**Dental Hygiene Instrument Satisfaction**

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Ottawa, Ontario

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July 10, 2017

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**I. Introduction**

Conroy Dental Centre prides itself on a strong dental hygiene team that provides optimal dental hygiene care to its patients through evidence-based practice, including effective skills and techniques for complete and comprehensive dental hygiene debridement and root planning. Currently, the dental hygiene instruments available for use are over eight years old and are in need of replacement in order to maintain the high treatment standards that Conroy Dental Centre wishes to provide to its patients.

**Purpose of Study**

Dental hygiene instruments that are in poor condition decrease treatment effectiveness in many ways. Tactile sensitivity is diminished, which can cause failure to detect calculus; damage to the root surface can occur; calculus can become burnished and difficult to remove; the risk of an instrument tip breaking in the patients sulcus is high; and inadvertent instrument slipping may occur. Patient comfort and satisfaction is decreased as more lateral pressure must be used in order to remove deposits. Moreover, clinician fatigue and risk of carpal tunnel syndrome is increased with the use of poor instruments. The risks outlined above can be avoided with the use of new, well maintained dental hygiene instruments. Patient satisfaction can be maintained at high standards; and effective, evidence-based practice can be provided. (Heimbach and Thomas, 2017) By gathering data from the Conroy Dental Centre hygiene team and dental hygiene instrument companies, it can be determined which instruments should be purchased and maintained that will benefit both patients and clinicians, and to allow the practice to maintain a strong reputation.

**Methods**

Two methods were employed in order to determine which dental hygiene instrument company would be the most appropriate for use at Conroy Dental Centre. Three dental hygiene instrument replacement companies were chosen for comparison, these include: 1) Hu-friedy, 2) D-Sharp, and 3) Nordent. Company sales representatives were contacted in order to determine instrument specifications, costs and to assess customer service skills. Survey questionnaires were sent, by email, to the dental hygiene team, which allowed for anonymity with respondents.

**Limitations**

In order to determine which company was best suited to Conroy Dental Centre, all dental hygiene staff were required to respond to the survey questionnaire. As a small practice, there were only two dental hygienists that could be used to produce data. This created a small survey sample, however, this should not be problematic to our data for the purposes of the current Conroy Dental team. If the dental hygiene team changes or grows, an additional set of surveys may need to be sent out

**Scope**

This report addresses several areas of interest to determine which dental hygiene instruments would be best suited to Conroy Dental Centre. What instruments provide the longest lasting working edge; what instruments are the most effective at scaling and root planning; which instruments provide the best ergonomic and comfortable handles, preventing clinician fatigue; what program is the most cost effective; what program is the most time-efficient in returning instruments; and what program has the best customer service.

**Conclusions**

The cost comparison showed that D-Sharp provided the lowest prices overall and the best discounts for new instruments. Hu-Friedy had minimal discounts and a much higher replacement price, while Nordent was in the middle. Sharpening costs were similar between all companies, ranging from $4.50 - $6.00. The Dental Hygiene Satisfaction Survey was imperative in determining which dental company should be used and would be best suited to the clinical needs of Conroy Dental Centre. A balance between the needs of the dental hygienist, and company costs would indicate that Nordent is the best company to choose for instrument replacement.

**II. Data Analysis**

All three dental companies (Hu-Friedy, D-Sharp and Nordent) were compared with the results presented in Appendix I. Furthermore, a cost comparison was conducted and is presented in Appendix II. The dental hygiene instrument satisfaction survey has been analyzed below.

**Comparison of instrument types/brands**

Each company offered variations in types of instruments (See appendix I). D-Sharp and Nordent both offered stainless steel construction, while Hu-Friedy offered higher quality high carbon chromium steel or resin construction. All companies offer round handles, but Nordent also offers hexagonal, medium or universal types for variation. Instrument weight offered slight variations and ranged from 12-17 grams. Handle diameters were also similar, ranging from 5.0 mm -11.0 mm. Both Hu-Friedy and Nordent provide instrument turnaround within 48 hours, while D-Sharp is significantly slower at 3-6 weeks.

As described above, all of the company’s instrument specifications are very similar, with the exception of Hu-Friedy being able to offer higher quality construction and the fastest instrument turnaround time. These findings demonstrate the need to determine personal preferences from the dental hygiene team in order to compare instrument quality once being used in a clinical setting.

**Company Cost Comparison**

Each company has different sharpening (figure 1) and replacement costs (figure 2). They also offer various discounts and promotions.

Sharpening costs varied by company and were based on sharpening of one double ended instrument. Nordent was the most cost effective, at $4.50, followed by Hu-Friedy at $5.50 and D-sharp at $6.00. A drawback to Hu-Friedy is that they will only sharpen their own company instruments, if there are any other brands of instruments that require sharpening, they will not service them. D-sharp and Nordent will sharpen any brand of dental instrument.

Replacement costs varied significantly between companies. D-sharp is the most cost effective, at less than $30.00 per instrument, while Hu-Friedy is nearly double that price. Nordent is approximately $10.00 less than Hu-Friedy.

Special promotions and trade-ins are also offered by each company. The best was from D-sharp who offers a 33% discount when 12 instruments are purchased, while Nordent offers a 20% discount regardless of how many instruments are purchased. Hu-Friedy offers the smallest discount approximately 8% when 12 instruments are purchased.

Although sharpening costs are similar between companies, replacement costs vary greatly. With Hu-Friedy and Nordent both being nearly double the cost of D-Sharp. D-sharp also provides the most significant discount, while Hu-Friedy provides the worst. From a cost comparison perspective, D-Sharp is the best company, however, cost cannot be the only determining factor in which instruments should be used. The adage “you get what you pay for” sometimes rings true.

**Dental Hygiene Instrument Satisfaction Questionnaire**

All (two) dental hygienists responded to the survey. Each question to the survey has been analyzed separately.

**How would you rank each dental hygiene instrument company?**

Each hygienist ranked the dental instrument companies in the same order (see figure 3): 1) Hu-Friedy, 2) Nordent, and 3) D-Sharp.

Figure 3. Preferred Company

**Which company's instruments provided the most comfort and least hand fatigue?**

Again, each hygienist ranked Hu-friedy as having the most comfortable instruments to work with, causing the least amount of hand fatigue.

**How would you rate the quality of Hu-Friedy instruments / D-Sharp / Nordent instruments?**

Instrument quality was rated from each company (see Figure 4.). Hu-Friedy ranked first with an average of 93% satisfaction. Nordent ranked second with an average of 80% satisfaction, while D-Sharp ranked the lowest with only 63% quality satisfaction.

*Figure 4. Instrument Quality*

**Which instruments provided the sharpest working edge?**

Instrument sharpening ranks were unanimous. Hu-Friedy was ranked first, Nordent second, and D-Sharp third.

**What company provided the best customer service?**

D-Sharp and Nordent were both chosen to have superior customer service, while Hu-Friedy was not chosen by any respondents.

**What company provided the quickest instrument turnaround time?**

Hu-Friedy was chosen by all respondents to have to fastest instrument turnaround time.

**How many business days did it take to receive sharpened instruments?**

Hu-Friedy sharpened and returned instruments within a 24 hour period.

**Do you have any other comments, suggestions, or concerns?**

Survey respondent comments included:

1) I loved Hu-Friedy. My only concern is that we cannot use any other brand while using this company. I have some instruments that are made by Henry Schein that I like to use.

2) Hu-Friedy would be my choice of dental instruments. They were the most comfortable and most efficient.

III. **Conclusion**

**Summary of Findings and Overall Interpretation of Findings**

Each company offered slight variations in instrument types, including; handles, weight, diameter, and construction material. Overall specifications appeared to be too similar to compare on paper, making the Dental Hygiene Instrument Satisfaction Survey an ideal tool in order to determine which instruments would be preferable.

The cost comparison clearly showed that D-Sharp is the most economical choice in instrument replacement and discounts/promotions. Hu-Friedy was nearly double the cost, with Nordent just below.

Hu-Friedy is the preferred company for dental hygiene instruments based on instrument quality, comfort and effective dental hygiene debridement. Nordent is ranked at a close second and is also flexible in that they will maintain other brands of instruments that the hygienists might prefer to use. D-Sharp ranked the lowest in instrument quality and satisfaction, however, they did rank highly in customer service.

**Recommendations**

It has been established the Conroy Dental Centre is in need of new dental hygiene instruments in order to provide the best quality care to patients. With new instruments that are sharpened regularly and replaced when needed, the office can see an increase in client comfort, safety and satisfaction; clinician comfort and safety; and in overall clinic production.

Based on all of the data collected, I would make the following recommendations to Conroy Dental Centre.

* Enrol with Nordent to both sharpen and maintain dental hygiene instruments.
* Take advantage of the trade-in discount to receive 20% off the purchase of new instruments – this discount will be especially advantageous during the initial replacement of all old/inefficient dental hygiene instruments.
* Continue to monitor quality and efficiency of instruments.

**Glossary**

Appendix I: Instrument Type Comparison

**Dental Hygiene Instrument Comparison**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Hu-Friedy** | **D-Sharp** | **Nordent** |
| **Handle Diameter** | 6.35 mm -9.99 mm | 5.0 mm – 10.0 mm | 5.5 mm -11.0 mm |
| **Handel Type** | Round or octagon | Round | Round, hexagonal, medium round or universal |
| **Instrument Weight** | 14-16 grams | 14-17 grams | 12-16 grams |
| **Instrument Construction** | High Carbon chromium steel allow or resin | Stainless steel | Stainless steel |
| **Texture** | Knurled | Diamond Knurl | Control rings, knurled  |
| **Instrument turnaround** | 24 hour in-house | 3-6 weeks, or 4 month standing order | 48 hours |

Appendix II: Cost Comparison Data

**Dental Hygiene Cost Comparison**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Hu-Friedy** | **D-Sharp** | **Nordent** |
| **Sharpening cost** | $5.50 per scaler | $6.00 per scaler | $4.50 per scaler  |
| **Replacement cost** | $59.89 | $29.99 | $49.95 |
| **Discounts or promotions** | Recycle 12, get 1 free | Buy 12, get 4 free | Trade-ins receive 20% off new instruments  |

Appendix III: Survey Questionnaire

**Dental Hygiene Instrument Satisfaction Survey**

I am an undergraduate student enrolled in a technical writing course at the University of British Columbia. The purpose of this survey is to obtain data for an analysis and investigation that could lead to improving dental hygiene instruments at a dental clinic. The report will be sent to the practice owner for review. The data received from this survey will aid in the recommendations of which dental hygiene instrument renewal company provides the most effective instruments. The survey contains 10 questions, and should take about 5 minutes of your time. Responses are voluntary and anonymous. Thank you for choosing to participate in my survey.

1. How would you rank each dental hygiene instrument company?
2. Which company's instruments provided the most comfort and least hand fatigue?
3. How would you rate the quality of Hu-Friedy instruments?
4. How would you rate the quality of D-Sharp instruments?
5. How would you rate the quality of Nordent instruments?
6. Which instruments provided the sharpest working edge?
7. What company provided the best customer service?
8. What company provided the quickest instrument turnaround time?
9. How many business days did it take to receive sharpened instruments?
10. Do you have any other comments, suggestions, or concerns?

**Works Cited**

Heimbach, J. and Thomas, C. (2017). *Instrument Replacement: How, When, & Why?*. [online] Rdhmag.com. Available at: http://www.rdhmag.com/articles/print/volume-28/issue-4/feature/instrument-replacement-how-when-amp-why.html [Accessed 1 Jul. 2017].