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Original Article

Evaluation of expectation of patients and their parents from orthodontic treatment in babol in 2016-2017

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Abstract

Introduction: The aim of this study was to recognize and investigate the expectations of patients and their parents from orthodontic treatment in order to increase the satisfaction from treatment outcome and enhance the patients' cooperation in Babol in 2017.

Materials & Methods: Totally, 200 people (100 patients aged 12-18 with one of their parents) who were attending for their first orthodontic treatment session participated in this cross-sectional study. Participants completed a self-administered questionnaire which was translated by Forward-Backward method from English to Persian language. Data were analyzed using SPSS 22 through descriptive statistics and t-tests.

Results: The most important expectations of patients and their parents from the first appointment of orthodontic treatment were check -up, diagnosis, discussion about treatment, and oral hygiene checking. Patients' expectations from first appointment were higher than their parents in "brace being fitted" (p=0.001), lower in "have a discussion about treatment plan" (p=0.006), "have x-rays" (p=0.003), and "have oral hygiene checked" (p=0.03). The highest expectation of patients as well as their parents from the type of orthodontic treatment was fixed braces. The main expectation of patients and parents from orthodontic treatment was the demand for straightening teeth and improving aesthetics.

Conclusion: Parents than patients had more reasonable expectations from the first appointment of orthodontic treatment. Parents had higher expectations from orthodontic treatment benefits. Age and gender did not have significant effect on the type and level of expectations of parents and patients.

Keywords: Patients, Parents, Orthodontics, Treatment

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انتظارات بیماران و والدینشان از درمان ارتودنسی در شهر بابل در سال ۱۳۹۶-۱۳۹۵

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چکیده

مقدمه: هدف از این مطالعه شناخت و بررسی انتظارات بیماران و والدین از درمان ارتودنسی به منظور افزایش رضایتمندی بیماران و والدینشان از نتایج درمان و همکاری بیشتر بیماران در شهر بابل در سال ۱۳۹۶-۱۳۹۵ می باشد.

مواد و روش ها: مجموعاً ۲۰۰ نفر (۱۰۰ بیمار ۱۸-۱۲ ساله و یکی از والدینشان) که برای اولین بار جهت درمان ارتودنسی مراجعه نموده اند در این مطالعه ی مقطعی شرکت کردند. نمونه ها یک پرسشنامه ی خود ایفا که به روش Forward-Backward به زبان فارسی ترجمه شده بود را تکمیل نمودند. بررسی داده ها با استفاده از آمارهای توصیفی و آزمون های تی تست با SPSS 22 انجام گرفت .

یافته ها: مهمترین انتظارات از جلسه ی اول درمان ارتودنسی معاینه و تشخیص، گفت و گو راجع به طرح درمان و بررسی بهداشت دهان بیمار بوده است. انتظارات بیماران از جلسه ی اول درمان نسبت به نصب براکت از والدین بیشتر (P=0.001)، گفت و گو پیرامون طرح درمان (p=0.006)، انجام رادیوگرافی (p=0.003) و بررسی بهداشت (p=0.03) کمتر بوده است. بیشترین انتظارات بیماران و والدین از انواع درمان های ارتودنسی، نصب براکت های ثابت بوده است. از انگیزه های اصلی مراجعه و تقاضای درمان مرتب شدن دندان ها و بهبود جنبه های زیبایی بوده است.

نتیجه گیری: والدین نسبت به بیماران انتظارات منطقی تری از جلسه ی اول درمان ارتودنسی داشتند. والدین انتظارات بیشتری از مزایای درمان های ارتودنسی داشتند. سن و جنسیت تاثیر چندانی بر نوع و میزان انتظارات والدین و بیماران نداشته است.

واژگان کلیدی: بیماران، والدین، ارتودنسی، درمان

Introduction

The main goal for most of the patients, seeking orthodontic treatment is a discernible improvement in some aspects of his / her dentofacial appearance. Orthodontic treatment enhances the quality of life due to improving the physical, social and psychological functioning. Improved occlusion promotes the health and longevity of the dentition, and so, in effect, many patients who seek orthodontic treatment express that their secondary goal of treatment is an oral health benefit. [1, 2] Four types of expectations that are commonly used are as follows: ideal (preferred outcome), predicted (realistic), normative and finally the unformed. [3] Satisfying the patients' realistic demands are directly related to the awareness of dentists about their patients' expectations and desires and only under these circumstances dentist can make frank conversation about unrealistic expectations. Inconformity between patient's demands and the service received is related to decreased satisfaction or dissatisfaction; however, there appears to be a 'zone of tolerance' such that patients may accept small failures of expectations. The aim of orthodontic treatment should be worthy treatment results, patient satisfaction and prevention of inadequate emphasis on some unnecessary aspects of the treatment. To achieve this goal, it is important that the quality of treatment outcome is consecutively and systematically evaluated and documented by means of professional clinical assessments and questionnaires or interviews. Perception of patient's concerns and demands is important for the evaluation of health care quality, the delivery of health services and the costs of care, from a policy prospect. Patients' expectations may affect not only concepts of the treatment outcome, but also the process of treatment. Optimal care sometimes cannot make patients with inappropriately high expectations satisfied, and those with inappropriately low expectations may be satisfied with deficient care. Some patients may be suffering from a psychological disorder called body dysmorphic disorder (BDD) (previously

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termed dysmorphophobia). [4-7] Needs assessment and tools used in this process which is performing the interviews and designing and completing the questionnaires help us to recognize the problems and prioritize and will give us information about patient's chief concern. [8,9]

Completing questionnaires by patients as well as their parents will inform dentists about patient's expected type of treatment, the duration of treatment, the frequency of appointments during treatment, the cost of treatment and the level of patient's awareness about the advantages and disadvantages of orthodontic treatment. [1, 4, 10] So far, no study has been done in Babol to evaluate the expectations of patients and their parents about orthodontic treatment; thus, this study aimed to investigate the expectations of patients and one of their parents from orthodontic treatment by completing a designed valid questionnaire at their first session of attending in orthodontic departments in Babol.

Materials & Methods

After ethical approval was given by Babol University of Medical Sciences (Mubabol. REC. 1396.51), 200 participants (100 patients and 100 parents) completed the questionnaires. The sample size was determined according to the previous studies. [1, 11] A brief oral explanation about study, questionnaire and its completing instruction was given to each family by the researcher and oral consent was taken from patient and their parents before completing questionnaire.

Participants included of patients, aged 12-18 (mean age: 14.92±2) years old with no previous history of orthodontic treatment and 100 parents who were attending for their first visit in Babol. In selecting samples, the questionnaire was distributed in a way that both male and female patients and fathers or mothers were studied. Totally, 70% of parent participants (aged 32-58 years with mean of 42.1±5.8) and 73% of patients were female. The same questionnaire was used for both patients and parents, and they completed the questionnaire separately.

A self-administered validated questionnaire [12, 13] was used in this cross-sectional study after Forward-Backward translation. As used by Sayers and Newton, a visual analogue scale marked at 0 to 10 mm spacing, was used as the response scale for all questions, except questions 8 and 9. "0" on visual analogue scale (VAS) offered as "extremely unlikely" and "10" offered as "extremely likely". The options of answering question 8 and 9 were different.

Questionnaire consisted of different parts about expectation from first appointment, type of expected orthodontic treatment, problems and side effects of orthodontic treatment, duration of treatment and motivation of seeking orthodontic treatment and since they were not able to combine as a single mark, each question was analyzed individually. Data from the questionnaire were analyzed using descriptive statistics, paired samples and independent samples t-test by SPSS 22. The mean responses were calculated using a level of statistical significance of 0.05.

Results

As shown in table 1, patients' expectations from orthodontic treatment was compared with those of parents. The most important expectations from the first session of orthodontic treatment were checkup and diagnosis, oral hygiene being checked and then taking impressions, radiography and the least expectation was fitting braces. Patients' expectations from the first treatment session were significantly higher than parents' in fitting braces (p=0.001), lower in taking radiographs (p=0.003), having discussion about treatment (p=0.006) and oral hygiene being checked (p=0.03).

Regarding the types of expected orthodontic treatment, fixed braces (Train track braces) were the best expected orthodontic treatment type chosen by patients and their parents. Jaw surgery, head brace and tooth extraction were among the least likely expected treatment types from patients as well as their parents. Parents expected more problems during orthodontic treatment than patients did (p=0.02).

Comparison of answers of tenth questions, which focused on the expectation from orthodontic treatment and their motivation to refer to orthodontist, showed that parents compared to patents themselves had higher expectations from orthodontic treatment for facilitating the difficulties of eating (p<0.001), speaking (p=0.002), improving the oral hygiene status (0.009), improving the chance of good career (p<0.001), and giving their children confidence socially (p=0.005) than patients.

Comparison of female and male participants' expectations (table 2) revealed that girls preferred "braces" more than male patients regardless of their type (p<0.001). There was no significant difference in

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the expectations of mothers and fathers from their children's orthodontic treatment. Comparison of expectation from duration of orthodontic treatment showed that 80 (80%) patients and 84 (84%) parents expected a period of 1-3 years for the duration of orthodontic treatment. For more information on this data, see Table 3.

Patients and their parents had similar expectations from the frequency of appointments for inspection during treatment (Table 4).

As a total, 62 (31%) of the parents and patients selected once a month (each 4 weeks) and 44 people (22%) expected less than two months for appointments repetition.

Table1. Comparison of expectation of patients and parents from orthodontic treatment

S.NO	Question	Patients(Mean)	SD	Parents(Mean)	SD	P*
1	At your initial appointment do you expect to:					
a	Have a brace fitted?	□□□□	3.277	3.56	2.893	0.001
b	Have a checkup and diagnosis?	8.79	1.945	9.10	1.439	0.165
c	Have a discussion about treatment?	8.31	2.312	9.03	1.720	0.006
d	Have x-rays?	6.30	3.240	7.40	2.940	0.003
e	Have impressions?	6.77	3.126	6.38	3.165	0.335
f	Have oral hygiene checked?	8.49	2.013	9.02	1.517	0.03
2	What type of orthodontic treatment do you expect?					
a	Braces, don't know what type?	6.66	2.583	6.28	2.539	0.121
b	Train track braces?	7.16	2.770	6.65	2.634	0.113
b	Teeth extracted?	2.98	3.127	3.37	3.158	0.257
d	Head brace?	2.68	3.005	2.96	2.998	0.462
e	Jaw surgery?	1.62	2.561	1.99	2.687	0.127
3	Do you think orthodontic treatment will give you any problem?	3.24	2.796	3.98	2.661	0.02
4	Do you think wearing a brace will be painful?	5.21	3.138	5.28	2.708	0.850
5	Do you think orthodontic treatment will produce problems with eating?	6.22	2.946	6.14	2.408	0.802
6	Do you expect orthodontic treatment to restrict what you can eat and drink?	5.43	3.279	5.79	2.851	0.313
7	How do you think people will react you wearing a brace?	6.84	2.501	7.06	2.313	0.419
10	Do you expect orthodontic treatment to:					
a	Straighten your teeth?	9.69	0.720	9.65	0.657	0.635
b	Produce a better smile?	9.23	1.705	9.34	1.401	0.594
c	Make it easier to eat?	7.21	2.993	8.43	2.199	<0.001
d	Make it easier to speak?	6.56	3.264	7.54	2.869	0.002
e	Make it easier to keep your teeth clean?	7.60	3.032	8.32	2.260	0.009
f	Improve my chances of a good career?	5.02	3.579	6.36	3.292	<0.001
g	Give you confidence socially?	7.63	3.044	8.66	1.934	0.005

*By paired samples T-Test

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Table 2. Comparison of patients and parents' expectations according to their gender

N	Q	Sex	Mean (patient)	P	Mean (parents)	P*
1	At your initial appointment do you expect to:					
a	Have a brace fitted?	Male Female	4.74 4.74	0.9	3.30 3.67	0.5
b	Have a checkup and diagnosis?	Male Female	9.04 8.70	0.4	8.80 9.23	0.1
c	Have a discussion about treatment?	Male Female	8.30 8.32	0.9	8.60 9.21	0.1
d	Have x-rays?	Male Female	5.89 6.45	0.4	7.47 7.37	0.8
e	Have impressions?	Male Female	6.81 6.75	0.9	5.80 6.63	0.2
f	Have oral hygiene checked?	Male Female	8.26 8.58	0.4	8.80 9.11	0.3
2	What type of orthodontic treatment do you expect?					
a	Braces, don't know what type?	Male Female	5.93 6.93	<0.001	6.07 6.37	0.5
b	Train track braces?	Male Female	6.81 7.29	0.4	6.63 6.66	0.9
c	Teeth extracted?	Male Female	3.19 2.90	0.6	3.20 3.44	0.7
d	Head brace?	Male Female	2.41 2.78	0.5	3.10 2.90	0.7
e	Jaw surgery?	Male Female	2.30 1.37	0.1	2.17 1.91	0.6
3	Do you think orthodontic will give you any problem?	Male Female	2.67 3.46	0.2	3.63 4.14	0.3
4	Do you think wearing a brace will be painful?	Male Female	5 5.29	0.6	4.67 5.54	0.1
5	Do you think orthodontic treatment will produce problems with eating?	Male Female	5.56 6.47	0.1	5.97 6.21	0.6
6	Do you expect orthodontic treatment to restrict what you can eat and drink?	Male Female	4.56 5.75	0.1	5.73 5.81	0.8
7	How do you think people will react you wearing a brace?	Male Female	6.19 7.08	0.1	6.93 7.11	0.7
10	Do you expect orthodontic treatment to:	Male Female				
a	Straighten your teeth?	Male Female	9.59 9.73	0.4	9.43 9.74	0.07
b	Produce a better smile?	Male Female	8.70 9.42	0.1	9.00 9.49	0.1
c	Make it easier to eat?	Male Female	6.96 7.30	0.6	8.50 8.40	0.8
d	Make it easier to speak?	Male Female	6.11 6.73	0.4	7.93 7.37	0.3
e	Make it easier to keep your teeth clean?	Male Female	7.93 7.48	0.4	8.53 8.23	0.5
f	Improve my chances of a good career?	Male Female	4.96 5.04	0.9	7.07 6.06	0.1
g	Give you confidence socially?	Male Female	6.96 7.88	0.1	8.77 8.61	0.7

*By independent samples T-Test

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Table 3. Expectations from duration of orthodontic treatment

Duration of treatment	Patients (n=100)	Parents (n=100)	Total number of participants (n=200)
I don't now	12	9	21
1 month	1	0	1
3 months	1	0	1
6 months	3	4	7
1 year	21	11	32
1.5 year	6	16	22
2 years	29	39	68
2.5 years	12	10	22
3 years	12	8	20
3.5 years	2	2	4
4 years	1	1	2

Table 4. Expectations from frequency of appointments

	Frequency of appointments	Patients (n=100)	Parent12s (n=100)	Total number (n=200)
0	I don't know	12	12	24
1	< 8 months	0	0	0
2	< 6 months	7	3	10
3	< 3 months	13	12	25
4	< 2 months	24	20	44
5	Each 6 weeks	6	13	19
6	Each 4 weeks	28	34	62
7	Each 2 weeks	9	5	14
8	Once a week	0	0	0
9	Twice a week	1	1	2

Discussion

Similar to previous findings reported, [1, 2, and 4] the highest expectations from the first orthodontic treatment appointment were checkup and diagnosis. In this study the most important expectations of patients and their parents from the first appointment after checkup and diagnosis were discussion about the treatment, oral hygiene being checked and then taking impressions, radiography, and the least expectation was fitting braces. In the studies of Sayers [13], as well as Sadek et al. [11] in London, the highest expectations of patients and parents were discussion about treatment in the first appointment, which represents the importance of pre-treatment discuss in developed countries. In the present study, parents' expectations were lower for "braces being fitted" in the first appointment and higher for "having discussion about treatment", "taking radiographs" and "oral hygiene being checked" than patients. Parents' expectations were more realistic than patients' from the first appointment. Regarding the types of expected orthodontic treatment, fixed braces (train track braces) were the best expected orthodontic treatment type chosen by patients and their parents. Jaw surgery, head brace and tooth extraction were among the least likely expected treatment types as seen in previous studies, too. [1, 11, 13] Patients and families had more tendency towards Non-Extraction orthodontic treatment, which could indicate an increase in family awareness of the significance of retaining teeth and the advantage of using alternative methods.

Present findings revealed that patients and their parents were optimistic about orthodontic treatment and problems during their treatment although parents expected more problems (p=0.02). Patients and parents had similar expectations and mindset about orthodontic treatment pain, eating difficulties and eating / drinking restriction during treatment. In the current study, both groups considered the treatment was almost painful and

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were aware of the eating and drinking restrictions and problems during treatment. Patients seemed to be informed about scale and type of pain of fixed braces, eating and drinking restrictions, including avoiding hard food due to the use of their friends' experiences. Similar to the study of Sayers et al. [13] positive reaction from people toward orthodontic treatment was expected from parents as well as their parents, indicating that the orthodontic treatment is common in our country.

Teeth straightening and improving aesthetics were the main expectations of patients and their parents from orthodontic treatment similar to previous studies [10, 14] and after that giving confidence socially, improving oral hygiene, facilitating the eating and speaking difficulties and at the end, raising the chance of good career in future respectively. Teeth straightening had higher priority in comparison to "having a beautiful smile". Parents than patients had more expectations from the orthodontic treatment about facilitating the difficulties of speaking and eating, giving confidence socially and raising the chance of good career in the future.

Marques et al. [15] in 2009 indicated that the main motivations and reasons of patients and their parents for seeking orthodontic treatment were treatment of '2 mm and over' anterior crowding and awareness of parents about the need of treatment for their children and 72%of the patients believed that the orthodontic treatments improve the quality of their life.

The result of the studies of vanWezel et al. and Bos et al. [16,17] Showed that the main patients' motivations for seeking orthodontic treatment were: a) improving the self-image of the individuals, b) improving the oral and dental health, and c) finally improving the oral functions. They also reported that the patients in the second study had higher expectations from orthodontic treatment outcome compared to the patients in the first study (2003).

The significance of improving the dental / oral health and beauty and its effect on the facial aesthetic is clear to everyone. More patients are being treated for aesthetic improvement reasons nowadays. Coyne et al. [18] in Australia reported that functional difficulties treatment were the main motivation of the patients for seeking orthodontic treatment without considering their gender. Certainly, the theory of the higher significance of the aesthetic improvement aspect compared to other advantages of the orthodontic treatment is not provable citing an older study; therefore, these studies took place in different societies with different cultures. No differences were found in the expectations of mothers and fathers. The only difference, observed in the expectations according to the gender, was the greater tendency of most female patients to fixed braces as their future treatment.

The patients and their parents had correct information about the duration of the treatments and the frequency of appointments, because the highest selected frequency of expectation on duration of treatment was related to '2 years'. About 10% of patients and their parents had no idea about this issue. In Sayers et al.'s study, parents had more accurate information about duration of orthodontic treatment than their children, and about 50% of the patients did not have information about this issue. In the present study, patients and their parents had similar expectations on the frequency of appointments for checking up during treatment. Similar to Duggal et al.'s [1] study, the highest patients and parents' frequency of expectation on appointments was related to "each 4 weeks".

This study was limited by the lack of cooperation of male participants in completing the questionnaires. It is suggested that in the future, a study be designed considering the parents' education and families' social status. In this study, participants had completed questionnaires before the examination and diagnosis and patients were not classified based on the complexity of problems, anomalies and treatment plan. It is suggested that further studies should consider the complexity of patient's problems and anomalies, because the patients' satisfaction with their dentofacial appearance and the severity of their problems will affect their expectations from orthodontic treatment.

Conclusion

The most important expectations of patients and their parents from the first appointment of orthodontic treatment were checkup and diagnosis, discussion about treatment and oral hygiene being checked. Parents compared to patients had more reasonable expectations from the first appointment of orthodontic treatment. The most important expectations from orthodontic treatment outcome were straightening teeth and having better smile. Parents had higher expectations from orthodontic treatment benefits. Age and gender did not have significant effect on the type and level of expectations of parents and patients.

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Conflict of interest: We declare no conflict of interest.

Authors' Contributions

The study was designed by Maysam Mirzaie and Mohammad Mehdi Naghibi. Maysam Mirzaie and Azin Miar defined the conceptual content of the research. The study data were collected by Azin Miar, Maysam Mirzaie and Valiollah Arash. Statistical analysis and interpretation of data were accomplished by Mohammad Mehdi Naghibi and Azin Miar. Preparation of manuscript was performed by Azin miar and its editing and revision were done by Mohammad Mehdi Naghibi and Maysam Mirzaie. Manouchehr Rahmati Kamel contributed to the design and implementation of the research. Study supervision was performed by Maysam Mirzaie.

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