

## **Oral Health Training Project for Carers Working in Group Homes with Adults with Multiple Disabilities**

People with multiple disabilities have been recognised as a group of individuals with chronic oral health care needs. In Sydney, 86% of adults with an intellectual disability have been identified as having dental disease as their most frequent medical disorder (Beange, Gale, & Stewart, 1995). Apart from teeth loss, poor dental health may result in more generalised infections, in particular the increased risk of respiratory infections from oral bacteria (Scannapieco, 1999). People with multiple disabilities are at an increased risk of respiratory infections from gastro-oesophageal reflux disease (Bohmer, Niezen de Boer, Klinkenberg Knol, & Meuwissen, 1997) and dysphagia (Langmore et al., 1998) and are a high risk group for morbidity from pneumonia. Ensuring good dental health may reduce some of this risk.

There is an increased awareness amongst health professionals on developing and maintaining adequate oral health. However, this awareness is not reported amongst the carers who provide attendant care for persons with disabilities (Simons, Baker, & Jones, 2000). Oral health is proportional to the amount of dental care individuals receive. People who are dependent on others to brush their teeth receive less dental care (Lloyd & Gambert, 1983). There is also a reluctance of dentists in the community to take on more challenging clients (Burtner, Jones, Mc Neal, & Low, 1990). Although limited specialist dental services exist, access to these services often require people to travel long distances and experience long waiting lists.

Scope (Vic) Ltd - formerly the Spastic Society of Victoria (SSOV) – provides services to over 400 adult clients statewide. In 1998, it became obvious through the results of a Dental Survey that many of the clients relied on elderly family carers to seek dental health care services for them. The results from the Dental Survey conducted with adult clients who accessed SSOV services suggested that less than 50% of clients had access to regular dental care. The medical vulnerability of these clients and the perceived lack of dental care led to this project. The project aimed to increase the access of people with multiple disabilities to dental services to improve their oral health care.

### **Aims**

The aims of this project were to:

1. Improve the oral hygiene of persons with severe and multiple disabilities residing in Scope residences;
2. Increase the awareness of carers to the importance of oral hygiene;
3. Train carers to develop effective oral hygiene techniques;
4. Identify the crucial elements of an oral hygiene training package to facilitate change in carers attitudes and knowledge;
5. Develop a dental hygiene training package for direct care staff; and,
6. Increase access to resources and referral for improved oral health.

### **Method**

A reference group was formed to guide the project through its stages. Members of the reference group included: dentists, dental hygienists, project workers from the Dental Hospital, a representative from the oral health project division of the Department of Human Services, a Scope health educator, training coordinator, speech pathologist and the project workers.

Six aspects to the project were identified. These involved:

- Obtaining participants for the three target groups;
- Locating an interested and available dentist to participate in the project;
- Developing and delivering a questionnaire as a “before and after” training assessment tool;
- Training attendant carers in oral health techniques through formal training and/or individual assistance from a dentist at their workplace;
- Developing a training package in oral health care and;
- Developing a procedure to ensure residents receive appropriate oral health in Scope (VIC) residences.

### *Participants*

Forty-five volunteer participants were sought for the three target groups from staff and clients of Scope (VIC). The participants were from the southern, northern and western metropolitan regions. The final composition of the groups were as follows:

- *Target Group A* consisted of eighteen participants, nine carers and nine residents from nine Scope residences in the southern metropolitan region. All participants were required to have a dental examination carried out by a qualified dentist. The carers from this group were also required to complete a questionnaire and attend a three-hour training session;
- *Target Group B* consisted of nine additional staff from the southern metropolitan region who were required to complete the questionnaire and attend the three-hour training session; and,
- A *Control Group* of eighteen residential staff from the northern and western metropolitan regions was identified. This group was only required to complete the questionnaires.

All participants received written information about the project and signed consent forms (see Appendix A).

### *Questionnaire*

The reference committee designed a questionnaire to assess the level of oral health knowledge and attitudes among the carers (see Appendix B). The questionnaire covered the target information that was presented during the training. The questionnaire was composed of twenty-three questions including both multiple choice and open-ended questions. It was piloted for clarity with four residential workers from other services and some modifications were made to improve the ease with which the questionnaire was administered

All staff completed this questionnaire twice. Firstly, prior to the intervention (dental examinations or the training session) and secondly, six months after the intervention. The questionnaires were completed in the presence of one of the project workers. Identifying data was removed from the questionnaire and each participant was given a code. The data was entered into an Excel spread sheet and later analysed through SPSS, a statistical computer package. The results from the staff in Target group A and Target group B were combined and analysed together and termed the Treatment group

### *Dental Examination*

Participants from Target group A received a dental examination prior to training. Plaque indices were measured, presence of caries and periodontal disease noted, and information was discussed with regard to maintaining and developing good oral hygiene. After six months, the assessments were repeated and data compared to previous results and examined for change.

### *Training*

A three-hour training session was developed and delivered by the dental hygienist and the dentist involved with the project. There was considerable discussion with the participants regarding the

venue and timing of the training session. The eighteen carers required to attend the training session were contacted by phone and sent a letter regarding the date, time and place of the training session. Attendance by the participants was confirmed the day before the training session. At the completion of the training session, participants evaluated the training by completing an evaluation form (see Appendix C). A formal training package (see Appendix D) was then developed following feedback received through the evaluation questionnaires.

#### *Oral health procedure*

An oral health procedure (see Appendix E) was developed by the health educator and the dental hygienist involved in the project. The procedure was designed as a guide for the carers, especially those working with residents, in the delivery and promotion of appropriate oral health practices

## **Results**

#### *Training*

Eleven of the 18 volunteer carers attended the training session. Of these 11 carers, five were from Target Group A and six were from Target Group B. Training session notes were sent to all participants from both groups as well as the seven carers who did not attend. Those who attended the training session responded very positively about the content, quality, presentation and relevance of the training. A close examination of their comments revealed the following:

- With regard to the content of the training:
  - The course content was considered highly relevant by 82% of participants, whilst 18% viewed it as relevant;
  - Forty five percent of the participants encountered new material while 45% were familiar with some of the material and 10% had encountered most of the content of the session before;
  - The majority (91%) indicated the course was of high quality and 9% thought it was of good quality;
  - Fifty five percent of participants thought there was an appropriate balance between theory, discussion and activities, whilst 45% thought the balance was fair;
  - The presenters overall performance were rated as excellent (82%) and 18% rated them as very good;
  - The course was considered as highly worthwhile by 64% of the participants and 36% thought the course was worthwhile;
  - The session was beneficial and highly applicable to their employment for 73% of participants whilst 27% rated the session as beneficial and applicable to their job
- With regard to the value of the training:
  - The most commonly reported gain was learning how to clean the teeth of people who had difficulty opening and maintaining the opening of their mouths;
  - Another reported gain was learning about the problems relating to teeth and gums and the implication of gum disease on a person's general health. As a direct result of the training session, 82% of the participants indicated that they intended to make changes in their work practices. Eighteen percent did not complete this question;
  - Overall, the content of the training session was considered appropriate. Comments such as "the session was interesting, enjoyable, good, kept you interested" were very positive. One participant wrote, "it was one of the best/useful training sessions I have attended

since being with SSOV! Outstanding - Excellent!” Ninety-one percent said they would recommend this training session to others and 9% did not respond.

*Questionnaires (see Appendix B)*

The results of the pre-intervention and post-intervention questionnaires were compared. For some questions there was no improvement and for some questions the control group improved more than the treatment group. Answers to questions indicating no improvement in either group, have not been reported on (eg. Question 16); Answers to questions where training was not directly targeted (eg. Questions 5,10,11,13,14,15) are also not included. Question 1 and question 12 had multiple parts not all of which were directly related to oral health. In these cases, only those parts of the question that directly related to the oral health questions have been reported on. Results are presented from the control group and the Treatment group (i.e. Carers from Target group A and Target group B)

*Q1. How serious do you think it would be if you had one of these below:*

*Gums that bleed*

Eleven percent more people in the Treatment group thought it was more serious than before intervention to have gums that bled (50% - 61%). However 29% of the Control group also thought it was more serious than before (53% - 82%)

*Dental Decay*

Five percent more people in the Treatment Group thought it was more serious than before to have dental decay (67% - 72%). The same change of five percent occurred in the Control Group (71% - 76%)

*Q2. How does the state of your mouth affect your health in general?*

To score on this question the answer needed to indicate the possibility of infections in other parts of the body. 17% of the Treatment Group improved on their knowledge. (0% - 17%) while only 5% of the Control Group improved on their knowledge (7% - 12%)

*Q3. What is a healthy mouth?*

To answer this question correctly, two points needed to be noted - decay free teeth and healthy gums. Six percent of Treatment Group improved on their knowledge about the importance of clean teeth (33% - 39%). Eleven percent of the group improved on their knowledge (22% - 33%) about gums. No one in the Treatment group got both parts of the answer correct. The Control Group did not improve.

*Q4. How do you get a healthy mouth?*

To answer this open ended question correctly, reference to the following five points was required: brushing, flossing, healthy eating, drinking lots of water and regular dental visits. The Treatment group mentioned only brushing and flossing. Eleven percent of the Treatment group improved in their knowledge of brushing. (89% - 100%) The control group stayed the same on 66%. For flossing 17% of the Treatment group improved (50% - 67%) and 22% of the control group improved on this knowledge. (13% - 35%)

*Q6. Why are teeth important?*

The correct answer to this question needed to include chewing or nutrition and looking good. Chewing/nutrition was not mentioned by any participant. Twenty two percent of the Treatment group improved in knowing the importance of looking good (22% - 44%) and 19% of the Control group also improved (40% - 59%)

*Q7. What sort of toothbrush do you use?*

This was a multiple-choice question with the preferred answer being “soft”. The Treatment group improved by 27 % using a soft toothbrush. (22% - 50%) while the control group stayed the same on 35%.

*Q8. Do you use fluoride toothpaste?*

Fluoride use was high in both groups and very little change was noted. There was 1% more in the Treatment group using fluoride toothpaste. (88- 89%) and 6% more in the Control group (94%-100%)

*Q9a. Do you use dental floss?*

In the Treatment group, 28% more people were using dental floss after training (39% – 67%) while in the Control group, 6% more were using dental floss. (47% - 53%)

*Q9b. How often do you floss?*

The Treatment group improved with 16% more flossing daily (29% - 45%). Flossing reduced in the control group (53%-47%)

*Q13. Is cleaning the teeth of someone else difficult?*

The Treatment group improved by 11% when indicating it was not difficult cleaning a client’s teeth (39% - 50%). The Control group stayed the same at 41%.

*Q17. How do you prevent your teeth from decaying?*

This was an open-ended question requiring three possible answers; eating a low sugar/healthy diet; brushing your teeth regularly and going to the dentist regularly.

The Treatment group who reported a healthy diet being important remained stable at 17% while the Control group worsened (53%-23%).

The Treatment group improved by 11% on indicating the need to brush your teeth (89% - 100%) while the Control group reduced (93-64%).

Both groups improved in their knowledge about going to the dentist with the Treatment group improving 11% (17-28%) and the Control group improving 26% (33-59%).

*Q18. How do you recognise tooth decay?*

There were three possible answers to this - a hole, pain, or bad breath.

The “hole” was the most frequent answer. 17% of the Treatment group (50%-67%) improved on this knowledge and so did 4% of the control group (67% - 71%).

*Q19. What causes gum disease?*

The complete answer required two points - not cleaning the teeth and the formation of plaque.

The Target group improved by 6% on not cleaning the teeth (50% - 56%) while the Control group stayed the same at 40%.

Only 5% of the Treatment group remembered about plaque (6% - 11%) and 6% of the Control group also improved in this knowledge (0% - 6%).

*Q20. How do you help prevent gum disease?*

This required two answers - brushing and flossing.

The Treatment group improved on brushing by 22% (56% - 78%) while the Control group stayed the same at 53%.

The Treatment group improved on flossing by 11%. (22% - 33%) and the Control group improved by 5% (13% - 18%)

*Q21. How would you know if a person had gum disease?*

This required two points - red gums and bleeding gums.

Twelve percent of the Treatment group improved knowing to look for red gums (5% - 17%). The control remained the same at 35%.

The Treatment group stayed the same on bleeding gums at 28% and the control group also stayed the same at 80%.

*Q22. Eating sweet things at mealtimes only will prevent decay.*

This required a true or false answer.

The Treatment group improved on their knowledge by 6% (83% - 89%) and the control group improved by 5% (71% - 76%)

### *Dental Examinations*

The results from the two dental examinations were compared. The Plaque Index (PI) scores for the nine residents showed very little change. This was largely due to the fact that nearly all the residents had significant tartar build up, some of which was quite severe and resulted in a higher PI reading. The lingual and palatal (inside) surfaces were extremely hard to clean in residents who had difficulty in opening his or her mouth. The buccal and occlusal (outside) surfaces were generally cleaned well. There was no evidence of caries in any of the residents. There were two residents who brushed their own teeth. Both had good techniques, but the main reasons for the high PI scores were tartar deposits and for one person, Dilantin hyperplasia.

Flossing was not really an option for most residents, as it was very difficult. This resulted in high interproximal PI scores.

The carers' PI scores were, if anything, a little higher than six months ago. Despite this, they demonstrated good cleaning techniques for both themselves and their residents. They were much more aware of cleaning gums as well as the teeth after the intervention.

## **Disussion**

Overall the results from this project were positive. There were however many difficulties doing this project and these will be outlined.

Initially it was hoped that by having two different types of intervention we might be able to find out the most useful components to assist carers in acquiring knowledge. However the lack of attendance at the training session made the numbers too small to compare. Thus the questionnaire results were taken from both target groups A and B, and renamed the Treatment group. Some from this group had only attended the training session, some had only a dental exam and some of whom had both. All training session participants were sent notes from the training session but it is not known whether these were read.

A major barrier in this project was contacting carers. This was difficult because of the rostering system as most carers were not rostered on the same shifts. Contact was usually made through the coordinators and communication did not flow on to the respective persons. This barrier was broken through numerous phone calls to the residential facilities and in obtaining personal contact details, so that staff could be contacted directly. Driving to the residential facilities was the only option for completion of the questionnaires and the dental examinations and this meant visiting the same facilities at least twice. An appointment system did not always work well. Although it was extremely time intensive ensuring all participants complete a before

and after questionnaire, only one of the participants had left the service, so staff turn-over was not an issue.

The carers were all part time workers and usually very busy. At first there was a lack of volunteers as not all the carers were made aware of project. Phone calls directly to the residential houses and explaining the project directly to staff produced positive results. Some carers complained about the poor wages and high expectations on their time.

The results from the questionnaire although positive were not statistically significant. The control group also showed improvement to a number of questions. This might have been due to a number of factors. Although several questions in the survey asked for information in different ways e.g multiple choice or open ended, open-ended questions were more poorly answered. This is possibly because open-ended required recall memory from the carers, while multiple choice gave them some cues. The final questionnaire was delivered six months after the basic interventions and this may have been too long to show an effect. Simons et al (2000) reported knowledge a week after training was high, but after a year, residents reported no changes in their oral care. The questionnaire may also have not been the most effective form of evaluating knowledge. Unfortunately, the participants were not asked to comment on the project at the end of the training to identify the most effective aspects of the interventions.

The dental exams indicated that general toothbrushing techniques had improved. The heavy tartar deposits, bruxism and an inability to open mouths easily were the main causative factors in the residents' susceptibility to periodontal disease.

Many of the residents need a general anaesthetic in order to clean their teeth well. The waiting list for this is very long and the tartar build up on the teeth between the dental visits could not clearly show the effects of improved tooth cleaning. There was also a lack of improvement in the carers teeth although there was no caries. Some carers said they had been going through stressful or busy times, hence there could have been a lack of motivation for oral hygiene.

It has been found that workplace support is crucial to the success of long term changes in the workplace. Attempts were made to inform the managers and supervisors about the importance of oral health but these were not followed up during the project. The importance of having gloves available for oral care was clearly stated after a training session in the previous year. It was still found however that some carers did not have gloves to perform the cleaning of their client's teeth.

The positive outcomes for this project has been the development of a training package and the inclusion of this into the Scope (VIC) training calendar. Hence, it will be available not only for staff at Scope (VIC) but others in the disability sector. The inclusion of the oral health procedure into the resident's procedure manual will also ensure regular dental visits and teeth cleaning. Currently, additional forms of training for carers are being developed e.g. a mentoring program. With mentoring, an experienced staff member assists a new staff member to learn the important practical aspects of resident care. It is hoped that an emphasis on oral health will be included.

Access to dentistry is still very difficult for these residents. It was hoped, as part of the project, that a mapping exercise of accessible dental surgeries would be undertaken. Unfortunately, this was not possible in the time available. A project worker at the dental hospital sent out a large survey to all dentists in Victoria inquiring into the oral health care of aged people. This project contributed two questions in order to include the issue of accessibility. However the response to this survey was very poor and there were few meaningful results. This problem needs to be addressed in the future.

## **Recommendations**

1. .To promote the importance of working with people with multiple disabilities to dentists and undergraduate students.
2. To establish and promote the area of both paediatric and adult disability in the dentistry field in order to increase available services.
3. To locate accessible dental surgeries so that people with multiple disabilities can receive a yearly scale and clean, as periodontal disease is a major concern
4. To establish a referral network with dentists willing to provide dental care for the residents. This may be one of the ways of establishing a regular preventative program.
5. To provide regular training on oral care to disability support workers and include it in other training courses such as mealtime assistance.
6. To provide hands on practical training through a mentorship program
7. To provide oral health awareness training at a supervisor and managerial level in the organisation.

Hilary Johnson, Stella Christini, Sabine Bommer, Katie Lyon

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