

Do Canadian Dentists Find Dental Research Useful?

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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 edition of JCDA. By April 1, 2002, 2,788 questionnaires, representing a response rate of approximately 16%, had been returned. In this first article in a 3-part series, we address the theme of research utility. The results show that 82% of respondents think that dental research has an important or very important impact on the dental health of Canadians. Furthermore, 98% of respondents claim to have modified an element of their clinical practice after having been informed of some research results.

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

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Health research in Canada recently underwent a major reorganization. The former Medical Research Council of Canada, which was the principal health-related research funding agency, was replaced by the 13 institutes of the Canadian Institutes of Health Research (CIHR). Dental research fell within the mandate of the Institute of Musculoskeletal Health and Arthritis (IMHA). As part of this reorganization, CIHR wanted to increase partnerships with all stakeholders in health and health care in Canada, and IMHA wanted to get more input from dentists.

A joint CDA–IMHA study was therefore organized to investigate what dentists think about dental research, in particular: the utility of research; the accessibility of research; and future dental research priorities. In this first article in a 3-part series, we address the theme of research utility.

Methods

A questionnaire and a prepaid return envelope were sent to Canadian dentists with the December 2001 edition of the *JCDA*. The survey 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 to McGill University's faculty of dentistry, 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 2,595 respondents, who described themselves as clinical dentists (101 professors/researchers and 92 other non-clinical dentists were excluded). **Table 3** describes the study sample in terms of practice location, type of practice, gender and age.

Results

The following results were obtained:

- 96% of respondents think that research is useful to them;
- 98% of respondents have altered an element of their clinical practice after having been informed of the results of research;
- research is especially useful in the area of treatment, with 89% of respondents having altered both the use of a material or a treatment technique after being informed of research results (**Fig. 1**). However, only 46% had altered

Table 1 Response rates of clinical dentists, professors and 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, professors and 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 Territory	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%
Quebec	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 this table because of the absence of population data for that territory.

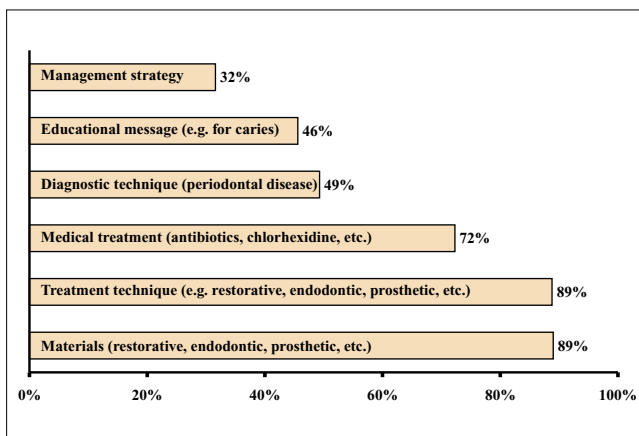


Figure 1: Percentage of dentists who have altered various elements of their clinical practice after having been informed of the results of dental research.

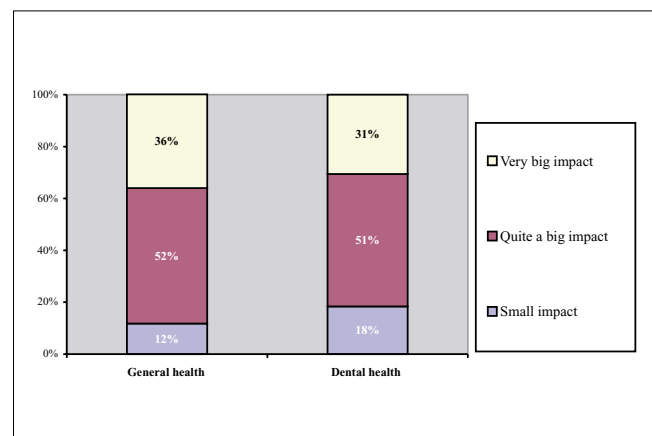


Figure 2: Percentage of dentists who think that research has a small, quite a big and a very big impact on the general and dental health of Canadians.

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	2329	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	-

an educational message and 32% had altered an overall management strategy (e.g., caries risk assessment).

- a large majority of respondents think that research has quite a big or a very big impact on both the dental and the general health of Canadians (Fig. 2).

Discussion

While the low response rate means we must be careful in our interpretation of the results, the available data suggest that Canadian dentists think dental research is good for the health of the population and for their own clinical practice.

Research seems to be very useful to dentists with respect to materials and treatment techniques, although it has less of an impact on diagnostic techniques and educational messages. This is an interesting observation when we consider that, for a number of years, many researchers have been calling for changes in preventive, diagnostic and treatment strategies among dentists.^{1,2} This difference between scientific discourse and routine clinical practice raises the issue of communication between researchers and clinicians. We will deal with this issue in the second article of this series.

Conclusion

The results of this survey suggest that research does have a direct impact on the work of a significant proportion of dentists. ♦

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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"/>