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Psychological impact of having orthodontic treatment on teenage patients

A Project Submitted to
The College of Dentistry, University of Baghdad,
Department of Orthodontic
in Partial Fulfillment for the Bachelor of Dental Surgery.

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Certification of the Supervisor

I certify that this project entitled "**Psychological impact of having orthodontic treatment on teenage patients**" was prepared by the fifth-year student **Nagham abdulsalam abdukkareem** under my supervision at the College of Dentistry/University of Baghdad in partial fulfilment of the graduation requirements for the Bachelor Degree in Dentistry.

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Date:

Dedication

To those who gave their life for me and support me all the time, my mother and my father.

To my lovely brothers and sisters...

To my friends who have always been with me in all moment I will never forget their love, advice and constant support for me, thank you for being with me.

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List of Abbreviations

OHRQoL	Oral health related quality of life
OIDP	Oral Impacts on Daily Performance
DFO	Dentofacial and orthodontic
CL	Class

Introduction

Introduction

Malocclusion affects the physical, social, and psychological functioning known as quality of life (**Brosens *et al.*, 2014**). Orthodontic treatment is associated with improved quality of life, as it can provide physical, social, and psychological changes (**Zhang *et al.*, 2008**). To achieve improvement, patients must experience some side effects related to treatment with orthodontic appliances (**Liu *et al.*, 2011**). Orthodontic treatment can be an uncomfortable process, as the appliances used represent foreign objects inserted into a physically and psychologically sensitive area of the body, causing physical and psychological discomfort (**Stewart *et al.*, 1997**) as well as functional limitations such as: difficulty eating, difficulty to perform oral hygiene, speech, presence of halitosis, dental mobility, impaired taste perception and gingival bleeding. These affect quality of life (**Marques *et al.*, 2014**) and may decrease the desire to undergo or cooperate with treatment (**Scott *et al.*, 2008**).

Costa *et al.* (2016) Show that teenagers with braces showed 4.88 times more chance of experiencing high negative impact on OHRQoL (oral health in relation to quality of life), than those who did not use braces. Therefore, investigating the functional and emotional limitations caused by the use of orthodontic appliances is important to better understand the consequences of therapy. This information will assist the orthodontist in developing appropriate strategies for conducting treatment (**Costa *et al.*, 2016**). In short, adolescents have their own way of functioning, their fears, worries, desires, hopes and education, which are called “teenage troubles,” The lack of self-assertion in adolescents is the behavioral disorder that can pose the biggest problem to the orthodontist in managing orthodontic and dentofacial (DFO) treatment. Provided that the desired behavior of empathy, consideration account, in the majority of adolescents, the orthodontist will manage the treatment in a therapeutic alliance in a calm and optimal way. The orthodontist, whose treatment will cover this

Introduction

period of adolescence, will have an important role in guiding these young patients in their development, their evolution, through their “mouth” which is an organ so psychologically invested in fundamental symbols of life and learning.

Aim of the study

Aim of the study

The aim of this study was to analyze the main discomfort caused by the use of orthodontic appliances (fixed, removable and myofunctional appliances), their determinants of discomfort and the effect they have on the quality of life of adolescents, using the Oral Impacts on Daily Performances (OIDP) questionnaire in the form of an interview.

Chapter one**Review of literature****1.1 Adolescence:**

In longitudinal growth curves, an increase in the velocity of growth occurs between 10–12 years in girls and 12–14 years in boys. This rapid increase in growth is termed as the adolescent growth spurt. Adolescence is a time of rapid physical and mental development (**Phularia, 2017**). several pertinent mental disorders that occur in adolescents, due to physiological change in hormonal secretion so this period is very sensitive, the person very emotional, including mood disorders, attention-deficit, hyperactivity disorder, personality disorders (**Phularia, 2017**). Adolescents spend a lot more time with their peers than younger children do and are more heavily influenced by them. The drive for affiliation and acceptance at this stage makes adolescents more open to peer influence and also tends to promote the rapid development of new relationships with less time spent on negotiation of the basis for the friendship than at other stages of life (**Berndt, 1979; Brown et al., 1986**). Researchers **Berndt (1979)** and **Brown et al. (1986)** have identified a linear pattern that associates age and openness to peer influence. In this stage the appearance more important to the individual especially the facial appearance, fashion a comfort able social identity, to try to gain acceptance into group. So the orthodontic treatment important. In other hand can be has negative effect on their appearance due to being the object of curiosity, comments, and jokes at the school and when contact with people.

1.2 Benefit of orthodontic treatment:

Facial appearance represent important effect on self and social perceptions (**Bos, 2003**). Concern relating to perceptions of facial appearance and social attractiveness can influence the psychological development of the

individual from childhood to adulthood (**Ukra *et al.*, 2012; Sobur, 2013**). It is generally accepted that the main benefit of orthodontic treatment relates to improvements in oral function and oro-facial aesthetics and thus to improved oral health related quality of life, Improved confidence, Well-aligned teeth that are easier to keep clean and healthy. Ideally positioned teeth, which lessen the chance of gingivitis and advanced gum disease. Closed spaces to avoid the need for a bridge or denture, better chewing and food digestion. The benefit of orthodontic treatment that are popularly known as Jackson's Triad (**Phularia, 2017**).

1. Functional efficiency
2. Structural balance
3. Esthetic harmony

1.2.1 Functional efficiency:

The teeth along with their surrounding structures, are required to perform certain significant functions such as mastication and phonation. Orthodontic treatment should increase the efficiency of the functions performed (**Phularia, 2017**).

1.2.2 Structural Balance:

Orthodontic treatment not only affects teeth but also the soft tissue envelop and the associated skeletal structures. The treatment should maintain a balance between these structures and the correction of one should not affect the health of the other (**Phularia, 2017**).

1.2.3 Esthetic Harmony

The orthodontic treatment should enhance the overall esthetic appeal of the individual. This might just require the alignment of certain teeth or movement of the complete dental arch, including its basal bone. The aim is to get results which go well with the patient's personality and make him or her look more esthetically appealing (**Phularia, 2017**).

1.3 The problems during orthodontic treatment:

Orthodontic treatment can be source of discomfortable to the patient as the appliances used to represent foreign objects inside the mouth, causing physical psychological discomfort and as well as functional limitations such as difficulty eating, difficulty to perform oral hygiene requiring extra care in brushing teeth, much more frequent visits to the dentist and an aesthetic embarrassment and this is the most important problem, speech, presence of halitosis, dental mobility, impaired taste perception and gingival bleeding (Stewart *et al.*, 1997). These affect quality of life (Marques *et al.*, 2014) and may decrease the desire to undergo or cooperate with treatment.

1.3.1 Pain, discomfort, and psychological adjustment to treatment

Pain, the most manifestation for patient poor cooperation, this result in early termination or even discontinuation of treatment (Sergl *et al.*, 2000). Due to the pain there are difficulties during chewing or biting a hard food. A significant factor of Individual psychological susceptibility for the intensity of discomfort due to physical effects of an orthodontic appliance on oral tissues. Psychological research has shown that the experience of pain and discomfort is influenced by personal values and expectations such as prospects of self-efficacy, treatment outcomes and patients attitudes towards treatment (AbuAlhaija *et al.*, 2010).

1.4 Orthodontist-patient relationships

Orthodontist-patient relationships in orthodontic treatment affected on number of variables. Variables that may relate directly to treatment, such as issues relating to compliance maintenance of oral hygiene, pain perception, discomfort and psychological adjustment to treatment, habits and patient satisfaction (Sinha *et al.*, 1996; Sergl *et al.*, 2000).

1.5 Patient satisfaction

Patients thought that the dentist-patient interaction should be comfortable and warm with a dentist who is technically competent and provides adequate information about the problem and procedures he/she will perform (**Gerbert *et al.*, 1994**). When these expectations are not met, the patients feel disappointed, less satisfied, fail to keep appointments, and do not comply with prescribed instructions which may ultimately result with a poor orthodontic result. **Gerbert (1994)** and **Anderson *et al.* (2009)** reported that the more the adolescents had focused on the post orthodontic treatment aesthetics and functioning, and the more they were energised by thinking about their post-treatment possible selves before the treatment, the more satisfied the adolescents and their parents were with the treatment.

1.6 Oral health related quality of life (OHRQoL)

The concept of 'OHRQoL' has been defined as either a standard of health of oral and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment (**Department of Health, 1994**) or the absence of negative impacts of oral conditions on social life and a positive sense of dento facial self-confidence (**Inglehart and Bagramian, 2002**).

1.7 Types of orthodontic appliances can be used during teenager stage**1.7.1 The impact of wearing a fixed orthodontic appliance on teenagers**

A number of studies have found that malocclusion can affect physical, psychological and social aspects of an individual's life (**Traebert and Peres, 2007; Bernabe' *et al.*, 2009**). which partially explains the growing demand for orthodontic treatment (**Mandall *et al.*, 2005; Marques *et al.*, 2009**). Appearance of the face is used as a guide to infer various characteristics about a person, including personality, integrity, social competence, intellectual competence, and mental health (**Sobur, 2013**). One of the most important

components of facial appearance is teeth and mouth (**Jeremiah *et al.*, 2011**). Individuals with poor dental structures require the use of fixed orthodontic devices as a treatment for malocclusion (**Proffit *et al.*, 2007**; **Yoana *et al.*, 2017**; **Rukiah *et al.*, 2018**). Perceptions about the use of fixed orthodontic devices from aesthetic aspects are usually the main motivation of individuals, especially adolescents in receiving malocclusion care (**Jeremiah *et al.*, 2011**; **Adam and Achmad, 2018**).

Discomfort and concern on the part of patients during the use of a fixed Orthodontic have been investigated. Orthodontic procedures may cause functional limitations, pain and discomfort, which tend to lessen as the treatment goes on (**Zhang *et al.*, 2008**).



Figure 1.1: Fixed orthodontic appliance (phularia, 2017)

1.7.2 The impact of wearing extra oral orthodontic appliances on teenagers:

Extra oral appliances (e.g. headgears and chin cup) are a vital part of traditional orthodontic treatment protocols. Positional changes produced by orthodontic extraoral appliances in the maxilla, the mandible and the cranial base have been reported by many investigators (**Watson, 1972**). Orthopedic appliances use extraoral forces of high magnitude (>400 g/side) to bring about skeletal changes. Intermittent application of such high forces in the growth period aids in correction of skeletal malocclusions by growth modification. Considering the psychological characteristics of children, it is not easy for them

to use an extra-oral appliance in daily life due to the possibility of being the object of curiosity, comments and jokes (Maj *et al.*, 1967). Thus, orthodontic treatment can lead to negative social interactions, particularly when extra-oral appliances that make the patient less attractive are used to treat the malocclusion.



Figure 1. 2: Headgear appliance (Phularia, 2017)

Advantages of extra oral appliances: (Phularia, 2017)

1. Anchorage established from extra oral anchorage source is much greater than intraoral anchorage source, since extra oral anchorage units are more stable.
2. There is lesser risk of anchor loss.
3. Chin cup appliance used to restrict mandibular advancement in treatment of class III malocclusion.

Disadvantages of extra oral appliances: (Phularia, 2017)

1. Depended on patient compliance.
2. The metallic framework and noticeable gadgets of orthodontic appliances (headgear or chin cup) may discourage the patient from wearing it, due to being the object of curiosity, comments and jokes at the school and when contact with people.

1.7.3 Functional Appliances

Functional appliances/myofunctional appliances are mainly designed to correct skeletal cl II relationship by positioning the mandible downward and forward to theoretically enhance mandibular growth. All functional appliances are intraoral devices. Treatment of skeletal malocclusions by growth modification using orthopedic and functional appliances is best carried out during adolescent growth spurt, frankel functional regulator to stimulate mandibular growth in the treatment of class II malocclusion (phularia, 2017). It is advisable to continue appliance wearing until the cessation of adolescent growth spurt so as to obtain stable results.

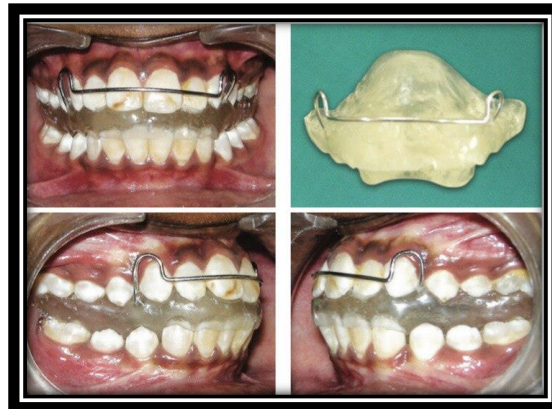


Figure 1. 3: Myofunctional appliance (phularia, 2017)

Functional appliances are classified into

1. Removable Functional Appliances

- Removable Tooth-Borne Appliances
(Activator, Bionator, Twin block appliance)
- Removable Tissue-Borne Functional Appliances
Functional regulator/functional corrector/Frankel appliance.

2. Fixed Tooth-Borne Functional Appliances

(Herbst appliances).

Advantages of functional orthodontic appliances: (Phularia, 2017)

1. They are effective in vertical control of increased overbite.

Disadvantages of myofunctional orthodontic appliances: (Phularia, 2017)

1. The success of functional appliances therapy solely depends on patient cooperation.
2. Impact on patient appearance possibility of being the object of curiosity, comments, and jokes.
3. Precise tooth movement is not possible with functional appliances.

1.7.4 Removable orthodontic appliances

They can be removed and inserted into the mouth by the patient. A great number of internal and external factors that potentially influence compliance. These include personal mentality and self-esteem of the patient and the dentist optimal dentist patient relationship, clear explanation of the purpose, risks and costs of the therapy to the patient and his/her parents, maintenance of the regular control and recall appointments; and types of appliances used of removable appliances requires careful case selection for the success of the treatment (**Dalya et al., 2017**). They are ideally used when simple tipping movement of teeth is sufficient to correct a certain type of malocclusion. They can also be used as passive appliances to maintain the teeth in their corrected positions after active phase of orthodontic therapy, e.g. Retainers. Removable orthodontic appliances can be used in conjunction with fixed mechano therapy.



Figure 1. 4: Removable appliance (Phularia, 2017)

Advantages of removable orthodontic appliances: (Phularia, 2017)

1. Removable appliances permit easy cleaning.
2. Patient can remove it.
3. They are good for overbite reduction.
4. They can tip the teeth efficiently.
5. They eliminate occlusal interferences.

Disadvantages of removable orthodontic appliances: (Phularia, 2017).

1. Discomfort when eating.
2. Impact on speech due to bulk acrylic base plate.
3. Impact on patient appearance.
4. Removable orthodontic appliances can bring about only a limited type of tooth movement.
5. Anchorage of tooth movement is sometimes difficult, since anchor teeth cannot be prevented from tilting.
6. Retention of removable orthodontic appliance is more difficult than with fixed appliances.
7. A high degree of cooperation and a certain amount of skill is required from the patient, who has to remove, clean and replace the appliance at frequent interval.

1.8 Psychological impact of having orthodontic treatment on teenage patients

The most significant impact of malocclusion in patients' quality of life is reflected in the psychosocial dimension instead of feeling a lack of satisfaction with the function. For patients wearing orthodontic devices, the emotional and social domains (which include aspects such as embarrassment and avoidance of smiling) are the most relevant (**O'Brien *et al.*, 2007**).

Previous studies found that the discomfort associated with the use of orthodontic appliances had a negative influence on the quality of life of adolescents (**Irma *et al.*, 2018**).

Andre'a *et al.* (2011) concluded, children wearing a fixed orthodontic appliance had significantly worse OHRQoL. Through a survey involving a sample of 579 adolescents from 11 to 14 years of age in the town of Brumadinho, southeast Brazil.

Ana *et al.* (2018) reported Patients' satisfaction was improved during and after appliance therapy, for more than half of the participants. Self-confidence was low in relation to school performances, almost half of the patients reported stagnation in their school performances during the fixed appliance therapy. However, more than 64% of the patients were quite satisfied about their facial aspect during and after the orthodontic treatment. Thus, the common concerns of the patients anxious about their aspect during appliance therapy are not supported by the findings of the study.

Annemieke *et al.* (2003) concluded that satisfaction with dental appearance is a significant predictor of orthodontic patients' expectations of treatment. Through a sample of patients who applied for orthodontic treatment, completed questionnaires, containing items on satisfaction with facial appearance and items on expectations of orthodontic treatment.

Serogl *et al.* (2000) documented that, the most frequent complaints were impaired speech, impaired swallowing, feeling of oral constraint and lack of confidence in public. Through study on Eighty-four patients undergoing either removable, functional, or fixed appliance treatment monitored their complaints during the first 7 days of treatment and rated them retrospectively 14 days, and 3 and 6 months after appliance insertion.

Costa *et al.* (2016) investigated the impact of wearing a fixed orthodontic appliance on oral health-related quality of life (OHRQoL) among adolescents. Concluded that, the adolescents who wore fixed orthodontic appliances had a greater chance of reporting a negative impact on OHRQoL than those who did not wear such appliances.

Eduardo *et al.* (2008) assess the prevalence, intensity and extent of the impacts on daily performances related to wearing different types of orthodontic appliances. found, one in four Brazilian adolescents undergoing orthodontic treatment reported side effects, specific impacts on daily living, related to wearing orthodontic appliances. Such impacts were higher among adolescents wearing fixed rather than removable or a combination of fixed and removable orthodontic appliances. This information could help to inform patients about the frequency and intensity of sociodental impacts during the course of their treatment.

Materials and methods

This cross-sectional questionnaire-based study was carried out at the orthodontic clinic, collage of dentistry university of Baghdad, Alanbar and Aliraqia universities, from December 2021 to march 2022. This study was carried out with the objective of assessing the psychological impact of having different types of orthodontic appliances on teenage patients.

2.1 Inclusion criteria:

Iraqi adolescence patients age range 10-14 years, boys and girls who attended to orthodontic clinic without any systemic disease and had not receive pervious orthodontic treatment. Data were obtained by interview questionnaires, the intensity of both physical and psychological discomfort was assessed using the Oral Impacts on Daily Performances (OIDP).

2.2 Methods:

The Oral Impacts on Daily Performances (OIDP) rates 7 dimensions which are: eating and enjoying food, speaking and pronouncing correctly, cleaning and brushing teeth correctly, sleeping and relaxing, smiling and showing teeth without embarrassment, maintaining the emotional state without anger, doing all work and socializing normally, and enjoying contact with people (**Irma *et al.*, 2018**).

2.3 Patient's information

- 1. Gender:
- 2. Age:
- 3. Type of appliance:
- 4. Time from start wearing
the appliance:
- 5. Education state:
- 6. Are you wearing the
Removable appliance
at school, lectures or
any important events ?

Oral Impacts on Daily Performances (OIDP) (Irma *et al.*, 2018).

- 1. Do you enjoy contact
with people
- 2. Do you do all socializing
in normal way
- 3. Do you smile and show
your teeth without
embarrassment ?
- 4. Eating and enjoy the food ?
(fixed orthodontic appliance)
- 5. Speaking and pronouncing
properly?
- 6. brushing or cleaning your teeth?
(fixed orthodontic appliance)
- 7. sleep and relax?



Figure 2.1: Myofunctional appliance (Monoblock appliance)



Figure 2.2: Fixed appliance for treating anterior open bite

Results

3.1 The impact of wearing orthodontic appliances according to the gender

The study included 36 males (51.4%) and 34 females (48.6%). Discomfort was associated with use of different types of orthodontic appliances and the most affected daily activities were eating and enjoying food which mentioned by 8 males (100%) and 14 females (100%), speaking mentioned by 27 males (75%) affected while 9 males (25%) not affected and 25 females (73.5%) affected while 9 females (26.5%) not affected and for brushing mentioned by 8 males (75%) affected while (25%) not affected and 14 females (100%) affected, (50%) of males and (50%) of females wearing the appliance at school and 22 males (61.1%) and 25 females (73.5%) enjoying and do all socializing. (Table 3.1, 3.2).

Table 3. 1 The impact of wearing orthodontic appliances on males

Type of appliance	N	%
Fixed appliance	8	22.2
Removable appliance	20	55.6
Myofunctional appliance	8	22.2
Total	36	100
Education state		
Primary school	20	55.6
Secondary school	16	44.4
Total	36	100
Social state		
Sociable	27	75
Timed	9	25
Total	36	100
Wearing at School		
Yes	14	50
No	14	50
Total	28	100
Enjoying		
Yes	22	61.1
No	14	38.9
Total	36	100
Socializing		
Yes	22	61.1
No	14	38.9

Total	36	100
Smile		
Yes	21	58.3
No	15	41.7
Total	36	100
Eating		
No	0	0
Little	1	12.5
Moderate	7	87.5
Sever	0	0
Total	8	100
Speaking		
NO	9	25
Little	11	30.5
Moderate	14	38.9
Sever	2	5.6
Total	36	100
Brushing		
No	2	25
Little	1	12.5
Moderate	3	37.5
Sever	2	25
Total	8	100
Sleep		
No	14	38.9
Little	7	19.4
Moderate	13	36.1
Sever	2	5.6
Total	36	100

Table 3. 2 The impact of wearing orthodontic appliances on females

Type of appliance	N	%
Fixed appliance	14	41.2
Removable appliance	18	52.9
Myofunctional appliance	2	5.9
Total	34	100
Education state		
Primary school	12	35.3
Secondary school	22	64.7
Total	34	100
Social state		
Sociable	26	76.5
Timed	8	23.5
Total	34	100
Wearing at school		
Yes	10	50
No	10	50
Total	20	100
Enjoying		
Yes	25	73.5
No	9	26.5
Total	34	100
Socializing		
Yes	23	67.6
No	11	32.4
Total	34	100
Smile		
Yes	24	70.6
No	10	29.4
Total	34	100
Eating		
No	0	0
Little	6	42.9
Moderate	8	57.1
Sever	0	0
Total	14	100
Speaking		
No	9	26.5
Little	10	29.4
Moderate	13	38.2
Sever	2	5.9
Total	34	100
Brushing		
No	0	0
Little	3	21.4
Moderate	9	64.3
Sever	2	14.3
Total	14	100

Sleep		
No	11	32.4
Little	7	20.6
Moderate	15	44.1
Sever	1	2.9
Total	34	100

3. 2 The impact of wearing fixed orthodontic appliances on teenagers

The study includes 8 males (36.4%) and 14 females (63.6%). The most affected daily activities were eating and enjoying food that mentioned by 22 patients (100%), speaking mentioned by 18 patients (81.8%) while 4 patients (18.2%) no affected and brushing mentioned by 20 patients (90.9%) affected while only 2 (9.1%) not affected, 17 patients (77.3%) smile and do all socializing while 5patients (22.7%) affected and sleep 16 patients (72.7%) affected while 6patients (27.3%) not affected. **Table (3.3).**

Table 3. 3 The impact of wearing fixed orthodontic appliances on teenagers

Gender	N	%
Male	8	36.36
Female	14	63.64
Total	22	100
Education state		
Primary school	2	9.09
Secondary school	20	90.91
Total	22	100
Social state		
Timed	6	27.27
Sociable	16	72.73
Total	22	100
Enjoying		
Yes	16	72.72
No	6	27.27
Total	22	100
Socializing		
Yes	17	77.3
No	5	22.7
Total	22	100
Smile		
Yes	17	77.3
No	5	22.7
Total	22	100
Eating		
NO	0	0
Little	7	31.8
Moderate	15	68.2
Sever	0	0
Total	22	100
Speaking		
No	4	18.18
Little	8	36.36
Moderate	8	36.36
Sever	2	9.1
Total	22	100
Brushing		
No	2	9.1
Little	4	18.18
Moderate	12	54.54
Sever	4	18.18

Total	22	100
Sleep		
No	6	27.27
Little	7	31.8
Moderate	8	36.36
Sever	1	4.54
Total	22	100

3. 3 The impact of wearing removable appliances on teenagers

The study included 20 males (52.6%) and 18 females (47.4%). The most affected daily activities were speaking mentioned by 29 patients (76.3%) affected while 9 patients (24.7%) not affected and sleep mentioned by 21 patients (55.3%) while 17 patients (54.7%) not affected, 19 patients (50%) wearing appliances at school and (50%) not wearing them and 25 patients (65.8%) enjoying and do all socializing while 13patients (34.2%) affected.

Table (3.4).

Table 3. 4 The impact of wearing removable orthodontic appliances on teenagers

Gender	N	%
Male	20	52.6
Female	18	47.4
Total	38	100
Education state		
Primary school	23	60.5
Secondary School	15	39.5
Total	38	100
Social state		
Sociable	28	73.7
Timed	10	26.3
Total	38	100
Wearing at School		
Yes	19	50
No	19	50
Total	38	100
Enjoying		
Yes	25	65.8
No	13	34.2
Total	38	100
Socializing		
Yes	25	65.8
No	13	34.2
Total	38	100
Smile		
Yes	24	63.2
No	14	36.8
Total	38	100
Speaking		
No	9	23.7
Little	11	28.9
Moderate	15	39.4
Sever	3	7.9
Total	38	100
Sleep		
No	17	44.7
Little	5	13.2
Moderate	16	42.1
Sever	0	0
Total	38	100

3. 4 The impact of wearing myofunctional appliances on teenagers

The study included 8 males (80%) and 2 females (20%) which discomfort associated with use of myofunctional orthodontic appliances. The most affected daily activities were speaking mentioned by 6 patients (60%) while 4 patients (40%) not affected, sleep mentioned by 8 patients (80%) while 2 patients (20%) not affected, 4 patients (40%) enjoying smile without embracement and do all socializing and 6 patients (60%) affected. 5patients (50%) wearing the appliance at school and (50%) not wearing it. **Table (3.5).**

Table 3. 5The impact of wearing myofunctional appliances on teenagers

Gender	N	%
Male	8	80
Female	2	20
Total	10	100
Education state		
Primary school	7	70
Secondary school	3	30
Total	10	100
Social state		
Sociable	9	90
Timed	1	10
Total	10	100
Wearing at school		
Yes	5	50
No	5	50
Total	10	100
Enjoying		
Yes	4	40
No	6	60
Total	10	100
Socializing		
Yes	4	40
No	6	60
Total	10	100
Smile		
Yes	4	40
No	6	60
Total	10	100
Speaking		
No	4	40
Little	2	20
Moderate	4	40
Sever	0	0
Total	10	100

Sleep		
No	2	20
Little	2	20
Moderate	4	40
Sever	2	20
Total	10	100

3.5 Comparison between types of orthodontic appliances : The results of comparison between impact of different types of orthodontic appliances wearing on teenagers revealed no significant differences. **Table (3.6).**

3.6 Comparison between types of orthodontic appliances (Chi square test)

	Fixed appliance	Removable appliance	Myofunctional appliance	X2	p-value
Enjoying					
Yes	16	25	4	3.289	0.193
No	6	13	6		
Socializing					
Yes	17	25	4	4.239	0.12
No	5	13	6		
Smile					
Yes	17	24	4	4.206	0.122
No	5	14	6		
Speaking					
No	4	9	4	2.907	0.82
Little	8	11	2		
Moderate	8	15	4		
Sever	2	3	0		
Sleep					
No	6	17	2	11.931	0.064
Little	7	5	2		
Moderate	8	16	4		
Sever	1	0	2		

DISCUSSION

It is generally accepted that the main benefit of orthodontic treatment relates to improvements in oral function and oro-facial aesthetics and thus to improved oral health related quality of life, teenagers realize that the first impression is greatly influenced by appearance in spite of orthodontic treatment is associated with improvement of the quality of life, although to achieve it the patients must experience side effects; appliances cause physical and psychological discomfort, as well as functional limitations.

The results of the present survey showed that all the participants (100%) experienced discomfort associated with the use of orthodontic appliances, which had a negative influence on their quality of life, which is similar to other studies (**Brosens *et al.*, 2014; Costa *et al.*, 2016**).

Marques (2014) assessed the impact of fixed orthodontic appliances using the Oral Impacts on Daily Performance (OIDP) scale and found that activities such as eating and enjoying food present in 37 participants (82.2%), cleaning or brushing teeth, experienced by 43 of the patients (95.5%) and Both in speaking and pronouncing properly and in maintaining the normal emotional state without anger, there was a 35.5% (16 patients) and for smiling, laughing and showing teeth without embarrassment 11 subjects (24.4%) were affected. In our survey eating and enjoying food (100%), brushing (90.9%), speaking (81.8%) were the most compromised and for smiling, laughing and showing teeth without embarrassment 17 (77.3%). So the results agreed with **Marques** study.

In our survey the most frequently discomfort mentioned during using of myofunctional appliance were smile and showing teeth without embarrassment (60%), enjoying (60%), socializing (60%) and sleep (80%) and found (50%) of patient wearing myofunctional appliance at school without embarrassment and (50%) don't wearing it at school due to impact on their appearance and

possibility of being the object of curiosity, comments, and jokes. This is consistent with other studies (**Bernabé *et al.*, 2008**).

The response rate in the present study for the daily activities affected by using removable appliance were speaking (76.3%), sleep (55.3%), smile (36.8%), while (65.8%) enjoying and do all socializing and found (50%) of patient wearing removable appliance at school without embarrassment and (50%) don't wearing it at school due to impact on their appearance and possibility of being the object of curiosity, comments, and jokes. This is consistent with other study (**Bernabé *et al.*, 2008**).

The results of comparison between impact of different types of orthodontic appliances on daily activities on teenager revealed no significant differences.

Conclusions and Suggestions**5.1 Conclusions**

1. The discomfort associated with the use of orthodontic appliances had a negative impact on the quality of life of adolescents.
2. The most common discomfort determinants mentioned by the adolescences were wearing the orthodontic appliances, enjoying, smiling, socializing ,speaking and sleep.
3. It is important to inform patients about the possible discomforts they may experience during orthodontic treatment, as well as to clarify that most of the discomforts are temporary, or that they will adapt to them and no longer perceive them as a burden.

5.2 Suggestions

1. The samples includes different ages (adolescences, teenagers and adults) using different orthodontic appliances to assess the variations in the impact of orthodontic appliances.
2. Study the Impact of wearing orthodontic appliances on adolescences before and after finishing of the treatment.

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1-Gender :

a)Male b)Female

2-Age :

3-Type of appliance :

a)Fixed orthodontic appliance

b)Removable orthodontic appliance

c)functional appliance

4-Time from start wearing the appliance:

5-Education state:

a)Primary school b)Secondary school

6-Social state:

a)Timed b)Social

7- are you wearing the removable appliance at school, lectures or any important events ?

Yes no

8-When wearing the appliance:

A. Do you enjoy contact with people ?

Yes no

B. Do you do all socializing in normal way ?

Yes no

C. Do you smile and show your teeth without embarrassment ?

Yes no

9-In which way dose affect your daily activities:

A. Eating and enjoy the food ?

No Little Moderately Severely

B. Speaking and pronouncing properly?

No Little Moderately Severely

C. Brushing or cleaning your teeth?

No Little Moderately Severely

D. Sleep and relax?

No Little Moderately Severely