INFLUENCE OF VOLUME OF DENTAL TREATMENT ON SELF REPORTED ORAL HEALTH OF PATIENTS VISITING UNIVERSITY COLLEGE OF DENTISTRY LAHORE

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ABSTRACT

The aim of this study was to assess the influence of volume of dental treatment on self reported oral health of patients visiting University College of Dentistry Hospital, Lahore. A cross sectional study of 660 participants was conducted in the Department of Periodontology, University of Lahore from March 2011 to March 2012. An oral examination conducted by calibrated examiners was followed by administering a self complete questionnaire i.e. global oral health transition (GOHT) statement to indicate change in oral health related quality of life (OHRQoL). A statistically significant greater proportion of people who had received six or more dental services in the past one year had a self-reported improvement in oral health than people who received less or no dental services (p=<0.01). Of the putative confounders, the presence of oral disease at baseline (p=<0.01), having a treatment need (p<0.01) usually visiting a dentist with a problem (p<0.05) and having a lot of difficulty paying Rs 1000($10) dental bill (p=<0.01) were significantly associated with oral health staying the same or worsening. Having six or more dental services was significantly associated with greater self-reported improvement in oral health than less than six dental services. Results provide important information to politicians, policy makers and administrators for allocating necessary resources to improve population OHRQoL.

Key words: Dental treatment volume, oral health related quality of life (OHRQoL).

INTRODUCTION

Clinical indicators do not measure the impact of the disease process on the person’s well being and patient’s assessment of their oral health is often markedly different to the opinion of health care professionals. Self-rated health (SRH) is a useful summary measure of people’s general health and was found to predict future health outcomes. Self-rated oral health (SROH) is a similarly useful summary measure of people’s oral health. Both are related to quality of life, especially at old age. Approximately 160 million work hours a year are lost due to oral disorders. Self-reported symptoms, oral health status, and perceived treatment needs are important and measurable dimensions of oral health-related quality of life. Amongst the most widely used self-reported conditions missing teeth, untreated decay, periodontal attachment loss and third molar symptoms have been found to be associated with increasing levels of adverse impact on well-being influencing leisure, social and intellectual functioning, social interaction and home tasks.

Given that people spend hard earned money and undergo inconvenience for dental care, such as time away from their place of employment, it is tempting to
infer that dental treatment does some thing that improves their oral health. A way to gain a perspective on the impact of dental care from the patients’ perspective is by their self-reported oral health (SROH). Self-report data can also be used to assess and monitor improvements in the oral health status of society. Individuals who perceive better oral health have a higher frequency of seeking preventive dental care. Limited work has been done to check if a greater volume of dental treatment would improve SROH more than a lesser volume of dental treatment. Locker found that an older adult Canadian population whose SROH improved had made significantly more dental visits and received significantly more dental services than those who did not. There is a need for research investigating the association between the volume of dental care and SROH.

METHODOLOGY

A cross sectional study comprising 660 participants (330 females and 330 males) who had undergone dental treatment during the past one year was conducted in the Department of Periodontology, University of Lahore from March 2011 to March 2012. An oral examination was conducted by calibrated examiners of each participant following which self-reported change in oral health was obtained using a self-complete questionnaire.

A modification of the global health statement i.e. Global Oral Health Transition (GOHT) statement was used to indicate change in oral health related quality of life. The global oral health transition statement measure consisted of the following statement and response categories: “Over the past year would you say your dental health has (1) Worsened a lot (2) Worsened a little (3) Stayed the same (4) Improved a little (5) Improved a lot. For this study, the responses were dichotomised into either “Same or Worsened” which included the responses of “Stayed the same”, “Worsened a lot” and “Worsened a little”, or “Improved” with the responses of “Improved a little” and “Improved a lot”.

The volume of dental services was defined as the total number of dental services received by a subject over the past 12 months. Subjects who had visited any healthcare facility for dental check up or treatment were classified as having made a dental visit. Those study subjects who had not attended a dentist were allocated zero dental services. Of those participants who visited a dentist, dental service volume over the past twelve months was dichotomised as either less than six procedures or six procedures or more. Six procedures or more were considered to be more than would be normally received during a regular dental visit. Study participants were asked eight questions on treatment need: if they had a need for extractions, fillings, a scale and clean, dentures, a dental check-up, gum treatment, a dental crown or bridge, or any other treatment. Participants who answered that they need a check-up or a scale and clean, were considered to have a dental treatment need. Study participants were defined as having an oral clinical disease if they had at least one decayed tooth or if they had at least one tooth with a periodontal pocket depth of 4 mm or more.

Socioeconomic status was measured by their educational status i.e. (Matric, FA/FSc/etc, BA/BSc/etc or above), Trade/Diploma/Certificate, (Middle or under and no school education), by the level of annual household income (less than $900, $900 to 2000 and above), by the occupation (manager/professional/paraprofessional, trades/clerical and worker/labourer), and by their employment status (employed or unemployed). People in part-time employment were classified as employed. Access to dental care was measured by whether the study participants had a lot of difficulty in paying Rs 1000 ($10) dental bill or whether they had avoided or delayed dental treatment because of cost.

Bivariate analysis was undertaken to estimate crude effects of dental service volume on self-reported change in oral health and to identify putative confounders. Variables that were significantly associated (p<0.05) with both the dependent and independent variables were defined as confounders.

RESULTS

Out of 660 participants, 42% were employed and visited a dentist for a check-up every 12 months. Thirty eight percent of the participants had no or only a little difficulty in paying Rs 1000 ($10) dental bill and 50% had avoided or delayed dental treatment due to cost. The most common types of dental care received were extractions, fillings and scalings. About half of the participants felt they had a treatment need other
than a check-up or a scale and clean (48.4%, 39.1–44.7). Almost half (51%) of the examined study participants had one or more dental diseases.

Table 1 shows the distribution of study subjects according to the occupation in form of percentages along with the 95% confidence intervals.

### Table 1: Distribution of Study Subjects According to Occupation

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Self Complete Questionnaire n = 660% (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manager/Administration</td>
<td>11.7% (5.3,18.2)</td>
</tr>
<tr>
<td>Professional</td>
<td>22.6% (13.0,32.3)</td>
</tr>
<tr>
<td>Para-Professional</td>
<td>5.7% (2.0,9.4)</td>
</tr>
<tr>
<td>Tradesperson</td>
<td>11.9% (4.8,19.2)</td>
</tr>
<tr>
<td>Clerical</td>
<td>26.0% (17.9,34.0)</td>
</tr>
<tr>
<td>Worker or labourer</td>
<td>22.1% (13.7,30.3)</td>
</tr>
</tbody>
</table>

Table 2 reports bivariate relationship between the dichotomised global oral health transition statement with volume of dental services and putative confounders. It shows that a statistically significant greater proportion of people who had received six or more dental services had a self-reported improvement in oral health than people who received less or no dental services (p<0.01). Of the putative confounders, the presence of oral disease at baseline (p<=0.01), having a treatment need (p<0.01) usually reason for visiting a dentist with a problem (p<0.05) and having a lot of difficulty paying Rs 1000 dental bill (p<=0.01) were significantly associated with oral health staying the same or worsening.

### DISCUSSION

The aim of this study was to assess the association between the volume of dental treatment and improvement in self reported oral health. The results of the study confirm that greater volume of dental treatment resulted in greater improvement in self reported oral health. This is coherent with findings of Locker in Canadian population where he found that an increasing dental service volume was associated with improving oral health related quality of life. However, this study found that only higher levels of service volume (i.e. 6 or more services) were associated with improved oral health related quality of life. The results also reveal that usually visiting a dentist for a check-up and not a dental problem was associated with a better self reported oral health which is consistent with previous studies by Kressin et al in the United States where they found that problem-based dental visiting was associated with a poorer oral health related quality of life and by Slade et al where they compared the oral health related quality of life of Australians, United States citizens and Canadian adults aged above 60years and found that people visiting a dentist for routine checkups had a better self reported oral health than those seeking treatments. Results are also in line with other previous studies which found that good self reported oral health was strongly associated with regular dental attendance.

An important part of maintaining good oral health is the use of appropriate dental services. Interestingly the results of this study reveal that those who had made use of dental services in the past one year for existing oral disease, rated their oral health as poor. This finding is similar to other studies which suggest that preventive dental visits are associated with good self-rating of oral health, while restorative or symptomatic visits are associated with poor self-rating of oral health. The results are also consistent with a previous study done by Chen and Hunter in New Zealand where they reported that oral health problems such as tooth sensitivity, bleeding gums and bad breath were significantly less likely to self-rate their oral health as good.

Results of this study also suggest that a current treatment need due to existing dental problem was associated with poor rating of self rated oral health. This is similar to previous study by Locker in adult Canadian population and Seremidi et al who found that adults who rated their oral health as “poor” were more likely to report having a current oral problem and perceived treatment needs.

Financial barriers can influence how regularly adults seek dental care and, consequently, the type of treatment they receive. To assess whether cost was a barrier to accessing dental care respondents were asked if they had avoided or delayed dental care due to cost. Results showed significant value in this study.
The possible limitations of the present study were that the randomised control trial (RCT) is the “gold standard” of study design. However, a randomised control trial was not feasible for this study for ethical reasons and since a self reported format was adopted therefore an observational epidemiological study design had to be adopted. Another limitation was that this study did not include clinical measures and examinations by dentists, and therefore the results pertain only to the associations found between self-reports of oral health. Also a self-perceived need for treatment was measured by asking whether or not the respondent had a need for dental treatment and oral functional limitation related to oral health problems was not measured. Thus, further studies are needed to evaluate the relationships between the clinical measures and self-reported oral health measures. Studies using a combined measure of perceived need of any dental care may provide more detailed information about the relationship among self reported oral health, self-perceived need for treatment and oral functional limitation. Research is needed to assess the validity and reproducibility of self-reported oral health questionnaire.

The proposals for policy development are that oral health programs and services should not only target treatments for dental disease, but should also include component that determine the subjective evaluation of oral health conditions which are affected by cultural health beliefs, socio-demographic and behavioral factors. The results of this study could provide helpful
information for oral health professionals to develop national oral health policy. Oral health education and promotion program is a good starting point for increasing oral health awareness and knowledge about the associations between oral and general health as well as improving regular dental attendance.

CONCLUSION

Having six or more dental services was significantly associated with a greater self-reported improvement in oral health than have less than six dental services. The difference of the effect of differing volumes of dental service on oral health related quality of life is important information for politicians, policy makers and administrators when allocating limited valuable resources to improve population oral health related quality of life.

REFERENCES