

The Further Educational Needs of Dental Hygienists

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ABSTRACT

Dental hygiene is an occupation that is beginning to assume the status of a profession. The research reported in this paper focuses on the perceptions of education as it relates to the professional status of dental hygienists, as well as on some aspects of their continuing education needs. It is taken from a study of dental hygienists and dentists in Alberta, which investigated the perceptions of both groups of the status of dental hygiene as a profession.

Data for the study was collected from focus groups of dental hygienists and questionnaires administered to both dentists and hygienists in Alberta.

While the study showed support among dental hygienists as a group for further education, as well as for the notion of mandated continuing education, there was uncertainty

about what forms it should take and whether it would in fact be needed by the majority of hygienists engaged in traditional practice, views that were shared by the dentists in the study. Of particular interest in the study were the views of the respondents on the baccalaureate in dental hygiene, which is seen by Dental Hygienists' Associations as being an important step in the evolution of dental hygiene as a profession. The respondents in the study were quite sharply divided over the need for the degree: dental hygienists in nontraditional careers were supportive of the idea, while those engaged in traditional practice, as well as the dentists, were less so. The findings of this study, which indicate a division within the ranks of dental hygienists, have considerable importance for those who are charged with charting the future of dental hygiene.

RÉSUMÉ

L'hygiène dentaire est une occupation qui est en passe d'acquérir le statut de profession. Les recherches dont on parle dans cet article portent sur la perception de l'éducation pour ce qui a trait au statut professionnel des hygiénistes dentaires ainsi que sur certains aspects de leurs besoins en éducation permanente. Elles sont tirées d'une étude qui explorait la façon dont des hygiénistes dentaires et des dentistes de l'Alberta percevaient le statut de l'hygiène dentaire en tant que profession. Les données de cette étude ont été recueillies auprès de groupes cibles d'hygiénistes dentaires et à partir de questionnaires distribués à des dentistes et à des hygiénistes albertains. L'étude montre que si les hygiénistes dentaires, en tant que groupe, sont favorables à l'éducation permanente ainsi qu'à la notion d'une éducation permanente obligatoire, il n'y a pas unanimité sur la forme qu'elle devrait avoir ni sur sa nécessité pour la majorité des

hygiénistes dentaires ayant une pratique traditionnelle. C'est un point de vue que partagent les dentistes qui participaient à cette étude. On relève un point particulièrement intéressant dans cette étude: il s'agit de l'opinion des personnes sondées sur le Baccalauréat en hygiène dentaire que les associations d'hygiénistes dentaires voient comme une étape importante dans l'évolution de l'hygiène dentaire comme profession. Les personnes interrogées étaient nettement divisées quant au besoin d'un diplôme: les hygiénistes dentaires exerçant dans des carrières non traditionnelles étaient favorables à cette idée tandis que les personnes exerçant dans des carrières traditionnelles, tout comme les dentistes, l'étaient moins. Les résultats de cette étude qui indiquent une division dans les rangs mêmes des hygiénistes dentaires sont d'une importance capitale pour ceux et celles qui sont responsables de la planification de l'avenir de l'hygiène dentaire.

INTRODUCTION

Dental hygienists are an integral part of the health care system of Canada, and like a number of other groups engaged in the health sector, they have looked to universities as one of the major suppliers of their pre-service education; the other principle source is the community college system. In contrast, the provision of education beyond the pre-service level has not been of particular interest to universities and, consequently, their CE units

have not, on the whole, been involved with providing training for dental hygienists. In the last few years, however, there has been an increasing interest on the part of hygienists in acquiring the status of a profession, which has manifested itself in a growing interest on the part of Dental Hygienists' Associations, in the United States and Canada, both in education at the baccalaureate level and in continuing education for dental hygienists generally. Consequently, if this desire for professionalization grows, there may be a greater role in the future for the CE units of universities in catering to the needs of this group.

The traditional mode of employment for the majority of dental hygienists is in a private practice setting, typically being employed by a dentist or dental clinic. In this environment, the hygienist generally works under the direct supervision of a dentist and has a prescribed set of tasks and expectations. Since this workplace setting offers work of a routine kind and offers limited career advancement, it is by its nature conducive to burn-out and low job satisfaction (Heine, Johnson, & Emily, 1983). Because, however, of the present tendency to stay in the workplace for a longer period (Johnson, 1990), many hygienists are now looking outside of these traditional or private practice settings for careers in alternative or nontraditional practice (e.g., public health, education, industry) (Rubinstein & Brand, 1986). In these settings, the work tends to be more varied and may involve research, administration, health promotion and education, or employment in the public health sector. These alternative or nontraditional practice settings, however, are not readily available. Where opportunities do exist, the clinical skills of the hygienists, particularly those who are degree trained, are often underutilised, while at the same time, they may lack preparation in other areas required by such practice settings, for example, administrative training.

In Canada, it took almost 20 years, from 1947 to 1968, for dental hygiene to be legally recognized as a health occupation by all provincial and territorial authorities (Health and Welfare Canada, 1988). With no Canadian schools, most dental hygienists in the early years were trained in the United States. These graduates went on to become the leaders in the field of dental hygiene at the time of its inception in Canada, along with graduates from the University of Toronto, Canada's first dental hygiene program, established in 1951 (Health and Welfare Canada, 1988). Currently, most Canadian dental hygienists receive their training through diploma programs in community colleges or universities. A small number pursue baccalaureate programs offered at the University of Toronto and the

University of British Columbia and the post-diploma certificate program offered by the University of Montreal. This latter program replaced a degree program offered by that university up until 1979. The Canadian military also offers an accredited dental hygiene program, whereby dental assistants can become dental hygienists through a six-month course of study.

Dental hygiene in Canada is an emerging profession, possessing some of the following attributes that Greenwood (1957) suggests are characteristic of a profession: systemic theory, authority, community sanction, ethical codes, and a culture. Formed in 1963, The Canadian Dental Hygienists' Association has played a large part in the professionalization of dental hygiene in Canada. The association has facilitates the development of practice standards, communicates with the federal government, and sponsors research conferences and other professional development activities. In addition, the association has further encouraged the development of the profession by supporting the initiation of baccalaureate programs in universities and the introduction of self-regulation at the provincial level. Despite these efforts and the fact that four provinces—Alberta, Ontario, Quebec, and British Columbia—have granted self-regulation, dental hygienists in Canada still continue to work under the direct or indirect supervision of a dentist.

The research reported in this paper is from a study of dental hygienists and dentists in Alberta, and notes their perceptions of the status of dental hygiene as a profession. The study was limited to Alberta principally as the result of the available funding. Specifically, this paper focuses on the perceptions of education as it relates to professional status, as well as on some aspects of the continuing education needs of dental hygienists.

METHOD

Data for the study was collected by means of a questionnaire administered to samples of dental hygienists and dentists in Alberta. The initial step in the construction of the questionnaire was a series of focus groups: three groups comprised of practising dental hygienists and one group of dental hygiene students enrolled at the University of Alberta. The groups were asked to consider the nature of dental hygiene as a profession. The points emerging from these discussions, together with a literature review and the criteria suggested by Greenwood (1957) as being characteristic of a profession, were used as a basis for constructing a pilot questionnaire. The pilot

questionnaire was then administered to samples of hygienists and dentists from outside of Alberta, so that the pool of potential respondents available for the administration of the final version of the instrument was not unduly narrow. Response rates of 33.3 percent and 68.6 percent were obtained from the dentists and hygienists, respectively. Based on the responses to the pilot instrument, a final version of the questionnaire was constructed. Feedback obtained from the pilot instrument led to an improvement in the clarity of a number of items and an avoidance of redundancy. Because this was a parallel study of hygienists and dentists, the survey instrument had two forms: one for dental hygienists and one for dentists, differing primarily on items soliciting background information. Each questionnaire was comprised of closed-end items, including Likert Scale items, and open-ended questions.

The instrument was administered in its final form to three distinct subject groups. From a membership list supplied by the Alberta Dental Hygienists' Association, hygienists employed in nontraditional settings were identified. Since the number of hygienists in this category is relatively small, they were all surveyed. In order to obtain an equal-sized sample of dental hygienists practising in traditional settings, a random sample was drawn from the remainder of the hygienists on the mailing list. Similarly, in order to obtain an equal-sized sample of dentists in the province, a random sample was drawn from a membership list supplied by the Alberta Dental Association. The size of the samples drawn was based on the response rates to the pilot questionnaire. In all, the questionnaire was administered by mail to 166 dental hygienists and 250 dentists.

RESULTS

An overall response rate of 52.8 percent was obtained (43.6 percent from the dentists and 66.9 percent from the dental hygienists). Dental hygienists employed in nontraditional settings responded at a higher level than those employed in traditional practice, 74.6 percent compared to 59.0 percent. This represented a rate of return comparable to that experienced for most mail surveys.

The majority (99.1 percent) of dental hygienists who responded were female, and the majority (91.0 percent) of the dentists were male, reflective of the gender domination of both occupations. The majority (85.7 percent) of the hygienists had completed their training at university; the others had graduated from community colleges. Baccalaureate degrees were held by

20 of the dental hygienists, 5 of which were degrees in dental hygiene, while the others possessed a diploma in dental hygiene. The greater majority of both the hygienists and the dentists were graduates of the University of Alberta.

Of the 111 dental hygienists who responded to the questionnaire, 49 were classified as being in traditional practice, with the vast majority being engaged in general practice. The most common forms of practice for the 62 hygienists classed as being in nontraditional occupations were public health positions and education.

The vast majority (88.9 percent) of dental hygienists saw dental hygiene as a profession. Among the 91 hygienists who had this perception, many felt it was due to the education they possessed (see Table 1).

TABLE 1: Percentage Responses of Dental Hygienists: Reasons for Their Perceiving Dental Hygiene as a Profession

| | % | n |
|---------------------------------------|-------|----|
| Level of education | 45.0 | 41 |
| Role in providing health care service | 28.6 | 26 |
| Manner in which care is provided | 15.4 | 14 |
| Skill or function | 7.7 | 7 |
| Salary | 2.2 | 2 |
| No response | 1.0 | 1 |
| Total | 100.0 | 91 |

n = number of respondents

Despite the strong sense among hygienists that dental hygiene was a profession, only 43.1 percent felt the public perceived dental hygiene in that way. Many of the hygienists' comments attributed the public's perceived view to the way dentists treated them; thus, "we need to visibly always have our employers respect." According to some of the hygienists, the public's inability to identify dental hygienists from other personnel working in the dental office further contributed to the public's perception. The hygienists felt an increase in education was the most important requirement in order for dental hygiene to be considered as a profession (see Table 2).

TABLE 2: Percentage Responses of Dental Hygienists:
Requirements for Dental Hygiene to be Considered a Profession

| | % | n |
|--|-------|-----|
| Increase in education | 24.3 | 27 |
| More recognition | 21.6 | 24 |
| Wide scope of practice and more responsibility | 14.4 | 16 |
| Stronger voice in government | 7.2 | 8 |
| Unsure | .9 | 1 |
| Nothing needs to be done | 9.9 | 11 |
| No response | 21.6 | 24 |
| Total | 100.0 | 111 |

n = number of respondents

Only a third of the hygienists felt that dentists viewed dental hygiene as a profession. This view was confirmed by the responses of the dentists, 50.9 percent of whom did not consider dental hygiene to be a profession. A number of comments by the dental hygienists tended to underline this differing perception. Several hygienists referred to the “dentists’ fear of losing control” and “the need for general dentistry to control the money making potential of hygiene.” Other comments emphasized an apparent lack of respect on the part of dentists, indicating that dental hygienists were considered “one of the girls” in the office or treated as “lower level staff” and were shown “no respect.” Increased education for hygienists and autonomy from dentists were seen to be the two most common requirements for dentists, as a group, to change their perception of dental hygiene (see Table 3). There was, however, a large group of hygienists who either did not respond to this item, were unsure, or felt nothing needed to be done.

TABLE 3: Percentage Responses of Dental Hygienists:
Requirements for Dentists to Perceive Dental Hygiene as a Profession

| | % | n |
|-------------------------------------|-------|-----|
| Increase in education by hygienists | 27.9 | 31 |
| Autonomy from dentists | 14.4 | 16 |
| Proactiveness | 10.8 | 12 |
| Unsure | 8.1 | 9 |
| Nothing needs to be done | 8.1 | 9 |
| No response | 30.6 | 34 |
| Total | 100.0 | 111 |

n = number of respondents

Continuing education was defined in the questionnaire as “training beyond the minimum level for practising dental hygiene.” Although continuing education for dental hygienists is not currently mandatory in Alberta, 91.9 percent of the hygienists and 91.7 percent of the dentists responding to the questionnaire supported the idea of mandatory continuing education for dental hygienists. From the focus groups and a review of the literature, four major benefits were identified with participation in continuing education: to increase job satisfaction; to increase the quality of care to clients; to increase employment opportunities; and to increase the status of dental hygiene as a profession. The respondents were asked to rank these items in order of importance (see Table 4). The data were tested for statistical significance using the Kruskal-Wallis test. Kruskal-Wallis is a nonparametric test of statistical significance. Using ordinal data and k independent samples, or groups, all cases from the k groups are ranked in a single series, then the rank sum and mean rank are computed for each group. The Kruskal-Wallis statistic has approximately a chi-square distribution (SPSS, 1981, p. 237).

TABLE 4: Comparison of Responses of Dental Hygienists and Dentists: Benefits for Dental Hygienists Participating in Continuing Education

| | Mean Rank | | Significance |
|--|----------------------------|--------------------|--------------|
| | Dental Hygienists (n = 11) | Dentists (n = 102) | |
| Job satisfaction | 109.09 | 104.72 | .55 |
| Quality of care | 109.80 | 103.96 | .25 |
| Employment opportunities | 117.46 | 95.62 | *.00 |
| Status of dental hygiene as a profession | 94.25 | 120.88 | *.00 |

Kruskal-Wallis one way ANOVA

*Significance $p \leq .05$

n = number of respondents

Lower mean rank indicates greater importance

Dental hygienists felt that the most important benefit accruing from continuing education would be to increase the status of dental hygiene as a profession, and the least important of the four listed benefits would be to increase employment opportunities. Dentists, on the other hand, ranked the items in the reverse order, indicating that they felt the most important

benefit would be to increase employment opportunities and the least important to increase the status of the profession. Other reasons given, via responses to an open-ended item on the questionnaire soliciting reasons for participating in continuing education, were to keep current with knowledge, for personal growth, and for networking or social reasons. Approximately half of the respondents indicated a number of disadvantages associated with continuing education: that it may not be recognized, either through underutilisation or underpay; that dental hygienists may be forced out of the traditional role or their diploma may no longer be recognized; that time and convenience may be a problem; and that some dental hygienists may simply not want continuing education.

The baccalaureate in dental hygiene is one aspect of continuing education that has received active support from the Canadian Dental Hygienists' Association. Currently offered by two Canadian universities by articulation with diploma programs, it has been considered for implementation by others and has been seen as an important step in the evolution of dental hygiene as a profession. Dental hygienists, however, as a group were divided on this issue: 36.0 percent agreed or strongly agreed that hygienists should have the degree; an equal number disagreed or strongly disagreed (see Table 5). An examination of the data shows that dental hygienists engaged in nontraditional practice were somewhat more supportive of the notion than those engaged in traditional practice, who tended to disagree or strongly disagree to a larger extent than their colleagues.

TABLE 5: Percentage Responses: Dental Hygienists should have a Bachelor's Degree Specifically in Dental Hygiene

| | % Traditional Dental Hygienists (n = 49) | % Nontraditional Dental Hygienists (n = 62) |
|-------------------|---|--|
| Strongly agree | 2.0 | 16.1 |
| Agree | 30.6 | 24.2 |
| Undecided | 28.6 | 25.8 |
| Disagree | 30.6 | 22.6 |
| Strongly disagree | 8.2 | 11.3 |
| Total | 100.0 | 100.0 |

n = number of respondents

Dentists, on the other hand, were more negative, with 52.9 percent disagreeing or strongly disagreeing with the concept of dental hygienists having to have a degree in the area.

Discussions within the focus groups and a review of the literature had identified four major functions of the baccalaureate in dental hygiene. These were made the basis of four items that the respondents were asked to indicate their agreement or disagreement with, using a 5-point scale, ranging from 1 = strongly agree to 5 = strongly disagree. A comparison of the responses of dentists and dental hygienists is shown in Table 6.

TABLE 6: Comparison of Responses of Dental Hygienists and Dentists: Purposes of the Baccalaureate in Dental Hygiene

| | Mean Rank | | | | Signif. |
|---|-------------------|-----|----------|-----|---------|
| | Dental Hygienists | n | Dentists | n | |
| Dental hygienists should have a bachelor's degree specifically in dental hygiene. | 100.07 | 111 | 120.20 | 108 | *.02 |
| The purpose of a bachelor's degree in dental hygiene is to prepare the dental hygienist for independent practice. | 95.52 | 111 | 123.12 | 106 | *.00 |
| The purpose of a bachelor's degree in dental hygiene is to prepare the dental hygienist for nonprivate practice positions. | 86.32 | 111 | 130.33 | 103 | *.00 |
| The purpose of a bachelor's degree in dental hygiene is to prepare the dental hygienist for a wider range of functions in supervised, traditional private practice. | 111.34 | 109 | 103.51 | 105 | *.29 |
| The purpose of a bachelor's degree in dental hygiene is to raise the status of dental hygiene as a profession. | 82.72 | 109 | 133.23 | 105 | *.00 |

Kruskal-Wallis one way ANOVA

* Significance $p \leq .05$

n = number of respondents, differences result from some respondents not answering that item. Higher mean rank indicates stronger disagreement.

Significant differences were observed between the dentists and the hygienists on four of the five items in Table 6. The hygienists agreed more strongly than the dentists that dental hygienists should have a degree in dental hygiene. The hygienists also agreed more strongly than the dentists that the baccalaureate in dental hygiene would prepare hygienists for independent practice and nontraditional practice. The hygienists were also more supportive of the notion that the degree would raise the status of dental hygiene as a profession.

A substantial number (78.3 percent) of hygienists felt that having a degree would raise the professional status of dental hygiene. However, only 50.9 percent indicated they would seek the degree, assuming the opportunity was available, while 46.2 percent indicated they would not. Of those hygienists who would take the degree and who gave reasons, the majority indicated it would be to provide the opportunity for a career change (see Table 7).

TABLE 7: Percentage Responses of Dental Hygienists: Reasons to Obtain the Baccalaureate Degree in Dental Hygiene

| | % | n |
|-----------------------|-------|-----|
| Broader learning base | 7.2 | 8 |
| Career change | 26.1 | 29 |
| Personal achievement | 13.5 | 15 |
| Other | 0.9 | 1 |
| No response | 52.3 | 58 |
| Total | 100.0 | 111 |

n = number of respondents

The majority of the hygienists who indicated they would not pursue the degree indicated it was because the degree was seen by them to be irrelevant (see Table 8).

TABLE 8: Percentage Responses of Dental Hygienists: Reasons not to Obtain the Baccalaureate Degree in Dental Hygiene

| | % | n |
|----------------|-------|-----|
| Irrelevance | 23.4 | 26 |
| Limited focus | 5.4 | 6 |
| Cost/Time | 3.6 | 4 |
| Not interested | 10.8 | 12 |
| No response | 56.8 | 63 |
| Total | 100.0 | 111 |

n = number of respondents

When asked about the future educational needs of dental hygienists in the year 2010, only a third of both the dentists and the hygienists who responded felt that the baccalaureate in dental hygiene would be needed for traditional practice. However, the vast majority of hygienists felt it would be needed for nontraditional practice, although dentists were more divided on the issue (see Table 9). The responses were somewhat similar when both the dentists and the hygienists were asked if practice in the future would require education in a field other than dental hygiene. Overall, both groups felt that traditional practice would not need this further education, although there was more support for the notion for nontraditional practice (see Table 10).

TABLE 9: Percentage Responses: Future Needs for the Baccalaureate in Dental Hygiene

| | Traditional Practice | | | Nontraditional Practice | | |
|-------------------|----------------------|------|-----|-------------------------|------|-----|
| | Yes | No | n | Yes | No | n |
| Dentists | 33.6 | 66.4 | 103 | 47.6 | 52.4 | 107 |
| Dental Hygienists | 37.8 | 62.2 | 109 | 78.9 | 21.1 | 111 |

n = number of respondents

TABLE 10: Percentage Responses: Future Needs for Education in a Field other than Dental Hygiene

| | Traditional Practice | | | Nontraditional Practice | | |
|-------------------|----------------------|------|-----|-------------------------|------|-----|
| | Yes | No | n | Yes | No | n |
| Dentists | 22.6 | 77.4 | 100 | 44.6 | 56.8 | 106 |
| Dental Hygienists | 20.2 | 79.8 | 105 | 65.7 | 34.3 | 109 |

n = number of respondents

When asked what specific areas of education might be relevant at a future date, the dental hygienists as a group most frequently suggested education courses; and nontraditional hygienists also suggested courses in management. When asked about the future need for non-university-based continuing education activities, 40 percent of hygienists thought that clinical courses would be needed, while dentists suggested sharing activities such as study clubs and workshops. Both groups also indicated that there may be a need for courses in personal growth, stress management and interpersonal skills.

DISCUSSION AND CONCLUSIONS

Further education, including continuing education, is seen by the dental hygienists who took part in this study as important from a number of perspectives. In their view, education is a key factor in the public's perception of the professional status of dental hygiene. Further, they felt that an increase in education would elevate the dental hygienists' professional status in the eyes of dentists who, as the study indicated, did not consider hygienists to be professionals.

As a group, dental hygienists were strongly in favour of mandated continuing education, an issue currently being considered by Dental Hygienists' Associations. This study, however, also revealed considerable uncertainty as to what specific forms of continuing education would be needed.

There were divided views among hygienists about education beyond the minimal requirement to practice (the diploma level). The majority felt that further education in dental hygiene (i.e., the baccalaureate in dental hygiene), or in other fields (i.e., management studies or education), would not be needed in the future by those hygienists involved in traditional practice. This view was also taken by the dentists who responded to the questionnaire. While both the dentists and the hygienists supported the notion of further education for those engaged in nontraditional practice, this sector constitutes a very small minority of the dental hygiene community.

The baccalaureate in dental hygiene has been viewed by Dental Hygienists' Associations and educators as an important step in the transition of the practice of dental hygiene to a profession. Although this degree is currently offered at two universities in Canada, other Canadian universities have been proposing the baccalaureate in dental hygiene for some time (Zier, 1985). In the United States, however, baccalaureate programs are closing and associate degree programs are being opened. According to Rayer (1994), this change is viewed by many as a backward step by which dental hygienists are losing their credibility and their control of the profession.

Within the population of dental hygienists in this study, there were conflicting opinions on the merits of the baccalaureate degree. As a group, dental hygienists were equally split on whether or not they should have the degree. Nontraditional hygienists were more supportive of the notion than

traditional hygienists. Although hygienists felt that the degree would raise the status of their profession, only half of them indicated they would study for this particular degree if it were available. The possibility of a career change was the most commonly stated reason given by the hygienists for pursuing a baccalaureate in dental hygiene.

Dentists were somewhat more sceptical of the necessity for the degree and were less convinced of its role in raising the status of dental hygiene. This finding is similar to dentists' views in the United States. The American Dental Association has stated that "many dentists who employ hygienists have found the current education system sufficient in preparing dental hygienists who are qualified to meet the patients' needs for preventive dental services" (Rayer, 1994, p. 46).

The baccalaureate is not generally seen by the respondents in the study as a way to increase competence or skill level in the dental office; rather, it is supported by a number of the respondents for other reasons. The baccalaureate would seem to increase the status of dental hygiene because hygienists would likely be viewed more as colleagues by other health professionals. It would also legitimate the provision of dental hygiene services outside dental private practice. Furthermore, dental hygiene would occupy a complementary, not subservient, position to dentistry. It is seen by a number of hygienists as a way of finding alternate career paths, a viable solution to the discontent and burn-out in the occupation.

This study has considerable implications for the leaders of the dental hygiene profession. While the associations and educators lobby for the development and establishment of more baccalaureate programs, the support of the membership is somewhat mixed and must be a cause for concern for those faced with the practical issues of developing such programs. Most members perceive the value of such degrees to be primarily in the limited areas of nontraditional practice and career change. The dilemma is that while there are some hygienists interested in pursuing a baccalaureate in dental hygiene (and there seems to be the move in this direction in Canada), few employment opportunities are available for hygienists outside of traditional private practice.

A research survey study of Western Canada (British Columbia, Alberta, Saskatchewan, Manitoba, and northwestern Ontario) recommended the baccalaureate for nontraditional employment settings. This is despite the fact that these positions are generally filled by diploma dental hygienists who seem to be capable and meet the approval of employers (Feller, 1983,

p. 21). The same is true of American dental hygienists. Of those working in nontraditional settings, fewer than one-third possess baccalaureate degrees, and the educational preparation of the others is no different from that of hygienists in traditional placement settings. The dental hygienist basically works as a clinician (Cirincione & Wils, 1990, p. 243), government, bureaucrats, administrators, and other decision-makers are unaware of the education received by baccalaureate hygienists and how they can be utilized in nonprivate practice settings. As indicated earlier, the majority of dental hygiene practice is conducive to burn-out, due in part to limited career opportunities (Boyer, 1994; Heine, Johnson, & Emily, 1983; Miller, 1991). Modes of employment need to be developed to expand the scope of dental hygiene practice and to include more opportunities for nonclinical activities, as well as for direct client care.

It appears that unless alternative career paths can be created within the health care system (dental hygiene clinics in hospitals, long-term-care facilities, and other health care institutions, or independent dental hygiene practice), there will not be strong support among the majority of dental hygienists for further education. And, without this support, the occupation of dental hygienist is unlikely to continue to evolve professionally. Only a small minority of hygienists, such as those engaged in nontraditional practice, will continue to grow and develop as professionals. Indeed, as evidenced in this study through the greater response rates and greater support for further education on the part of nontraditional dental hygienists, this is, to some extent, already the case. This important issue must be addressed by the leaders of dental hygiene, who are faced with the potential of a divided membership.

In this study, subjects were asked the purpose and need of the baccalaureate in dental hygiene, but not the specific content of these programs. Until hygienists have career opportunities outside traditional private practice, there is no reason for them to pursue the baccalaureate. Indeed, over one-half of the hygienists in this study felt that a baccalaureate is irrelevant to them. However, since the legislation governing the supervision of dental hygienists is beginning to change or is under review in a number of provinces, it is anticipated that in the future this perception may change.

The Health Workforce Rebalancing Committee (1994) in Alberta recommended that dental hygienists should have more control of their profession, not only in regulation and education, but also in the health care

services they provide. This seems to be in keeping with the growing demands to reform the health care system, so it can be expected that other provinces will soon follow. In the future, the public/consumers will likely have more choices in how, where, and by whom health care services will be provided. Thus, public recognition of dental hygiene may increase as the control by dentistry lessens, and hygienists are no longer limited to the role of a technician, but are allowed to function as professionals. In turn, the move towards autonomy and occupational freedom for hygienists will produce a need for continuing education by dental hygiene professionals as they respond to demands by the public and government for quality of care and quality assurance. In the future, continuing education for dental hygienists may encompass in-service courses to teach skills such as the administration of local anaesthesia; baccalaureate programs to enhance health care through nonclinical activities such as research, administration, or health promotion; and even courses of a more personal development focus. In this event, it is to be expected that dental hygienists, like professionals in many other health-related occupations, will turn to university CE units to meet their needs.

This study was limited to Alberta, where self-regulation for dental hygienists had been legislated prior to its undertaking. In addition, a potential major impact on dental hygiene in the province is the emergence of the Health Workforce Rebalancing Committee and the proposed Health Professions Act. This act will affect the delivery of health care services, including dental hygiene services, since one of the principles of the act is to increase access to care by eliminating barriers to access. For example, the supervision clause in the *Dental Disciplines Act* (1990), which states that dental hygienists need to work under the supervision of a dentist, is a barrier to access. By eliminating this legislative barrier, consumers/public will have a choice of where and how to obtain dental services. Thus, dental hygienists could increase the access to care for individuals in health care facilities such as nursing homes and hospitals because they could provide services without the supervision of a dentist. In addition, individuals would have the option of obtaining services directly through a dental hygiene practice, which would be more cost effective than the present method of accessing a hygienist indirectly through a dental practice.

Few studies have examined the skills, functions, and procedures of dental hygienists. Yet these studies would be useful wherever health care reform has become a political issue in North America. In an effort to lower health care costs, prevent duplication of services, and promote collaboration with

health care providers, it will be necessary to study the cost effectiveness of dental hygienists within different delivery systems. In the event that further education becomes necessary for dental hygiene practice in the future, the establishment of various continuing education programs, including the baccalaureate, will provide dental hygienists with entry to positions that should be created outside the traditional dental office.

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