

DRIFTODONTICS AND ITS ROLE IN ORTHODONTICS: A CLINICAL STUDY ON 40 PATIENTS AT MILITARY DENTAL CENTRE, DHAKA

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ABSTRACT

Background: *Driftodontics* has emerged as a promising approach that leverages the natural physiological movement of teeth to achieve alignment. This concept involves creating optimal conditions—such as through selective extractions, interproximal reduction, or occlusal adjustments—to guide teeth into their ideal positions without the need for extensive mechanical appliances. **Aim:** To evaluate the clinical efficacy of *Driftodontics*—a minimally invasive orthodontic approach leveraging natural tooth drifting—compared to traditional orthodontics in patients with mild-to-moderate malocclusions. **Materials and Method:** A 24-months prospectivestudy was conducted at the Military Dental Centre Dhaka on 40 patients (aged 18–35 years). Participants were divided into two groups: Driftodontics (selective extractions, interproximal reduction; $n=20$) and Traditional Orthodontics (fixed appliances; $n=20$). Outcomes included alignment success, treatment duration, patient satisfaction, and occlusal stability. **Results:** Driftodontics achieved 85% alignment success versus 95% with traditional methods ($p=0.16$), with significantly shorter treatment duration (8.2 vs. 14.6 months; $p<0.001$). Patient satisfaction was higher in the Driftodontics group (90% vs. 65%; $p=0.04$). Both groups showed comparable occlusal stability (PAR score reduction: 82% vs. 88%; $p=0.32$). **Conclusion:** Driftodontics offers a time-efficient, patient-friendly alternative for mild-to-moderate malocclusions, particularly in time-constrained populations, without compromising clinical outcomes.

Keywords: Driftodontics, Orthodontics, Teeth alignment, Patient satisfaction

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INTRODUCTION

Orthodontics has undergone significant advancements in recent decades, with a growing emphasis on minimally invasive techniques that reduce treatment time, enhance patient comfort, and improve clinical outcomes¹. Among these innovations, *Driftodontics* has emerged as a promising approach that leverages the natural physiological movement of teeth to achieve alignment. This concept involves creating optimal conditions—such as through selective extractions, interproximal reduction, or occlusal adjustments—to guide teeth into their ideal positions

without the need for extensive mechanical appliances².

The principle of Driftodontics is rooted in the biological phenomenon of tooth drifting, which is commonly observed in cases of tooth loss, periodontal therapy, or occlusal changes³. By harnessing this natural process, orthodontists can achieve predictable results with fewer interventions, making it particularly appealing for patients seeking shorter treatment durations and reduced discomfort⁴.

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This approach is especially relevant in settings such as military dental centers, where patients often face time constraints and logistical challenges that limit their ability to undergo prolonged orthodontic treatment⁵.

Despite its potential, Driftodontics remains understudied, with limited clinical data available to validate its efficacy and applicability. This study aims to address this gap by evaluating the role of Driftodontics in orthodontic treatment, comparing its outcomes to traditional fixed appliance therapy. Conducted at the Military Dental Centre Dhaka, this research focuses on alignment success, treatment duration, patient satisfaction, and occlusal stability in a cohort of 40 patients with mild-to-moderate malocclusions.

MATERIALS AND METHODS

Forty patients (18–35 years) with mild-to-moderate malocclusions were enrolled in this 24-month prospective study after obtaining ethical clearance from the concerned institution and consent in written format from the study recruits. Participants were divided into two groups:

- **Group A (Driftodontics):** 20 patients underwent selective extractions or interproximal reduction to create space for natural tooth drifting.
- **Group B (Traditional Orthodontics):** 20 patients received conventional fixed appliances.

Outcome measures included:

1. **Alignment Success:** Defined as crowding/spacing <2 mm and functional occlusion.
2. **Treatment Duration:** Time taken to achieve satisfactory alignment.
3. **Patient Satisfaction:** Assessed via a 5-point Likert scale.
4. **Occlusal Stability:** Measured using the Peer Assessment Rating (PAR) index.

Data were analyzed using statistical software, with $p<0.05$ considered significant. Data were expressed in mean and percentage.

RESULTS

The clinical outcomes of the study are summarized below, with detailed data presented in tables for clarity.

Table 1: Alignment Success Rates

Group	Satisfactory Alignment (%)	Unsatisfactory Alignment (%)	p-value
Driftodontics (n=20)	85% (17/20)	15% (3/20)	0.16
Traditional (n=20)	95% (19/20)	5% (1/20)	

Interpretation: Driftodontics achieved 85% alignment success, compared to 95% with traditional orthodontics. The difference was not statistically significant ($p=0.16$).

Table 2: Treatment Duration

Group	Average Duration (Months)	Range (Months)	p-value
Driftodontics (n=20)	8.2	6–11	<0.001
Traditional (n=20)	14.6	12–18	

Interpretation: Driftodontics required significantly less time (8.2 months) compared to traditional orthodontics (14.6 months; $p<0.001$).

Table 3: Patient Satisfaction Scores

Group	Highly Satisfied (%)	Moderately Satisfied (%)	Dissatisfied (%)	<i>p</i> -value
Driftodontics (n=20)	90% (18/20)	10% (2/20)	0% (0/20)	0.04
Traditional (n=20)	65% (13/20)	30% (6/20)	5% (1/20)	

Interpretation: 90% of Driftodontics patients reported high satisfaction, compared to 65% in the traditional group ($p=0.04$).

Table 4: Occlusal Stability (PAR Score Reduction)

Group	Pre-Treatment PAR Score (Mean)	Post-Treatment PAR Score (Mean)	Reduction (%)	<i>p</i> -value
Driftodontics (n=20)	28.4	5.1	82%	0.32
Traditional (n=20)	29.7	3.6	88%	

Interpretation: Both groups showed significant PAR score reductions, with no statistically significant difference in occlusal stability ($p=0.32$).

Table 5: Adverse Events

Group	Root Resorption (%)	Enamel Decalcification (%)	Supplemental Aligners Required (%)	Total Adverse Events (%)
Driftodontics (n=20)	0% (0/20)	0% (0/20)	10% (2/20)	10% (2/20)
Traditional (n=20)	20% (4/20)	15% (3/20)	0% (0/20)	35% (7/20)

Interpretation: The Driftodontics group had fewer adverse events (10%) compared to the traditional group (35%).

DISCUSSION

This study aimed to compare the effectiveness of Driftodontics—a minimally invasive technique that utilizes the natural physiological movement of teeth—with conventional fixed appliance orthodontics in patients with mild to moderate malocclusion. Our findings demonstrate that while conventional orthodontics showed slightly higher alignment success, Driftodontics provided comparable clinical outcomes with significantly shorter treatment duration and greater patient satisfaction.

The 85% alignment success in the Driftodontics group, although slightly lower than the 95% observed in the traditional group, was not statistically significant ($p = 0.16$). This supports the notion that in carefully selected cases, natural drifting guided by techniques such as selective extraction or interproximal reduction can yield satisfactory alignment results without extensive mechanical intervention. Similar concepts have been explored in earlier studies on passive tooth movement and space closure following extractions or periodontal changes, which showed that physiologic drift can be both effective and stable over time when guided properly^{6,7}.

A significant advantage of Driftodontics was the reduced treatment duration—8.2 months on average versus 14.6 months in the traditional group ($p < 0.001$). This is a major benefit in environments such as military dental centers, where patients often face time constraints due to duty schedules or postings. Minimally invasive approaches that require fewer appointments and lower appliance dependency are aligned with modern trends in orthodontic efficiency and patient-centered care^{8,9}.

Patient satisfaction was also significantly higher in the Driftodontics group (90% vs. 65%, $p = 0.04$), likely due to the absence of large appliances, improved aesthetics during treatment, and reduced discomfort. These findings align with existing literature suggesting that treatment burden—including duration, visibility of appliances, and discomfort—is a major determinant of patient satisfaction in orthodontics¹⁰.

Importantly, occlusal stability assessed through PAR score reduction was comparable between the groups (82% vs. 88%; $p = 0.32$), indicating that Driftodontics does not compromise post-treatment functional outcomes. However, 10% of patients in the Driftodontics group required supplemental aligners, suggesting that some cases may still need adjunctive mechanical guidance. Previous studies have emphasized that physiologic tooth drift is more predictable in certain occlusal patterns, emphasizing the need for careful case selection¹¹.

Another notable finding was the lower incidence of adverse events in the Driftodontics group. Unlike the traditional group, which experienced root resorption (20%) and enamel decalcification (15%), no such complications were reported among Driftodontics patients. This supports evidence that prolonged fixed appliance use increases the risk of iatrogenic effects, particularly root resorption and white spot lesions^{12,13}.

Despite promising outcomes, this study has limitations. The sample size was relatively small ($n = 40$) and derived from a single institution, which may limit the generalizability of findings. In addition, the follow-up period was limited to the treatment phase; long-term retention and relapse rates were not assessed. Further multicenter randomized controlled trials with larger cohorts and extended follow-up are needed to validate these findings and explore the role of Driftodontics in broader populations¹³.

Driftodontics appears to be an effective, time-efficient, and patient-friendly alternative to conventional fixed appliance therapy for mild-to-moderate malocclusions. It holds particular promise in time-sensitive settings such as military dental clinics, offering comparable clinical outcomes with reduced risk and higher patient acceptance.

CONCLUSION

Driftodontics represents a promising, minimally invasive approach for mild-to-moderate malocclusions, offering time efficiency, enhanced patient comfort, and comparable clinical outcomes to traditional orthodontics. Its application in time-constrained populations, such as military personnel, is particularly advantageous. Future studies with larger sample sizes and longer follow-up periods are recommended to validate these findings and explore its broader applicability.

CONFLICT OF INTEREST

There is no conflict of interest.

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