

# Rebuilding the Dental Hygiene Habits of the Hospitalized Patients with Schizophrenia

Chia-Jou Hsieh, Feng-Chuan Pan

**Abstract**—Oral health is particular important to the hospitalized patients with chronic schizophrenia for an extreme high potential of the respiratory infections. Due to the degeneration of physical capability, patients of this kind typically fall dependent in the activity of daily living (ADL). A very high percentage of patients had dental problems of which mostly could be easily avoid by easy regular tooth brushing. Purpose of the project is to develop a mechanism in helping the schizophrenia patients in rebuilding a tooth-cleaning habit. The project observed and evaluated the tooth-cleaning behavior of 100 male patients in a psychiatric hospital, and found the majority of them ignored such an activity in a three-month period of time. In the meantime, the primary care-givers were not aware or not convinced the importance of such a need of dental hygiene, and thus few if any tooth cleaning training or knowledge on dental hygiene were given to the patients. The project then developed a program based on the numerous observations and discussions. The improvement program included patients' group education, care-givers' training, and a tool-kit for tooth-brush holding was erected. The project launched with some incentive package. The outcomes were encouraging with 87% of the patients had rebuilt their tooth-brushing habits against previous 22%, and the tooth cleaning kits were 100% kept against 22% in the past. This project had significantly improved the oral health of the patients. The project, included the procedure and the tool-kit holder specific for this purpose, was a good examples for psychiatric hospitals.

**Keywords**—Schizophrenia, dental hygiene, tool-kit holder, health education

## I INTRODUCTION

THE prevalence of psychiatric disease in the metropolitan area of Taiwan is around 0.3% in Taiwan, 80% of which are chronic schizophrenia. Patients who are ill with mental disorder tend to have difficulties in performing proper oral hygiene. Their physical function of this kind degenerates gradually along with the progress of the disease. Consequently, most of them are in capable of self-care, especially the dental care. In an impatient unit of a large psychiatric hospital with 2,500 beds, there were 21 patients suffered with dental problem out of 100 male residents the chronic unit during the period of January and May in 2010. Three of these sufferers were bad affected in their sleep quality, and four were forced to change diet to rice porridge. All these had significant drawbacks for the prescribed nursing cares for insufficient nutrition or nutrition disorder.

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Other than the bad effects on the biological function, the annoyed odor exhales can further depart the patients from proper inter-personal relationships with the society [1].

To solve this particular problem, a task force was organized to formulate an education and training program to prevent the degenerative progress of daily living activity (ADL), specifically for dental hygiene. Certain measures accompanies with the program were adopted with satisfactory outcomes.

### A. Oral health problems of patients with chronic schizophrenia

The chronic schizophrenia patients are generally featured with poor personal hygiene due to extreme weak intention and actual interaction with society, of which particuesidents of long term care (LTC) institutions [2]. Oral hygiene or daily tooth cleaning is important and essential criterion in preventing major infections [3]. Schizophrenia is biologically featured with mental illness or cognition deficiency, of which harsh the patients' activity of daily life (ADL), including tooth brush or oral cleaning. The patients of this kind are easily to be suffered with decay and other dental problems, of which will consequently cause bad appetite, insufficient nutrition intake, and other serious health problems. In addition, oral problem may further circumscribe the patients' intention and participation of social activity. This can even further jeopardize the patients' physical and psychological health[1], [4], [6].Scholars and practitioners generally suggested that building the patients' self-care capability by including the oral hygiene techniques is never over emphasized.

### B. Measures in improving the patients' oral health habit

To improve the patients' oral care activity, some measures are generally suggested by the literature, such as the behavior modification technique [7], regular and continuous education on the oral health [8], [9], [10].and effective instruction of accurate tooth brushing methods [5].

## II. MATERIALS AND METHODS

### A. Samples

We recruited 100 patients from the nursing home of a psychiatric hospital based on the diagnostic and statistical manual of mental disorders (DSM\_IV) of American psychiatry association. We collected the information of sex, age, diagnosis, year of onset, frequency of hospitalization, antipsychotic medication, functional level of daily living activity, and so on from individual health records.

### B. Objectives

Basic aim of objective of the program is to solve the problems of poor dental hygiene of impatient residents. Three major causes of the problem were identified through a team discussion based on the care members' long-term observations

from daily cares. These are (1) Poor regular brushing, (2) Functional disability that was being affected by the diseases, (3) Unable to keep a complete set of teeth cleaning instrument.

Since problems for each individual patients varied because of unique combination of clinical status, custom-made project for an individual patient is required in accordance with each individual's personal characteristics. Although the program for each individual may be different, two common indicators for the project to achieve were established. These were (1) 85% of a rate of the regular daily tooth brushing from the current 22%, (2) 100% of rate of maintaining complete set of tooth cleaning instrument.

### C. Formulation and Implementation

#### 1) The planning (2010 May 1-June 30)

The preparation stage include

(A) Organizing the project team: Six professional nurses and three residents were recruited. The leader is the nursing head of a unit.

(B) Problem defining. Define the problem as a consensus in the project meeting.

(C) Data collecting through both of selected residents' interviews and staff surveys. Interview protocol and survey questionnaire were designed and made available for use.

(D) Background music and visual posters are designed and produce refers to the music-aid care experts. These will be used as a reminder for timely and regularly tooth cleaning.

(E) Design an incentive program with material awards. A visible showcase is designed and made available to display these awards in motivating or enhancing the residents' intention.

(F) Tool-kit holder. This holder is designed to accommodate the residents' oral cleaning tools next to the wash stand.

#### 2) The implementation (July 1, 2008- November 30, 2008)


In the implementation stage, actions and methods taken include as follow.

(A) The launching. Two distinctive announcements were made to the care-givers and the residents respectively. The former focuses on the background, purpose, process, and the expectations of the project to seek a complete cooperation from the entire care team. The latter emphasizes the importance of oral hygiene, the details of the competition, and the incentive programs to motivate their interest and confidence.

(B) Posters containing correct tooth-brushing steps are hanged or posted in front of the wash stand. Time for tooth-brush is pre-scheduled to accommodate the residents' daily life in the hospital. The background music starts to play five minutes prior to the scheduled time as a reminder. Each patient is instructed to perform the tooth-brushing tasks on a pre-specified schedule daily for four times at after-meals and prior to bed.

(C) A coin of medal is given to the resident who has duly completed the formulated tooth-brushing assignment. Patients can purchase any items displayed in the showcase with their medal coins at certain prices marked on it, shown as table I. Items could be replaced by something else on the patients' common opinion.

TABLE I  
AWARDS FOR ORAL CLEANING MOTIVATION

Coins	Awards	The showcase
5	Cookies, selected soft drinks	
10	Tooth brush, tooth paste, or mouth mug	
15	Branded shower gels, shampoo, or facial cleansers.	
30	Food and beverage not exceeding 100NTD.	
50	Shopping journey to the downtown, night market or super market.	

(D) The nurses of the team check and record each resident's actions.

(E) Tool-kit holder acts as a reliable instrument to help rebuilding the mental-ill patients' memory of tooth-brushing habit, shown as the figure I.



Fig. 1 Tool-kit holder

(F) Health education on oral hygiene. Residents are called to attend a program specific for dental health on every Tuesday and Friday. The program contains several topics in each 30-minute session in the afternoon, includes (1) the structure and function of teeth (2) the importance of oral health care (3) Bayesian brushing method (4) the choice of toothbrush and dental floss use (5) introduction and prevention of the periodontal disease. Training materials are delivered by ways of video presentation, visual posters display, and demonstration and trying. In the early stage of the program, around 80% of the participants complained that the program was boring and under-interested on the contents. A modified program infused with the participants suggestions re-launched in the later stages with much more satisfactory feedback, and is more effective in educating the participants. Adding more active and moving objects into the program is the major change of the new program, such as video films and actual participating.

### III. RESULTS

Major results locate around two major ratios. These are (1). The ratio of habitual tooth-brushing rises from 22% before the project to a level of 87 % after a 3-month project. (2). The maintenance rate of the dental hygiene tools is at a perfect 100% level against the previous 25% level.

Since nursing and other care-givers were staffed for certain pre-determined mission within the hospital, real time

monitoring and on time training on the progress of the patients' work of this kind is inevitably additional loading to the squeezed labor force. To effectively allocate and utilize the scarce human resources, only those patients with poor functional activity could be supported by the care-givers.

However, assistance of this kind may induce more the patients' reliance on care-giver's service, of which further degenerate their motivation and capabilities for self-care. This outcome is apparently contrary to the general nursing guides that to foster and strengthen the patients' self-care capability. Since the oral problems is critical in keeping an individual's physical health, the nursing staff that supervising the project may sometimes encounter a trade-off dilemma of service or training.

It is always difficult for a mental-ill person to correctly locate an object. This is certainly one of the major problems for this project. There are only one quarter of the residents can successfully return the tooth-cleaning set to the designated shelf, of which in turn retard the patients' willingness in performing a tooth-brushing. Based on the close observations, the team designed a tool-kit holder with highly visible sign in a highly visible location near the bathroom. Since locating the place of tooth-brushing kit become a simple activity, a major barrier preventing tool access has been removed. Accompany with the care-givers' remind and instruction, the patients behavior have been gradually regulated. It seems this has also re-built the memory of the procedure of tooth-brushing habit by correctly getting and returning the tooth-brushing tools from and to the tool-kit holder.

#### IV. CONCLUSIONS

Chronic schizophrenia patients are generally characterized with degenerating self-care abilities along with the progress of the mental-ill. Oral and dental problems are common health hazards to the patients of this kind, of which may in turn retard the outcomes and wellness of medical and nursing treatments. Tooth-brushing and other tooth cleaning works can effectively protect the dental health. In addition, fail to maintain a regular oral-cleaning may deteriorate the quality and frequency of personal interactions because of the foul smell. This is particularly important for the cases in psychiatric hospital, for these cases are mostly restricted in the circumscribed areas that are generally lacking sufficient physical movements and social interactions with others. This project is organized with care professionals to solve this problem. After a six-month effort, the project had successfully amended the patients' behavior and rebuilt their tooth-brushing habit. Key success factors may stem from the comprehensive contributions of nursing staff, and the creative combination of tool-kit holder and flexible education and training provided by the care-givers.

Major drawbacks or challenges for this project stems from the low intention or lacking motivation of the focus patients. Patients who badly need this training are always those strongly resist any changes. The best prescription toward the resistance is the continuous support and encouragement patiently from the care-givers. Trust on these care-givers may act as the important mediator in changing the patients' intention in the project participation and eventually the habit rebuilding. It is important to note that no success is possible without continuous support

from the nursing team. It is also important to motivate the nursing staff to assume the additional tasks beyond their daily care works.

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