

## **Mid year Report (Academy Dentistry International Foundation)**

### **Name of the project:**

“Quantification of bioavailable and total fluoride in toothpastes sold in 10 countries of the ADI Middle East Section”

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### **Introduction:**

Dental caries is still a disease that affects populations around the globe. This disease is a serious health problem afflicting children and adults living in middle and low income countries. Toothpaste-containing fluoride has been recognized as the main contributor to the decline of dental caries specially in communities with no other type of fluoride supplementation. Caries control effect of fluoride tooth paste completely depends on the optimum quantity of fluoride, particularly bioavailable fluoride. Some studies have shown that in developing countries the amounts of total and especially bioavailable fluoride in tooth pastes sold in market is much less than optimum amounts for caries prevention. This means that people in this regions are in the risk of dental caries.

The other issue about fluoride tooth paste is non-availability of quality control to ensure that toothpastes marketed in developing countries have the correct amount of fluoride. Furthermore there are controversies for the best methods of determining both total and specially bioavailable fluoride in tooth paste .Considering these findings and limitations academics and dental associations have suggested that reference fluoride laboratories be instituted and established in developing countries in order to capacity building for qualifying fluoride tooth paste and other fluoride content oral care products .

### **Objectives:**

The main aim of this survey is to analyze the situation of effective fluoride that supply needs to be supplied to children and adolescents (their families indirectly) living in Middle East countries .

The subsidiary objectives are:

- 1- To assess oral hygiene habits of children and adolescents residing Middle East countries
- 2- To capacity building for qualifying fluoride toothpaste in Middle East region including :
  - A-Equip fluoride laboratory for advanced fluoride analyses
  - B-Participate in global efforts for developing the most accurate method for fluoride analyses in tooth paste and other fluoride containing oral care products

- C-Establish and then extend reference fluoride laboratories for qualifying oral care products among Middle East countries
- 3- Interaction with fellows at the inter country level, this promoting international exchange of oral health information and concepts which will facilitate further collaborations among fellows in the region.
  - 4- Acquisition information about affordability of tooth paste specially for children and adolescents and their families residing in the Middle East countries

### **Project tasks:**

Oral hygiene habits of children and adolescents residing 10 countries of ADI ME Section will be evaluated using the adapted questionnaire recommended by the World Health Organization Global Oral Health Program (WHO GOHP). Data about affordability of toothpaste marketed in Middle East countries, frequency of tooth brushing/tooth paste use, current brand of tooth paste will be collected from at least 50 families in each country will be evaluated for the brands of tooth pastes (totally 500 families and ultimately a large number of people.) Using the “modified WHO questionnaire for dentifrice use” and the developed check list , 5 mostly used brands of TP (3 tubes /brand) by children and adolescents in each country will be identified , collected and transferred to the fluoride laboratory located in Torabinejad Dental Research Centre , Iran . Bioavailable and total fluoride content of tooth paste samples will be measured. The collected data will be tabulated, analyzed and disseminate. Further activities are anticipated using the outcomes of this project.

### **Project Progress :**

To fulfill the main and subsidiary aims following steps have been defined and accomplished so far :

#### **I-Identify mostly used TP brands : 5 brands from each country , 3 tubes from each brand :**

##### **1- Identify co-investigators from other countries :**

So far colleagues from India and Emirates has been informed, justified and data and sample collection will be started parallel to Iran in the very near future. Negotiations with fellows from Nepal are in process and for Pakistan, Saudi Arabia, Qatar, Afghanistan , Iraq the fellows or colleagues have been identified and will be contacted in near future .

##### **2- Modify WHO questionnaire :**

The WHO questionnaire has been modified and questions for affordability have been added, checklists and labels have been developed.

##### **3- Translate WHO questionnaire to the local languages :**

The questionnaire has been translated in Farsi.

##### **4- Specify the eligibility and inclusion criteria for participants :**

It completed and included in the check lists.

**5- Conduct the survey and collect TP samples.**

Will be started in three countries in 10 days and will be conducted in parallel in other countries.

**II- exchange samples and data:**

**1- Exchange data electronically :**

**Electronic copies of forms and check lists will be circulated by email , to be able to**

**2- Tooth paste samples shipment :**

TP samples will be transported by trustable shipments .

**III- analyses the samples:**

**1- Determine the most updated and valid method for analyses specially for bioavailable F.**

The 1- minute potentially available method that is the most updated method and was/is under the evaluation by ISO/TC106/SC7 –Oral Care Products as the standard method for bioavailable fluoride analyses in tooth paste . Through a separate project samples from Iran , Turkey and US markets were analyzed and the 1-minute method modified and quality control tests were duplicated . Communications with ORCA ( European Organization for Caries Research ) and ISO to share the knowledge and acquisition state of the art in fluoride analyses is in process .

**2- Analyze the TP samples :**

Fluoride laboratory at Torabinejad Dental Research Centre has been equipped for advanced methods of fluoride analyses (Annex A)

**IV- report and dissemination**

**1- Release the news about project :**

Negotiations and paper works has been completed and the page of the project is being developed by the Information Centre of Dental School, Isfahan University of Medical Sciences and will be uploaded as a link in the near future .

**2- Writing final report**

**3- Developing paper drafts.**

**ANNEX A :**

**By the generous support of Academy Dentistry International Foundation some equipment and materials has been purchased so far (figures 1 and 2) .**

**Torabinejad Dental Research Centre ,Isfahan University of Medical Sciences will support the expenses of laboratory works , Isfahan University Dental school has will support data and sample collection expenses and Fahameh Company has undertaken some laboratory materials and consumables .**

**The project has obtained Code of Ethic for data and sample collection in Iran .**

**Figures 1& 2**

