Townies Doing Research

by Trisha E. O'Hehir, RDH, MS

Do you ever feel like a detective searching for the answers to clinical mysteries? Why can't patients effectively brush their teeth? Why don't pockets heal after they've been treated? If only you were a clinical researcher, you could answer those questions and solve those mysteries! As an active Townie, you can now become a Townie Researcher and participate in clinical research, gathering data to answer those questions.

Hygienetown and Dentaltown now offer Townies the opportunity to test new products in their own clinical practices. These are not randomized, controlled clinical trials. There is no calibration between clinicians. Extensive data collection is not needed. On the other hand, these studies are not simply product evaluations. These are real-life pilot studies to determine just how new products work in the hands of regular clinicians with regular patients. These studies bridge the gap between randomized, blinded, controlled, clinical trials and personal experience.

Top Townies, those who are active on the site, are invited to participate in the studies. If a particular project fits their schedule and their interest, they agree. Dentist and dental hygienist teams are invited to participate. The two most recent projects were directed toward hygienists, but since they work in practices owned by dentists, the dentist was informed about the study and agreed to the project as outlined.

The goal of Townie Research projects is to add something new to clinical practice that interests both patients and clinicians. Patients are impressed that their dentist/dental hygienists are researchers and they are excited to be part of studies testing new products that are already on the market. Data collection involves the usual clinical and photographic data already being collected in practice today. We want to know how these products work if you simply buy them and start using them. The indices used are plaque scores, probing depths and bleeding upon probing. Our

goal is not to add time to already busy appointments, but to make gathering the data useful in measuring the effectiveness of a new product.

Townie Researchers receive a copy of the complete research protocol explaining what the product is, what the research question to be answered is and step-by-step instructions on how to gather data, instruct or treat the patient and what follow-up data is needed. Test products are sent directly to the practice from the manufacturer. Telephone conference calls with the researchers on a particular project help answer questions, revise the protocol if we find an easier way to treat the patients and give the Townie Researchers an opportunity to compare notes with each other.

Reports from the latest two research projects are presented here. The Townie Researchers who participated enjoyed the experience and provided valuable information on the products they tested. Join them on the Townie Research message board to find out more about the studies and about becoming a Townie Researcher yourself!

Effects of the 30 Second Smile Power Toothbrush on Plaque Removal

A Clinical Practice Study

People brush an average of 38 seconds and brush in an erratic pattern that doesn't allow for equal brushing throughout the mouth. To overcome those difficulties, the 30 Second Smile power toothbrush was designed by Hydrabrush, Inc., located in Escondido, California, with a unique brush head that contacts maxillary, mandibular, facial, lingual and occlusal surfaces at one time, simply by biting into the brush and moving it gently around the arch. The 30 seconds that people now brush will reach all tooth surfaces equally.

Townie Researchers selected patients in their practices who showed high plaque levels despite repeated instructions in oral hygiene. Townie Researchers provided the 30 Second Smile power toothbrush to a total of 12 patients. Data collection included baseline plaque scores and intra-oral photographs. Plaque scores were repeated approximately two weeks later, and in some cases further follow-up visits were scheduled. Both children and adults were included in the study.

Before and after photos of the study reveal high baseline plaque levels. After using the 30 Second Smile toothbrush for two weeks, plaque levels were reduced. Plaque scores dropped from 58 percent to 25 percent (patient 1).

Patient 2 began with a plaque score of 82 percent and returned two weeks later with a 21 percent plaque score.

A null hypothesis was proposed for this study stating that no changes in plaque scores would be seen with the use of the 30 Second Smile toothbrush compared to previous brushing. Results demonstrated that a majority of patients in this study showed lower plaque scores after two weeks or more of using the new brush. Some showed no difference and none showed increased plaque scores using the 30 Second Smile toothbrush. Thus, the null hypothesis was disproved in this study.

Based on these findings, the 30 Second Smile power toothbrush provides better plaque removal when used instead of a manual toothbrush for

Patient 1: Before: 58 percent

Patient 1: After: 25 percent

Patient 2: Before: 82 percent

Patient 2: After: 21 percent

continued on page 122

continued from page 121

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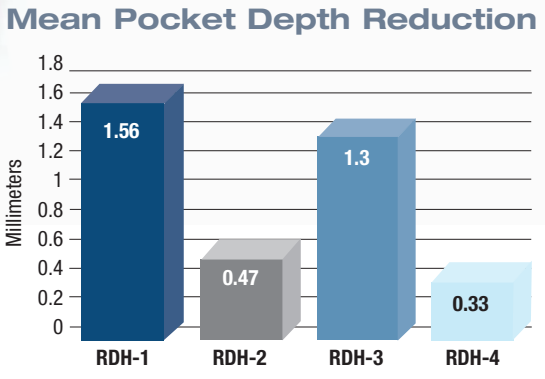

those who are ineffective with daily plaque removal. For patients who are not effectively removing plaque with a manual or power toothbrush, the 30 Second Smile brush promises to provide an effective alternative. The unique design and ability to reach all areas without depending on the manual dexterity of the user makes the 30 Second Smile ideal for those who need a new way to effectively clean their teeth.

A Clinical Practice Observation of the Effects of HybenX

Instrumentation on Non-Responding Periodontal Sites by Dental Hygienists in the European Union

Non-responding areas are common after completion of non-surgical periodontal therapy, due to remaining bacterial biofilm. These areas continue to show signs of disease with probing depths of 5mm or greater and bleeding upon probing. Bacterial biofilm is attached to root surfaces, floating within subgingival pockets and found within root surface calculus deposits. This subgingival bacterial biofilm can be disrupted with mechanical action or chemical desiccation causing the biofilm matrix to denature, precipitate and coagulate. This detaches the biofilm and allows it to be rinsed away.

HybenX Plaque Biofilm Remover is a concentrated sulfate solution that causes desiccation by absorbing water, making it an effective solution for breaking down bacterial biofilm. It is both selective and self-limiting, making it a safe plaque removal agent for subgingival areas. HybenX is made by Epien Medical in St. Paul, Minnesota, makers of Debacterol. HybenX is not yet available in the U.S., but is available in many countries outside the United States.

HybenX solution comes in pre-filled syringes for subgingival delivery prior to instrumentation. The HybenX will desiccate the bacterial biofilm and allow for effective subgingival calculus removal, resulting in reduced bleeding and reduced probing depths.

Four Townie Researchers were recruited, each active international Hygienetown members, from England (2), Scotland (1) and Italy (1). All Townie Researchers received a copy of the research protocol and the HybenX product. Each hygienist agreed to treat five patients with subgingival instrumentation plus the application of HybenX.

Data collection included baseline probing depths and bleeding scores on areas that did not respond to previous instrumentation (see chart).

Probing depth reductions were seen in 10 of the 13 patients treated. Three patients showed no reduction in probing depth after treatment. Comparing Townie Researchers, the mean probing depth reductions were 1.56mm for RDH-1, 0.4mm for RDH-2, 1.3mm for RDH-3 and 0.33mm for RDH-4. The overall mean reduction was 0.92mm.

Based on these preliminary findings, the use of HybenX in combination with subgingival instrumentation in sites that did not respond to initial scaling and root planing provided a benefit. Findings thus disproved the null hypothesis that no changes in probing depths and bleeding would be seen. Future studies will need to compare sites treated with instrumentation alone and sites treated with both instrumentation and HybenX to determine the impact of HybenX Plaque Biofilm Remover. ■