Assessment of Parents comprehension of orthodontic consent within Jordanian population

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Abstract

Objectives: To investigate the comprehension of the consent among the parents of Jordanian orthodontic patients undergoing fixed orthodontic treatment, using the verbal explanation supported with the University hospital consent leaflet.

Materials and methods: 32 consecutive parents of patients, aged 12-17 years, and about to undergo orthodontic treatment at the University Hospital, received information about risk and benefits of fixed orthodontic treatment, using verbal explanation supported with the University hospital consent leaflet. Parents were asked a series of open-ended question to evaluate their comprehension of the information presented in the consent.

Results: Parents answered correctly the questions related to straightening of the teeth as a benefit of orthodontic treatment, whether they should inform their orthodontist about any previous injuries to the patient's teeth, and if pain is expected due to orthodontic treatment. However, more than half of the parents failed to answer the questions related to improvement of gum and teeth health as a benefit of orthodontic treatment, root resorption as a risk of orthodontic treatment and the importance of following diet instructions to reduce the risk of white spot lesions.

Conclusion: Parents do not recall root damage as a risk of orthodontic treatment nor diet advice to reduce the risk of white spot lesions, which requires a special attention from the orthodontist to reinforce this information at the beginning of any orthodontic treatment.

Keywords: Consent, Parents, Orthodontics.

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Introduction

Informed consent is a process of communication in which the health care provider educates patients about the nature of their conditions and the possible solutions to their particular problems, and in turn, the patient consents to the proposed treatment regimen[1]. An important rule of the health care professional is to effectively communicate information to the parents of the patients who will undergo orthodontic treatment regarding risks, possible side effects, and responsibility during treatment. Traditionally, informed consent is given to the patient using the didactic method, where the treating doctor verbally explains the nature, risk and benefits of the treatment to the patient. The patient is given a leaflet and is allowed to ask questions before signing the consent form. Studies showed that patients remember little of the information disclosed when using the traditional informed consent process[2,3] and that having a signed consent form cannot guarantee patient understanding of the proposed procedure which alone does not constitute valid consent[4]. In orthodontics, several studies showed that the standard methods of informed consent for treatment using written and verbal instructions are relatively ineffective, as evaluated by recall and comprehension among

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the parents of orthodontic patients[5,6]. Ernst et al. (2007) found a high level of recall among the parents of orthodontic patients for the consent process concerning appliance type, the reasons for treatment and length of treatment. However, there was a poor recall for important factors such as decay, root resorption and retention after orthodontic treatment[7].

In this study, we aim to investigate the comprehension of consent among the parents of orthodontic patients undergoing fixed orthodontic treatment using verbal explanation supported with the University hospital consent leaflet. This study is the first to investigate the consent comprehension among parents of Jordanian patients.

Materials and Methods

The sample group were parents of new patients, aged 12-17 years old, seeking fixed orthodontic treatment at the Jordan University Hospital with no history of previous orthodontic treatment by the patient or within the family. The native language of the patient and the parent was Arabic. Neither patients nor parents had received any previous orthodontic literature. Before parent's enrolment, a questionnaire was distributed to collect their names and demographic data including age, gender, monthly family income, education level of parents, and whether the patient or any member of his/her immediate family had a history of previous orthodontic treatment.

32 consecutive parents of patients planned to receive orthodontic treatment with fixed appliances at the University hospital were recruited in this study. Parents were given the written consent form in a quiet room to read for 10 minutes, followed by verbal consent explanation presented by a trained dentist who used a written text as a reference to guarantee consistency of the information presented to the participants. Questions were allowed at the end of the verbal explanatory session. The outcome measure for this study was the level of parent's recall and comprehension of information, based on a series of open-ended questions (Appendix 1). The questionnaire was given to all participants immediately after signing the consent. The questionnaire contained 13 questions and the parents' score was calculated based on the number of correctly answered questions; the maximum score was 25. Open ended questions were used instead of multiple-choice questions to avoid the chance of getting the right answer if any choice was chosen randomly, and also to avoid answering the questions without reading them. The questions were written using the University hospital consent leaflet as a reference.

Results:

The age range of participants was 30 – 58 (44.6) years with 751.6 Jordanian Dinar average income. The sample had slightly more females (n=17) than Males (n=15) (Table 1). The percentage of correct answers of each question is shown in Figure (1). All the parents answered correctly the questions related to straightening of teeth as a benefit of orthodontic treatment, whether they should inform their orthodontist about any previous injuries to their teeth, and if pain is expected as a result of treatment. However, more than half of the parents failed to answer the questions related to improving teeth and gum health as a benefit of orthodontic treatment, root resorption as a risk of orthodontic treatment and to follow diet instructions to reduce the risk of white spot lesions. Only two thirds of the parents recalled the questions related to how often they should visit the orthodontist during treatment and the consequences of bracket breakages.

According to the Jordan statistics yearbook 2016[7], family income below 500 JD is considered as low socioeconomic status. Our results showed there was no impact of the socioeconomic status on the score of the parents (Table 2). Similar results were found when the education level of parents was investigated

Discussion:

This study was conducted with the aim of investigating the comprehension of the consent by parents of Jordanian patients seeking orthodontic treatment. The study was designed

in a robust way; the questionnaire was open ended to avoid any possibility of chance when filling it, if any choice was made randomly and also avoiding any carelessness with regards to not reading the questions properly, or choosing any answer when not knowing the correct one. The written consent used at the University hospital was used in this study to serve as a reliable source of information. In addition, the study was conducted on patients who were planned for orthodontic treatment and not on random sample. This added strength to the results as it represented a real life situation were parents were interested to read and understand the consent information.

Three questions were answered correctly by less than 50% of the parents: These were regarding improving the health of gum and teeth as a benefit of orthodontic treatment, root damage as a risk of treatment and following diet instruction to reduce the risk of white spot lesions. Poor recall of root resorption as a risk of orthodontic treatment was reported before in the literature; only 21 % of the parents and patients recalled root resorption after six months of treatment[8]. This finding is essential as histologic research indicates an extremely high (more than 90%) occurrence of root resorption that is caused by orthodontic forces[9]. Parents also failed to remember the diet instructions to reduce the risk of white spot lesion. This is important as any negligence in this will result in decalcification, a common risk of orthodontic treatment. It has been reported that 50% of the orthodontic patient will have at least one white spot at the end of the treatment[10].

Education level of parents had no effect on the results of this study, yet it's worth mentioning that most parents in this sample held Bachelor degrees while other levels of education were much less frequent. Therefore, a more equally distributed parent sample according to the education level is needed to accurately study this variable and its effect on the comprehension of the consent. Socioeconomic status of parents had no effect on their comprehension of the consent. This is justified by the fact that parents do care about their kids regardless the amount of money they make.

Conclusion:

- Orthodontists should emphasize the risks of root damage during orthodontic treatment. Parents do not recall this risk in the short term.
- Orthodontists should emphasize the importance of diet control during orthodontic treatment to reduce risk of white spot lesion. Parents do not recall this information.
- Socioeconomic status has no effect on parents' comprehension of orthodontic consent.

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Table (1): Descriptive table.

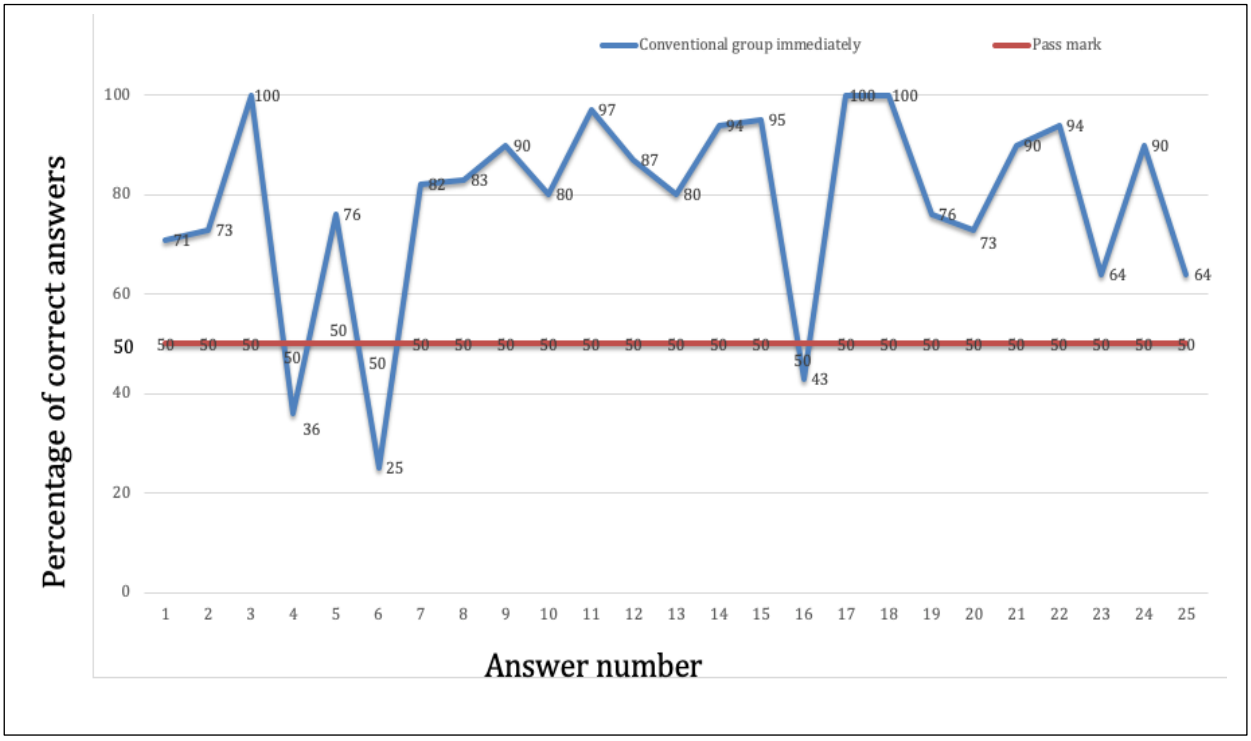
N	Age range (Mean)	Gender		Mean Monthly income (JOD)	Educational level of Father					Educational level of Mother				
		Male	Female		Less than High school	High school	BSc	MSc	PhD	Less than high school	High School	BSc	MSc	PhD
32	30-58 (44.6)	15	17	751.6	2	3	7	3	0	3	2	12	0	0

Table (2): The impact of family income on the scores of parents

Income (JOD)	N	Mean score* (SD)	t	df	P-value**
< 500	15	79.1 (10.5)	0.31	29	0.761
> 500	17	77.9 (12.0)			

* The patients' answers to the questions were normalized to out of 100
** significant at α = 0.05 (2 tailed) test using independent t-test.

Figure 1: Percentage of correct answers



Appendix 1: The questionnaire

Question number	Questions asked to patients	Answer number
1	**In your opinion what is orthodontic treatment?**	
	• Wearing braces	1
	• Wire moving the teeth	2
2	**What are the benefits of orthodontic treatment?**	
	• Straight teeth / achieve more pleasing smile	3
	• Improve the health of the teeth / gums	4
	• Improve the bite / make it easier to eat	5
3	**What are the risks of orthodontic treatment?**	
	• Root damage / shortening	6
	• White marks on teeth / tooth decay	7
	• Damage to the gums	8
4	**What are the consequences of not brushing your teeth properly?**	
	• White marks on teeth / tooth decay	9
	• Damage to gums	10
5	**How often should you brush your teeth per day?**	
	• At least 3 times	11
6	**Which food you should avoid during orthodontic treatment?**	
	• Sweets / avoid sweets between meals	12
	• Fizzy drinks	13
	• Hard and sticky food	14
7	**What can you do to decrease the possible risks?**	
	• Brush teeth properly	15
	• Follow diet as instructed	16
8	**Should you tell your doctor about any previous injuries to your teeth?**	
	• Yes	17
9	**a. Do you expect any pain during teeth movement?**	
	• Yes	18
	b. When?	
	• 3-5 days after braces first fitted	19
	• Each time it is adjusted	20
	c. What should you do?	
	• If the pain is severe enough, take painkillers	21
10	**What will happen if you will not wear your retainer?**	
	• Teeth return to original position	22
11	**How often should you visit your orthodontist during the treatment?**	
	• Every 4-6 weeks	23
12	**How long on average does orthodontic treatment take?**	
	• 18 - 24 months	24
13	**What will happen as a result of bracket breakage?**	
	• Delay in the treatment progress.	25

Appendix 2: The questionnaire in Arabic

Group: experiment / control
Parents/children
Name:
Age:
Gender: Male/ Female.
Monthly income of the family:
Educational level of the parents: did not finish high school/ finished high school/ BDS/ MSc or PhD.
Score: /25

تقييم فهم الوالدين للموافقة على تقويم الأسنان لدى السكان الأردنيين

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الملخص

الأهداف: التحقق من فهم أولياء أمور مرضى تقويم الأسنان الأردنيين الذين يخضعون لعلاج تقويم الأسنان الثابت لنموذج الموافقة المستنيرةباستخدام الشرح اللفظي المدعوم بنشرة موافقة المستشفى الجامعي.

المواد والطرق: تلقى (32) من الوالدين المتتاليين للمرضى الذين تتراوح أعمارهم بين (12 و17) عامًا، وكان من المقرر أنْ يخضعوا لعلاج تقويم الأسنان في المستشفى الجامعي، وتقدم لهم معلومات حول مخاطر وفوائد علاج تقويم الأسنان الثابت، باستخدام الشرح اللفظي المدعوم بنشرة موافقة المستشفى الجامعي. بعد شرح الموافقة، سئل الوالدين مجموعة من الأسئلة لتقيم مدى فهمهم.

النتائج: أجاب جميع الوالدين بشكل صحيح عن الأسئلة المتعلقة بتقويم الأسنان كاستفادة من علاج تقويم الأسنان، وإذا كان يجب إخبار أخصائي تقويم الأسنان عن أيّ إصابات سابقة لأسنان المريض، وما إذا كان الألم متوقعًا، إلا أن أكثر من نصف الآباء فشلوا في الإجابة عن الأسئلة المتعلقة بتحسين صحة الأسنان واللثة بوصفهما فائدة من علاج تقويم الأسنان، وذوبان الجذور كخطر من علاج تقويم الأسنان وأهمية اتباع تعليمات النظام الغذائي لتقليل مخاطر البقع البيضاء الآفات.

الخلاصة: لا يتذكر الآباء تلف الجذور كخطر من العلاج التقويمي، ونصائح النظام الغذائي لتقليل مخاطر آفة البقع البيضاء، الأمر الذي يتطلب اهتمامًا خاصًا من اختصاصي تقويم الأسنان لتعزيز هذه المعلومات.

الكلمات الدالة: الموافقة، الآباء، تقويم الأسنان.