

# BULLYING IN ORTHODONTIC PATIENTS AND ITS ASSOCIATION TO MALOCCLUSION, MENTAL AND ORAL HEALTH RELATED QUALITY OF LIFE

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## ABSTRACT

**Objective:** To evaluate the frequency of bullying related to malocclusion and how the patient quality of life is affected by it before and after orthodontic treatment.

**Materials and Methods:** This was a cross-sectional study in which participants were assessed regarding their quality of life, impact of bullying, and impact of orthodontic treatment on it through a modified version of Olweus Bully/Victim Questionnaire.

**Results:** More than 57% of the population experienced bullying in some form, of which most belonged to the age group 11-20 yrs. Patients with Class III malocclusions suffered the most amount of bullying, while there was a significant association between IOTN and incidence of bullying. Majority of the participants had no confidence speaking or smiling, and had a poor quality of life, which they claimed did not improve after orthodontic treatment.

**Conclusion:** Bullying related to malocclusions might lead to long term mental distress, and impact a poor quality of life on patients with a poor self-image. There needs to be an adjunctive mental health therapy program to orthodontic treatment to deliver more positive outcome.

**Keywords:** Bullying, Orthodontic, Malocclusion, Mental Health, Quality of Life

## INTRODUCTION

Bullying can be defined as “Repeated and long-term offensive behaviors involving vindictive, cruel, or malicious attempts to humiliate or undermine an individual or groups of employees”. Bullying is the cause of 10-15% suicides in Sweden every year. On the other hand an employee being bullied can affect his/her respective employer between \$30,000 to \$100,000 USD annually.<sup>1</sup> Bullying is an act of hostile conduct, where a person or a set of people continuously confront, criticize, disgrace, or assaults a comparatively weak or frail person. Bullying poses a grave threat for the psychosocial well-being, academic and professional progress of the victims. In

some countries, for example, the Scandinavian countries, bullying is also known as mobbing (mobbing in Swedish). Bullies are usually driven by their quest for authority and power, they want to be respected and be ‘bossy’ among their peer group. They tend to be relatively famous, trendy and everyone’s favorites even as early as five to eight years of age. The onlookers are usually in a puzzle because they perceive bullying as a damaging, unhealthy and a terrible exercise but in order to protect their status in the peer group, they usually stay silent.<sup>2</sup> Bullying is an abuse which be done by getting involved physically, verbal confronting, aggressive and offending expressions or signs, or through deliberate ignoring and prohibition from a particular group. Different researches have concluded that youngsters who bully others have increased chances of getting involved in other brutal activities or crimes. According to a research (Fosse 2006), 160 youngsters who went for psychiatric care, 50% of them were bullied

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throughout their schooling period, and the more the intensity of bullying they had faced, the more their psychiatric problems were as adults.<sup>3</sup> People who bully or get bullied are also vulnerable towards suicidal attempts. Another term which has been coined due to the increased use of social media is 'cyberbullying'. It is an intentional, deliberate and repeated harm caused via mobile phones, computers or any other gadget used for communication purposes. The figures for the probable bullies and their victims are increasing as people are more and more welcoming new technologies which makes communication easy and quick.<sup>4</sup> Malocclusion is one of the many factors that exposes a child to bullying at their educational institutes. Bullying is reduced when these malocclusions are treated by orthodontics.<sup>5</sup> Malocclusion is not a disease but rather it is one end of the normal spectrum of occlusion. Malocclusion are usually treated during adolescence, when the secondary or permanent dentition is coming. Malocclusion can affect the self-esteem, confidence and character of an individual. It can go on to dictate an individual's academic or professional development.<sup>6</sup> Males have been reported to be more involved in bullying than their female counterparts.<sup>7</sup> Orthodontic care has proved to be helpful to improve the quality of life and the psychosocial health of individuals who are bullied for their malocclusions. Malocclusion not only affect the personality but also makes the individual prone to trauma of maxillofacial region, for example, an overjet of 6mm or more is linked to increased incidence of trauma to the maxillary teeth.<sup>8</sup> People seek orthodontic treatment for improved dental and facial appearance and psychological health.<sup>9</sup> Global surveys have been indicating a rise in malocclusions during childhood and adolescence, due to which a lot of people find it hard to socialize and carry their day-to-day activities.<sup>10</sup> A person with unesthetic facial and occlusal features experiences more difficulties with quality of life than their fellows, who has no or minor orthodontic problems. Bullying due to malocclusion damages these individuals' quality of life and put them under an inferiority complex.<sup>11</sup> There are certain indices through which orthodontic treatment need is measured, the most commonly used indices are IOTN (Index of Orthodontic Treatment Need) and DAI (Dental Esthetic Index). Again, these indices can never indicate the impact of malocclusion over a patient's quality of life.<sup>12</sup> Oral health-related quality of life (OHRQoL) is described as the degree

to which oral outcomes influence a person's oral function, emotional, mental and well-being, and collective well-being and happiness.<sup>13</sup> Orthodontists conventionally believe that the main purpose and objective of orthodontic intervention is the overall functioning and health of the oral cavity. However, a lot of patients go for orthodontic treatment for to improve their psychological and social well-being.<sup>14</sup> It is natural for a person having well-aligned teeth to be considered more smart, good looking and appealing. Amongst the different health occupations, orthodontics frequently involve patients who experience bullying.<sup>15</sup>

The rationale of this study is to investigate the frequency of bullying among patients applying for orthodontic treatment, its impact on their self-esteem, association of bullying with IOTN and type of malocclusion and whether orthodontic treatment has an impact on their quality of life.

## MATERIALS AND METHODS

The study was conducted at Department of Orthodontics, Khyber College of Dentistry. Ethical permission was acquired from the board of ethical review, Khyber College of Dentistry, before conducting the research. The sampling technique employed was convenience sampling, where participants who were ready to be interviewed at the department of Orthodontics.

Study population included all patients visiting the OPD of Khyber College of Dentistry, and were consenting to be interviewed, with no age or gender limit. Patients with systematic diseases, patients with psychosocial problems, or any kind of syndrome or handicap affecting other parts of the body were excluded from the study to reduce any confounders. The study was of a cross-sectional design assessed through a modified version of Olweus Bully/Victim Questionnaire. People who visited the orthodontic department of the teaching dental colleges in Peshawar were included in the study. Questions were asked about the participants experience regarding bullying, their type of malocclusion, their motivation for orthodontic treatment, and the role orthodontic treatment played in improving the patients' mental health and attitude. The software used to for data analysis was SPSS version 22.0. Chi square test was applied to draw an association whether the type of malocclusions, IOTN grading and patients self-es-

teem were related to bullying or not.

## RESULTS

A total of 389 forms were collected from patients coming for Orthodontic treatment in Peshawar, out of which 154 were males and 235 were females. Among the male's population 88 (57.1%) were reported to have been bullied whereas 66 (42.9%) were not bullied. Among the females, 99 (42.1%) reported being bullied whereas the rest 125 (57.9%) were not bullied. (P-value 0.004).

Categorizing this data on the basis of their ages, we found out that 232 out of these 389 people belonged to age group 11-20, 109 (47%) out of these reported to being a subject to bullying leaving behind 123 (53%) as not bullied, 153 were from the age group 21-30, out of which 76 (49.7) were bullied leaving behind 77 (50.3) as not bullied, and only 4 people were from the 31+ age group, 2 (50%) agreed to being bullied. (P value 0.273).

We tried to draw an association between IOTN and being subject to bullying, where 32.7%, 44.7%, 58.5%, 54.3%, 36.4% reported an incidence of being bullied for Grade I, II, III, IV and V respectively. ( $p=0.027$ ). Similarly, participants with class 3 malocclusion were the most prone to being bullied (63%) while class II and class 1 had almost 50% incidence of being bullied in some form. Most of the bullying was done verbally than physically (80.7%), and done

by one's own age group (85%). ( $p=0.001$  for all). Almost 47% of the bullied victims confided the issue with someone most of them being their parents. 61% of the victims had a chronic fear of being bullied. There might be some association between people's perception that others consider their teeth being ugly and being bullied as almost 73% of those who have been bullied carried this notion with them, while 71% were always afraid that they might be made fun of because of their malocclusion. ( $p=0.001$ )

Bullying did seem to harm the confidence of the victims, as almost 60% reported to have no confidence while speaking or smiling (0.001)

## DISCUSSION

Bullying has been synonymized with when an individual of any age group is consistently intimidated with negative actions performed by their peers. Though there has been a difference of opinion regarding the exact definition varying from physical and verbal abuse to mild teasing by friends, all of these definitions have been collectively included during the assessment of studies.<sup>13,14</sup> Bullying has tremendous psychological impact on the well-being of an individual as most of the victims displayed lower social competence, self-esteem issues and lower performance in athletics.<sup>15,16</sup>

Our study displayed that almost half of the people coming in for orthodontic treatment have

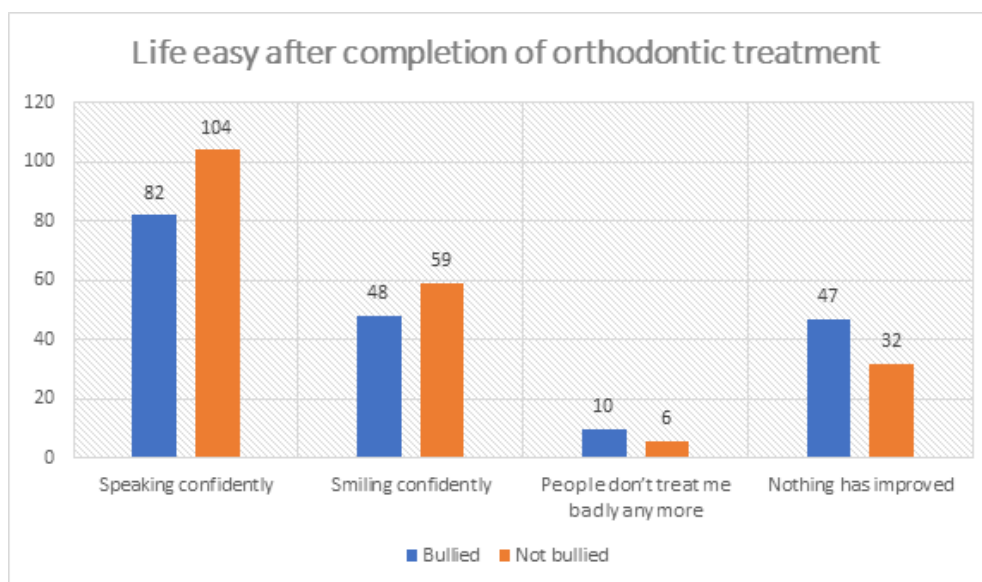
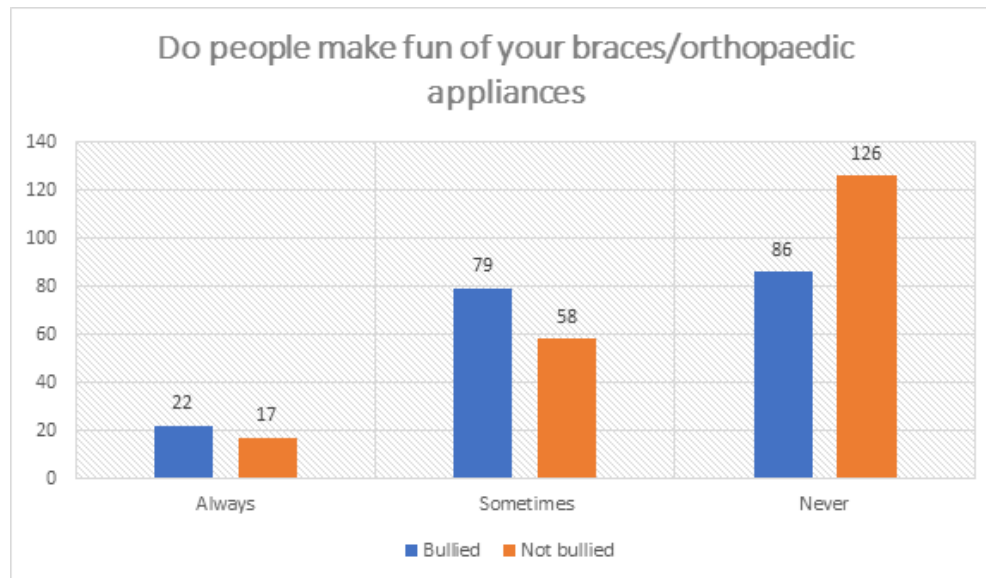
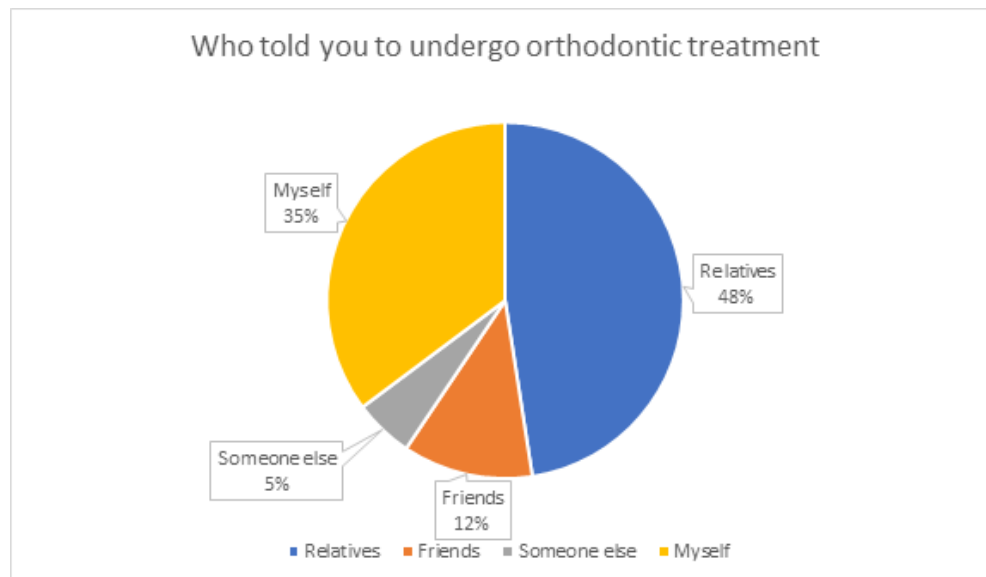


Fig 1: Life easy after completion of orthodontic treatment



**Fig 2: Do people make fun of your braces/orthopaedic appliances**



**Fig 3: Who told you to undergo orthodontic treatment**

been bullied in some respect. This is comparable to the findings of Al Bitar and those in Nigeria where it was reported around 42%, with those from Brazil reporting 48%.<sup>7,11</sup> These numbers are still higher than those in developed countries. This might be suggestive of the fact that these countries might have a better structured educational program where policies are implemented in both the school and workplace to curb the incidence of such acts.<sup>15</sup> Most people coming for orthodontic treatment regard their facial features as unaesthetic. This is further exacerbated by bullying as other studies also displayed that people were targeted for their physical

features.<sup>17</sup> There have been studies which suggest that protrusive upper teeth are the least attractive in facial features and thus conventionally more likely to be bullied.<sup>18</sup> However it stands in contrast to our study where class III patients had the highest percentage of reported victimhood of bullying, which can be a reflection of our cultural understanding of dental aesthetics. Mild facial deformities like Class II division 1 or commonly known as 'buck teeth' are more commonly subjected to ridicule where as severe dentofacial deformities draw pity instead.<sup>16,19</sup> Our study reported more than 50% of the patients with class II malocclusion reported to being bullied

by their peers and colleagues, where this contrasted with reportedly low bullying rates for 16% and 9% in class II and III patients respectively in a UK study.<sup>16</sup> Study done amongst Jordanian children stood low as well where 19% of the bullied children had class II malocclusion.<sup>14</sup>

There seemed to be a significant association between IOTN and being subjected to bullying. In our study there was a significantly more bullying associated with moderate orthodontic problems as the most percentage of victimization amongst the IOTN groups was in Grade III at 58%. This can tell that even though severe malocclusion did find themselves at the receiving end, their percentage was comparatively less, suggesting other factors might come into play.<sup>20</sup> This stands in agreement with the findings of Seehra et al where an association was found between IOTN and bullying, however no significance was reported on regression analysis.<sup>16</sup> Further work needs to be done in this regard to derive whether our current IOTN index needs to be modified keeping the patients emotional state in view.<sup>21</sup>

The role of implementing anti bullying policies in the school and work environment is paramount as a significant number (85%) of the verbal aggression was carried out by peers and classmates. Verbal aggression is a common form employed by the perpetrators.<sup>22</sup> Bullying can impart deep rooted psychological problems like anxiety and depression, where more than 60% of our participants felt a fear of being bullied by their peers. This can lead to a lack of enthusiasm in work or academics, which was supported by studies in both Jordan, UK and Turkey in which there were more unexplained absences from the school amongst children who were bullied compared to those who were not.<sup>14,23,24</sup> Most of the victims did confide in their parents, but there are no dedicated programs which reduce workplace harassment or a mental health counsellor in most institutes in Pakistan.<sup>25</sup>

It's an established fact that being bullied for physical appearance can shatter the self-esteem of a person. Almost 60% of our population who have been a victim of bullying targeting their facial characteristics did not have the confidence to speak or smile properly. This is supported by studies done in Brazil and Turkey, having a 42% and 43% dissatisfaction with their smile among individuals with

malocclusion.<sup>26,27</sup>

Undergoing orthodontic treatment is not the end for most individuals as despite undergoing treatment, individuals were still targeted for the orthodontic appliances they wear.<sup>28</sup> Our results showed more than 50% of the individuals who were previously bullied continued to be targeted and made fun of for their appliances. This is in contrast to the 22% of individuals who were made fun of for their orthodontic appliances in Kent.<sup>16</sup>

The most important feature which should be focused on is whether our current models of orthodontic treatment improve the quality of life of the patient. There was significant improvement in the overall attitude and self-esteem of the patient as almost 80% reported to being able to smile and speak more confidently now. However, 20% still had reservations about their outcome as they explained that nothing seems to have changed. This might imply a deeper level of mental and emotional disturbance regarding their facial appearance, for which appropriate therapy should be adjunctive along with orthodontic treatment.

## LIMITATIONS

The prime limitation of our study is it being a cross-sectional study. For better analysis of how orthodontic treatment affects a patient, a follow up study should be conducted on specific individuals for better outcome.

## CONCLUSIONS

There is a wide spread occurrence of bullying in our school and work environment, which is psychologically harmful for the emotional well-being of an individual. There is an association between the IOTN and the amount of bullying a person faces, where moderate levels are more targeted than severe malocclusions. Skeletal Class III patients were the most targeted individuals based on their facial appearance. Majority of the bullying is carried out by one's own peer group, which demands the need for anti-bullying policies in the school and work environment. There was a significant number of self-esteem issues among the bullied victims as more than half regarded their dentofacial appearance as unaesthetic.

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