The Working Practices and Job Satisfaction of Dental Hygienists in New Zealand

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Abstract

Objectives: *To describe the current working practices and level of job satisfaction of dental hygienists in New Zealand.* ***Methods:*** *Postal survey of all dental hygienists on the New Zealand Dental Council's database. An initial mailing was followed by a 3-week follow-up. Information was sought on respondents' demographic characteristics, current occupation and working practice, history of career breaks, continuing education and career satisfaction.* ***Results:*** *213 responses were received (73.2%); 90.6% were currently working as hygienists, mostly in private practice. Many worked part time, particularly those with children. Almost 50% of respondents had taken at least one career break, most frequently for childrearing. The mean time taken in career breaks was 3.6 years. Overall, dental hygienists reported high levels of satisfaction with their careers and their income. Older hygienists had higher career satisfaction scores. Most respondents were actively involved in continuing education. Almost half were interested in expanding the range of procedures they perform. Over one-third plan to retire within the next 10 years.* ***Conclusions:*** *While many hygienists take career breaks and work part time, most have a high level of career satisfaction, actively participate in continuing education, and are satisfied with their remuneration.*

Key Words: Dental auxiliaries, dental hygienists, career satisfaction, workforce

Introduction

Although dental hygiene tasks have been undertaken in New Zealand for some years, the providers have not been (until recently) officially designated as dental hygienists; rather they have been categorized as unregistered "Section 11 workers," practicing under Section 11 of the 1988 Dental Act. They were permitted to: remove deposits from the teeth; apply materials to the teeth for the purpose of preventing disease; give advice on oral health; and carry out other similar work. Those practicing thus included not only trained dental hygienists but also former dental therapists with limited (if any) dental hygiene training, and untrained persons (1).

In 2004, the Health Practitioners Competence Assurance Act superseded the 1988 Dental Act. Under that new framework, dental hygienists are required to register with the Dental Council of New Zealand. In order to do so, applicants must submit evidence of an appropriate qualification. While the Dental Council does not define "dental hygienist", it promulgates a "Scope of Practice" whereby dental hygienists are involved in providing oral health education and preventing oral diseases. Their tasks usually relate to the prevention and nonsurgical treatment of periodontal diseases, with clinical guidance required to be provided by a dentist. Dental auxiliaries without hygiene qualifications are accommodated under a "Scope of Dental Auxiliary Practice" which allows them 5 years to gain appropriate qualifications. A "Scope of Orthodontic Auxiliary Practice" is also available. In this paper, the term "dental hygienist" also includes these other auxiliaries.

Training for dental hygienists in New Zealand has been controversial and varied (1). The first course (a 1-year, Army-based training program) commenced in 1974. In 1990, a short-lived 2-week course was established to teach dental hygiene procedures to school dental nurses, enabling them to practice as "Section 11" workers (1). It was succeeded by a 15-month Polytechnic course (the Certificate in Dental Hygiene), producing its first graduates in 1995. This was superseded by a 2-year Diploma of Dental Hygiene at the University of Otago, which now offers either a diploma or a degree in dental hygiene.

There are concerns about how best to ensure that New Zealanders receive appropriate, accessible and affordable dental services. Two of the options being explored include expanding the roles of dental hygienists and therapists, and training new auxiliaries to undertake both types of tasks. Information about the existing dental workforce (including each professional group's role, career patterns and job satisfaction) is essential in order to plan effectively (2). To date, dental hygienists have been difficult to assess because almost all work in the private sector (many in several practices), and they lacked a registering body until 2004. There is minimal current information on their workforce retention, daily working circumstances or career satisfaction. The new Dental Council database offers the first opportunity to contact all dental hygienists and obtain such information.

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The aim of this study was to investigate working patterns, continuing education and career satisfaction among New Zealand dental hygienists.

Methods

The Otago University Ethics Committee approved the study. A self-complete questionnaire (and reply-paid return envelope) was sent to all dental hygienists on the Dental Council database (N = 316). Questions sought information on respondents' demographic characteristics, current occupation and working practice, previous career breaks (defined as any period taken off work longer than 6 weeks), continuing education and career satisfaction. A follow-up letter and duplicate questionnaire were sent to non-respondents after 3 weeks.

Using a previously validated career satisfaction scale (3-5), respondents were asked to rate their satisfaction with their work life. Response options were 1 to 10, where 1 = minimum satisfaction and 10 = maximum satisfaction. The scale was also modified to measure income satisfaction.

To examine differences by age, a median split was used to divide respondents into those aged <36 years and those aged 36+. Chi-square tests were used for testing the statistical significance of differences between proportions, while means were compared using the independent samples t-test. The level of significance was set at $P<0.05$. The responses received were analyzed using the Statistical Package for the Social Sciences (SPSS; Version 11.0 for Mac OS X, SPSS Inc., Chicago, Il).

Results

Respondent characteristics. Of the 316 questionnaires posted, 25 were returned unopened. Completed questionnaires were received from 213 hygienists, giving an effective response rate of 73.2% (completion rate 67.4%). Some respondents did not answer all questions. Ninety-five percent (95.3%) were females, and respondents' average age was 37.7 years (SD=8.6, median 36, range 21-61 years). On average, males were younger than females (mean age 33.4 and 37.9 respectively). Respondents were permitted to self-identify with more than one ethnic group: 72.8% were New Zealand European; 5.6% Maori; 0.5% Pacific Island; and 25.4% identified as "Other." When asked if they currently had childcare responsibilities, 44.6% of hygienists stated that they did, and those aged 36+ were more likely than younger respondents to report these (50.9% and 37.1% respectively; $P<0.05$).

Table 1
Dental qualifications held by respondents

Qualification	Percent (n=213)
Diploma in Dental Hygiene	39.4
Certificate in Dental Hygiene	13.1
Army Training	6.6
Bachelor of Dental Surgery	6.6
Dental therapy qualification plus periodontal training	4.7
Degree in Dental Hygiene	1.9
Other/Not stated	16.0
No formal training/qualification	11.7

Table 2
Working circumstances of dental hygienists currently employed as hygienists by age group: Percentages or Mean (SD)

	Age group		
	Up to 35 years	36+ years	All combined
	(n=89)	(n=86)	(n=185)
Current employer[a]	%	%	%
Private dental practitioner	83.1	76.0	79.4
Orthodontist	22.4	22.9	22.7
Another dental specialist	9.0	7.3	8.1
Hospital dental department	0.0	2.1	1.1
Teaching institution	2.2	2.1	2.2
Other	1.1	7.3	4.3
	(n=89)	(n=100)	(n=189)
Current role(s) [a]	%	%	%
Dental hygienist	83.1	79.0	81.0
Dental assistant	13.5	14.0	13.8
Practice manager	3.4	9.0	6.3
Tutor/lecturer	2.2	3.0	2.6
Dental sales representative	1.1	0.0	0.5
Orthodontic auxiliary	11.2	15.0	13.2
Other	3.4	8.0	5.8
Hours worked per week			
Mean (sd)	30.4 (9.8)	30.4 (9.4)	30.2 (9.5)
Number of practices	%	%	%
One	58.4	65.3	62.1
Two or more	41.6	34.7	37.9
Prefer to work [b]	%	%	%
Fewer hours	13.6	29.4	22.1
The same number of hours	70.5	60.8	65.3
More hours	15.9	9.8	12.6
Have a dental assistant	%	%	%
Usually/Sometimes	24.1	31.7	28.2
Rarely/Never	75.9	68.3	71.8
Holding a job of another type	%	%	%
Yes	15.7	22.5	19.4
No	84.3	77.5	80.6

[a] Some hygienists had more than one employer and/or worked in more than one role
[b] $p<0.05$

Fewer than half of respondents (42.7%) had trained in New Zealand; 10.3% had trained in the United Kingdom, 2.7% in South Africa, 1.4% in the United States, and 9% in another country, while 35.2% did not specify. The mean time since qualification was 8.8 years (SD=7.6).

Most respondents held a formal vocational qualification (12 had more than 1). There was considerable variation in the qualifications held (Table 1). Of the New Zealand trained dental hygienists (n=91), 60.4% had a Diploma in Dental Hygiene, while 22.0% had a Certificate in Dental Hygiene. All of the army-trained hygienists had trained in New Zealand, while all of those who had previously graduated as a dentist (but were currently working in New Zealand as a hygienist) had done so overseas.

Current working practice. Of those not currently practicing (n=20), 70.0% had been on a career break for at least 12 months, and 20.0% had never worked as dental hygienists. Thirty-five percent of those not currently practicing were in paid employment, with 25.0% working in the dental field. The most common career break reasons of those not currently working were child rearing (25.0%) and study (10.0%). Over one third (35.0%) of those on a career break planned to return to dental hygiene practice.

The remaining 193 respondents were employed as dental hygienists. Data on their working situations by age are presented in Table 2. Most were employed by private dentists, worked as dental hygienists, and were not supported by a chairside assistant. The only significant association was a preference of more older than younger hygienists to work fewer hours per week than they were currently. Over one-third (37.2%) worked fewer than 30 hours per week.

A greater proportion (48.9%) of those with childcare responsibilities reported working part time (< 30 hours) than those without such responsibilities (27.2%; $p<0.05$).

Data on respondents' regular clinical duties by age are presented in Table 3. The only significant association was that more (59.6%) hygienists in the older age group took radiographs regularly than those who were younger (37.2%). The great majority of procedures reported were non-invasive and reversible in nature. Almost all provided dental health education.

Table 3
Percentage of dental hygienists regularly performing duties in their working practice by age group

	Age group		
	Up to 35 years n=99	36+ years n=112	All Combined n=211
Preventive procedures	%	%	%
Dental health education	91.8	93.1	92.5
Dietary counseling	50.0	59.4	55.0
Fluoride application	39.3	36.0	37.6
Fissure sealants	9.9	16.0	13.0
Operative procedures	%	%	%
Examination	48.8	48.3	48.6
Taking radiographs[a]	37.2	59.6	48.9
Reading radiographs	61.4	70.6	66.1
Local anesthetic	0.0	2.4	1.2
Temporary dressings	9.6	7.1	8.3
Permanent restorations	1.2	1.2	1.2
Polishing of restorations	27.1	33.7	30.4
Taking impressions	54.1	60.4	57.5
Placing or removing orthodontic bands/wires	24.4	23.1	23.7
Suture/pack removal	9.6	10.6	10.1
Curettage	37.8	47.1	42.6
Other emergency treatment	14.6	14.3	14.5
Other activities	%	%	%
Peer support/review	31.7	18.4	25.3
Clinical supervision	6.7	7.8	7.2
Clinical teaching	2.7	4.1	3.4
Team co-ordination	23.5	22.6	23.0

[a] $p<0.05$

A higher proportion of overseas-trained than New Zealand-trained hygienists reported undertaking dietary counseling regularly (69.8% and 46.5% respectively, $p<0.05$). Conversely, a higher proportion of New Zealand than overseas-trained hygienists reported that they regularly undertook team management/coordination (27.2% and 10.0% respectively, $p<0.05$).

Career breaks. One or more career breaks had been taken by 46.5% of the 185 who provided this information; 27.6% had taken 2 or more. The most common reason was child rearing/maternity leave (58.1%), with a mean time of 36.9 months. A further 33.7% had taken an extended break for holiday or travel (mean time 17.3 months); 8.1% had taken a break due to personal illness (mean time 6.5 months). The mean total career-break time was 42.7 months (SD 70.8).

Continuing education. The *New Zealand Dental Journal* was the most popular journal, with 46.5% having read it in the previous 3 months. The *New Zealand Dental Hygienists Association Newsletter* had been read by 13.1%, other dental hygiene/auxiliary journals by 25.3%, and periodontal journals by 22.5% respondents. Over two-fifths of the sample (42.3%) met the New Zealand Dental Council continuing education target of 20 hours per year.

Job satisfaction. Overseas-trained hygienists planned to retire earlier than those trained in New Zealand ($p<0.05$). Data relating to career satisfaction, intentions and interests of dental hygienists by age are presented in Table 4. Older hygienists planned to retire sooner than their younger colleagues ($p=0.01$).

Table 4
Dental hygienists' career satisfaction, interests and intentions by age group: Percentages or Mean (SD)

	Age group		
	Up to 35 years n = 99	36+ years n = 112	All combined n = 211
Feel a valued part of dental community	%	%	%
Always/Mostly	78.2	72.8	75.3
Sometimes/Seldom/Never	21.8	27.2	24.7
Interested in expanding range of procedures	%	%	%
Yes/Maybe	85.1	77.8	81.2
No	14.9	22.2	18.8
Would choose to pursue dental hygiene again	%	%	%
Yes	81.0	76.0	78.2
No	19.0	24.0	21.8
Intend to retire from dental hygiene[b]	%	%	%
Less than 10 years	33.3	43.6	39.2
10 to 19 years	36.1	44.7	41.0
20 years and over	30.6	11.7	19.9
Mean job satisfaction score (sd)[ac]	7.7 (1.6)	8.3 (1.2)	8.0 (1.4)
Mean income satisfaction score (sd)	6.7 (2.3)	7.1 (1.9)	6.9 (2.1)

[a] $p<0.05$
[b] $p=0.01$
[c]=scale one to ten

Discussion

This study reports on a survey of the working patterns and job satisfaction of New Zealand dental hygienists. The 73.2% response rate was satisfactory (6); it compares favorably with some recent surveys of dental auxiliaries (7, 8, 9), but was slightly lower than some others (2, 10). While it is possible that non-responders differed systematically from responders, there are no data to determine this.

While the first New Zealand dental hygienists were army-trained, and approximately half were male (11), that dental hygienist workforce is now predominantly female, and more closely resembles the gender profile in other countries (4,12). This study's mean hygienist age is very similar to the United Kingdom's 38 years (4) but is somewhat higher than the 30 years previously reported in New Zealand (13). Few respondents entered the profession directly from high school; the mean age of 37.7 years and mean time since qualification of 8.8 years indicate an average age of 28.9 at the time of qualification. It is likely that, as in other countries (4), many individuals enter training after working as dental assistants. It would be of interest to investigate previous employment histories in future studies of dental hygienists.

The number of dental hygienists self-identifying as Maori or Pacific Islanders is low and may reduce the opportunities to address reductions in health inequalities in these populations. The proportion of New Zealand-trained dental hygienists was less than reported earlier, indicating that the projected increase in that proportion (13) has not taken place. However, this finding should be interpreted with caution, as many respondents did not state a country of qualification, and some did not report having a relevant qualification. The hygienists currently practicing in New Zealand are, on average, more experienced than those surveyed earlier (mean 8.8 and 5.5 years respectively).

Consistent with the findings of previous studies, both in New Zealand (7,13) and overseas (2,4,8,12), a large proportion of the workforce works part-time. However, the mean number of hours worked per week by New Zealand hygienists has doubled, from 15.2 hours in 1996 (13) to 30.4 hours. Accordingly, fewer hygienists were looking to increase their working hours now than previously (13). As reported elsewhere (4), hygienists with childcare responsibilities were more likely to report working part time. As with overseas studies, many hygienists work in more than one practice (2,4,12), but more in the current study reported working in only one practice than previously reported in New Zealand (7,13). A similar trend has been reported in Scotland (8). This may reflect an increasing demand for hygiene services, meaning that individuals can achieve enough hours of employment in one office. It could also relate to an anecdotal increase in the number of group dental practices, allowing a hygienist to treat patients of several dentists in one setting. It would be of interest to seek more detailed information regarding practice settings in future studies.

It has been suggested that the range of duties performed by many dental hygienists is limited (14). This study indicates that there is potential for dental hygienists to diversify in the tasks they perform. For example, only 13% reported placing fissure sealants regularly. This is lower than the 20% of recent graduates reported to place fissure sealants daily (7) but is higher than the 5% reported for a larger sample of New Zealand hygienists two decades ago (13). Fissure sealant provision may be related to a number of factors such as the training of the workers, demand for fissure sealing versus other procedures, patient age (with more sealants placed in younger patients) and the payment system. For example, recent changes in the funding of dental services for adolescent patients from a fee-for-service to a capitation-based system may result in a decrease in the provision of fissure sealants in New Zealand. In the United Kingdom, nearly 70% of dental hygienists regularly place sealants (4).

Another example is providing local anesthetic; this was performed regularly by only 1.2% of dental hy-

gienists in this study, compared to 63% in the United Kingdom (4). Dental hygienists have only been legally allowed to administer local anesthetic in New Zealand since September 2004. Orlando and Pack (13) reported that 70% of hygienists felt restricted by not being able to do so. The 49% of respondents who reported taking radiographs regularly is much greater than reported previously (4,7,13). Radiography is now included in the training of New Zealand hygienists. That many in the current study reported regularly taking impressions and placing/removing orthodontic bands or wires is most likely due to the inclusion of orthodontic auxiliaries in the sample (based on list available) in addition to qualified dental hygienists. Such activities are undertaken much less frequently by dental hygienists in the United Kingdom (4). Dietary counseling was more commonly reported than in a previous New Zealand study (13), while the frequency of fluoride application was similar.

There were some differences between locally trained hygienists and those trained overseas with respect to their regular duties. That more overseas-trained than New Zealand-trained dental hygienists undertake dietary counseling regularly may reflect a difference in training-program emphasis. Conversely, a higher proportion of New Zealand-trained than overseas-trained dental hygienists reported regularly undertaking team management. The reasons for this are unclear.

Over 80% of respondents indicated a desire to expand the range of procedures they perform. Similar interest in broadening the scope of practice has been observed in other studies (8,12,13). In recent years, dental hygiene training in New Zealand has become more comprehensive. Maximizing the scope of practice has been reported to provide greater task diversity for hygienists, increasing their career satisfaction (14).

As in other studies (2,4,8), career breaks were common, with almost 60% of respondents having taken at least one. The mean duration of 3.6 years (and median of 1.4 years) was considerably longer than the mean of 30 months (and median of 11 months) reported for the United Kingdom (4). In both studies, there was considerable variation in career-break length. Consistent with other reports (2,4,12), the most commonly cited reason for taking a career break was bearing and raising children.

A strong commitment to continuing education was evident in this study. Previous studies have also reported this (4,7,12), despite concerns about the availability of continuing education (2). It is expected that the requirements for annual registration will lead to an increased availability of (and involvement in) continuing education courses in New Zealand.

High levels of career satisfaction among dental hygienists have been reported elsewhere (2, 4, 10, 17), and those seen in this study were similar. That income satisfaction scores were higher than previously reported in New Zealand (13) may reflect an increasing demand for dental hygienists (enabling them to command higher incomes) or it may reflect the greater number of hours worked than in the previous study. In this study, as reported elsewhere (4), the mean job satisfaction of older dental hygienists was higher than that of younger respondents. This may reflect the flexibility of a dental hygiene career, where family-life and part-time work can be optimally balanced. Conversely, it may represent a degree of selection bias because hygienists who enjoy their job are more likely to remain in the workforce (4).

Workforce retention is an important issue. It has been suggested that dental hygienist "burnout" is common. Some United States hygienists leave the profession after a short time (14), while most Scottish hygienists remain employed for at least 30 years, with only one-third retiring early (8). Hillam (2) concluded that hygienists continue to work in their chosen career at least as much as female dentists do in theirs. However, as one-third of respondents in the current study intend to cease practice within the next decade, the current emphasis on recruiting students into dental hygiene training needs to continue. Government policy (for example interest-free student loans, funding of training) is instrumental in determining student intake numbers in New Zealand. Another factor relates to the registration of overseas-trained dental personnel. Overseas-qualified dentists represent a substantial component of the New Zealand dental hygiene workforce, but it is not known how long these individuals work as dental hygienists; it may represent temporary employment prior to obtaining dentist registration. The new registration requirements for dental hygienists in New Zealand will make it more difficult for overseas-trained dentists to do this.

Conclusions

Workforce planning for dental hygienists (as for other dental professionals) must be informed by information on their working patterns. The hygiene workforce is a small but growing provider of dental care in New Zealand. The new registration requirements brought about by the Health Practitioners Competence Assurance Act 2004 are likely to have a significant effect on this workforce. Ongoing research is required to determine such effects. Further research is indicated to investigate the need for further expansion of the scope of practice of dental hygiene and for continuing education opportunities, and to determine the effect of any new training programs upon the workforce.

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