DURATION AND LENGTH OF ADAPTATION TO NEW COMPLETE DENTURES: A SURVEY BASED ON PATIENTS’ SELF-REPORTED OUTCOMES

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Introduction We studied the duration of adaptation to new complete dentures (CD) and changes for 5 years based on patients’ self-reported outcomes.

Methodology Sixty fully edentulous patients who received new CDs and wore them for 5 years were included. A questionnaire (answers 0-10 VAS) related to self-perceived speech, chewing function, comfort of denture wearing, denture retention, and orofacial esthetics was completed on the 1st, 3rd, 8th, 15th, and 30th day after new CD delivery, and after 1, 3, and 5 years of denture wearing.

Results Self-perceived speech reached the highest scores on the 30th day; females and previous removable denture (RD) wearers adapted faster during the first days. Chewing reached the highest scores on the 30th day, remained unchanged over the 1st year, and decreased significantly afterwards; females gave higher scores during the first 15 days and previous RD wearers from the 3rd till the 30th day. A comfort of denture wearing first slightly decreased, but soon increased, reaching the highest values the 30th day, remained unchanged after one year, then decreased gradually, with no significant difference between gender and previous RD experience. Retention scores decreased after 3 and 5 years, without difference between gender and previous RD experience. Orofacial esthetics scores decreased substantially after 3 years with no effect of gender and previous RD experience (p>0.05).

Conclusion The highest scores were obtained for orofacial esthetics and speech, the lowest for chewing function. Participants needed 30 days to adapt to new CDs. The adaptation lasted one year and decreased significantly the 3rd and the 5th year.

KEYWORDS

Complete Denture; Adaptation; Chewing; Speech; Comfort Esthetics.

1. INTRODUCTION

Edentulism represents a certain level of physical impairment, which is regarded as a chronic disability, causing many edentulous individuals to face obstacles in their everyday activities, such as eating or speaking [1]. Furthermore, it may significantly impact an individual’s psychological and social functioning and the overall quality of life [2,3,4]. Global trends have shown significant differences in the rates of edentulism worldwide [1,2,3,5]. Recent data from developed countries demonstrated a slight but encouraging decline in complete edentulism [6]. However, although edentulism is becoming less frequent in developed, industrialized countries, it remains prevalent in many parts of the world, and a complete denture is still one of the most frequent treatment options in cases of edentulism, especially considering older patients [1,6-9]. Prosthodontic treatment using a complete denture (CD) aims to achieve oral rehabilitation and re-establishment of the lost function, namely speech, occlusion, aesthetics, and masticatory function. It is considered one of the main challenges of prosthodontic treatment [9-15]. It is important to obtain satisfactory retention and stability of CDs, crucial factors for successful adaptation to them [15,16]. The masticatory function, antagonistic contacts, and preservation of masticatory muscle reflexes in CD patients were negatively correlated with the development of dementia in old patients [14,17]. The success of treatment with CDs is further influenced by many other factors that are also important to secure optimal retention and
stabilization of a denture, such as characteristics of the saliva, status of the alveolar bone, condition of the mucosa and its resilience, relations between maxillary and mandibular residual alveolar ridges and neuromuscular factors [7-11,16,18]. Besides, a new denture may cause difficulties during speaking, and time is needed for patients to reach a satisfactory level of speech [16,18]. Although the quality of a new denture depends mainly on technological, biological, and physiological factors, it also depends on the interaction between the patient and the therapist [7]. However, long time CD wearing elicits some inherent problems, such as continuous residual ridge resorption, injuries of underlying mucosa, mucosal inflammation, flabby ridge development, and even loss of a complete alveolar ridge bone with consequent loss of denture retention and stability, loss of vertical dimension of the lower third of a face, and contra-clockwise rotation of the mandible [19-24]. As the mandible is more prone to residual alveolar ridge loss, recent recommendations of a panel of experts led to McGill consensus proposing that the minimum treatment needed for completely edentulous subjects is a manufacture of maxillary complete denture and a mandibular two-implant overdenture [25, 26, 27]. In subjects with narrow alveolar ridges, rehabilitation with four mini implant retained mandibular overdenture is also an option. Unfortunately, rehabilitation of the implant retained overdenture is usually not available to many patients due to economic, social, or general health issues [7-15,27,28]. Consequently, the manufacture of conventional CDs is the only treatment option for them. A certain amount of time is needed for a patient to accept a new prosthodontic device, especially a removable denture [8-15]. This study aimed to assess how long patients need to adapt to their new conventional CDs and how long their satisfaction lasts. An additional aim was to evaluate the association between gender, previous removable denture experience, and age with adaptation to CDs and self-perceived satisfaction.

2. METHODOLOGY

2.1. Sample
The subjects recruited in this study comprised 82 fully edentulous individuals needing new CDs, unwilling to undertake implant-supported mandibular overdenture treatment for different reasons, primarily due to a fear of a surgical procedure, general health, or economic reasons. A total of 40 participants received new CDs at the Department of Prosthodontics, Dental Polyclinic, Split, Croatia, from September 2015 to June 2016. The Ethics Committee of the School of Dental Medicine in Split approved the study. Another 42 participants received new CDs at the Department of Removable Prosthodontics, School of Dental Medicine, Zagreb, Croatia, in the same period, with the approval of the Ethics Committee of the respective dental school (No. 05-PA-26-6/2015). After 30 days, one patient was not available for the recall examination, after 12 months an additional 9 patients dropped out, after 3 years 5 more patients dropped out, and another seven patients were not available after 5 years. Finally, 60 patients completed the prospective clinical study and were included in the final analysis. The flowchart of the study protocol and drop-outs is presented in Figure 1.

2.2. Complete denture manufacture
All dentures were made following the same criteria. After alginate preliminary impressions, custom trays were made, and custom (individual) impressions were obtained for everyone. After registration of the vertical jaw relation in a centric position, the occlusal rims were transferred into a semi-adjustable articulator. The semi-anatomical artificial teeth and a lingualized occlusion scheme, with no attempt of occlusal balance were applied. New CDs were processed after the artificial teeth set-up in a trial denture and verification of satisfactory esthetics and antagonistic contacts in a centric relation in the mouth. After the new dentures delivery, during adaptation, the occlusion was checked and adjusted if necessary, oral mucosa was inspected for soreness, and the denture was trimmed-off when necessary.

Two experienced specialists in Prosthodontics, who were not involved in the CD manufacture assessed the quality of new complete dentures in retention (quality of fit), flange extension, stability, esthetics, and occlusion, as described in previous studies [8,9]. The observers listed the dentures into low, average or high quality dentures. The weighted kappa statistics was calculated based on the number of matching categories between the two observers and showed satisfactory agreement (κ = 0.808). Only patients with high-quality new dentures were recruited in the study.

2.3. Study protocol
After the new CDs delivery, the patients had to fill in a small questionnaire consisting of two parts. The first part comprised data about gender, age, and previous dental status in their mouth (fixed partial denture or natural teeth (FPD); removable partial denture (RPD));...
The second part comprised five questions with the answers on the 0 to 10 visual-analog scale (VAS) for assessment of self-perceived speech ability, chewing function, comfort of denture wearing, denture retention, and orofacial esthetics. Assessments were repeated on the 3rd day after CDs delivery, 8th day, 15th day, and 30th day. Same assessments were again repeated after 9-12 months of denture wearing and in a period after 3 and after 5 years of denture wearing. The checks were made in a dental office for the 1st, 3rd, 8th and 15th day. If the patients needed any denture adjustments, they also came to a dental office, and if not, they were assessed by telephone. The one-year, 3-year and 5-year examination was performed in a dental office. The flowchart is presented in Figure 1.

2.4 Statistical analysis
We used the IBM SPSS Statistics for Windows (Version 20.0.; IBM Corp, Armonk, NY, USA) to evaluate the descriptive statistics (medians, modal values, quartiles, means and standard deviations for the patients’ self-perceived assessments of their speech, chewing ability, denture retention, the comfort of denture wearing, and their orofacial esthetics). Changes over time were estimated by the Friedman non-parametric test for related samples. Comparisons between gender and comparison between patients who previously wore removable denture and the first time removable denture wearers were performed by non-parametric Mann-Whitney test.

3. RESULTS
The patients’ age was between 66 and 81 years. There were 44 females (77.3%) and 16 males (26.7%). Seven patients (3 females, 4 males) (11.66%) had natural teeth or a fixed partial denture before treatment with new complete dentures (were the first time removable denture wearers), while 53 patients (41 females, 12 males) (88.33%) already had experience with removable partial dentures.

The patients’ self-perceived speech ability on the 1st, 3rd, 8th, 15th, and 30th day after complete denture delivery, and after 12 months, 3 years and 5 years of denture wearing is presented in Table 1. The scores gradually increased till the 30th day after CD delivery, and then remained almost unchanged at the 12 months and 3-year recall examinations and only slightly decreased after 5 years of denture wearing. Statistically significant difference existed between the observed periods (Mann-Whitney test; \( \chi^2 = 116.04, df = 7, p = 0.001 \)), mostly due to lower grades till the 30th day. However, participants without previous removable denture experience gave lower scores during the first 15 days, but after 30 days and further on no significant difference was observed between previous CD and the first time CD wearers (Table 2, Mann-Whitney test). Females gave better scores for speech than males during the first 15 days of denture wearing (Tab. 2).

The patients’ self-perceived chewing ability on the 1st, 3rd, 8th, 15th, and 30th day after complete denture delivery, and after 12 months, 3 years and 5 years of denture wearing is presented in Table. 1. The scores were the lowest from the 1st to the 8th day, afterwards increased, reached the highest values on the 30th day, remained almost unchanged during the first year and afterwards decreased (the 3rd year) and reached the lowest values in the 5th year of follow-up examination (Friedman test; \( \chi^2 = 223.45, df = 7, p = 0.001 \)). During the first 3 days after new CDs’ delivery no significant difference existed between the previous and the first time denture wearers, but after the 3rd day previous CD wearers gave significantly better scores than the first time denture wearers; that remained unchanged till the 3rd year.

| Table 1. Medians, mods, means, and percentiles of self-assessed speech, chewing, the comfort of denture wearing, denture retention, and esthetics. |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Speech          | 1st day         | 3rd day         | 8th day         | 15th day        | 30th day        | 1 year          | 3 years         | 5 years         |
| Median          | 8.50            | 9.00            | 9.00            | 9.00            | 10.00           | 10.00           | 10.00           | 10.00           |
| Mode            | 10              | 10              | 10              | 10              | 10              | 10              | 10              | 10              |
| Mean            | 8.27            | 8.43            | 8.83            | 9.08            | 9.43            | 9.58            | 9.50            | 9.28            |
| SD (mean)       | 1.89            | 1.84            | 1.28            | 1.09            | 0.81            | 0.67            | 0.70            | 0.96            |
| Percentile 25   | 7.00            | 8.00            | 8.00            | 8.00            | 9.00            | 9.00            | 9.00            | 9.00            |
| Percentile 50   | 8.50            | 9.00            | 9.00            | 9.00            | 10.00           | 10.00           | 10.00           | 10.00           |
| Percentile 75   | 10.00           | 10.00           | 10.00           | 10.00           | 10.00           | 10.00           | 10.00           | 10.00           |
| Chewing         | 1st day         | 3rd day         | 8th day         | 15th day        | 30th day        | 1 year          | 3 years         | 5 years         |
| Median          | 7.00            | 7.00            | 7.00            | 8.00            | 9.00            | 9.00            | 7.00            | 6.50            |
| Mode            | 7               | 7               | 7               | 8               | 9               | 9               | 7               | 6               |
| Mean            | 6.87            | 6.73            | 7.45            | 8.02            | 8.87            | 8.95            | 7.48            | 6.57            |
| SD (mean)       | 1.70            | 2.00            | 1.73            | 1.51            | 0.87            | 0.81            | 1.07            | 1.73            |
| Percentile 25   | 6.00            | 5.25            | 7.00            | 7.00            | 8.00            | 9.00            | 7.00            | 6.00            |
| Percentile 50   | 7.00            | 7.00            | 7.00            | 8.00            | 9.00            | 9.00            | 7.00            | 6.50            |
| Percentile 75   | 8.00            | 8.00            | 8.00            | 9.00            | 10.00           | 9.00            | 8.00            | 8.00            |
### Table 2. Significance of the differences for the self-perceived speech ability between gender, and between participants with previous removable denture experience and the first time complete denture wearers over the observed period.

| SPEECH | PREVIOUS RPD EXPERIENCE | N   | MEAN RANK | P             |
|--------|-------------------------|-----|-----------|---------------|
| 1ST DAY| no                      | 7   | 7.36      | 33.56         |
|        | yes                     | 53  |           | <0.001 **     |
| 3RD DAY| no                      | 7   | 8.93      | 33.35         |
|        | yes                     | 53  |           | <0.001 **     |
| 8TH DAY| no                      | 7   | 10.64     | 33.12         |
|        | yes                     | 53  |           | 0.001 **      |
| 15TH DAY| no                     | 7   | 12.36     | 32.90         |
|        | yes                     | 53  |           | 0.001 **      |
| 30th DAY| no                     | 7   | 19.64     | 31.93         |
|        | yes                     | 53  |           | 0.08 NS       |
| 1 YEAR | no                      | 7   | 18.86     | 32.04         |
|        | yes                     | 53  |           | 0.061 NS      |
| 3 YEARS| no                      | 7   | 20.86     | 31.77         |
|        | yes                     | 53  |           | 0.25 NS       |
| 5 YEARS| no                      | 7   | 24.29     | 31.32         |
|        | yes                     | 53  |           | 0.33 NS       |

| GENDER | N   | MEAN RANK | P       |
|--------|-----|-----------|---------|
| 1ST DAY| female | 44     | 34.91 | 18.38 | 0.001 ** |
|        | male   | 16     |       |       |          |
| 3RD DAY| female | 44     | 34.86 | 18.5  | 0.001 ** |
|        | male   | 16     |       |       |          |
| 8TH DAY| female | 44     | 34.55 | 19.38 | 0.002** |
|        | male   | 16     |       |       |          |
| 15TH DAY| female | 44     | 32.98 | 23.69 | 0.051 NS |
|        | male   | 16     |       |       |          |
| 30th DAY| female | 44     | 32.98 | 26.75 | 0.25 NS |
|        | male   | 16     |       |       |          |
| 1 YEAR | female | 44     | 32.39 | 25.31 | 0.09 NS |
|        | male   | 16     |       |       |          |
| 3 YEARS| female | 44     | 31.66 | 27.31 | 0.33 NS |
|        | male   | 16     |       |       |          |
| 5 YEARS| female | 44     | 31.05 | 29.00 | 0.66 NS |
|        | male   | 16     |       |       |          |

**=p<0.01; *=p<0.05; NS=not significant.
Afterwards no significant difference existed (Table 3). Females gave better scores to chewing than males for the first 15 days and at the one-year observation (Table 3).

**Table 3.** Significance of the differences for the self-perceived chewing ability between gender and between participants with previous removable denture experience and the first time complete denture wearers over the observed period.

| CHEWING | PREVIOUS RPD EXPERIENCE | N | MEAN RANK | P         |
|---------|--------------------------|---|-----------|-----------|
| 1ST DAY | no                       | 7 | 20.71     | 31.79     | 0.119 NS |
|         | yes                      | 53|           |           |          |
| 3RD DAY | no                       | 7 | 21.07     | 31.75     | 0.113 NS |
|         | yes                      | 53|           |           |          |
| 8TH DAY | no                       | 7 | 17.14     | 32.26     | 0.030 *  |
|         | yes                      | 53|           |           |          |
| 15TH DAY| no                       | 7 | 18.21     | 32.12     | 0.046 *  |
|         | yes                      | 53|           |           |          |
| 30TH DAY| no                       | 7 | 16.86     | 32.30     | 0.026 *  |
|         | yes                      | 53|           |           |          |
| 1 YEAR  | no                       | 7 | 14.79     | 32.58     | 0.009 ** |
|         | yes                      | 53|           |           |          |
| 3 YEARS | no                       | 7 | 21.50     | 31.69     | 0.150 NS |
|         | yes                      | 53|           |           |          |
| 5 YEARS | no                       | 7 | 22.29     | 31.58     | 0.194 NS |
|         | yes                      | 53|           |           |          |

**= p<0.01; *=p<0.05; NS=not significant.

The patients’ self-perceived comfort of denture wearing is presented in Table 1. It decreased after the 1st day till the 8th day, then increased till the 30th day remained unchanged at the 1-year follow-up and again decreased after 3 and 5 years (Friedman test; \(X^2=223.45, \text{df}=7, p<0.001\)). There was no significant differences between males and females, and between those without or with previous removable denture experience (Table 4).

**Table 4.** Significance of the differences for the self-perceived comfort of denture wearing between gender and between participants with previous removable denture experience and the first time complete denture wearers over the observed period.

| COMFORT | PREVIOUS RPD EXPERIENCE | N | MEAN RANK | P         |
|---------|--------------------------|---|-----------|-----------|
| 1ST DAY | no                       | 7 | 29.07     | 30.69     | 0.822 NS |
|         | yes                      | 53|           |           |          |
| 3RD DAY | no                       | 7 | 32.79     | 30.20     | 0.718 NS |
|         | yes                      | 53|           |           |          |
| 8TH DAY | no                       | 7 | 27.64     | 30.88     | 0.652 NS |
|         | yes                      | 53|           |           |          |
| 15TH DAY| no                       | 7 | 21.93     | 31.63     | 0.171 NS |
|         | yes                      | 53|           |           |          |
| 30TH DAY| no                       | 7 | 23.93     | 31.37     | 0.296 NS |
|         | yes                      | 53|           |           |          |
| 1 YEAR  | no                       | 7 | 22.50     | 31.56     | 0.202 NS |
|         | yes                      | 53|           |           |          |
| 3 YEARS | no                       | 7 | 27.57     | 30.89     | 0.652 NS |
|         | yes                      | 53|           |           | 0.928 NS |
| 5 YEARS | no                       | 7 | 29.93     | 30.58     | 0.928 NS |
|         | yes                      | 53|           |           |          |

**=p<0.01; *=p<0.05; NS=not significant.

The results were similar with the self-perceived assessment of denture retention, with a more emphasized decrease after one year (Friedman test; \(X^2=218.65, \text{df}=7, p<0.001\)) (Table 1). Also, no significant differences were found between gender and previous or the first time denture wearers (Table 5).

The patients’ self-perceived comfort of denture wearing is presented in Table 1. It decreased after the 1st day till the 8th day, then increased till the 30th day remained unchanged at the 1-year follow-up and again decreased after 3 and 5 years (Friedman test; \(X^2=223.45, \text{df}=7, p<0.001\)). There was no significant differences between males and females, and between those without or with previous removable denture experience (Table 4).
Table 5. Significance of the differences for the self-perceived complete dentures' retention between gender, and between participants with previous removable denture experience and the first time complete denture wearers over the observed period.

| RETENTION | PREVIOUS RPD EXPERIENCE | N  | MEAN RANK | P     |
|-----------|-------------------------|----|-----------|-------|
| 1ST DAY   | no                      | 7  | 32.64     | 0.735 NS |
|           | yes                     | 53 | 30.22     |       |
| 3RD DAY   | no                      | 7  | 30.79     | 0.964 NS |
|           | yes                     | 53 | 30.46     |       |
| 8TH DAY   | no                      | 7  | 29.93     | 0.928 NS |
|           | yes                     | 53 | 30.58     |       |
| 15TH DAY  | no                      | 7  | 23.93     | 0.296 NS |
|           | yes                     | 53 | 31.37     |       |
| 30th DAY  | no                      | 7  | 23.64     | 0.276 NS |
|           | yes                     | 53 | 31.41     |       |
| 1 YEAR    | no                      | 7  | 21.21     | 0.152 NS |
|           | yes                     | 53 | 31.66     |       |
| 3 YEARS   | no                      | 7  | 29.71     | 0.152 NS |
|           | yes                     | 53 | 30.60     |       |
| 5 YEARS   | no                      | 7  | 21.50     | 0.150 NS |
|           | yes                     | 53 | 31.82     |       |

**=p<0.01; *=p<0.05; NS=not significant.

Table 6. Significance of the differences for the self-perceived esthetics between gender, and between participants with previous removable denture experience and the first time complete denture wearers over the observed period.

| ESTHETICS | PREVIOUS RPD EXPERIENCE | N  | MEAN RANK | P     |
|-----------|-------------------------|----|-----------|-------|
| 1ST DAY   | no                      | 7  | 25.93     | 0.469 NS |
|           | yes                     | 53 | 31.10     |       |
| 3RD DAY   | no                      | 7  | 33.50     | 0.636 NS |
|           | yes                     | 53 | 30.10     |       |
| 8TH DAY   | no                      | 7  | 31.79     | 0.839 NS |
|           | yes                     | 53 | 30.33     |       |
| 15TH DAY  | no                      | 7  | 31.64     | 0.857 NS |
|           | yes                     | 53 | 30.35     |       |
| 30th DAY  | no                      | 7  | 30.64     | 0.982 NS |
|           | yes                     | 53 | 30.48     |       |
| 1 YEAR    | no                      | 7  | 37.00     | 0.307 NS |
|           | yes                     | 53 | 29.64     |       |
| 3 YEARS   | no                      | 7  | 32.57     | 0.752 NS |
|           | yes                     | 53 | 30.23     |       |
| 5 YEARS   | no                      | 7  | 34.00     | 0.588 NS |
|           | yes                     | 53 | 30.04     |       |

**=p<0.01; *=p<0.05; NS=not significant.

Self-perceived orofacial esthetics did not change from the 1st day till the 3-year examination, when it decreased and continued to decrease till the 5-year follow-up (Friedman test; χ²=234.05, df=7, p<0.001) (Table 1). Although females gave slightly lower scores, no significant differences were found for any of the observation stages (Table 6). The same results were seen with previous and the first time complete denture wearers over the observed period.

3. DISCUSSION

The treatment of complete or partial edentulousness has always been a major challenge. Although dental implants enable better and longer-lasting adaptation to removable dentures, they are still unavailable to most of the population due to health issues and economic reasons. Therefore, we aimed to study how long it is necessary to adapt to new CDs considering...
self-perceived speech function, chewing ability, the comfort of CD wearing, denture retention, and orofacial esthetics. We also aimed to monitor the duration of the peak of patients' satisfaction and the influence of gender, and previous dental status. The study was designed as a longitudinal clinical prospective study in a cohort of edentulous patients receiving new CDs. Most patients gradually adjusted to complete dentures over 30 days. Self-perceived chewing ability, speech and comfort of denture wearing reached the highest scores only after 30 days. However, self-perceived chewing function, and the comfort of denture wearing, first decreased from the 1st to the 8th day and then increased until the 30th day, then remained unchanged through the first year, and decreased after 3 years. Orofacial esthetics and denture retention did not change significantly from the first day to the first year but the scores decreased significantly after 3 years, and even more after 5 years of CD wearing. Speech significantly and gradually increased over 30 days. It seems that the period of 30 days can be considered sufficient for CD adaptation due to speech, chewing and comfort of denture wearing. However, this applies for patients who received high-quality new CDs, as insufficient denture quality has been one of the risk factors for non-adaptation to removable dentures [8,9,29].

It is not surprising that previous RPD wearing influenced a self-perceived speech function, as patients with previous RPD experience adapted faster [8,9,29]. They had already adapted to speaking with a palatal coverage. With first time CD wearers, adjustment to new complete dentures took the longest. When analyzing speech, it is important to have in mind that older patients are more likely to suffer from xerostomia and have difficulty speaking clearly due to insufficient saliva flow, therefore they need to adapt longer [29]. Decrease of a self-perceived speech ability after 5 years of CD wearing can be attributed to the loss of maxillary and mandibular denture retention, mainly due to alveolar bone atrophy over time [19-22], which is significantly higher in CD wearers than in mandibular complete implant-supported overdenture patients [20,31].

During the first days of wearing new CDs, dentures may cause pain and discomfort. That was probably the reason why participants' scores for chewing ability, the comfort of denture wearing, and denture retention first decreased after the 15th day and increased only after the 8th day. The scores peaked on the 30th day, when all occlusal and denture adjustments were finished and patients learned how to speak more clearly. These results remained throughout the 1st year of denture wearing. The results coincide with the results of other studies [11,12,32,33]. No influence of gender and previous denture status was observed on a self-perceived comfort of denture wearing and denture retention. This is in line with the results of some previous research [33-36]. However, gender and previous removable denture experience significantly influenced chewing function, as females and previous RPD wearers gave better scores. The results were the same for the self-perceived speech ability. Better scores obtained from female patients can be probably explained by their happiness about esthetic outcome. Although males were also almost equally satisfied with esthetics, the accepted cultural and personality standards probably played a role in the fact that females scored some other domains better than men [6,37,38].

The already experienced denture wearers adapted faster, which is in line with other studies [8,9,28,29,39], although it has also been reported that greater overall improvements after complete denture therapy were observed in participants without than in those with previous denture experience [10,40]. First time CD wearers were probably uncomfortable with palatal coverage, which could be a reason for their lower scores immediately after delivery. Previous CD wearers had already adapted to palatal coverage. It has been reported that previous denture wearers also adapted faster as their discrimination of tactile ability significantly increased faster over the first 30 days than in the first time denture wearers [39].

Orofacial esthetics scored highly as in other studies [8,9,38], but the score started to decrease significantly after three years of denture wearing. There could be many reasons. The vertical dimension of the lower third of the face decreases gradually over time due to alveolar ridge atrophy and artificial teeth wear [19-22, 30,31], accompanied by a counterclockwise rotation of the mandible and the appearance of emphasized wrinkles and a decreased lip volume. The CD patients probably noticed that problem. Moreover, artificial teeth and denture materials also absorb colors from drinks and food and stain over time.

All new complete dentures delivered in this study were made without balanced occlusion, as it has been proved that no occlusal scheme is superior regarding chewing ability [11,41,42]. One article reported that 38.0% of patients showed non-adaptation to CDs. Non-adaptation was significantly associated with the absence of previous mandibular denture experience (p = 0.042), ulcerations after 15 days of rehabilitation (p < 0.001), and a reduced posterior mandibular ridge (p = 0.035). After 6 months, this incidence decreased to 14.1% [43]. Our study sample had in the most cases previous CD experience, only 7 of them were the first time CD wearers, which is also the limitation of the study. The strength of the study is the duration of observation up to 5 years. Our longitudinal prospective clinical research confirmed that the process of adapting to new CDs is usually completed within a month. The patients' satisfaction remained unchanged during the first year and significantly decreases after 3 years of CD wearing in all domains: function, speech, comfort, retention, and esthetics, reaching the lowest scores after 5 years.
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Questions

1. How long does a patient need to adapt to new complete dentures?
   - a. One day;
   - b. Two weeks;
   - c. Four weeks;
   - d. Six month.

2. How long does the adaptation to new denture last (based on the data in this manuscript)?
   - a. One week;
   - b. One month;
   - c. One year;
   - d. 4-5 years.

3. Which two categories received the highest grades after one month of new complete denture wearing, based on patients’ self-reported outcomes??
   - a. Chewing and retention;
   - b. Comfort of denture wearing and chewing;
   - c. Retention and speech;
   - d. Speech and esthetics.

4. Which category did not significantly change within one-month period of new denture wearing?
   - a. Comfort of denture wearing;
   - b. Esthetics;
   - c. Speech;
   - d. Chewing ability.