

Licensing and Technology Transfer Opportunity: Manipal University

Title of Technology Available: A full mouth toothbrush for the physically & mentally challenged.

Brief Description of Invention: This modified toothbrush is for all, but specially designed for disabled, mentally challenged and bedridden patients to facilitate proper cleaning and oral hygiene maintenance. This modified toothbrush reduces the time needed to clean as it engages multiple teeth at once. As it is a full mouth brush, the patient needs to insert the brush inside his mouth and move from side to side and then up and down for 10-15 seconds only. This modified toothbrush has bristles arranged in such a way that the angle of contact to the tooth surface caters to effective cleaning.

Brief Background of Invention: Patients who are physically challenged, especially patients with hand/arm injuries, patients lacking the manual dexterity to brush their teeth on their own, patients with Parkinson's, mentally challenged, geriatric and bed-ridden patients find it hard to brush on their own and have to often depend on a caregiver/guardian to help them perform a simple task like brushing. If no one is available to help them out, some of them go without brushing for days. The major problem faced by caregivers is the denial to open mouth for further brushing (after having brushed one part of mouth), uncooperative behavior and inability to spit again and again. The Oral hygiene of people who are physically challenged, patients lacking manual dexterity, patients suffering from Parkinson's disorder or are mentally challenged is a severely ignored sector. According to 2011 Census, India had 2.68 Crore disabled people which constitute 2.21 of the population of the country. Of the 2.68 Crore disabled population, 20% had disabilities regarding movement, 19% had mental retardation, 3% had mental illness and 8% had a combination of multiple disabilities. These statistics show that there is a significantly big market in India which has been potentially ignored to date. This modified toothbrush would have a significant social impact in both rural and urban India as it would take care of the oral hygiene needs of the disabled. This product also can be used by the general population and would enhance teeth cleaning while reducing the time needed for doing it.

Describe the final product: It consists of a gothic arch shaped mouthpiece which fits into the patient's mouth and has an innovative arrangement of bristles that engage the gingival sulcus and help to remove the plaque from that region. This modified toothbrush reduces the time needed to cleanse the mouth by as much as 50 % as it engages multiple teeth at once and helps in reaching all the regions of the mouth with ease. This modified toothbrush has bristles arranged in such a way that the angle of contact to the tooth surface caters to effective cleaning.

Technological Domain (Keywords): Full mouth, automatic toothbrush

Proof of Concept: We have developed CAD Models as well as fully working alpha prototype.

Stage of Development:

Ideation/Prototype/Advanced Prototype/Ready to Market technology - Prototype

Provide Information on Competitors who manufacture and/or sell similar products: NA

What are the unique advantages your innovation has compared to the competition: ? This modified toothbrush reduces the time needed to cleanse the mouth by as much as 50 % as it engages multiple teeth at once and helps in reaching all the regions of the mouth with ease. This modified toothbrush has bristles arranged in such a way that the angle of contact to the tooth surface caters to effective cleaning.

A few potential companies who might be interested in this technology:
Toothbrush companies

Intellectual Property Status: Indian Patent application with number 201841047637(Indian filed in (2018)