

## Utilization of Oral Hygiene Expanded Functions among Oral Hygienists in Public Health Services in South Africa

V. Lukhozi<sup>1</sup>, M. E. Hoque<sup>2</sup> and H. Heever<sup>1</sup>

<sup>1</sup>*Department of Public Health, School of Health Care Sciences, University of Limpopo (Medunsa Campus), South Africa*

<sup>2</sup>*Graduate School of Business and Leadership, University of KwaZulu-Natal (Westville Campus), South Africa*

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**ABSTRACT** The purpose of this cross-sectional study was to determine the utilization of oral hygiene expanded functions among all 20 oral hygienists who completed a self-administered questionnaire. More than a tenth (11%) of the oral hygienists were not employing the oral hygiene expanded functions. The administration of local anesthesia was the most practiced expanded function (70%). One-fifth (20%) of the public health facility never use oral health expanded functions and 30% mentioned that lack of equipment was the reason for the functions not being fully utilized at their work place. The majority of oral hygienists (85%) agreed that the oral hygiene expanded functions are important and valuable to the oral health profession. Almost half (45%) of the hygienist indicated that their own preferences and lack of confidence were the barriers to utilization of the extended functions. It was recognized that barriers and problems experienced by oral hygienists towards full implementation of the oral hygiene expanded functions needed to be addressed.

### INTRODUCTION

The profession of oral hygienist has evolved markedly since its inception in the early 20<sup>th</sup> century. Initially the oral hygienist was permitted to examine, scale, and polish teeth under the supervision of dentists and to give instruction in oral hygiene. Changing disease patterns in the last few decades have resulted in the need to review some broader issues in dental service delivery, including decisions on the appropriate utilization of dental personnel in the workforce, and the type of skills mix required by members of the dental team (Baltutis and Morgan 1998).

These changes have been slow and have varied significantly throughout various geographical locations, both nationally and internationally (Walsh 2003). The changes came in the form of additional functions or duties in the scope of oral hygiene, for example, administering of local anesthesia and placement of restorations. The additional functions are called dental hygiene expanded functions internationally and here in South Africa they are called oral hy-

giene expanded functions (Johnson 2003). In the mid-nineties the Oral Hygiene Association of South Africa, the Health Profession Council of South Africa and other interested parties began negotiations to expand the scope of the oral hygiene profession.

The regulations defining the new scope of oral hygiene were promulgated and approved in 1999 by the Ministry of Health of South Africa (Oral Hygiene Association of South Africa 1999). Certain functions were added to the scope of oral hygiene. The amendments to the Health Professions Act (Act No. 56 of 1974) enabled oral hygienists to perform the following extra functions: placement of glass ionomer cement on sensitive dentine or cervical abrasion lesions, placement of temporary fillings, temporary restorations, atraumatic restorative technique, temporary cementing of inlays, crowns and bridges, placement of soft linings in dentures as tissue conditioners, performing specified functions in orthodontics and administering of applicable local analgesia, taking of cytological smears, removal of orthodontic bands, etc., and placement of pre-activated orthodontic appliances (Oral Hygiene Association of South Africa 1999).

The scope of the oral hygiene profession in countries like Canada, Italy and Australia gradually changed due to the addition of these extra duties in the profession (Walsh 2003). In 1997 the dental hygienists in Maine, Italy were al-

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*Address for correspondence:*

Mr. M. E. Hoque, MSc  
Graduate School of Business and Leadership,  
University of KwaZulu-Natal (Westville Campus),  
South Africa

Telephone: +27 0312608690

E-mail: hoque@ukzn.ac.za, Muhammad.ehsanul@gmail.com

lowed to administer local anesthesia (Walsh 2003). South Africa is no exception to the changing trends in the scope of the profession. Traditionally in South Africa prior to 2000, taking of radiographs, placements of fissure sealants, scaling and polishing, root planning and dental education were among some of the procedures frequently performed by a hygienist.

### Objectives

Access to basic health services has increased dramatically since 1994 through the upgrading of existing clinics and building of new ones. In a study conducted in Soweto, South Africa, before and after the introduction of free primary dental health services, concluded that there was a statistically significant increase in casual patient attendance in the year after free primary dental health care was introduced with an increased dental operator load (Bhayat and Cleaton-Jones 2003). The problem was that the extra clinical expanded functions were not being utilized by the hygienists, especially in the public sector. If the challenges of non-utilization of the expanded functions can be identified in public dental settings; policy makers and management in oral health may come up with a feasible strategy whereby it becomes a norm for hygienist working in the public sector to implement expanded functions. This might contribute to reducing the long queues and backlogs experienced in dental clinics. Dentists will be able to concentrate on providing more difficult dental treatment. Thus the study aims to determine the utilization of oral hygiene expanded functions by oral hygienists in the public sector in Gauteng province of South Africa.

## METHODOLOGY

### Study Setting

The structure of the South African Government Department of Health exists within the context of one national government and nine provincial governments. Each province is further divided into districts. The Gauteng Provincial Health Department serves a geographical area of 17 010 square kilometres and renders health services to the total population that stood at 8.8 million in 2001. There are six health districts of Gauteng Provincial Health Department. In 2004,

Gauteng province had a total number of 360 clinics and 45 hospitals providing Primary Health Care services, including the provision of oral health services (Gauteng Department of Health 2005).

### Study Design, Study Population and Sample Size

This was a cross-sectional descriptive study. The study population was all the oral hygienist employed by the Gauteng Provincial Health Department and the South African National Defence Force (SANDF); and registered with the Health Profession Council of South Africa. The study population consisted of 20 oral hygienists.

### Ethical Consideration

Permission to conduct the study and ethical clearance was obtained from the Medunsa Research, Ethics and Publications Committee of University of Limpopo (Medunsa Campus). Another approval was sought from the Department of Health in Gauteng province. Informed written consent of participants was obtained. Confidentiality of participants was maintained at all times. To further maintain confidentiality no form of identifiers were in the questionnaires. Participation was voluntary and participants were informed that they could withdraw from the study at any stage of the interview if they so desired without any penalty.

### Data Collection Instruments and Data Collection

A structured and semi-structured questionnaire was used to collect data from all study participants. The questionnaire constituted of three sections. Section one included biographical data, sections two entails utilization of the expanded functions, while the last section focused on barriers of successful implementation.

The questionnaire was self-administered by the respondents. Data were collected during last two weeks of December, 2006 and the first two weeks of January, 2007. Prior to data collection, telephone calls were made to the oral hygienists to make appointments for data collection. Questionnaires were distributed to the respective hospitals and Primary Health Care facilities by the researcher. The available respondents filled

out the questionnaire and handed the completed questionnaire back to the researcher.

The questionnaire was pre-tested on colleagues working in academia (2 Oral hygienists) to identify gaps and modify the questionnaire appropriately. The questionnaire was then pilot tested using a representative sample of oral hygienists from tertiary hospitals in Gauteng province, and modified to ensure that it answered the research questions.

**Data Analysis**

Data were entered into a Microsoft Excel 2003 spreadsheet and imported to SPSS 17.0.1 for window version for analysis. The analysis of the results of participants' demographics and baseline outcome variables (both primary and secondary) were summarized using descriptive summary measures: expressed as mean (standard deviation) or median (minimum-maximum) for continuous variables and as a percent for categorical variables.

**RESULTS**

Almost all (95%) of the oral hygienists were female. Among the hygienists, 45% worked at the state hospitals, 30% worked for SANDF and the rest in primary clinics. Sixty five percent qualified before the year 2001. Oral hygienists saw, on average, 6 patients per day.

Among the respondent, 90% of the hygienists received training in oral hygiene expanded functions and were allowed to practice such expanded functions. Over a tenth of them (11%) were not practicing the expanded functions (Table 1) and all of them indicated personal preference as the cause of it.

The administration of local anesthesia was the most practiced (70%) expanded function,

**Table 1: Oral hygienists who received training in expanded functions and using OH expanded functions**

<i>Variables</i>	<i>No of hygienists</i>	<i>Percentage</i>
<i>Received OH Expanded Functions Training</i>		
Yes	18	90
No	2	10
<i>Utilizing OH Expanded Functions</i>		
Yes	15	83
No	2	11
Did not answer	1	6
<i>Reasons for Not Using OH Functions</i>		
Personal preference	2	100

followed by temporary fillings (62%). The least practiced functions were placement of glass ionomers and taking of cytological smears (5% respectively). Most hygienists (85%) were comfortable and satisfied with the execution of their expanded functions skill (Table 2).

One-fifth (20%) of the public health facility never used oral hygiene expanded functions. Majority of oral hygienists (85%) agreed that the oral hygiene expanded functions are important and valuable to the oral health profession (Table 3).

**Table 3: Classification of utilization rates in clinics and hospitals and importance of the expanded function (n = 20)**

<i>Classification</i>	<i>Percentage</i>
<i>Utilization of OH Expanded Function in Your Work Place</i>	
Fully	20
Moderately	30
Slightly	30
Never	20
<i>Oral Hygiene Expanded Functions are Important</i>	
Agreed	85
Not agreed	15

**Table 2: Individual OH expanded function utilized and comfort in execution of skill (n=20)**

<i>Expanded function</i>	<i>Practiced</i>	<i>Comfort in execution</i>	<i>Discomfort in execution</i>
Placement of glass ionomers	1	1	0
Temporary filling	13	12	1
Atraumatic restorative technique	12	12	0
Cementing of crowns, inlays	5	3	0
Tissue Conditioners	3	1	0
Administration of local anastasia	14	13	1
Cytological smears	1	1	0
Ceph tracing	5	5	0
Removal of bands, etc	3	3	0
Placement of pre-activated bands	3	1	0
Other	1	1	0

Almost a third (30%) mentioned that lack of equipment as a reason for the functions not being fully utilized at their work place. Over a third (40%) indicated their personal preference and lack of confidence as the reason for non-utilization of the expanded functions (Table 4). Almost half (45%) of the hygienists indicated that their own preference and lack of confidence was the barrier to utilization of the extended functions. Only a quarter (25%) mentioned lack of patient's need and lack of equipment as barriers.

**Table 4: Reasons for oral hygiene expanded not being fully utilized and barriers to utilization (n = 20)**

<i>Reasons</i>	<i>OH functions not being fully utilized (%)</i>	<i>Barriers to the implementation (%)</i>
Lack of delegation	25	30
Personal preference	25	20
Lack of confidence	15	25
Lack of patient needs	5	5
Lack of equipment	30	20

## DISCUSSION

This study determined the utilization of oral hygiene expanded functions by oral hygienists in the public sector in Gauteng province of South Africa. The most practiced expanded function was the administration of local anesthesia with 70% of hygienist reporting that they utilize this function. This result is similar to the study conducted in Arkansas where oral hygienists reported that they are using administration of local anesthesia and that it had a positive impact on scheduling; production; patient satisfaction and comfort; and quality of care (DeAngelis and Goral 2000).

The researchers found that 65% of hygienists do place temporary restorations as well as Atraumatic Restorative Technique (60%) on a regular basis. This is comparable to another study that found greater utilization of restorative function by dental hygienists than perceived (Cooper 1993). It was also determined from this study that fifty-six percent of respondents had at some point worked in a practice where a hygienist provided restorative dental services. On the other hand, a study by Brian and Cooper (1984) concluded that placing tem-

porary and amalgam restorations were rarely performed by the majority of graduates from Purdue University.

Regarding barriers, personal preferences and lack of confidence were the main reason for non-utilization of the expanded functions. Oral hygienists normally do not perform these expanded functions as no one supervises them. Also the dentists do not delegate these tasks to them. As a result of this, by not performing, they lose confidence. A study indicated that once oral hygienists perform oral hygiene expanded functions, there are reduced dental emergencies; the load of work done on one patient by the dentist is reduced; and the quality of oral health care is enhanced (Monajem 2006).

## CONCLUSION

The oral hygienists working in Gauteng public health services do utilize some of the oral hygiene expanded functions. The most practiced function was administration of local anesthesia. Some of the public health facility never used oral health expanded functions and some lacked equipment's. The majority of oral hygienists agreed that the oral hygiene expanded functions are important and valuable to the oral health profession but almost half of the hygienist indicated that their own preference and lack of confidence was the barrier for utilization of the extended functions.

## RECOMMENDATIONS

Barriers and problems experienced by oral hygienists towards full implementation of the oral hygiene expanded functions need to be addressed as this could lead to better and improved oral health service rendering. Since the dental load is increasing, there is great need for existing oral hygiene services to be utilized effectively and efficiently.

## LIMITATIONS OF THE STUDY

The sample was selected from one province only. The results of the study may not be generalised to other provinces, which may provide a superior or inferior service.

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