

Are the Results of Dental Research Accessible to Canadian Dentists?

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A b s t r a c t

The aim of this joint CDA–IMHA study was to investigate what Canadian dentists think about the utility of dental research. A questionnaire was sent to all dentists in Canada with the December 2001 JCDA. By April 1, 2002, 2,788 questionnaires, representing a response rate of approximately 16%, had been returned. In this second article in a 3-part series, we address the theme of research accessibility. The study results show that while 75% of respondents think that research results are easily accessible, 90% would like them to be more accessible. For clinical dentists, the most important source of information about research is generalist dental journals (JCDA in particular), while teachers/researchers prefer specialist journals. In addition, clinical dentists prefer to learn about research through clinical practice guidelines rather than conventional scientific reports.

MeSH Key Words: attitude of health personnel; dental research; dentists

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Recently, the Institute of Musculoskeletal Health and Arthritis (IMHA) of the Canadian Institutes of Health Research undertook a process to review future dental research priorities and organization. As part of this process, a joint IMHA–CDA study was undertaken to investigate the opinions of Canadian dentists on the utility and accessibility of current dental research and possible future research priorities. This article, the second in a 3-part series, deals with the issue of access to research findings.

Methodology

A questionnaire with a prepaid envelope was sent to Canadian dentists with the December 2001 JCDA. The questionnaire contained questions on sociodemographics; research utility; research accessibility; and dental research priorities. (See Questionnaire at the end of the article.) By April 1, 2002, 2,788 questionnaires had been returned, representing a response rate of approximately 16%. No second mailing or follow-up was performed. **Tables 1 and 2** compare the study sample with the dentist population of Canada by gender and practice location.

Analyses were performed on data from 2,696 subjects, comprising 2,595 clinical dentists and 101 teachers/researchers. Ninety-two respondents, who were neither clinical dentists nor teachers/researchers, were excluded.

Tables 3 and 4 provide the characteristics of survey respondents (clinical dentists and teachers/researchers, respectively) in terms of practice location, type of practice, gender and age.

Results

The following results were obtained:

- Approximately 75% of clinical dentists think that dental research is easily available. However, a large majority (90%) would like dental research to be more easily available.
- For clinical dentists, the principal sources of information on dental research are JCDA (75% of respondents) and continuing education courses (72%). Only 26% of clinical dentists consult specialist journals, compared to 79% of teachers/researchers (**Fig. 1**).
- Clinical dentists prefer to read about the results of dental research in clinical practice guidelines (54%) and clinical abstract commentaries (49%) such as those published in JCDA. Only 18% of clinical dentists prefer conventional scientific reports (**Fig. 2**).

Discussion

While the low response rate means we must be careful of our interpretation of the results, the available data suggest

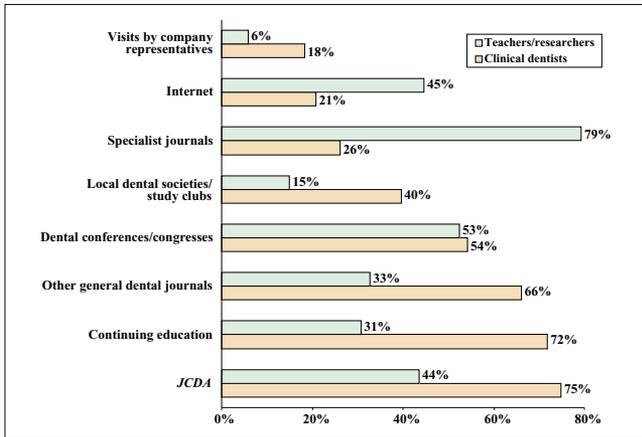


Figure 1: Percentage of clinical dentists (n = 2,595) and teachers/researchers (n = 101) citing their principal sources of research information (because respondents could choose more than 1 answer, the figures do not add up to 100%).

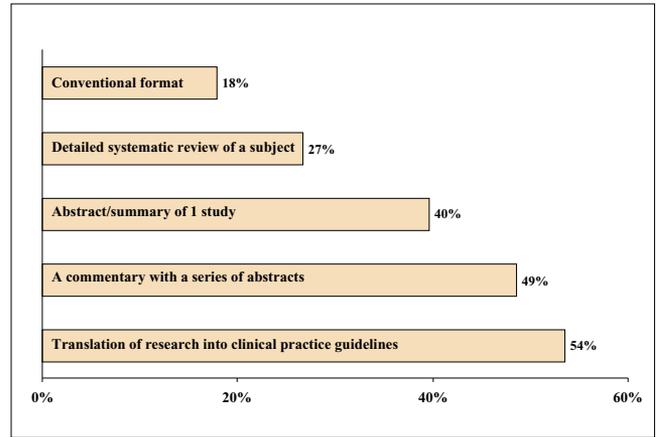


Figure 2: Percentage of clinical dentists (n = 2,595) citing their preferred format for presenting research results (because respondents could choose more than 1 answer, the figures do not add up to 100%).

Table 1 Response rates of clinical dentists and teachers/researchers by geographic location and gender (n = 2,696)

| Practice location | Number of dentists in Canada | | Distribution of respondents by location and gender ^a | | Response rates (%) | |
|-----------------------|------------------------------|---------------|---|--------------|--------------------|--------------|
| | Women | Men | Women | Men | Women | Men |
| Alberta | 339 | 1,357 | 62 | 235 | 18.3% | 17.3% |
| British Columbia | 532 | 2,104 | 111 | 391 | 20.9% | 18.6% |
| Manitoba | 88 | 459 | 12 | 86 | 13.6% | 18.7% |
| New Brunswick | 69 | 197 | 19 | 46 | 27.5% | 23.4% |
| Newfoundland | 26 | 131 | 4 | 23 | 15.4% | 17.6% |
| Northwest Territories | 8 | 34 | 0 | 5 | 0.0% | 14.7% |
| Nova Scotia | 115 | 355 | 25 | 76 | 21.7% | 21.4% |
| Ontario | 1,578 | 5,730 | 207 | 700 | 13.1% | 12.2% |
| P.E.I. | 12 | 48 | 3 | 12 | 25.0% | 25.0% |
| Quebec | 1,246 | 2,735 | 206 | 367 | 16.5% | 13.4% |
| Saskatchewan | 73 | 276 | 22 | 65 | 30.1% | 23.6% |
| Yukon Territory | 5 | 15 | 0 | 3 | 0.0% | 20.0% |
| Total | 4,091 | 13,441 | 671 | 2,009 | 16.4% | 14.9% |

^aTwo questionnaires from Nunavut were not included in this table because of the absence of population data for that territory.

Table 2 Response rates of clinical dentists and teachers/researchers by geographic location and type of dental practice (n = 2,696)

| Practice location | Number of dentists in Canada | | Distribution of respondents by location and gender ^a | | Response rates (%) | |
|-----------------------|------------------------------|--------------|---|-------------|--------------------|--------------|
| | Generalists | Specialists | Generalists | Specialists | Generalists | Specialists |
| Alberta | 1,528 | 168 | 259 | 36 | 17.0% | 21.4% |
| British Columbia | 2,421 | 242 | 442 | 63 | 18.3% | 26.0% |
| Manitoba | 480 | 87 | 78 | 19 | 16.3% | 21.8% |
| New Brunswick | 241 | 25 | 61 | 4 | 25.3% | 16.0% |
| Newfoundland | 152 | 11 | 26 | 0 | 17.1% | 0.0% |
| Northwest Territories | 45 | 0 | 4 | 1 | 8.9% | — |
| Nova Scotia | 389 | 72 | 91 | 13 | 23.4% | 18.1% |
| Ontario | 6,467 | 884 | 798 | 112 | 12.3% | 12.7% |
| P.E.I. | 56 | 5 | 12 | 3 | 21.4% | 60.0% |
| Québec | 3,623 | 371 | 496 | 77 | 13.7% | 20.8% |
| Saskatchewan | 319 | 38 | 76 | 11 | 23.8% | 28.9% |
| Yukon Territories | 20 | 4 | 3 | 0 | 15.0% | 0.0% |
| Total | 15,741 | 1,907 | 2,346 | 339 | 14.9% | 17.8% |

^aTwo questionnaires from Nunavut were not included in the table because of the absence of population data for that territory.

Table 3 Characteristics of clinical dentists who responded to the survey compared to characteristics of the dentist population in Canada

| Variables | Sample (n = 2,595) | Percentage of total sample | Percentage of the dentist population |
|--------------------------|-----------------------|----------------------------------|--|
| Practice location | | | |
| Alberta | 287 | 11.1 | 9.6 |
| British Columbia | 495 | 19.1 | 15.1 |
| Manitoba | 86 | 3.3 | 3.2 |
| New Brunswick | 65 | 2.5 | 1.5 |
| Newfoundland | 26 | 1.0 | 0.9 |
| Northwest Territories | 5 | 0.2 | 0.3 |
| Nova Scotia | 96 | 3.7 | 2.6 |
| Nunavut | 2 | 0.1 | |
| Ontario | 889 | 34.3 | 41.6 |
| P.E.I. | 15 | 0.6 | 0.3 |
| Quebec | 544 | 21.0 | 22.6 |
| Saskatchewan | 82 | 3.2 | 2.0 |
| Yukon Territories | 3 | 0.1 | 0.1 |
| Total | 2,595 | 100.0 | 100.0 |
| Type of practice | | | |
| General practitioner | 2,329 | 90.0 | 89.2 |
| Specialist | 260 | 10.0 | 10.8 |
| Periodontist | 47 | 1.8 | 1.7 |
| Prosthodontist | 26 | 1.0 | 1.0 |
| Endodontist | 34 | 1.3 | 1.0 |
| Pedodontist | 44 | 1.7 | 1.1 |
| Orthodontist | 68 | 2.6 | 3.6 |
| Oral surgeon | 29 | 1.1 | 1.9 |
| Public health | 7 | 0.3 | 0.4 |
| Oral medicine | 5 | 0.2 | 0.2 |
| Total | 2,589 | 100.0 | 100.0 |
| Gender | | | |
| Men | 1,931 | 74.8 | 76.7 |
| Women | 652 | 25.2 | 23.3 |
| Total | 2,583 | 100.0 | 100.0 |
| Age | | | |
| 30 years or less | 272 | 10.5 | - |
| 31 to 45 years | 1,126 | 43.4 | - |
| 46 to 60 years | 1,002 | 38.6 | - |
| 61 years or more | 193 | 7.4 | - |
| Total | 2,593 | 100.0 | - |

that although the majority of clinical dentists find dental research accessible, there is a marked difference between this group and the teachers/researchers in terms of how they find out about dental research. The fact that only a minority of clinical dentists cite specialist journals as a source of research information can be explained as follows: i) researchers present their work in a format that is not helpful to clinicians¹; ii) clinical dentists do not have easy access to scientific or specialist journals because these publications are expensive and there are many to choose from, and because they have limited access to the university libraries

Table 4 Characteristics of teachers/researchers who responded to the survey

| Variables | Sample (n = 101) | Percentage of total sample |
|-------------------------|---------------------|-------------------------------|
| Location | | |
| Alberta | 10 | 9.9 |
| British Columbia | 10 | 9.9 |
| Manitoba | 12 | 11.9 |
| New Brunswick | 0 | 0.0 |
| Newfoundland | 1 | 1.0 |
| Northwest Territories | 0 | 0.0 |
| Nova Scotia | 8 | 7.9 |
| Nunavut | 0 | 0.0 |
| Ontario | 23 | 22.8 |
| P.E.I. | 0 | 0.0 |
| Québec | 32 | 31.7 |
| Saskatchewan | 5 | 5.0 |
| Yukon Territories | 0 | 0.0 |
| Total | 101 | 100.0 |
| Type of activity | | |
| General practitioner | 19 | 19.4 |
| Specialist | 79 | 80.6 |
| Periodontist | 9 | 9.2 |
| Prosthodontist | 18 | 18.4 |
| Endodontist | 5 | 5.1 |
| Pedodontist | 6 | 6.1 |
| Orthodontist | 7 | 7.1 |
| Oral surgeon | 8 | 8.2 |
| Public health | 17 | 17.3 |
| Oral medicine | 9 | 9.2 |
| Total | 98 | 100.0 |
| Gender | | |
| Men | 19 | 19.2 |
| Women | 80 | 80.8 |
| Total | 99 | 100.0 |
| Age | | |
| 30 or less | 3 | 3.0 |
| 31 to 45 years | 26 | 25.7 |
| 46 to 60 years | 50 | 49.5 |
| 61 or more | 22 | 21.8 |
| Total | 101 | 100.0 |

that house these journals. In response to these issues, the clinical dentists in our sample suggested that research information be synthesized in formats such as clinical practice guidelines and commentaries with related abstracts, and that these practical and applied forms of research reporting should be published in generalist journals such as *JCDA*, which already plays an important role in knowledge transfer from researchers to clinicians. To improve communication between clinicians and researchers, the 2 groups need to discuss how best to be innovative in the presentation of research results. ♦

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The views expressed are those of the authors and do not necessarily reflect the opinions or official policies of the Canadian Dental Association.

Reference

1. Owen P. Clinical practice and medical research: bridging the divide between the two cultures. *Br J Gen Pract* 1995; 45(399):557-60.

16. In terms of research funding priorities, please give your opinion on the priority level of each of the following specific fields of dental research

| | Low priority | Medium priority | High priority | Don't know |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Amalgam | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Composite materials | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Other restorative materials | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Fluoride therapies | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Dental instrumentation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Implants | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Dental caries | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Periodontal diseases | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Tooth loss | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Orofacial & dental pain | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Infectious mucosal lesions | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Oral cancer | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Malocclusion | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Major malformations (e.g. clefts etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Trauma & acquired anatomical defects | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Smoking & dental disease | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Nutrition & dental disease | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Organization of dental services | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Access to dental services | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. Patient/dentist communication | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Infection control | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. Dental disease in children & adolescents | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. Dental disease in adults | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. Dental disease in the elderly | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. Dental disease in the disabled | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. Dental disease in First Nation's peoples | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. Dental disease in the poor | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

17. Among the 27 topics mentioned above, or alternative topics not included in the list, please indicate what you think are the three most important topics for dental research in the future

| | Number | Alternative topic not included in list above |
|--------|--------|--|
| First | _____ | _____ |
| Second | _____ | _____ |
| Third | _____ | _____ |



A QUESTIONNAIRE ON CANADIAN DENTAL RESEARCH PRIORITIES



Canadian health research has recently undergone a major re-organization with the creation of the thirteen Canadian Institutes of Health Research (CIHR). Dental research falls under the mandate of the Institute of Musculoskeletal Health and Arthritis (IMHA). An important part of this re-organizing process is an evaluation of future health research priorities for Canada. In deciding upon these future priorities, the IMHA wishes to consult as widely as possible and this includes the input of dentists. We therefore ask you to take 10 minutes of your time to complete this questionnaire, the results of which could have a very important bearing upon the future of dental research in Canada. The questionnaire is anonymous and the absolute confidentiality of your response is assured. Once you have completed the questionnaire, please return it in the prepaid envelope provided. If you have any questions about the questionnaire or any related issues, please contact one of the survey organisers, Dr. Paul Allison of McGill University at (514) 398-7203 ext. 00045.

Thank you for your time,

J.P. Lund (Advisory Board, IMHA)

J.P. O'Keefe (Editor-in-Chief, JCDA)

1. How old are you?

- 30 yrs or younger 31-45 yrs 46-60 yrs 61 yrs or older

2. Are you?.....

- Female Male

3. What is your principal work role? (please tick only one box)

- Clinical dentist Teacher Researcher Other

4. In which field of dentistry do you principally work? (please tick only one box)

- General practice Periodontics Prosthodontics Endodontics
 Pediatric dentistry Orthodontics Oral surgery
 Dental public health Oral medicine/pathology or radiology

5. In which province/territory do you principally work? (please tick only one box)

- British Columbia Yukon Alberta Northwest Territories
 Saskatchewan Manitoba Nunavut Ontario
 Quebec New Brunswick Nova Scotia Prince Edward Island
 Newfoundland and Labrador

6. In your opinion, are the results of dental research.....

- a) easily available to you No Yes Don't know
- b) useful to you No Yes Don't know

7. Would you like the results of dental research to be more easily available to you?

- No Yes Don't know/no interest

If yes, how?

(N.B. You may tick more than one)

- Through written media (e.g. journals)
- Through the Internet
- Through continuing education and meetings
- Other (specify.....)

8. What are your principal sources of information concerning dental research?

- Research doesn't interest me; I have no principal source *(N.B. You may tick more than one)*
- Continuing education courses
- Local dental society/study clubs
- Dental conferences/congresses
- The Journal of the Canadian Dental Association
- Other general dental journals
- Other specialist clinical and/or research journals
- The Internet
- Visits by representatives of pharmaceutical, equipment and other private companies
- Other (specify.....)

9. When reading about research, which of the following formats is preferable for you?

- Don't know/no interest *(N.B. You may tick more than one)*
- No preference
- A conventional report of one study
- An abstract/resumé of one study
- A commentary with a series of abstracts (e.g. the "Clinical Abstracts" series in the JCDA)
- A detailed systematic review on a subject
- Translation of research into clinical practice guidelines

10. Have you ever altered an element of your clinical practice as a result of learning the results of some form of research?

- No Yes Not applicable

If yes, how?

(N.B. You may tick more than one)

- A material (e.g. restorative, endodontic, prosthetic, surgical)
- A treatment technique (e.g. restorative, endodontic, prosthetic, surgical)
- A diagnostic technique (e.g. for caries, periodontal disease)
- A medical treatment (e.g. antibiotics, chlorhexidine, fluoride)
- An educational message (e.g. for caries, oral cancer)
- An overall management strategy (e.g. caries risk assessment)
- Other (specify.....)

11. How could the CDA help promote dental research in Canada? *(N.B. You may tick more than one)*

- Set up a mechanism for funding research
- Advocate for research funding at the federal level
- Publish more reports of research activities in Canadian dental schools
- Disseminate the findings of Canadian dental research through its media contacts
- The organization of continuing education forums on research issues
- Other (specify.....)

12. Would you like to be involved in research in any way; e.g. in deciding on research projects or as a facilitator (i.e. permitting access to your patients)?

- No Yes Don't know

13. How big an impact does research have on the general health of Canadians?

- None A small impact Quite a big impact A very big impact Don't know

14. How big an impact does research have on the oral health of Canadians?

- None A small impact Quite a big impact A very big impact Don't know

15. In terms of research funding priorities, please give your opinion on the priority level of each of the following areas of dental research

| | Low priority | Medium priority | High priority | Don't know |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Better understanding of disease processes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Better understanding of patient behaviour | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Development of preventive techniques | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Development of diagnostic techniques | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Development of treatments | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Development of materials | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Evaluation of effectiveness of different techniques and treatments | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Improving access to dental care | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |