



THE ASSOCIATION OF FACULTIES
OF MEDICINE OF CANADA

L'ASSOCIATION DES FACULTÉS
DE MÉDECINE DU CANADA

2015 AFMC Graduation Questionnaire

Methodological Notes

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This document is intended to present information regarding the methodology behind the development, administration and analysis of the 2015 AFMC Graduation Questionnaire (AFMC GQ), including key aspects of data quality. It provides users with an understanding of the strengths and limitations of AFMC GQ data, and how the data can be used. For ease of reference, methodological notes have been organized into the following sections:

1. Background: History of the Graduation Questionnaire
2. Questionnaire Development
3. Eligible Participants
4. Questionnaire Administration
5. Response Rates
6. Data Capture, Processing and Analysis
7. Use of Results

1. Background: History of the Graduation Questionnaire

Prior to 2015, the Graduation Questionnaire (GQ) was administered as the Canadian Graduation Questionnaire (CGQ) by the Association of American Medical Colleges (AAMC). The CGQ was developed in 2001 as a tool for Canadian faculties of medicine to engage medical students in the evaluation of their medical education and well-being. The AAMC CGQ was English-only from 2001 to 2008, and bilingual from 2009 to 2014. The AAMC and AFMC worked in collaboration to facilitate the transfer of this important questionnaire for 2015, the inaugural year of the AFMC GQ.

2. Questionnaire Development

The AFMC GQ Working Group and Subcommittees, comprised of medical educators, representatives from Canadian faculties of medicine, students, residents, an AAMC representative, and AFMC staff, worked closely together to create the 2015 AFMC Graduation Questionnaire and improve its relevance to Canadian medical education. An active AFMC GQ member from the Committee on Accreditation of Canadian Medical Schools (CACMS) secretariat contributed to ensure alignment with the new accreditation standards and elements, and to reflect the content of the new Data Collection Instrument document.

While broad aspects of the graduation questionnaire remain similar or unchanged from the CGQ, many areas were modified to better meet the needs of the Canadian medical education community. As no comparisons with past AAMC CGQ data are possible (see section 7 “Interpretation and Use of Results”), an item-by-item comparison of the two tools is not provided here.

The AFMC translated the 2015 GC into French using currently accepted Canadian medical education terminology.

An application was made under the leadership of committee decanal leaders to The Ottawa Health Science Network Research Ethics Board (REB). Approval was granted for the 2015 AFMC GQ in January 2015.

3. Eligible Participants

The target population for the 2015 AFMC GQ was the 2,835 students who were registered in active studies and, as of January 2015, eligible for graduation from their MD program at a Canadian faculty of medicine. Faculties provided the AFMC with student lists. The national student total was calculated by summing the number of eligible students at all 17 Canadian faculties of medicine. Eligibility was not independently verified. The AFMC relied on the 17 faculties of medicine for the accuracy of the information they provided.

4. Questionnaire Administration

The 2015 AFMC GQ was programmed and accessible for student completion in both English and French using FluidSurveys, an online survey platform. Prior to the launch of the questionnaire, beta testing was conducted using a convenience sample to assess the functionality of the survey software (this sample did not include eligible graduating students).

The AFMC received a roster of eligible students from each faculty of medicine. Eight faculties were able to provide the university email addresses of their eligible students and the AFMC contacted these students directly for participation in the GQ. The remaining nine faculties were unable to share this information with AFMC and contacted their students via email using communication materials provided by the AFMC.

The 2015 AFMC GQ was available to access online between February 6, 2015 and May 31, 2015. Launch dates varied by school to best coincide with their respective academic schedules.

Students were sent an invitation to participate in the GQ via email using one of the two methods listed above. The email invitation provided students with a faculty (or where applicable, campus) URL to an English or French version of the GQ. Students were not provided with individual URLs as in previous years. Upon accessing the URL, students were directed to a page providing more information about the GQ and prompting them for their (voluntary) informed consent.

Students who gave consent to participate were presented with the questionnaire. All questions in the 2015 AFMC GQ were voluntary. Students were able to view their progress via a progress bar that indicated the percentage of completion, and had the option to save their responses and return to complete the questionnaire at another time.

Students received a total of up to three reminders using one of the two methods described above (either from the AFMC or from a designated university representative). All students received reminders: responses were anonymous and students could not be matched to data to determine completion.

Unlike previous years, in 2015 students did not have to pre-register for inclusion in the GQ.

5. Response Rates

Designated contacts at each faculty received biweekly updates from AFMC on the proportion of eligible students who had submitted questionnaires or refused to participate in the GQ. All schools received a document outlining appropriate methods of encouraging student participation in the GQ. Schools were allowed to provide incentives for students to participate in the AFMC GQ (e.g., prizes if a minimum response rate was achieved).

The response rate for the 2015 AFMC GQ is calculated based on completed questionnaires. A questionnaire was considered “complete” only if all of the following criteria were met:

1. Questionnaire showed consent to participate in the GQ;
2. Respondent answered at least one question in addition to the initial consent question (see 1); and
3. Respondent clicked the “submit” button at the end of the questionnaire.

The following table presents how many questionnaires were accessed and demonstrates how the criteria above were applied to determine the total number of completed questionnaires retained for analysis.

| | |
|--|--------------|
| Questionnaires accessed | 3,392 |
| 1. Questionnaires showing consent to participate | 3,379 |
| 2. AND answered at least one question | 3,378 |
| 3. AND clicked “submit” | 2,150 |
| Total completed questionnaires | 2,150 |

The resulting number of completed questionnaires was divided by the total number of eligible graduating students to determine the national response rate.

| | |
|--|--------------|
| Total completed questionnaires | 2,150 |
| Total eligible students | 2,835 |
| National response rate (2015 AFMC GQ) | 75.8% |

During the administration of the GQ the steps taken to protect respondent anonymity (e.g. faculty and/or campus specific instead of individual URLs; access being allowed more than once per computer/device; no logging of IP address), prevented AFMC staff from identifying unique respondents. Very limited identifying information was collected in the GQ, making the accurate detection of duplicates (two or more sets of responses from the same respondent) impossible. Using only the responses of those respondents who clicked “submit” also ensures consistency with the REB-approved informed consent.

The refusal rate for the 2015 AFMC GQ was 0.4%. This is calculated as the number of respondents who accessed the GQ but replied “no” when asked to provide consent to participate, divided by the total number of students eligible to complete the GQ.

6. Data Capture, Processing and Analysis

Responses were captured by FluidSurveys software, which allows for responses to both the English and French versions of the GQ to be combined (i.e., appear together in the same dataset).

FluidSurveys software possesses skip logic functionality, including advanced question branching. This allows a respondent to be directed to a follow-up question based on their previous response selected. This reduces respondent burden since respondents to whom a follow-up question does not apply are not shown it. For the GQ, branching was employed for several questions; however, the FluidSurveys software has the technical ability to save responses that are not consistent with the branching rules (and therefore illogical), as responses are captured in real time. For example, a respondent could enter a response of “Yes,” progress to the next question (dependent on that “Yes” response), but then move back in the questionnaire and change their previous response to “No.” If they had already entered a response to the follow-up question, that would still be captured by FluidSurveys (the respondent would not be presented with the follow-up question on the second pass through, and would therefore be unable to change their response). As a result of this possibility, a data cleaning principle was put in place to favour responses to the prerequisite question (in the example given, the yes/no question) over the follow-up question. In order to enforce this, filters were put in place during data analysis to ensure that responses to follow-up questions were not considered for analysis when not logically consistent with responses to the relevant prerequisite question.

Due to question design issues, 2 two-part questions mistakenly permitted a contradictory follow-up response following the pre-requisite, yes or no, question. For all respondents who provided contradictory responses, both responses were removed from the analysis, resulting in a maximum of 0.6% eliminated responses for any given question. An additional multiple response question, with the initial option of “prefer not to say” mistakenly permitted an option for further disclosure - in this case, the ‘prefer not to say’ response was retained.

To protect against data entry errors,¹ FluidSurveys allows for response parameters to be set that cannot be violated (to use numerical data as an example, a minimum and maximum value can be specified to avoid out-of-range values such as 255 for age). For the questions about scholarship and bursary/grant/sponsorship amounts, a minimum value of one (1) was not enforced in the online questionnaire. During data cleaning, any responses of zero (0) were removed, along with the response to the prerequisite yes/no question. This affected less than 0.1 percent of cases. Several questions in the GQ allowed respondents to select the response option “other (please specify),” and then provided respondents with a text box in which to elaborate. For these questions, possible responses were not specified in the FluidSurveys programming. Instead, responses were reviewed by a human coder during data cleaning to ensure that responses were captured accurately (e.g., despite misspellings or alternate spellings) and not deemed anomalous. If the response was deemed valid, the coder selected one of the following: re-categorised the response into an existing category, coded it to a newly-created category (if sufficient number of similar responses), or coded it as “other.” If the response was deemed anomalous, it was removed from the analysis.

Qualitative questions asking for comments about various aspects of the medical education experience, student wellbeing or the GQ itself were retained verbatim and are not reported publicly.

Frequency distributions (counts and percentages) are presented for all questions from the 2015 AFMC GQ. In the case of questions in the “Mistreatment” section of the report, some frequencies may be calculated and presented for more than one question at a time. Please refer to the notes accompanying each data table for more information. Percentages presented may not add to 100 due to rounding or due to response formats that permitted more than one response per question. For some questions, measures of central tendency (mean/median) and dispersion (standard deviation/range) are reported. Because all questions in the 2015 AFMC GQ were voluntary, there are instances where respondents skipped (i.e., did not answer) a question. Some questions also had response options such as “not applicable” or “prefer not to say/provide.” These cases were excluded from calculations of total counts, percentages or measures of central tendency and dispersion for a given question. In the case of “not applicable” or “prefer not to say/provide” responses, an additional table is provided with the count of respondents who chose such options and the count of those who did not answer the question. Where these options were not available to respondents, the number who skipped the

¹ Data entry errors in the context of the 2015 AFMC GQ are defined as respondent errors (e.g., typos), since the GQ is a self-administered questionnaire.

question can be obtained by subtracting the total count of responses from the 2,150 completed questionnaires.

To uphold rigorous standards of participant anonymity and the confidentiality of responses, only aggregate data are reported by the AFMC. The AFMC produces a publicly available national report, combining data from all schools. Each faculty is also provided with a unique report that presents aggregate responses at the faculty and, if applicable, campus levels. These reports will not be publicly disseminated by the AFMC. No report is issued if there are fewer than ten (10) respondents for that reporting level (e.g., if a campus has fewer than 10 respondents).

Responses to demographic, enrollment or financial questions could, on their own, reveal information about the identity of a respondent. For this reason, no results are reported when fewer than five (5) respondents selected a response option for any of the demographic, enrollment or financial questions. In the national report, this was achieved by collapsing (combining) response categories. In faculty and campus reports, fields marked with an asterisk (*) have been suppressed since collapsing categories was not always possible.

Individual-level data (microdata) will not be made available by the AFMC.

7. Use of Results

As mentioned in Section 3, the 2015 AFMC GQ surveyed students eligible to graduate from an MD program in a Canadian faculty of medicine as of January 2015. Subsequent graduation was not verified by the AFMC, who relies on member schools to provide eligible student information. It is important to qualify that the AFMC GQ data reflect the responses of respondents who are eligible to graduate but may or may not be actual graduates.

The results obtained by the AFMC GQ are not based on a random sample and respondents were self-selecting. For this reason, the results presented in this report are representative only of the students who responded to the 2015 AFMC GQ and should not be used to make inferences about the entire student population. Extreme caution must be applied when performing comparisons or drawing conclusions based on this non-random sample. As noted in Section 6 - when appropriate, standard deviations were reported. This statistic is useful to assess the distribution of the answers to a question. The standard deviations in this report are not meant to be used to build confidence intervals or infer statistical significance.

While the AFMC GQ was born out of the AAMC CGQ, comparisons to AAMC CGQ data from previous years cannot be made due to changes in the content of the questionnaire and method of administration. Revisions (e.g., question wording or available response options) were made to the AFMC GQ to improve relevance to Canadian medical education, students and faculties, resulting in non-comparable questions or responses to past AAMC CGQs. The AFMC GQ was administered as a completely anonymous questionnaire. In the past, the AAMC administered the CGQ using unique, private links (URLs), which were emailed to each student. For the 2015

AFMC GQ, the emailed links were specific to faculties or, where applicable, campuses, but were not linked to the identity of a student in any way. This may have impacted response rates (see section 5) or disclosure of information (e.g., students may have felt more willing to share sensitive information than in the past). The extent of the impact of these changes has not been measured.

The 2015 AFMC GQ was administered in both English and French languages. Feedback provided at the end of the GQ by those who responded to the French questionnaire suggested some potential translation issues. The general nature of such feedback makes it difficult to assess the level of impact this may have had on data quality. The AFMC is committed to working with our Francophone stakeholders to improve the quality of the French GQ for future editions of the questionnaire.

7.1 Additional considerations regarding specific questions within the 2015 AFMC GQ

The following are specific considerations regarding the interpretation or comparability of results for specific questions:

- **Gender identity and sexual orientation**: When asked about their sexual orientation, respondents were presented with a list that included categories of gender identity. These categories were not presented when respondents were asked about their gender identity (although the latter question did include an “other” category).
- **Ethnic/cultural background**: Originally this question was constructed for comparability with Statistics Canada National Household Survey data. However, Statistics Canada uses the categories provided to identify population groups of visible minorities for employment equity purposes, not to identify ethnic or cultural origins. Any comparisons with data on ethnic or cultural origins should be done using extreme caution. Additionally, despite the provision of identical response categories, the results of this question are not comparable to the visible minority data collected by Statistics Canada as part of the National Household Survey.
- **Type of degree program**: This question was asked and programmed to allow for more than one response; however, response options were mutually exclusive. During data cleaning, a coder verified that multiple selections (including “Other”) could be narrowed down to a single choice (for example, a respondent selecting “MD” and “MD/PhD” could be treated as “MD/PhD”, as only one MD degree is being completed by any given respondent). For this reason, results for this question are reported as for a single-response question.
- **Clinical learning experiences**: Due to an error in programming, respondents who selected “not applicable” when asked to provide an overall rating for a clinical discipline were presented with a battery of seventeen (17) statements related to that discipline. For reporting purposes, a filter was put in place to ensure that only the responses of respondents who had actually selected a rating from “poor” to “excellent” for the

clinical discipline were considered when analyzing the results to the follow-up question for that discipline.

- **Research:** The first question in this chapter of the National Report asks about research projects with a faculty member and allows students to indicate availability of this opportunity. A similar question in the series of questions that follows (“There were opportunities available for me to undertake research”) does not include this qualification. Therefore, respondents who indicated they had no opportunity to participate in research with a faculty member were still asked the question about opportunities to undertake research in general.
- **Student services:** Due to an error in programming, respondents who selected “not applicable” when asked to provide a rating for “personal counselling” were also asked to rate the “confidentiality of personal counselling” (these items appear in the series of questions asking about the Office of Student Affairs/Student support services team). For reporting purposes, a filter was put in place to ensure that only the responses of respondents who had selected a rating from “very dissatisfied” to “very satisfied” or who had no response at all when asked to rate “personal counselling” were considered when analyzing the ratings for “confidentiality of personal counselling”.
- **Mistreatment:** The questions asking about respondents’ experiences related to feeling publicly embarrassed are excluded from much of the analysis. These questions were added to the GQ and CGQ by the AAMC to increase the validity of items related to questions on being publicly humiliated. While a discussion on the impact of this change is not within the scope of this report, it is of note that the frequency distribution for the question asking “How frequently a student was publicly embarrassed” differs markedly from other items in this section.
- **Career plans:** In the past, the AAMC CGQ asked students about their choice of specialty prior to asking about factors that influenced this choice. In the 2015 AFMC GQ, the question asking students their choice of specialty was not asked. Students were still asked about the factors that influenced their choice. However this was meant to refer to their choice more broadly (i.e., their medicine career in general). Language referring to specialty choice was mistakenly left unchanged in the 2015 AFMC GQ, but responses to these questions should be interpreted as pertaining to the career choice of becoming a physician and not as related to the selection of a specific specialty.
- **Debt:** Students were asked three different questions related to their debt load (amount): one about medical education debt, a second about non-educational debt, and a third about educational debt incurred prior to enrolment in medical school studies. Caution should be used when interpreting these responses, as respondents may assign different individual meaning to these distinctions.

Under the terms of our ethics requirements, the release of AFMC GQ data is governed by protocol # 20150069-01H approved by the Ottawa Health Science Network Research Ethics Board. The national report (a summary report combining the data from all schools) will be

made available to the public on AFMC's website.

The information contained in the 2015 AFMC GQ National Report is presented by the AFMC on behalf of the Canadian faculties of medicine. Please contact the AFMC at gq@afmc.ca prior to use of or quoting any information contained in this report.

Please feel free to contact gq@afmc.ca for more information about this summary or any aspect of the AFMC GQ.