DENTISTS' OPINIONS OF QUALITY ASSURANCE

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Abstract

For a quality assurance (QA) program, including practice guidelines, to be most successful, its development and implementation should involve all individuals affected by the program. In health care however, QA has typically been carried out by hospital administrators and managers of public health programs and little is known about how health care providers view QA. The Community Dental Services Division of the City of North York Public Health Department (NYPHD) has had a QA program in place for 15 years, but little is known about how dentists, who are currently or might be affected by such a program, view QA.

We sent a QA questionnaire to all 771 dentists who were either employed by the North York Public Health Department (NYPHD), or who had treated children under the CINOT Program and have had their claims administered by the NYPHD. Based on the results of the 282 questionnaires that were returned it is evident that the dentists view QA as something positive for the profession. However, the respondents also felt that a QA program should be developed and managed by practicing dentists, and that the public, government, and academic should have limited involvement. Cost also was not considered to be an important factor in QA. Understanding these views could guide the development and implementation of QA in dentistry.

Introduction

Although the origins of quality assurance (QA) are rooted in industry and business, the general principals apply to all professions and businesses that produce a product or provide a service, including health care. Quality assurance in medicine involves many areas, including monitoring and improving both the inputs and systems which determine the care patients receive, as well as assessing the impact of changes on the patients' and the community's health. An integral part of a quality assurance program in health care is the development of guidelines and standards outlining what care is appropriate and how care should be provided and can be improved.

Compared to the medical profession, QA in dentistry is in its infancy. The development of formal quality assurance programs and mechanisms has been limited. Aside from some publicly funded dental programs, such as the Community Dental Services Division of the City of North York Public Health Department, QA in dentistry has consisted primarily of a patient complaint process with formal hearings. However, the Regulated Health Professions Act (1991) now requires that the each health profession in Ontario develop and implement a quality assurance program.

Quality assurance and quality improvement programs require that both managers and staff understand and support the program. All individuals must know the objectives of the program and should be involved in modifying or designing the processes necessary to achieve these goals (Health Canada 1993). QA programs that do not incorporate these ideas are unlikely to receive full co-operation from staff and/or managers and will most likely fail to have any real impact (Health Canada 1993). Although much research in health care has been carried out developing quality assurance programs and practice guidelines, very little research regarding health care providers' opinions of quality assurance has been carried out.

The City of North York Public Health Department (NYPHD) provides dental care to children through school-based dental clinics and administers the provincially funded CINOT Program within the jurisdiction of North York. Preventive and treatment services are provided in the school-based clinics by NYPHD dental staff, 19 dentists, 6 hygienists, and 34 assistants. Children treated under the CINOT program may also be treated in the school-based clinics or at private dental practices.

In an effort to that ensure the North York children receive appropriate care and to allocate the dental program's resources most effectively, the NYPHD has had a formal quality assurance program in place for its staff for 15 years. This program includes provider profiling, regular monitoring of children's oral health and the care they receive, monthly staff meetings to keep providers up to date with current evidence, and the development of practice guidelines specific to the NYPHD clinics (Woodward *et al.* 1995). NYPHD staff dentists, hygienists, and assistants appear to participate willingly in the QA process and comply with the practice guidelines developed to assist their clinical decision-making (Bennett 1993). However, private dentists in North York do not participate in this process and may have different perceptions of the methods and value of QA.

The purpose of our study was to summarize the views regarding quality assurance of dentists who provide care to North York children in the school-based clinics or through the CINOT Program. The results should help NYPHD dental program managers identify any perceptual differences that exist between the managers and dentists, as well as among dentists themselves, and enable the managers to better identify the needs and preferred methods of QA.

Methods

The study began with a search of the health care literature to identify previous studies of opinions of quality assurance. This search, up to and including the year 1993, was carried out using computer-aided (MEDLINE) and hand search methods. The initial search focused on studies of health care providers opinions of QA. However, this search revealed only one article (White 1993) and the search was expanded to identify articles where quality assurance was the central focus. We hoped that these articles would summarize the health professions' current and past opinions of this topic.

Using the literature identified by the search, we developed a questionnaire to assess dentists' opinions regarding QA and practice guidelines (Appendix 1). Many of the questions were adapted from White's (1993) questionnaire on nurses' perceptions of QA. Each question had five possible responses, Strongly Agree, Agree, Disagree, Strongly Disagree, and No Opinion. Demographic questions concerning the dentist's age, sex, speciality (if any), and dental education, were also included.

The questionnaire was reviewed by four staff (3 dentists, 1 hygienist) from the NYPHD, as well as a representative of the Royal College of Dental Surgeons of Ontario (RCDSO), and revisions were made based on their comments. Following these revisions, the questionnaire was reviewed and approved on the basis of scientific merit, ethics, and relevance to the NYPHD, by committees from the Faculty of Dentistry, University of Toronto, the Office of Research Services, University of Toronto, and the NYPHD.

The approved questionnaire was mailed in the fall of 1994, along with a self-addressed, stamped, return envelope, to all dentists who are staff of the NYPHD and half of the dentists who have treated North York children and have had their CINOT claims administered by the NYPHD. CINOT dentists were randomly chosen from a master list of all dentists who have treated North York children

through the CINOT Program from 1987 to 1994. Initial mailing of the questionnaire was followed up by a reminder notice, a second mailing of the questionnaire, and finally, a second reminder notice, each at approximately two week intervals.

Due to a low response rate, we decided to expand our mailing to all dentists who had submitted CINOT claims to the NYPHD. This mailing was carried out using the procedure described previously. Thus, we mailed a questionnaire to all dentists who have treated North York children in the NYPHD's school-based clinics or through CINOT claims administered by the NYPHD.

To help determine if respondents differed from non-respondents, we compared the demographics of respondents to non-respondents. Information regarding the dental speciality and education of non-respondents was obtained from the 1994 RCDSO Directory. At this time we also recorded the sex of the non-responder if we felt it was evident from the dentist's name; if we were unsure, this datum was omitted.

Data were entered into a computer file using the data entry program Epi Info (Dean *et al.* 1990), and data cleaning and analysis were carried out using SPSSPC (Norusis 1990). Analysis consisted of calculating means, frequencies and cross-tabulations, using ANOVA, binomial, and chi-square test statistics to identify any significant differences in proportions or significant associations.

Although both demographic and questionnaire data are presented in this report we have made no attempt to assess any relationship between these variables. Rather than investigate all of the many possible relationships in one single report, relationships in specific areas, such as education and opinions regarding practice guidelines, will be examined in future papers.

Results

In total, the questionnaire was mailed to 771 dentists, 282 (36.6%) of whom returned a complete or partially complete questionnaire. One dentist returned an incomplete questionnaire with a refusal to participate further.

Demographics

Figure 1 shows that the majority of the responding dentists (73%) were aged 31-50 years. No age data were available for non-responding dentists.

Of the responding dentists who identified their sex (n=270), 82.6% were male and 17.4% were female. Based on the names of non-responding dentists, we estimated that 78.6% were male and 21.4% were female. This small sex difference between responders and non-responders was not statistically significant ($p>0.05$).

The mean year of graduation was found to be significantly different ($p=0.04$) between responders (1977.3) and non-responders (1978.8), although the difference was only 1.5 years. Graduation year for responders and non-responders then was arranged into eight categories (Figure 2), but no significant difference distribution in the distribution of the responders and non-responders was found ($p>0.05$)

Figure 3 summarizes the dental school attended by responders and non-responders. No significant difference between responders and non-responders was found ($p>0.05$).

Figure 4 shows that a significantly greater proportion of responders were specialists compared to non-responders ($p>0.05$). This difference appears to be due to a greater proportion of paediatric dentists choosing to respond.

Questionnaire

Responses to each questionnaire item, along with the number of respondents (N), have been summarized in Tables 1 to 10. To simply further analyses, the response "strongly agree" has been combined with the "agree" response; similarly, the responses of "strongly disagree" and "disagree" have been combined.

Table 1. What is the goal of quality assurance?

In your opinion, the goal of QA is:	agree (%)	disagree (%)	no opinion (%)	N
to assure that dentists in Ontario are providing optimal care	90.3	7.2	2.5	279
to assure that dentist are providing appropriate care	84.5	12.3	3.2	277
to identify common areas of dental practice that need improvement	81.7	13.7	4.7	278
to identify specific areas of individual practitioners' practices that need improvement	65.8	29.9	4.3	278
to help contain dental costs	34.7	53.6	11.7	274
to identify the "bad apples" among the profession so they can be disciplined	26.6	63.3	10.1	278

Table 2. Whose needs should quality assurance serve?

In your view, QA should be designed to serve the needs of the:	agree (%)	disagree (%)	no opinion (%)	N
public	94.6	4.0	1.4	278
practicing dentists	88.0	9.1	2.9	275
dental educators/academics	50.7	38.0	11.3	274
publicly funded programs	49.5	37.8	12.7	275
government	17.7	73.1	9.2	271
third party insurers	14.6	78.1	7.3	274

Table 3. What should be the focus of quality assurance?

QA should focus on the:	agree (%)	disagree (%)	no opinion (%)	N
outcomes of the care provided	87.9	9.5	2.6	273
appropriateness of the care provided	86.1	10.9	2.9	274
process of how care is provided	82.1	13.1	4.7	274
patient satisfaction with care	71.1	23.1	5.9	273
setting in which care is provided	63.7	28.1	8.1	270
public's access to care	60.6	30.3	9.1	274
cost versus the benefit of the care provided	49.1	46.5	4.4	271

Table 4. What should a comprehensive quality assurance program include?

A comprehensive QA Program should include the following:	agree (%)	disagree (%)	no opinion (%)	N
continuing education on problems commonly identified by the profession	92.0	4.0	4.0	274
setting clinical standards and guidelines	90.1	8.8	1.1	274
consultation and advice to individual practitioners who do not meet an adequate standard	80.7	13.5	5.8	275
risk management	66.7	21.6	11.7	264
review of a dentists practice and patterns of providing care	48.1	44.1	7.8	270
cost containment	40.7	50.4	8.9	270
peer review of individual patients/cases	36.4	54.6	8.9	269
site visits to and evaluation of dental practices by trained evaluators	30.3	57.6	12.2	271
referral for discipline	23.6	63.8	12.5	271

Table 5. Who could a quality assurance program benefit from?

Development and implementation of a QA program could benefit from the assistance of:	agree (%)	disagree (%)	no opinion (%)	N
practicing general practitioners	96.7	1.4	1.8	276
dentists with training in health care evaluation	86.4	8.8	4.8	273
practicing dental specialists	82.2	13.8	4.0	275
dental educators/academics	78.0	20.5	1.5	273
the public	46.3	48.5	5.2	270
government	13.8	81.0	5.2	268
third party insurers	9.4	82.0	8.6	267

Table 6. What is quality care?

In your opinion, quality care is:	agree (%)	disagree (%)	no opinion (%)	N
the degree to which dental services for individuals and populations are consistent with current professional knowledge	94.5	1.8	3.7	271
the performance of specific activities in a manner that will improve health and prevent the deterioration that would have occurred as a function of the disease process	93.0	2.9	4.0	273
a continuous effort by all members of an organization to meet the needs and expectations of the client	83.6	11.3	5.1	274
the degree to which the dental services for individuals and populations increase the likelihood of a desired health outcome	81.9	8.5	9.6	270
the type of care practiced and taught by recognised leaders of the dental profession	75.5	18.2	6.3	269

Table 7. When should dentist compliance with standards of practice be expected?

Dentist compliance with standards of practice should be expected:	agree (%)	disagree (%)	no opinion (%)	N
only after practitioners have been allowed to comment on draft versions of the standards and appropriate revisions are made	82.8	9.9	7.3	274
after a specified grace period, to allow practitioners to make any necessary changes to their practices	81.8	13.9	4.4	274
after practitioners have received Continuing Dental Education to explain rationale and implications	75.0	13.6	11.4	272
immediately after their development and publication	27.5	66.2	6.3	279

Table 8. What areas of dental practice should be assessed by quality assurance?

If a QA Program includes dental practice assessment, the following areas of each dentist's practice should be evaluated:	agree (%)	disagree (%)	no opinion (%)	N
asepsis techniques	93.0	4.8	2.2	274
radiograph equipment	90.8	6.6	2.6	273
practitioner compliance with standards of practice	89.4	7.3	3.3	273
record keeping	87.9	8.8	3.3	273
cleanliness and housekeeping	87.6	8.8	3.6	274
qualifications of staff	77.1	18.5	4.4	271
patient satisfaction	64.5	27.5	8.1	273

Table 9. What should standards of care be based on?

Practice guidelines or standards of care should be based upon:	agree (%)	disagree (%)	no opinion (%)	N
experience and knowledge of practicing dentists (most important)*	83.7	14.1	2.2	276
expert opinion (2nd most important)*	76.6	15.8	7.7	273
research published in health care journals	68.5	22.5	9.1	276
the cost versus the proven benefit of a specific procedure or treatment	55.3	37.8	6.9	275
public experience and opinion	20.4	71.3	8.4	275

* dentists were asked to rank which two items were most important and second most important

Table 10. What influence will standards of care have on dentistry?

Practice guidelines or standards of care in dentistry will:	agree (%)	disagree (%)	no opinion (%)	N
create an environment for continuous improvement of dental care	85.5	10.2	4.4	275
serve as a good educational tool	79.8	10.3	9.9	272
assist dentists in their clinical decision making	69.6	24.5	5.9	273
limit unnecessary or ineffective care	49.1	40.9	10.0	269
promote litigation by patients	40.5	38.3	21.2	269
reflect some ideal which cannot be achieved in the majority of patients or practices	32.3	56.1	11.5	269
create unrealistic expectations among patients	24.9	61.9	13.2	273
provide no help in every day practice	11.5	78.4	10.0	269
reduce the quality of care provided	3.3	90.8	5.9	272

Discussion

Quality Assurance, which has its roots in industry and business, began to be incorporated into health care in the early 1970s. Much of this initial effort focused on costs in United States hospitals and failed for a number of reasons. Measuring quality was found to be more difficult than anticipated and few QA committees progressed past the stage of developing criteria which they could use to assess their programs. When quality was measured, it was often done using only one measure which was not validated and lacked credibility with clinicians and administrators. Early QA programs focused primarily on isolated incidents using an expensive and time consuming method of case-by-case review. This method focused on detecting infractions of the rules, assigning blame, and disciplining the individuals or "bad apples" responsible. Thus, in the end, physicians resisted QA and saw it as an administrative activity unrelated to their own work.(Coltin & Aronow 1993, Flood 1993, Palmer & Adams 1993)

In the later 1980s, health care professionals interested in QA began to adopt a philosophy that was focused more on the system rather that the individual. It was recognized that for QA to be successful, patients, administrators and staff, would need to be a part of its design and implementation. QA also began to take on a more proactive, rather than reactive, stance aiming at preventing problems before they occur. New terms such as Quality Improvement (QI), Continuous Quality Improvement (CQI), and Total Quality Management (TQM), were used to address this change in philosophy and distance it from QA. Quality Assurance is now seen mostly as the method of identifying problems which are rectified by Quality Improvement. For the purpose of this report, QA includes all concepts involved in the measuring and improving of quality in health care.(Harrigan 1992, Coltin & Aronow 1993, Flood 1993, Palmer & Adams 1993)

Of importance to NYPHD managers and, potentially, the RCDSO, is a knowledge of how practicing dentists view quality assurance and practice guidelines. Based on our response rate we cannot consider our results to be representative of all dentists who treat North York children under the CINOT program, even though the demographics of responders and non-responders do not differ substantially. However, the dentists who did respond appear to have some views of QA that are consistent with past QA philosophy and some that are in agreement with current QA philosophy, including QI.

Approximately 85% of respondents felt that the focus or goal of QA is to assure that dentists are providing appropriate care (Table 1 & 3). This is an important aspect of current QA philosophy. However, about 90% of the dentists also felt the goal of QA was to provide optimal care. This is a noble goal, but in most cases it is not possible and is not synonymous with appropriate care. To provide the best, most up to date, technologically superior care in all cases would require too many resources and is not an option for any publicly funded health care system. Appropriateness refers to whether the practitioner "did the right thing" ; did they choose and use health care technologies correctly. Testing appropriateness requires a knowledge of how well technologies work, an area which is lacking in many areas of dentistry. The findings also indicate that dentists are interested in the outcomes and process of care. While outcome measures represent the traditional approach to assessing quality, increasing attention is being directed toward the process of how care is provided.(Coltin & Aronow 1993, Health Canada 1993, Flood 1993, Palmer & Adams 1993)

Most dentists also felt that QA should identify and improve common problem areas of dental practice through education and consultation (Tables 1,4) which also is consistent with current QA philosophy. Fewer felt that QA should focus on the individual (Tables 1, 4) and less than half felt that

QA should be concerned with cost (Tables 1,3,4) or identification and discipline of "bad apples" (Tables 1,4). These are both areas that made the old QA philosophy so "distasteful" to physicians. Dentists who feel that individual discipline is synonymous with QA will probably resist QA in dentistry.

Almost 95% of dentists responded that QA should be designed to serve the needs of the public which is consistent with current QA philosophy. Current ideology dictates that QA should focus on the customer and how to improve things for the customer (Coltin & Aronow 1993). Berwick (Health Canada 1993) defined a customer as a person who depends on you. Although this obviously has its roots in business, it also applies to health care. Patients are customers of dentists as well as health care program managers. Dentists may also be thought of as customers, especially in a public health setting, as they depend on their administrators and other dentists, as well as suppliers (Health Canada 1993). Consistent with this philosophy is the finding that 88% of dentists responded that QA should serve the needs of practicing dentists (Table 2) and 83% felt that guidelines and standards should be reviewed by practicing dentists and revised accordingly before they are implemented (Table 7). However, this response could also be considered consistent with the professional's view of QA that health care programs should be designed and administered by the health care providers (Flood 1993).

Generally, dentists believed that practice guidelines would be beneficial. Most dentists felt that guidelines would create an environment of continuous improvement in dentistry, would serve as a good educational tool, and would not reduce the quality of care (Table 10). However, only half of the dentists believed that practice guidelines would limit unnecessary or ineffective care, which is one of the objectives of the NYPHD's guidelines. Most felt compliance to guidelines should be assessed (Table 8), but only after practitioners have received Continuing Dental Education and have had sufficient time to make the necessary changes in their practices.

When asked what a QA program should assess, aside from practitioner compliance with standards of practice, dentists felt most strongly that this should involve technical aspects of the practice, such as asepsis techniques, record keeping, radiograph equipment. Fewer dentists were of the opinion that such an assessment should involve staff qualifications or patient satisfaction (Table 8).

Some results regarding the publics and patients involvement in QA appear to be contradictory. While 95% believed QA should serve the public (Table 2), only 61% and 71% felt that QA should focus on the public's access to care and patient satisfaction, respectively (Tables 3, 8). While 90% of dentists think a comprehensive QA program should include setting clinical standards and guidelines (Table 4), most also felt that these guidelines should be based primarily on the experience and knowledge of practicing dentists and expert opinion (Table 9). The Canadian Task Force on the Periodic Health Examination describes this level of evidence as less valid than any other type of evidence.

Many of the responding dentists indicated that only dentists know what is best for the public. Less than 50% of dentists felt that the public should be involved in developing a QA program (Table 5) that is supposedly serving their needs and only 20% believed that the public should be involved in guideline development (Table 9). These beliefs appear to be out-dated and need to be addressed if QA is to be successful in the dental profession. Although patient satisfaction and quality of care are not always found to be strongly related, patient satisfaction has become an important measure of health care quality.(Harrigan 1992, Health Canada 1993, Silberman 1993, Smits 1993)

Another challenge for QA in dentistry will be to incorporate the concept of cost playing a role in defining appropriate care. Although cost should not be the principle focus of a QA program, it must receive some consideration as it influences accessibility to care which is often considered as a dimension

of quality (Harrigan 1992). Many respondents did not support the ideas of cost versus benefit (Tables 3, 9) or cost containment (Table 4) as part of QA or standards of care. However, health care costs are forcing all other health care providers and organizations to reconsider what and how services are provided compared to alternative uses of the same resources.

The majority of dentists agreed with all of the definitions of quality care, although "the type of care practiced and taught by recognised leaders of the dental profession" was the least favourable response. Fewer than 3% of dentists disagreed with the definition of quality care being "the degree to which dental services for individuals and populations are consistent with current professional knowledge" and "the performance of specific activities in a manner that will improve health and prevent the deterioration that would have occurred as a function of the disease process." Interestingly, 84% of dentists felt that quality care involved meeting the needs and expectations of the client, but as was already discussed, few dentists believed that public opinion or patient satisfaction should be included when developing a QA program and standards of practice.

Conclusion

Almost all of the dentists who responded to our survey indicated that QA in dentistry should focus on the profession as a whole, not individual practitioners. In general, dentists responded that a formal QA program would be beneficial to the profession and would result in continuous improvement of the care provided. These views are consistent with current QA ideology. However, responding dentists also felt that a QA program in dentistry, along with its practice guidelines or standards of practice, should be developed, implemented, and managed by dentists, with little public/patient input. Opinions and experience of dentists and dental experts was also favoured over published research as a

basis for practice standards or guidelines. These views will need to be addressed in order to implement an effective QA program in dentistry.

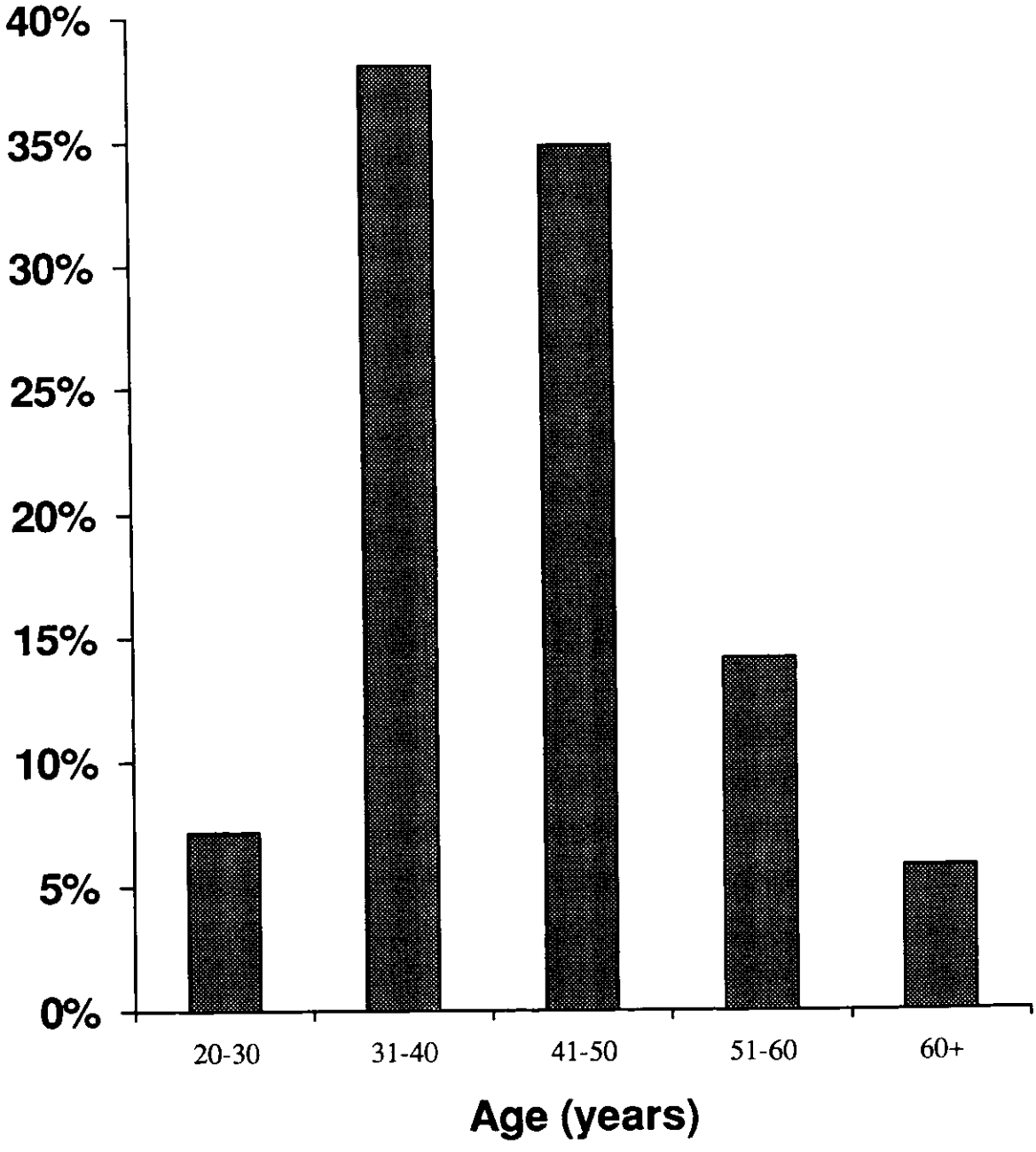

Figure 1. Age distribution of responding dentists.

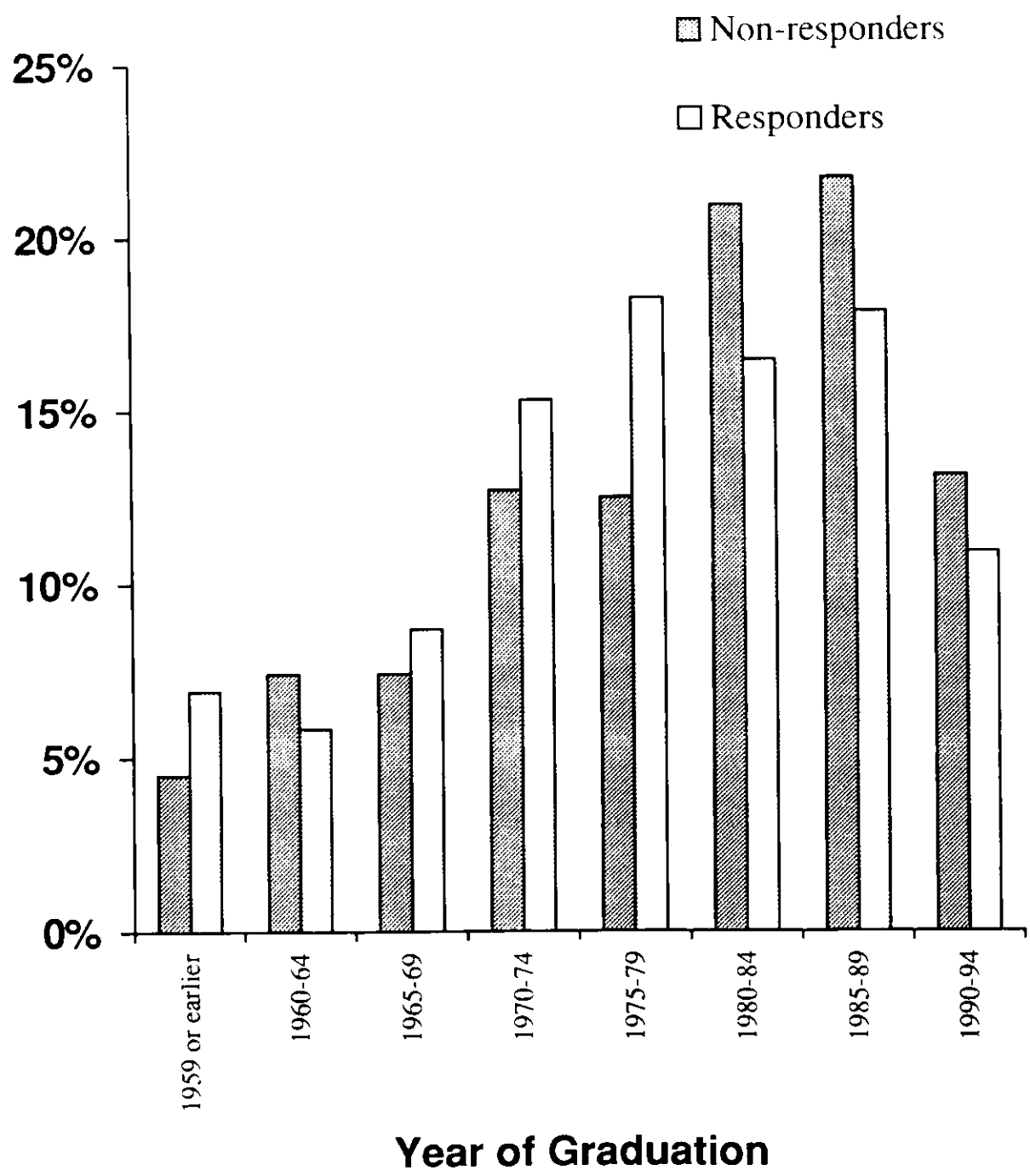

Figure 2. Year of graduation of responding and non-responding dentists.

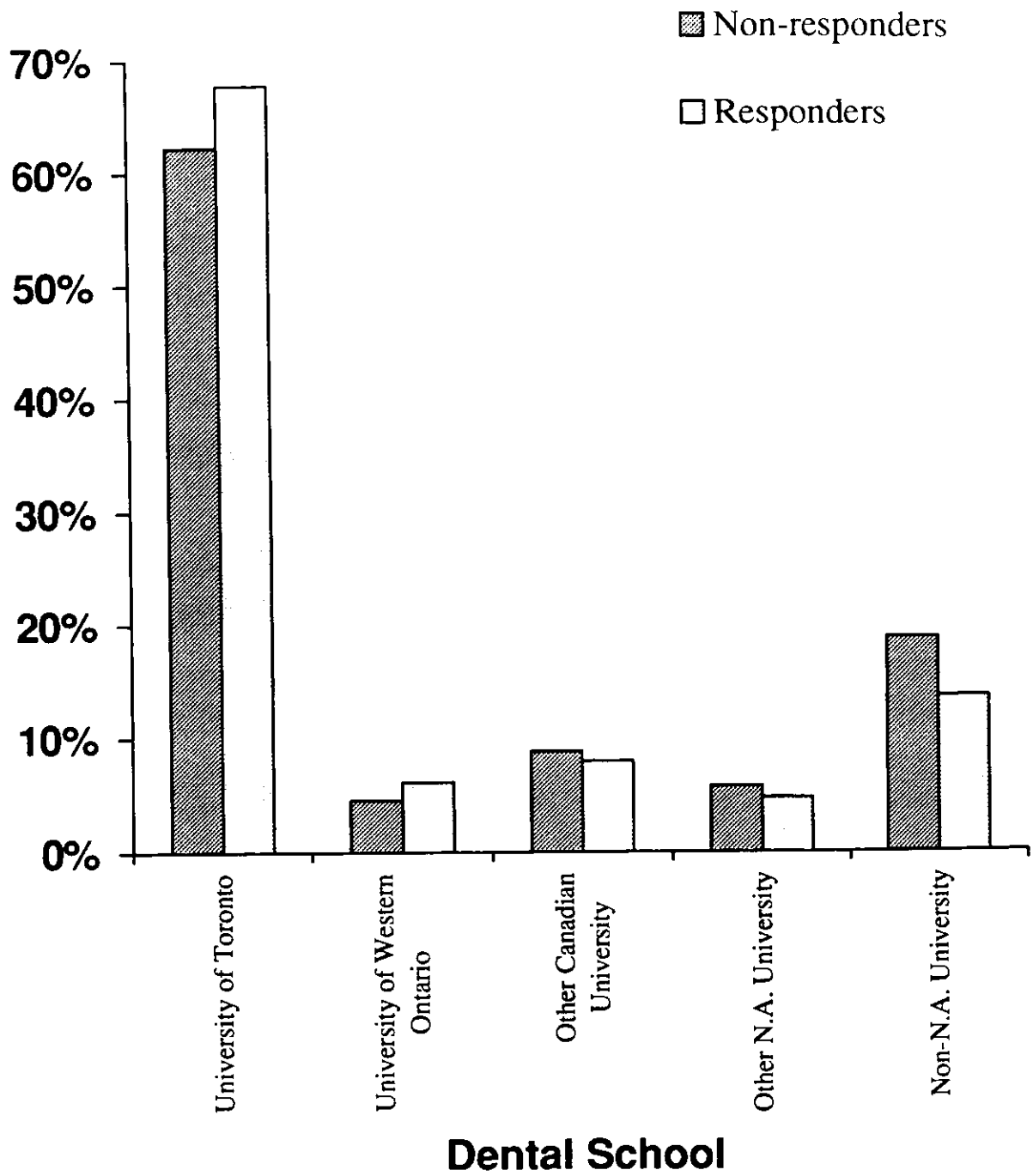

Figure 3. Dental school attended by responding and non-responding dentists.

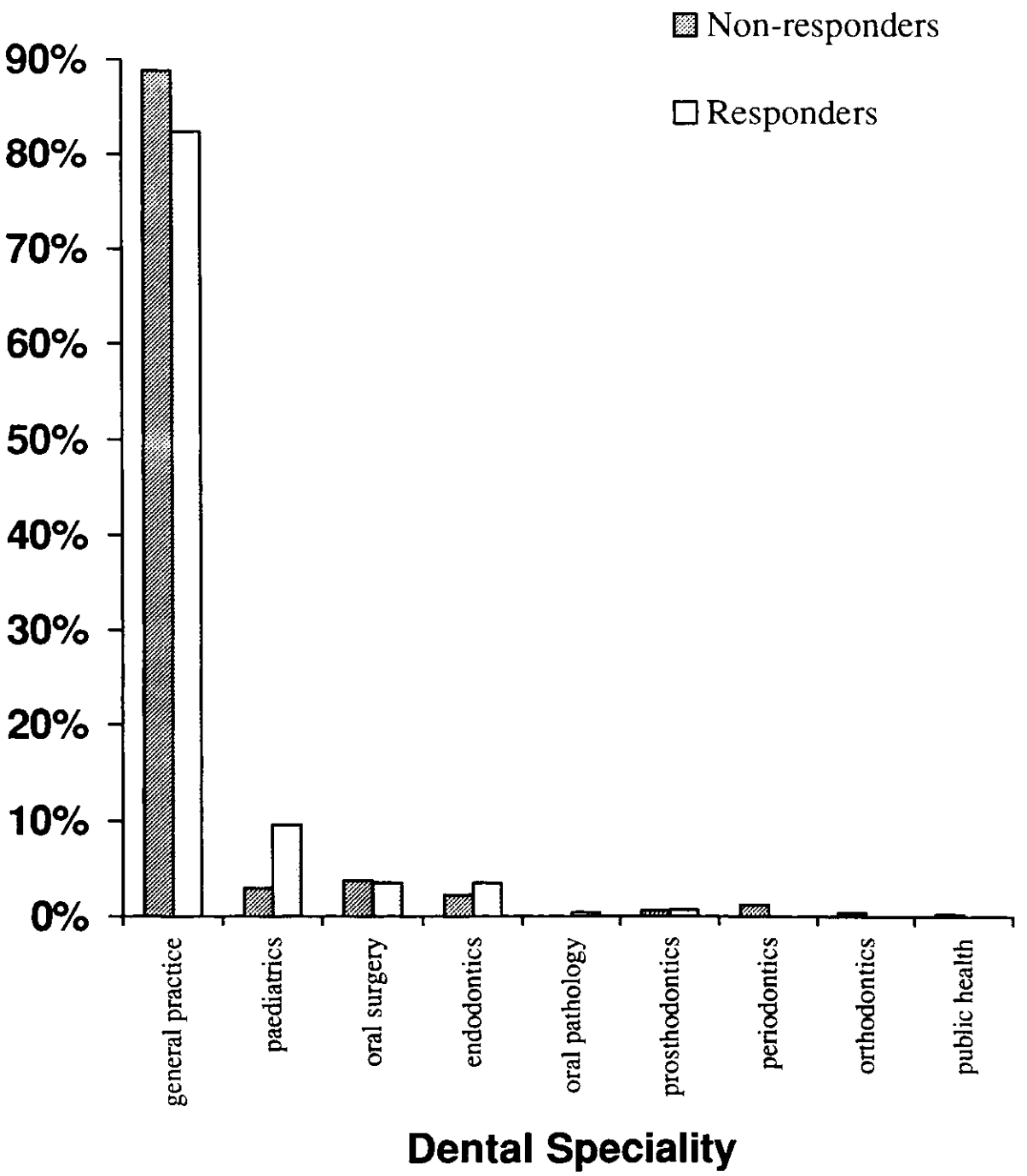

Figure 4. Dental speciality of responding and non-responding dentists.

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