depression, ear problems (hearing disorders, hearing loss or decreasing audition (BradyaCUSIA) feeling of ear obstruction, (Tinaouitus) earache, dysphagie-vertigo.

TMJ disorders are the second prevalent factor in musculoskeletal pain. In addition, they are the most important known reason for feeling of pain in oral or face zone that they will not have pain with toothache origin. According to gender distribution female because of effect of behavioral, hormonal, anatomical, psychological factors more than male will be exposed to affliction of TMJ disorders.

About prevalence of this disorder in different age group, in the past they will believe that TMJ affected adults group as degenerative disease. However, during recent years some of epidemiologic studies showed that the prevalence of TMJ among children and adolescents is almost similar to adults. TMJ prevalence among adolescents is from 16.3% up to 68% and it will be reported that in adults group it is 43%. It seems that high percentage of society people experienced at least one of these symptoms in their lifetimes. According to LUCAS WRIGHT AND
OKESON finding, almost 50 to 60 percentages of society people at least have one of the TMJ disorders symptoms. But low percentage of these symptoms is so severe that forced the patient to attempt to treat.

Awareness of TMJ prevalence and factors affecting the outbreak of this disorder can be helpful in the prevention and treatment. Several studies in different countries in relation with children TMJ in mixed and permanent dentition were performed. Up to now, we don’t have received any report about TMJ prevalence in children and adolescents of Kermanshah city. So, that the target of this study is to evaluated prevalence of TMJ in high school students of Kermanshah.

MATERIALS AND METHODS

In this descriptive-analytical study high school students of Kermanshah city will be evaluated. Total number of about 603 students in a cluster sampling of all high school in Kermanshah city has been selected. Participation in the study was entirely voluntary and it will be explained to the students that, this study will not have any damage to them and the collected information will be confidential.

The students will be asked to fill the questionnaire about demographics (gender, age, level of education) and medical (the recent history of head/neck/mandible, history about treatments of telling facial pain or TMJ problems) then the samples have been examined by executive of project (students) regarding the problems of maximal mouth opening, lock joint, incubation joint, muscular contraction, joint click, recurrent muscle contraction, tempromandibular arthritis, headache, neck pain, toothache, changes in occlusion.

Obtained data for each student was recorded in data collecting form. Obtained data was analyses with SPSS software. For evaluating the effect of gender, age, level of education. They apply chi-square, kruskal wallis, mann-whitney test, the significant level of P value P<0.05 will be considered.

Conclusions

In this study total number of 603 students in the age range of 14-19 years includes 290 boy (48.1%), 313 girl (51.9%) will be evaluated, that 189 person (27.9%) were educating in the eleventh grade and 246 person (40.8%) were in twelfth grade. Among these students 43 person (7.1%) have previous trauma to head/neck or mandible and 560 person (92.9%) don’t have previous trauma in these regions. 12 persons (%)2) have history of receiving treatment in relation to this type of problem. (Table 1) Table 2 illustrated that there were common complain includes headache/neck pain or frequent toothache (26.7%)/joint click (21.1%) and TMJ arthritis (16.6%).

According to presented findings in table 3, from total number of 603 students, 302 person of them don’t have any problems about TMJ.301 students (%) of them at least have one problem that among them,100 person have one problem (16.6%) and 82 person have two problem (13.6%). Three or seven number of problems observed in less than10% of students. In table 4 frequency comparison of tempromandibular problems and disorders among girl and boy students illustrated the findings of table 5 shows that TMJ frequency in boys were 56.2% that in proportional to girl frequency (44.1%) significantly was more (p=0.003).

In table 6 frequency comparison of tempromandibular problems and disorders according to each problem in age range of 14-16 and 19-17 years have been illustrated. The table 7 findings shows the TMJ frequency in group age of 14-16 year 45.2%, 17-19 year 58.3%, and there is a significant relation among these two age range (p=0.002).

For emphasis of age effect on TMJ PREVALENCE, test of Pearson correlation coefficient shows that TMD outbreak has significant relation with student’s age. In a way that with increasing age, also TMD frequency have enhanced (R= +0.104, P=0.011).

In table 8 illustrated frequency comparisons of problems and disorders of TMJ according to existence of which problem in relation to having previous trauma or do not. Table 9 findings shows that the frequency of TMD in people with previous trauma (86%) proportional to peoples without having previous trauma (47.1%) was significantly more.
DISCUSSION

Tempromandibular disorders are variable with age range and gender and previous trauma and existence of risk factors including para-functional habits- shows various prevalence in different group. In recent study, disorders prevalence of a sample of students in age range of 14-19 year and the effect of factors like gender and age on frequency have been evaluated.

According to this study, the most common problems relating to tempromandibular joint is head ache, pain neck, frequent toothache (26.7%), joint click (21.1%) and tempromandibular arthritis (16.6%) the Akhters and his colleagues with evaluating young people reported that the most common symptoms and signs in a descending order was pain and click of joint the problem of maximum mouth opening in the Sahebi and Bostani Amlashly, study problem prevalence relating to tempromandibular disorders in the mixed and permanent dentition includes joint click (23.9%) tenderness in digestive muscles (20.9%) and joint pain (5.4%). FUJITA and his colleagues reported the most symptoms of TMJ in this order: joint click (40%) joint click associated with pain (26.3%).

Evaluating the results of this study and other studies shows that the symptoms and signs of TMD isn’t similar in different groups although this difference may be basically resulting from existence of real differences and also this differences caused by applying different measures in distinguishing TMD. Also the age of evaluated people can be considered as expressing factors of these differences. For emphasis this subject Anastassaki Kohler and his colleagues realized that symptoms prevalence depend on age as an example they reported that joint click was the most common one in people of 30-40 years. But in people with age range of 40-50 years common symptoms was mandible and facial pain.

This study shows that almost half of evaluated students (49.9%) at least have one problem relating to TMD. This result was so similar to Gohariyan and Madani findings that TMDS prevalence among students with age range of 21-24 years was reported 51.5%. in lasemi and his colleagues, s study prevalence of tempromandibular disorders in people with average age of 34 years, reported relatively high (34.1%). Mahshid and her colleague’s study shows that prevalence of symptoms of TMJ disorders is respectively 45.7% and 36.5% and total TMD prevalence was 58.7%. Also Nakhjavani and Fardis brothers reported that prevalence of TMJ disorders in Iranian students with an age range of 7-9 year was so high. That among them 65.2% afflicted TMD. According to Ryalat findings TMD has high prevalence among Arabic students that 68.6% of them have at least one of the TMD symptoms. Fujita and his colleagues evaluated disorders prevalence among 57 patient these symptoms includes joint click (40%) and joint click associated with joint pain (26.3%).

In other hand AKHTER and his colleagues have reported the existence of disorders symptoms in younger Japanese, and its value was 28.1%. Also Karibe and his colleagues in evaluating 1415 student in age range of 11-15 year recognized manifestation of at least one of TMD’s disorders. SANCHEZ-PEREZ and his colleagues in evaluating Mexican students observed that26.1% of them have one of TMD’s symptoms include joint click, muscular pain, TMJ pain or tenderness of this joint. Different findings of TMD prevalence results from different pupilities that have been evaluated and different methods that used for distinguishing TMD. In evaluating of TMJ’s disorders based on facilities and targets of study, we can use different methods like: Questionnaire, medical examination and radiographic techniques.

According to this study’s findings TMJ’s disorders and problems in boys was noticeably more common than girls. In contrast to this study, Sahebi and Bostani declared that TMD is more common in girls than boys. Although in this study, these researchers sample was in age range of 6 -12. That as an possible factors, we can relate this difference to age range of evaluated sample. Also Nilsson study reported that evaluating adolescents revealed that girl have higher prevalence of TMD. MANFREDINI and his colleagues reported that female afflicted to TMD 3 unit more than male. Suvinen and his colleagues reported this rate with 2 in female and 1 in male. This study shows a direct and significant relation with student’s age where with increasing age also TMD prevalence has increased. For emphasizing this finding, Mahshid and her colleagues reported the relation between TMD and increasing age.

SCHMID-SCHWAP and their colleagues realized that TMD prevalence and type of symptoms are influenced by age. In a similar condition Karibe and his colleagues observed increasing in TMD prevalence with increasing age in adolescents. Although decreasing TMD’s prevalence in epidemiologic studies with adult’s age have been reported. In this study you saw that disorders prevalence increased with age. This increasing seems as a function of student’s age or inversely in higher education grade, risk factors results in observing this increasing manner like stress of entrance to university. Suvinen and his colleagues with evaluating and following a group of people in ages of 15, 18, 23, reported a significant relation among TMD’s prevalence and psychosomatic symptoms.

In this study TMD’s prevalence for people those have previous trauma is 86%, where in comparisons to whom that do not have previous trauma is 47.1%. For emphasizing this finding, the performed systematic study
shows that soft tissue trauma to neck, the rate of outbreak and TMD’s prevalence increased. In similarity to this study Klobas and his colleagues realized that frequency of symptoms relating to TMJ in patient with previous trauma is 89% and for people without previous trauma is 18%. They also show that people with previous trauma, tenderness of muscles and joints and feeling of pain in reaction to movement are more common.

And based on they conclude that injuries in neck region can affected the function of TMJ. Different results have been published by Probert. The findings of this study shows that the problems of TMJ in the students of high school was so common and have some relation with age and gender having previous trauma in Mandible, facial, neck region consider as an risk factor in manifestation of disorders in adolescents.

Table 1: frequency distribution of evaluated students regarding demographic variables

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Frequency (total number of 603 individual)</th>
<th>Gender:</th>
</tr>
</thead>
<tbody>
<tr>
<td>48.1%</td>
<td>290</td>
<td>boy</td>
</tr>
<tr>
<td>51.9%</td>
<td>313</td>
<td>girl</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age range(year):</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2% 7</td>
</tr>
<tr>
<td>32.8% 198</td>
</tr>
<tr>
<td>29.9% 180</td>
</tr>
<tr>
<td>30.5% 184</td>
</tr>
<tr>
<td>5.3% 32</td>
</tr>
<tr>
<td>0.3% 2</td>
</tr>
<tr>
<td>31.3% 189</td>
</tr>
<tr>
<td>27.9% 168</td>
</tr>
<tr>
<td>40.8% 246</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade of education:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1% 43</td>
</tr>
<tr>
<td>92.9% 560</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Previous trauma:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2% 12</td>
</tr>
<tr>
<td>98% 591</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Previous treatment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2% 12</td>
</tr>
<tr>
<td>98% 591</td>
</tr>
</tbody>
</table>

Table 2: frequency distribution of tempromandibular problems and disorders in students (total number 603)

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Frequency</th>
<th>Type of problem/disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>9%</td>
<td>54</td>
<td>The problem of maximal mouth opening</td>
</tr>
<tr>
<td>11.3%</td>
<td>68</td>
<td>Lock/incubation of tempromandibular joint</td>
</tr>
<tr>
<td>13.4%</td>
<td>81</td>
<td>Muscular contraction</td>
</tr>
<tr>
<td>21.1%</td>
<td>127</td>
<td>Click joint</td>
</tr>
<tr>
<td>12.6%</td>
<td>76</td>
<td>Recurrent muscle contraction</td>
</tr>
<tr>
<td>16.6%</td>
<td>100</td>
<td>Tempromandibular joint arthritis</td>
</tr>
<tr>
<td>26.7%</td>
<td>161</td>
<td>Headache, neck pain, or frequent toothache</td>
</tr>
<tr>
<td>7.1%</td>
<td>43</td>
<td>Recent history of head, neck or mandible trauma,</td>
</tr>
<tr>
<td>8.3%</td>
<td>50</td>
<td>Changes in occasions</td>
</tr>
<tr>
<td>2%</td>
<td>12</td>
<td>Previous treatment of telling pain in face or tempromandibular problems</td>
</tr>
</tbody>
</table>

Table 3: frequency distribution of students according to number of problems and disorders of tempromandibular joint (total number of 603)

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Frequency</th>
<th>Number of problems/tempromandibular joint disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>50.1%</td>
<td>302</td>
<td>Without problem or disorder</td>
</tr>
<tr>
<td>16.6%</td>
<td>100</td>
<td>One case</td>
</tr>
<tr>
<td>13.6%</td>
<td>82</td>
<td>Two case</td>
</tr>
<tr>
<td>9.5%</td>
<td>57</td>
<td>Three case</td>
</tr>
<tr>
<td>5.5%</td>
<td>33</td>
<td>Four case</td>
</tr>
<tr>
<td>4.1%</td>
<td>25</td>
<td>Five case</td>
</tr>
<tr>
<td>0.5%</td>
<td>3</td>
<td>Six case</td>
</tr>
<tr>
<td>0.2%</td>
<td>1</td>
<td>Seven case</td>
</tr>
<tr>
<td>100%</td>
<td>603</td>
<td>total</td>
</tr>
</tbody>
</table>
Table 4: Frequency comparison of tempromandibular problems and disorders according to gender

<table>
<thead>
<tr>
<th>P VALUE *</th>
<th>Frequency of problems and disorders**</th>
<th>Type of problem or disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Girl number (313)</td>
<td>Boy number (290)</td>
</tr>
<tr>
<td>0.001</td>
<td>(5.1%) 16</td>
<td>(13.1%) 38</td>
</tr>
<tr>
<td>0.017</td>
<td>(8.3%) 26</td>
<td>(14.5%) 42</td>
</tr>
<tr>
<td>0.004</td>
<td>(9.6%) 30</td>
<td>(17.6%) 51</td>
</tr>
<tr>
<td>0.113</td>
<td>(18.0%) 58</td>
<td>(23.8%) 69</td>
</tr>
<tr>
<td>0.547</td>
<td>(11.8%) 37</td>
<td>(13.4%) 39</td>
</tr>
<tr>
<td>0.498</td>
<td>(17.6) 55</td>
<td>(15.5%) 45</td>
</tr>
<tr>
<td>0.305</td>
<td>(24.9%) 78</td>
<td>(28.6%) 83</td>
</tr>
<tr>
<td>0.008</td>
<td>(4.5%) 14</td>
<td>(10%) 29</td>
</tr>
<tr>
<td>0.383</td>
<td>(7.3%) 23</td>
<td>(9.3%) 27</td>
</tr>
<tr>
<td>0.473</td>
<td>(1.6%) 5</td>
<td>(2.4) 7</td>
</tr>
</tbody>
</table>

*chi-square test
**percentage in gender

Table 5: Comparisons of affliction to tempromandibular disorders according to gender

<table>
<thead>
<tr>
<th>P value *</th>
<th>has</th>
<th>Has not</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(56.2%) 163</td>
<td>290</td>
<td>Boy</td>
</tr>
<tr>
<td>0.003</td>
<td>(44.1%) 138</td>
<td>313</td>
<td>girl</td>
</tr>
</tbody>
</table>

*chi-square
Problem/disorder frequency**

Table 6: Frequency comparison of tempromandibular problems and disorders according to age group

<table>
<thead>
<tr>
<th>P value</th>
<th>17-19 year (218 number)</th>
<th>14-16 year (385 number)</th>
<th>Type of problem/disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.462</td>
<td>(10.1%) 22</td>
<td>(8.3%) 32</td>
<td>Problem of maximal mouth opening</td>
</tr>
<tr>
<td>&lt;0.001</td>
<td>(17.9%) 39</td>
<td>(7.5%) 29</td>
<td>Lock/incubation of tempromandibular joint</td>
</tr>
<tr>
<td>0.002</td>
<td>(19.3%) 42</td>
<td>(10.1%) 39</td>
<td>Muscular contraction</td>
</tr>
<tr>
<td>0.059</td>
<td>(25.2%) 55</td>
<td>(18.7%) 72</td>
<td>Joint click</td>
</tr>
<tr>
<td>Problem or disorder frequency (%)</td>
<td>P value</td>
<td>Has</td>
<td>Has not</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---------</td>
<td>-----</td>
<td>---------</td>
</tr>
<tr>
<td>Recurrent muscle contraction</td>
<td>0.519</td>
<td>(13.8%) 30</td>
<td>(11.9%) 46</td>
</tr>
<tr>
<td>Tempromandibular arthritis</td>
<td>0.119</td>
<td>(19.7%) 43</td>
<td>(14.8%) 57</td>
</tr>
<tr>
<td>Headache, neck pain or frequent toothache</td>
<td>0.039</td>
<td>(31.7%) 69</td>
<td>(23.9%) 92</td>
</tr>
<tr>
<td>Recent trauma to head, neck or mandible</td>
<td>0.632</td>
<td>(7.8%) 17</td>
<td>(6.8%) 26</td>
</tr>
<tr>
<td>Changes in occlusion</td>
<td>0.130</td>
<td>(10.6%) 23</td>
<td>(7%) 27</td>
</tr>
<tr>
<td>Previous pain treatment/ tempromandibular problems</td>
<td>0.837</td>
<td>(1.8%) 4</td>
<td>(2.1%) 8</td>
</tr>
</tbody>
</table>

*chi-square test  
**percentage in age group

<table>
<thead>
<tr>
<th>Age group</th>
<th>14-16 year</th>
<th>17-19 year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has</td>
<td>45.2% 174</td>
<td>54.8% 211</td>
</tr>
<tr>
<td>Has not</td>
<td>58.3% 127</td>
<td>46.1% 91</td>
</tr>
<tr>
<td>Number</td>
<td>385</td>
<td>218</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problem or disorder frequency (%)</th>
<th>P value*</th>
<th>Twelfth (Number 246)</th>
<th>Eleventh (number168)</th>
<th>Tenth (number189)</th>
<th>Type of problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem of maximal mouth opening</td>
<td>0.608</td>
<td>(10.2%) 25</td>
<td>(8.9%) 15</td>
<td>(7.4%) 14</td>
<td>Problem of maximal mouth opening</td>
</tr>
<tr>
<td>Lock/incubation of tempromandibular joint</td>
<td>&lt;0.001</td>
<td>(17.5%) 43</td>
<td>(8.3%) 14</td>
<td>(5.8%) 11</td>
<td>Lock/incubation of tempromandibular joint</td>
</tr>
<tr>
<td>Muscular contraction</td>
<td>0.014</td>
<td>(26.8%) 66</td>
<td>(16.1%) 27</td>
<td>(18%) 34</td>
<td>Muscular contraction</td>
</tr>
<tr>
<td>Joint click</td>
<td>0.966</td>
<td>(12.6%) 31</td>
<td>(13.1%) 22</td>
<td>(12.2%) 23</td>
<td>Recurrent muscle contraction</td>
</tr>
<tr>
<td>Recurrent muscle contraction</td>
<td>0.504</td>
<td>(18.7%) 46</td>
<td>(15.5%) 26</td>
<td>(14.8%) 28</td>
<td>Tempromandibular arthritis</td>
</tr>
<tr>
<td>Headache, neck pain or frequent toothache</td>
<td>0.075</td>
<td>(31.3%) 77</td>
<td>(25.6%) 43</td>
<td>(21.7%) 41</td>
<td>Headache, neck pain or frequent toothache</td>
</tr>
<tr>
<td>Recent trauma to head, neck or mandible</td>
<td>0.156</td>
<td>(8.9%) 22</td>
<td>(7.7%) 13</td>
<td>(4.2%) 8</td>
<td>Recent trauma to head, neck or mandible</td>
</tr>
<tr>
<td>Changes in occlusion</td>
<td>0.013</td>
<td>(10.6%) 26</td>
<td>(3%) 5</td>
<td>(10.1%) 19</td>
<td>Changes in occlusion</td>
</tr>
<tr>
<td>Previous pain treatment/ tempromandibular problems</td>
<td>0.664</td>
<td>(2.4%) 6</td>
<td>(1.2%) 2</td>
<td>(2.1%) 4</td>
<td>Previous pain treatment/ tempromandibular problems</td>
</tr>
</tbody>
</table>

*chi-square test  
**percentage in education grade
Table 9: comparisons of affliction to tempromandibular disorders according to grade of education

<table>
<thead>
<tr>
<th>P value*</th>
<th>Has</th>
<th>Has not</th>
<th>number</th>
<th>Education grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.002</td>
<td>(41.8%) 79</td>
<td>(58.2%) 110</td>
<td>189</td>
<td>Tenth</td>
</tr>
<tr>
<td></td>
<td>(47.0%) 79</td>
<td>(53%) 89</td>
<td>168</td>
<td>Eleventh</td>
</tr>
<tr>
<td></td>
<td>(58.1%)</td>
<td>(41.9%) 103</td>
<td>246</td>
<td>twelfth</td>
</tr>
</tbody>
</table>

*Kruskal Wallis test  
**Problem/disorder frequency (%)  

Table 10: comparisons of affliction to tempromandibular disorders according to having previous trauma

<table>
<thead>
<tr>
<th>P value*</th>
<th>With previous trauma (43 number)</th>
<th>Without previous trauma (560 number)</th>
<th>Type of problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.234</td>
<td>(14%) 6</td>
<td>(8.6%) 48</td>
<td>Problem of maximal mouth opening</td>
</tr>
<tr>
<td>0.115</td>
<td>(18.6%) 8</td>
<td>(10.7%) 60</td>
<td>Lock/incubation of tempromandibular joint</td>
</tr>
<tr>
<td>0.001</td>
<td>(30.2%) 13</td>
<td>(21.1%) 68</td>
<td>Muscular contraction</td>
</tr>
<tr>
<td>0.021</td>
<td>(34.9%) 15</td>
<td>(20%) 112</td>
<td>Joint click</td>
</tr>
<tr>
<td>0.029</td>
<td>(23.3%) 10</td>
<td>(11.8%) 66</td>
<td>Recurrent muscle contraction</td>
</tr>
<tr>
<td>0.222</td>
<td>(23.3%) 10</td>
<td>(16.1%) 90</td>
<td>Tempromandibular arthritis</td>
</tr>
<tr>
<td>0.022</td>
<td>(41.9%) 18</td>
<td>(25.5%) 143</td>
<td>Headache, neck pain or frequent toothache</td>
</tr>
<tr>
<td>0.410</td>
<td>(11.6%) 5</td>
<td>(8%) 45</td>
<td>Changes in occlusion</td>
</tr>
</tbody>
</table>

*chi-square test  
**percentage in group with or without having previous trauma  

Table11: comparisons of affliction to tempromandibular disorders according to having previous trauma

<table>
<thead>
<tr>
<th>P value*</th>
<th>Has</th>
<th>Has not</th>
<th>number</th>
<th>having previous trauma</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;0.001</td>
<td>(47.1%) 264</td>
<td>(52.9%) 296</td>
<td>560</td>
<td>without having previous trauma</td>
</tr>
<tr>
<td></td>
<td>(86.0%) 37</td>
<td>(14%) 6</td>
<td>43</td>
<td>With previous trauma</td>
</tr>
</tbody>
</table>

*chi-square
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