

Dental care provision in private clinics: an introductory explanation for dental manpower estimation and dentistry educational needs assessment.

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ABSTRACT

Background: Having an estimate of needed workforce is necessary for workforce planning. Time and work study is a means to provide basic data in this regard.

Purpose: To determine delivery time for common type of dental care, dentists' working time in Tehran.

Methods: A cross-sectional study was conducted among the general dentists who work in private clinics in Tehran. 100 dentists were chosen randomly. They filled out a self-administered questionnaire. In order to determine the time spent on each service by the dentists, the median was calculated as the central index.

Results: The list of dental treatments was determined by median time to deliver each of them. The useful working time was 90000 minutes for each dentist during a year.

Conclusion: The results of this study can be used in estimating dental workforce and reforming dental educational programs.

Key words: WORKFORCE, DENTAL SERVICES, DENTAL CARE, DELIVERY TIME, EDUCATIONAL NEEDS ASSESSMENT.

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Introduction

Solutions to improve Iranian population oral health have been controversial. Some believe that increasing the number of dentists is helpful to the condition. Training a dentist requires huge resources. Regarding limitations in resources, training appropriate and highly qualified dentists should be carefully planned. Therefore, enough evidence is needed for making due decision on human workforce planning.

To estimate workforce, there are various methods and models (1,2). Models for estimation the need for expert workforce are taking two main approaches as adopted by WHO (3,4): demand based approach (1,2), and need based approach (1,2). It is proved that calculating models based on this approaches are fitted for workforce estimation in developing countries such as Iran. These models require that the researcher determine the time spent for each service and mean annual effective practice time of service providers.

This survey indicates the above information about dentists and the percentage of general practitioners involved in each service.

The result is also likely to help in improving the quality of educational programs in the faculties of dentistry.

Marital and Methods

A cross sectional study was conducted on 100 dentists working at private clinics in Tehran. Sample size estimation was based on a pilot study. Through simple random sampling, general practitioners working at private clinics in Tehran were selected.

Data gathering tool was a self-administered questionnaire, supplemented with a guideline on how to fill it out in the questionnaire. We asked about following items:

- 1- Type of services they provide for patients in their private clinics.

TABLE 1. Type of services and relative frequency of their provision by general dentists, median time spent for, and frequency of demand in 100 residents per year.

Type of Service	Relative frequency of services provided by general practitioners	Median time spent for each service (minute)	Frequency of annually demand in 100 residents *
Filling	%97	30	10.3
Extraction	%89	15	14.4
Scaling and polishing	%88	30	3.0
Single root canal therapy	%86	30	4.74
Fixed prosthodontics	%76	60	0.54
Removable prosthodontics	%73	60	0.14
Three roots canal therapy	%73	60	4.74
Emergency	%70	30	2.82
Preventive care	%55	28	0.08
oral surgery	%28	60	0.3
Removable orthodontics	%21	270	0.22
Gingivectomy	%18	120	0.68
Fixed orthodontics	%3	120	0.22

* source: reference No:3

2- Mean time they spend to provide above services.

3-Total weekly time they deliver care in their clinics.

The services inquired about in the questionnaire had been extracted from the curricula of dentistry in dental schools; including filling, extraction, root canal therapy (RCT/ single roots and molars), fixed and removable prosthodontics, scaling and polishing, gingivectomy, fixed and removable orthodontics, preventive care (fluoride, therapy, fissure sealant, oral health education), emergencies (minor surgery, splint, abscess that treatment, drug therapy, biopsy, pulpotomy), oral surgery (implant, impacted tooth), etc.

As the range of time spent for some services was very wide, we considered median as central index. Besides, for most services, the median and mode were similar.

It is worth noting that we considered total time spent to provide one service for a patient, for instance, 10 minutes for an extraction and six hours for preparing a full removable denture.

Results

As shown in table 1, filling is the most frequent service that general dentists provide and the least frequent one is fixed orthodontics.

More than 80% of general practitioners provide following services in their clinics: Filling (97%),

extraction (89%), scaling and polishing (88%), and single root canal therapy (86%).

The services provided by less than 20% of dentists were: gingivectomy (18%), orthodontics preventive care including space maintainer and space regainer (17%), and fixed orthodontics (3%).

This study reveals that the average effective time each general dentist delivers services (therapeutic, not educational and research services) in his/her clinic is 6 hours per day and 5 days per week. Excluding the annual vacations the effective practice time of each general practitioner is estimated to be 90000 minutes per year.

Discussion

The results of this study could be used to estimate dental workforce required in Iran. Authorities and policy makers can use our findings for workforce planning purposes.

Using the result of present study, the educational need of dental program can be determined. Planning based on educational needs, improves the program of dentistry in dental schools in Iran.

This study shows that general practitioners equally involve in all type of services. According to a survey on utility and demand of dental health care by people, the majority of people's demand is provided by general dentists in comparison with other dental health care providers.

Table 1 shows that some items that are demanded by less than 1 in 100 people, are provided by a small number of dentists. But, this is not true in all situations. In spite of less than 1 per 100 people demand for the fixed and removable dentures, more than 70% of dentists provide the service in their clinics. This might be due to two reasons:

- 1- General practitioner's skills in this type of care
- 2- High income of these cares.

Dental education programs could be revised based on tasks expected from a dentists that can be defined through task definition studies. Our findings and further such studies can be of great help in this regard.

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