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THE PERCEPTIONS OF THE PROVIDER ASSESSMENTS FOR PATIENT EXPERIENCES DURING PAIN AND ORTHODONTIC TREATMENT IN JORDANIAN CONTEXT

[1*]Mutaz H. Al-Shakhatreh, [2]Abdullah T. Al-Halholi, [3]Yazan A. Al-Nsour, [4]Luma A. Al-Najada, [5]Sinan M. Al-Hadeed

*[*1,2,3,4,5]Jordanian Royal Medical Services*

Abdullah.halhouli@yahoo.com, yazan.nsoor@yahoo.com, Najadaluma@gmail.com, Sinanhadeed@gmail.com

Corresponding Author: Motazshakhatreh87@gmail.com

ABSTRACT:

Aim: *The goal of the present study is to determine the perceptions of the provider assessments for patient experiences during pain and orthodontic treatment in Jordanian context.*

Materials and Methods: *The research sample was gathered at the Jordanian Royal Medical Services, Princess Haya Bent Alhussain Hospital, and Price Hashim Hospital from patients who have had orthodontic treatment in the past. Specifically, 107 questionnaires were analyzed. The questionnaire aimed to identify the pain during and appointments based on providers' and patients experience. The replies of the patients were calculated using frequency.*

Result: *A comparison was also conducted, focusing on the average responses from all of the providers and patients. The independent sample t-tests showed the estimation of the providers regarding the last appointment of their patients. The providers asked their patients how much pain they were experiencing (2.93 versus 2.50; P.056). Following this, a comparison was made regarding the pain that patients experienced immediately after the last appointment (3.83 versus 3.62; P.047), as well as one day after the treatment (3.72 versus 3.48; P.006) and two days after the last appointment (3.19 versus 3.08; P <.001). Last but not least, it is demonstrated that at today's appointment, difference was (2.13 vs 2.28; P .425).*

Conclusions: *Finding out whether or not orthodontists are aware that their patients take pain medication and whether or not patient reports of their pain are compatible with orthodontists' assessments of their patients' pain levels are crucial.*

KEYWORDS: *Patients' Experience; Providers' Perceptions, Pain and Orthodontic Treatment*

INTRODUCTION

The perceived need of patient for orthodontic treatment is always influenced by a variety of factors, which can be roughly categorised as aesthetic, social, financial, or functional [1-2]. The patient may believe that other factors are equally important, even though the orthodontist is required to prioritise function and occlusion in the objective assessment of treatment need [3,4,5]. Additionally, emphasising that pain is a component of life quality is essential in the sciences of oral health[6]. A patient's quality of life can be impacted by their physical, psychological, and social circumstances, all of which are influenced by their dental health.[7,8] As a result, researchers have recommended that when evaluating the needs of patients' treatments as well as and outcomes, life quality regarding oral health is taken into account.[7, 9–12] In the field of orthodontics, researchers have evaluated patients' quality of life in relation to the results of orthodontic treatment, for example, by examining the impact of post-treatment improvements on patients' look and functionality.[7-9, 13–15] There is, however, a dearth of data regarding orthodontic patients' quality of life throughout treatment.[8, 9, 11] It is commonly acknowledged that receiving orthodontic treatment has an impact on a patient's appearance, speech, ability to consume related to oral health food, and social interactions.[8,9]

Since pain and discomfort are major factors in a patient's quality of life and their absence is necessary to achieve a high quality of life, it is crucial to comprehend how patients' experiences with pain throughout treatment affect their quality of life.[16, 17] as discomfort is a refusal cause for patients.[18-22] Practically, all orthodontic patients also experienced discomfort during the biting and chewing of food, which led them to modify their eating habits.[23-26] Patients' motivation and participation, which may be impacted by their attitude towards orthodontic therapy, are necessary for the effective clinical care of patients seeking orthodontic treatment. [27-29].

Undoubtedly, it is crucial to thoroughly explain the views and worries orthodontic patients have about their care in these historic times. It would be beneficial to know what problems were encountered during the course of treatment. It is still difficult to comprehend how patients felt about their care both during and after their clinical orthodontic treatment, as well as the psychological factors that are pertinent to this field. Hence, the aim of the study is to investigate the perceptions of the provider assessments for patient experiences during pain and orthodontic treatment in Jordanian context.

MATERIALS AND METHODS:

For the purpose of data collection from the participants, a questionnaire was employed. The purpose of this questionnaire is to address patients' perceptions of pain as well as orthodontists' estimates of the amounts of discomfort that their patients are experiencing. Survey data were collected from 107 patients (39 males, 66 females) and their ages were between 13-17 years old and two providers who also filled the questionnaires. These patients were from the Jordanian Royal Medical Services, Princess Haya Bent Alhussain Hospital, and Price Hashim Hospital from patients who have had orthodontic treatment in the past. Every patient was made aware of their participation in the study. A provider survey was completed by the providers of each patient who took part. The participants were informed that the responses they provide would be hidden from their providers. Following the patients' leaving, the providers were notified that the patient had taken part in the study and finished the survey. It was not possible for patients and providers to discuss notes during the survey responses because the clinicians replied after the patient was discharged. The sociodemographic profile of the patients, their level of discomfort, and their usage of painkillers both before and after their most recent consultation were evaluated by the patient survey. The medical professionals determined how much pain each patient was in and whether or not they were using painkillers. SPSS was used to analyse the data.

RESULTS

A total of 105 patients were included in the final study sample. These participants were asked using closed questions regarding their visit experience asking for various questions. Additionally, service providers of these patients were also asked to fill a questionnaire on the patients' experience of their orthodontic treatment shown in Table 1.

Table1 Percentage of the Responses of Patients and Average Scores of Reported Pain

Survey Questions	1=Strongly Disagree/ 2=Disagree	3= Neutral	4= Agree/ 5= Strongly Agree	Main Standard Deviation (SD)
I have pain during appointments	51.5%	21.9%	26.6%	2.59/1.276
I have pain for a few days after an appointment.	18.1%	26.7%	55.2%	3.58/1.175
Pain from the braces affects my daily life.	62.9%	23.8%	13.4%	2.30/1.030
Pain from my braces causes me to change my diet.	38.1%	30.5%	31.4%	2.99/1.229

My teeth hurt when I chew or bite.	70.5%	14.3%	15.2%	2.34/.989
Pain makes it difficult for me to brush my teeth.	60.9%	31.4%	7.7%	2.31/.891
Pain makes it difficult for me to floss my teeth.	23.8%	34.3%	41.9%	3.25/1.150

This table shows that 26.6% of the patients agreed or agreed strongly that they have pain during appointment. Only 55.2% agreed strongly or agreed that they have pain for a few days after an appointment. Besides, table 1 shows that 13.4% agreed strongly or agreed that they have pain from the braces affecting their daily lives, additionally, 31.4% of the patients agreed strongly or agreed that they have pain from their braces causing them to change their diet. It is also displayed that 15.2% of these patients agreed strongly or agreed that their teeth hurt when they bite or chew. Only, 7.7% of the patients feel pain making it difficult for them to brush their teeth and 41.9% of them feel pain making it difficult for them to floss their teeth.

Furthermore, patients were also asked to record any pain they experienced during the present appointment, just after, one or two days after the previous appointment, and other questions. On a 5-point rating system, where 1 represented no pain at all and 5 represented extreme pain, these patients answered to these questions. Using the same response scale, the service providers assessed the patients pain levels.

Table 2 Patients' and Providers' Pain Reports regarding the Last as well as Current Appointment

Pain	Patient/Providers	Mean	P.Value
During last appointment	Patients	2.93	.056
	Providers	2.50	
Immediately following the last appointment	Patients	3.83	.047
	Providers	3.62	
One day after the last appointment	Patients	3.72	.006
	Providers	3.48	
Two days after the last appointment	Patients	3.19	.478
	Providers	3.08	
During today's appointment	Patients	2.13	.425
	Providers	2.28	

A comparison was also examined looming at the average responses between all of providers' as well as patient's employing independent sample t-tests showing the estimation of providers regarding the last appointment of their patients asking how much pain they had (2.93 vs 2.50; .056), next, a comparison regarding the immediately pain after the last appointment (3.83 vs 3.62; P .047), and one day after the treatment (3.72 vs 3.48; P .006) and two days after the last appointment (3.19 vs 3.08; P <.001). Lastly, table 2 shows that during today's appointment (2.13 vs 2.28; P .425). This table also presents that the P.value is below 0.05 for immediately following the last appointment and one day after the last appointment showing a significant value; whereas, there is no significant value for during last appointment, two days after the last appointment, and during today's appointment as the p.value for each was more than 0.05. Hence, it is clearly observed that there was no difference in the average patients' and providers' responses concerning the following during last appointment, two days after the last appointment, during today's appointment.
Next, this study compared the percentage of pain report questions comparing the answers of patients and service providers.

Table 3 A Comparison of Pain Reports of Patients and Providers About the Last and Current Appointment

Pain	Category	No pain at all	Little Pain	Neutral	Pain	Very Much Pain
During last appointment	Providers	10.4%	48.6%	25.8%	11.4%	2.8%
	Patients	6.6%	20%	53.4%	13.4%	6.6%
Immediately following the last appointment	Providers	4.8%	15.2%	7.6%	58%	14.4%
	Patients	1%	8.6%	18%	51.4%	21%
One day after the last appointment	Providers	8.6%	9.6%	22%	45.8%	14%
	Patients	2.8%	3.8%	27.6%	49.6%	16.2%
	Providers	5.8%	22%	37.2%	29.6%	5.4%

Two days after the last appointment	Patients	2%	25.8%	33.4%	29.6	9.6
During today's appointment	Providers	24.8%	34.2%	29.6%	11.4%	0
	Patients	28.6%	42%	18%	10.4%	1%

Table 3 clearly compares between the responses of patients and service providers. It shows that there is a little difference in the sense of (No pain at all/Little Pain) in the answers of patients compared to service providers as well as this difference is also observed in the category of (Pain/Very Much Pain). Specifically, service providers are overestimated when they say something about pain or very much pain. On contrary, they are underestimated when they say something related to no pain or little pain. In addition, it is also found that there is a consistent between patients and service providers.

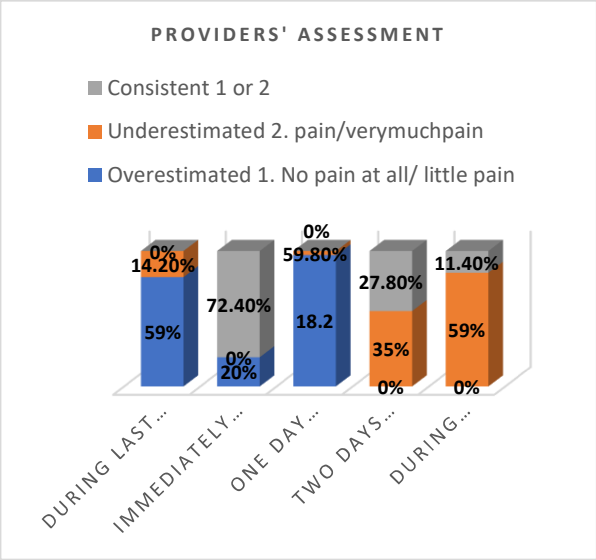

Figure 1: overestimated, underestimated, correctly assessment percentages of providers regarding the pain of their patients.
Figure 1 shows that service providers' estimations were varied. The researchers of this study categorized pain report into two categories: (no pain at all/little pain) and (pain/very much pain) based on service providers' responses as shown in table 3. Accordingly, figure 1 displays that during last appointment 59% of the respondents indicated that patients do not feel pain at all (10.4%) and/or feel little pain (48.6%). In regard to immediately cases following the last appointment 20% of the service provider overestimated and 72.4% of their estimation regarding immediately cases after the appointment was consistent with patients' perceptions (see figure 1 for more details).

DISCUSSION

Undoubtedly, during active orthodontic treatment with fixed appliances, pain and discomfort are frequently experienced as being complicated. Relatively speaking, pain begins four hours after first bonding and separator installation, intensifies over the next twenty-four hours, and subsides seven days later. Pain and discomfort during orthodontic treatment are primarily caused by a number of reasons, including pressure, ischemia, inflammation, and edoema associated with movement of the teeth. This study adopted a survey in order to evaluate pain based on patients' perception and service providers' perception. It seems that pain in there after few hours of treatment. Furthermore, the discomfort that comes with wearing fixed orthodontic appliances frequently has a significant negative influence on orthodontic patients' quality of life. The main causes of discomfort are typically the braces' pain when they bite or chew, when they want to brush or floss their teeth, and other factors like speech impairment, poor oral hygiene, tooth mobility, eating difficulties, halitosis, gingival bleeding, and taste impairment.

As anticipated by previous studies, [31–33] more than half of the patients e.g., 55.2% agreed or strongly agreed with the statement, "patients have pain after appointments for a few days" and an additional 26.7% gave a neutral response to the question, meaning they did not strongly disagree or disagree. It is evident that pain from orthodontic treatment had an impact on patients' quality of life and daily activities, even though fewer individuals reported discomfort during appointments and the negative effects of having pain. In line with previous research significant percentages of patients [32, 34, 35] indicated that pain changed their diet and negatively impacted their brushing and flossing habits. This indicates that pain management is an important part of orthodontic treatment. Whether orthodontists can accurately determine whether their patients are in pain is one intriguing subject. It was anticipated that there would be major discrepancies in the pain evaluations made by patients and providers, based on data indicating that orthodontic training places little focus on pain communication and management. The outcomes validated this theory. Providers generally anticipated that their patients would be in less pain than what the patients had indicated. It is also important to notice that, despite the fact that many

patients reported experiencing pain at a level of 5, no service provider predicted that their patients would feel this greatest possible level of pain. It is possible that the service providers were unaware that patients could feel so much pain since they never reported the maximum level of pain.

It would also be interesting to investigate whether there were differences throughout providers in terms of how well they could determine the patient's level of pain. Therefore, by comparing the percentage of patients' and providers' responses, a consistency score was presented. Indeed, there was also a consistent patients and providers. Additionally, the pain reports from patients and service providers on the most recent and current appointment were compared using an independent t-test, with the average score and p-value being examined.

It appears essential to educate service providers more thoroughly about (1) how accurately to predicting pain, and (2) how to effectively communicating with patients about pain management strategies, as previous research has shown that pain is a major cause of patients' non-compliance and missed appointments.[37] Adolescent orthodontic patients and their parents shouldn't be in charge of making decisions about pain management; instead, a standard of care for the use of analgesics in the treatment of orthodontic patients' pain should be followed [37-39]. Subsequent studies ought to investigate whether better communication between patients and providers on pain management could enhance patients' quality of life during orthodontic treatment, which would ultimately lead to better patient cooperation and satisfaction.

CONCLUSION

It can be concluded that patients are often discouraged from getting orthodontic treatment due to the pain that they experience as a result of their orthodontic condition. In order to enhance productivity and treatment effectiveness, it is important to identify whether orthodontists are aware of their patients' usage of pain medication, as well as whether or not patients' pain experiences and the orthodontists' assessments of their patients' pain levels are consistent with one another.

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