Medical Teacher

ISSN: 0142-159X (Print) 1466-187X (Online) Journal homepage: informahealthcare.com/journals/imte20

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**To cite this article:** P. Schattner, B. Klein, L. Piterman, J. Sturmberg & L. McCall (2007) Impact of Master of Family Medicine degree by distance learning on general practitioners' career options, Medical Teacher, 29:4, e85-e92, DOI: 10.1080/01421590701287905

**To link to this article:** https://doi.org/10.1080/01421590701287905

Published online: 03 Jul 2009.

2007; 29: e85–e92 MEDICAL TEACHER

WEB PAPER

# Impact of Master of Family Medicine degree by distance learning on general practitioners' career options

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## Abstract

**Introduction:** This study investigated the impact of a Master of Family Medicine degree (via distance education) on GPs' career options, and in particular, whether they were more likely to adopt university positions after the course. A secondary aim was to examine whether those who undertook a research project as part of their Masters took up different career options than Masters graduates who undertook a more clinically orientated course.

**Methods:** A questionnaire survey was posted to all 192 graduates of the Master of Family Medicine degree. Approximately one fifth of these resided overseas, with the majority in Hong Kong.

**Results:** The response rate was 68%. Graduates stated that they benefited from the course, particularly in the areas of clinical knowledge and improvement in 'academic' skills. Changes in careers, with increases in non-clinical appointments, did occur after the course for both the Research and Clinical Masters graduates.

**Discussion:** Responses to the survey indicated that graduates benefited in completing the course and changes in their career direction following graduation. However, whether the Masters course provided new skills to enable career change, or the GPs were in the process of change anyway, cannot be determined with certainty. Further studies, including interviews, are required to establish the impact of a distance education higher degree.

**Conclusion:** The research output of general practice remains behind that of its specialist colleagues. Higher degrees for GPs might encourage them to undertake more academic pursuits, but the precise relationship still remains uncertain.

## Introduction

'Academic output' for general practitioners (GPs) as measured by, for example, publications and research grants, is less than that of their medical specialist colleagues (Askew et al. 2001; Kamien 2001). Encouraging GPs to undertake a higher degree, particularly one that includes a component of research, might well be one way of increasing this output (Smith 1993). As distance education provides busy GPs with the opportunity for continued education, the Department of General Practice at Monash University, Australia, began offering such courses more than 15 years ago.

This department has shown that many GPs undertake diploma or masters courses to overcome their sense of isolation and to gain intellectual stimulation, although it appears that the attraction of academia is not a particularly important motivator (Piterman et al. 2000a, 2000b). Nevertheless, there is some evidence that higher degrees for health practitioners can assist those who wish to embark on new career paths, although not necessarily university ones (Mathheos et al. 1998; Treloar 1998; Davis et al. 2004; Maxwell et al. 2004).

The Monash Masters program first commenced in 1989 as an on-campus course, and became a distance education course in 1992 (Piterman et al. 2000b). It originally required a minor thesis based on a one year research project (which we shall call the 'Research Masters'), but subsequent market forces dictated that an alternative masters be offered to students with clinical coursework options without a compulsory research project ('Clinical Masters'). This alternative Masters commenced in 1999. The Research Masters is undertaken over 2 years full time or 4 years part time. The Clinical Masters takes 18 months full time and 3 years part time. Both have core subjects as well as elective, clinically focused ones. The core subjects for both degrees include Principles of General Practice and introduction to Research Methods in General Practice. The Research Masters has an additional core

### Practice points

- Academic general practice needs to be fostered.
- Encouraging general practitioners to undertake higher degrees might help achieve this.
- Degrees includes masters by distance education.
- These can be either clinical or research masters.

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ISSN 0142–159X print/ISSN 1466–187X online/07/040085–8 © 2007 Informa UK Ltd.
DOI: 10.1080/01421590701287905

subject, applied research methods, whereas the Clinical Masters has Learning and Teaching Family Medicine. Regular course instruction is equivalent to two half-day sessions per week, including student assignments.

We hypothesised that those who undertook a Research Masters degree were more likely to be interested in undertaking further research and entering a career pathway in which research was a key component. The aim of this study was therefore to investigate the self-reported impact of the Masters program on GPs, and in particular, whether the Research Masters resulted in more GPs taking up career options outside clinical practice than those who completed the clinical masters.

## Methods

### Sampling frame

Only graduates (i.e. not current students) of the Master of Family Medicine degree were eligible to participate. Attempts were made to update the department's database of Australian graduates by telephoning the clinics to check contact details; however, it was not possible to verify that addresses or fax numbers were correct in all cases. One hundred and ninety two graduates were identified and therefore included in the survey. Of these, 40 (20.8%) had undertaken the Research Masters degree and 152 (79.2%) the Clinical Masters.

### Study instrument

The questionnaire was developed de novo based on discussions within the study team, as no suitable instrument was found by searching the literature. The instrument went through several iterations until the authors were satisfied that the final version covered the areas of interest (especially post-graduate educational factors hypothesised to be associated with changes in career activities), and demonstrated face validity. There were several sections to the questionnaire covering the following themes: demographic information; brief course details; attitudes to the course; pre- and post-graduate career activities; information about the Masters Research project (if relevant); and finally, an open-ended question on other opinions about the Masters course.

### Survey methods

The target group of 192 was sent the questionnaire, an explanatory statement and a reply-paid envelope. A follow-up questionnaire was sent by fax to non-responders after an average of 4 weeks from the initial mail-out.

### Data analysis

The survey data were entered into SPSS Version 12. Frequency analysis and Chi Square (with Fisher's correction where required) were used for categorical data, with non-parametric tests (Mann-Whitney $U$ and Wilcoxon signed rank) used for between group (i.e. between the Research and Clinical Masters) and within group analyses, respectively. Significance was taken at the $p<0.05$ level.

The open-ended responses were analysed independently by two authors (LM and LP) who reached agreement on the common themes.

### Ethics

Ethical approval for the study was obtained from the Standing Committee on Research in Humans at Monash University.

## Results

### Response rate and characteristics of respondents

The response rate was 68% (130/192). Of these, 102 had completed the Clinical Masters course and 28 the Research Masters (i.e. just over three quarters of the respondents were clinical masters). Sixty six percent (86/130) were Australian resident doctors, with the largest overseas group being those from Hong Kong (20%; 26/130). The majority worked in general practice (115/130), though some were hospital employees. Two thirds (88/130) were from metropolitan centres, with almost the same proportion (78/130) being either principals or associates in their practices. Prior to their commencement of the masters, a little more than a quarter (42/130) were involved in academic general practice, most of them part-time, and about a half (66/130) reported that they were actively involved in their Division of General Practice (government-funded professional support organisations based on geographical areas).

The general characteristics of the two groups of graduates can be found in Table 1. There were no significant differences between the two groups with the exception of the Research Masters being much more likely to be involved in academic general practice ($\chi^2=7.4$; $p=0.01$, Fisher's test).

As we hypothesised that the Research Masters group was more likely to follow an academic career path, we asked them a series of additional questions regarding their studies. The most common type of research project undertaken by the Masters students during their degree was attitudinal (13/30), with clinical, health service and educational being the next most frequent (4/30, 4/30 and 3/30 respectively). Most of the research projects used descriptive methods (13/30), with 6 being qualitative and 4 observational. Eleven out of 25 Research Masters graduates had published their study in a peer-reviewed journal, and 10 out of 27 had presented it at a conference. (Note that there were missing responses to some items leading to some inconsistency in the denominator.)

Sixteen out of 27 had a diploma or post-graduate degree prior to commencing the masters; 5 had enrolled in a doctorate following graduation and a further 8 intended to do so.

### Reasons for doing the course

There were very few differences between both groups for undertaking the Masters program, although those who completed the Clinical Masters were significantly more likely to have done so to improve clinical knowledge (($\chi^2=7.70$; $p=0.014$, Fisher's test). Nevertheless, both groups indicated that clinical knowledge, as well as self-development, rated

**Table 1.** Characteristics of respondents (Clinical and Research Masters).

| | Clinical Masters | % of Clinical respondents[1] | Research Masters | % of Research respondents |
|---|---|---|---|---|
| Course Type | 102 | (100) | 28 | (100) |
| Gender | | | | |
| Male | 61 | (59.8) | 19 | (67.9) |
| Female | 41 | (40.2) | 9 | (32.1) |
| Age | | | | |
| 25–29 | 1 | (1.0) | 0 | (0) |
| 30–40 | 20 | (19.6) | 0 | (0.0) |
| 41–50 | 45 | (44.1) | 16 | (57.1) |
| 51–60 | 32 | (31.4) | 9 | (32.1) |
| Over 61 | 4 | (3.9) | 3 | (10.7) |
| Country of residence | | | | |
| Australia | 64 | (62.7) | 22 | (78.6) |
| Hong Kong | 25 | (24.5) | 1 | (3.6) |
| UAE | 3 | (2.9) | 1 | (3.6) |
| Other | 10 | (9.8) | 4 | (14.3) |
| Location of work | | | | |
| Metropolitan | 68 | (67.3) | 20 | (71.4) |
| Other | 33 | (32.7) | 8 | (28.6) |
| GP practice size | | | | |
| solo | 21 | (22.1) | 6 | (22.2) |
| 2–4 | 39 | (41.1) | 6 | (22.2) |
| 5 or more | 31 | (32.6) | 13 | (48.1) |
| Not applicable | 4 | (4.2) | 2 | (7.4) |
| Practice position | | | | |
| Principal/associate | 60 | (60.6) | 18 | (66.7) |
| Assistant/salaried | 25 | (25.3) | 4 | (14.8) |
| Other | 8 | (8.1) | 3 | (11.1) |
| Not applicable | 6 | (6.1) | 2 | (7.4) |
| Involvement in professional organisations[2] | | | | |
| Academic GP | 27 | (14.7) | 15 | (27.3) |
| Division of General Practice | 50 | (27.2) | 16 | (29.1) |
| Medico-political | 7 | (3.8) | 2 | (3.6) |
| College of GPs | 57 | (31) | 16 | (29.1) |
| Government | 18 | (9.8) | 3 | (5.5) |
| Other | 25 | (13.6) | 3 | (5.5) |
| Where they work (full-time)[2] | | | | |
| General practice | 62 | (82.7) | 12 | (70.6) |
| Hospital practice | 5 | (6.7) | 2 | (11.8) |
| Non-clinical (e.g. government) | 1 | (1.3) | 1 | (5.9) |
| Other | 7 | (9.3) | 2 | (11.8) |
| Where they work (part-time)[2] | | | | |
| General practice | 22 | (47.8) | 9 | (47.4) |
| Hospital practice | 10 | (21.7) | 1 | (5.3) |
| Non-clinical (e.g. government) | 1 | (2.2) | 2 | (10.5) |
| Other | 13 | (28.3) | 7 | (36.8) |

[1]Percentages are rounded to first decimal point and refer to valid responses only.
[2]Multiple responses allowed.

**Table 2.** Reasons for undertaking the Masters course.

| Reasons for undertaking the course[1] | Clinical Masters | % of responses by Clinical group[2] | Research Masters | % of responses by Research group |
|---|---|---|---|---|
| Clinical knowledge | 91 | (26.1) | 19 | (21.8) |
| Career change | 20 | (5.7) | 7 | (8) |
| Self development | 89 | (25.6) | 25 | (28.7) |
| Patient care | 78 | (22.4) | 16 | (18.4) |
| Fulfil medical education requirements | 29 | (8.33) | 5 | (5.7) |
| Academia | 28 | (8) | 13 | (14.9) |
| Promotion | 3 | (0.9) | 0 | (0) |
| Other | 10 | (2.9) | 2 | (2.3) |

[1]Multiple responses allowed.
[2]Percentages are rounded to first decimal point and refer to valid responses only.

highly as reasons for undertaking the course (110/130 and 114/130 respectively – see Table 2). There was also a trend for the Clinical Masters group, in comparison to the Research Masters group, to suggest that improving patient care was one of their main reasons for doing the course ($\chi^2 = 4.10$; $p = 0.057$, Fisher's test).

## Impact of the course on attitudes to career

Graduates were asked what impact the course had on their attitudes and beliefs about their careers (Table 3). Those in the Research Masters group were significantly more likely to pursue a higher degree (Mann–Whitney $U = 917.50$; $p = 0.015$); were more interested in doing further research (Mann-Whitney $U = 738.00$; $p = 0.000$); were more interested in publishing (Mann–Whitney $U = 732.50$; $p < 0.001$); and more interested in applying for further research grants (Mann–Whitney $U = 770.00$; $p = 0.001$). The Clinical Masters group were significantly more likely to report that their course led them to a better understanding of the nature of the consultation in general practice (Mann–Whitney $U = 1015.50$; $p = 0.024$); and that the course made them more satisfied with their clinical work (Mann–Whitney $U = 1042.00$; $p = 0.039$).

Virtually all respondents agreed that they had been taught useful 'academic' skills, as well as clinical ones. However, almost half did report that the course gave them greater professional leadership skills, although this was not one of the Masters learning objectives and was not specifically dealt with during the course. Almost three quarters of all respondents developed a greater interest in pursuing other formal studies, and almost half felt that they might consider doing a doctorate. Although three quarters had become more interested in general practice research, only a quarter were more interested in applying for a Research grant. The vast majority felt that the course increased their understanding of the theoretical and scientific basis of general practice, an understanding of the health care system, and the nature of the medical consultation. There was virtual unanimity about the course making them less likely to leave general practice as a vocation. A summary of attitudinal responses to the course can be found in Table 3.

## Career changes and the Masters course

There were several differences regarding the self-reported relationship between the masters course and career achievements (see Tables 4 and 5). Although it appears that the data on employment in 'non-clinical' positions show increases for both the Research and Clinical Masters after the course, between group analysis reveals that there was a significant difference in employment status both before (Mann–Whitney $U = 948.00$, $p = 0.008$) and after the masters (Mann–Whitney $U = 761.00$, $p = 0.004$). It is therefore necessary to examine the 'within group' analysis which shows that the increase in non-clinical employment was only statistically significant for the clinical group ($Z = -2.683$; $p = 0.007$, Wilcoxon signed rank test) (see Table 5).

Within group analysis also showed that both the clinical and Research Masters increased their level of employment at university after the doing the course. The clinical group did so significantly ($Z = -2.236$; $p = 0.025$, Wilcoxon signed rank test), but this just failed to reach statistical significance for the research group ($Z = -1.890$; $p = 0.059$, Wilcoxon signed rank test).

As might be expected, the Research Masters group were significantly more likely to have achieved the following after the course in comparison with the clinical group: completed research projects (Mann–Whitney $U = 436.00$; $p = 0.000$); research grants (Mann–Whitney $U = 629.50$, $p < 0.001$); publications (Mann–Whitney $U = 537.50$, $p < 0.001$); and conference presentations (Mann–Whitney $U = 746.50$, $p = 0.009$). (Note that caution should be exercised in interpreting the data on the publication variable, as the two groups were significantly different at baseline: Mann–Whitney $U = 802.50$, $p = 0.009$.)

## Attitudes and beliefs to the course based on open-ended responses

Although some respondents agreed that the course was 'career changing', some thought that 'academics' did not value Masters degrees, only doctorates. Others felt that while the Diploma in Family Medicine (a mandatory precursor to the Masters) was worthwhile, the Masters degree was only to try to 'impress'

**Table 3.** Attitudes to the Masters in Family Medicine course.

| Attitudes | Completely disagree (valid%) | Disagree somewhat (valid%) | Agree somewhat (valid%) | Completely agree (valid%) |
|---|---|---|---|---|
| The course has taught me useful academic skills | | | | |
| Clinical Masters | 1 (1.0) | 2 (2.0) | 48 (48.0) | 49 (49.0) |
| Research Masters | 0 (0) | 1 (3.6) | 9 (32.1) | 18 (64.3) |
| The course has enhanced my career opportunities | | | | |
| Clinical Masters | 10 (10.3) | 24 (24.7) | 49 (50.5) | 14 (14.4) |
| Research Masters | 3 (10.7) | 2 (7.1) | 16 (57.1) | 7 (25.0) |
| The course assisted me in taking a greater leadership role within my profession | | | | |
| Clinical Masters | 12 (12.5) | 30 (31.3) | 35 (36.5) | 19 (19.8) |
| Research Masters | 3 (10.7) | 6 (21.4) | 11 (39.3) | 8 (28.6) |
| The course taught me useful clinical skills | | | | |
| Clinical Masters | 0 (0) | 10 (10.0) | 48 (48.0) | 42 (42.0) |
| Research Masters | 3 (11.5) | 2 (7.7) | 11 (42.3) | 10 (38.5) |
| The course increased my interest in pursuing other formal studies (excluding a doctorate). | | | | |
| Clinical Masters | 6 (6.4) | 21 (22.3) | 46 (48.9) | 21 (22.3) |
| Research Masters | 1 (3.7) | 6 (22.2) | 11 (40.7) | 9 (33.3) |
| The course increased my interest in pursuing a higher degree (i.e. a doctorate – MD or PhD) | | | | |
| Clinical Masters | 14 (14.6) | 34 (35.4) | 39 (40.6) | 9 (9.4) |
| Research Masters | 3 (11.1) | 5 (18.5) | 10 (37.0) | 9 (33.3) |
| The course increased my interest in research in general practice | | | | |
| Clinical Masters | 8 (8.2) | 26 (26.8) | 47 (48.5) | 16 (16.5) |
| Research Masters | 0 (0) | 2 (7.1) | 12 (42.9) | 14 (50.0) |
| The course increased my interest in publishing academic papers | | | | |
| Clinical Masters | 19 (19.6) | 42 (43.3) | 26 (26.8) | 10 (10.3) |
| Research Masters | 1 (3.6) | 6 (21.4) | 11 (39.3) | 10 (35.7) |
| The course increased my interest in applying for research grants | | | | |
| Clinical Masters | 28 (29.2) | 48 (50.0) | 16 (16.7) | 4 (4.2) |
| Research Masters | 3 (11.5) | 9 (34.6) | 10 (38.5) | 4 (15.4) |
| The course increased my understanding of the science of medicine | | | | |
| Clinical Masters | 1 (1) | 7 (7.1) | 48 (48.5) | 43 (43.4) |
| Research Masters | 0 (0) | 4 (14.3) | 12 (42.9) | 12 (42.9) |
| The course increased my understanding of the academic foundations of general practice | | | | |
| Clinical Masters | 1 (1.0) | 2 (2.0) | 26 (26.3) | 70 (70.7) |
| Research Masters | 0 (0) | 0 (0) | 11 (39.3) | 17 (60.7) |
| The course increased my understanding of the dynamics of the consultation in general practice | | | | |
| Clinical Masters | 2 (2.1) | 3 (3.1) | 41 (42.3) | 51 (52.6) |
| Research Masters | 1 (3.6) | 4 (14.3) | 14 (50.0) | 9 (32.1) |
| The course increased my understanding of the health care system | | | | |
| Clinical Masters | 8 (8.1) | 20 (20.2) | 53 (53.5) | 18 (18.2) |
| Research Masters | 1 (3.6) | 6 (21.4) | 14 (50.0) | 7 (25.0) |

**Table 4.** Other beliefs about the Masters course.

| Attitudes | Completely disagree (valid%) | Disagree somewhat (valid%) | Agree somewhat (valid%) | Completely agree (valid%) | Not applicable (valid%) |
|---|---|---|---|---|---|
| I have modified my approach to patient 1care as a result of the course | | | | | |
| Clinical Masters | 1 (1.0) | 3 (3.0) | 43 (42.6) | 52 (51.5) | 2 (2.0) |
| Research Masters | 1 (3.6) | 3 (10.7) | 14 (50.0) | 9 (32.1) | 1 (3.6) |
| I have felt more satisfied with my clinical work as a result of the course | | | | | |
| Clinical Masters | 0 (0) | 4 (4.0) | 33 (33.0) | 62 (62.0) | 1 (1.0) |
| Research Masters | 1 (3.7) | 5 (18.5) | 9 (33.3) | 11 (40.7) | 1 (3.7) |
| I have felt more satisfied in doing research as a result of the course | | | | | |
| Clinical Masters | 5 (5.1) | 26 (26.3) | 40 (40.4) | 16 (16.2) | 12 (12.1) |
| Research Masters | 1 (3.6) | 4 (14.3) | 10 (35.7) | 11 (39.3) | 2 (7.1) |
| I have felt more satisfied with my academic work as a result of the course | | | | | |
| Clinical Masters | 5 (5.0) | 11 (11.0) | 42 (42.0) | 35 (35.0) | 7 (7.0) |
| Research Masters | 1 (3.6) | 1 (3.6) | 15 (53.6) | 9 (32.1) | 2 (7.0) |
| I have considered leaving the medical profession as a result of the course | | | | | |
| Clinical Masters | 79 (78.2) | 11 (10.9) | 3 (3.0) | 3 (3.0) | 5 (5.0) |
| Research Masters | 22 (78.6) | 3 (10.7) | 2 (7.1) | 0 (0) | 1 (3.6) |

academics, and was not worth the effort. There were specific comments about the difficulties in obtaining adequate research supervision at a distance, although it had encouraged a few to continue on to a doctorate. There were no other comments volunteered on the possible impact of the course on their careers.

## Discussion

About a fifth (21%; 40/192) of all Masters graduates had undertaken a Research course, which is comparable to the proportion among the respondents (22%; 28/130). This suggests that the views of the 68% of doctors that participated in the survey are likely to accurately represent those of both the Research and Clinical Masters graduates. The vast majority (88%) of doctors were predominantly in clinical practice, although there were some important differences at baseline between the Clinical and Research Masters group, with the latter being more likely to have non-clinical appointments.

Most doctors undertook the course to improve themselves, particularly in the sense of becoming better clinicians. However, a sizeable proportion (31.5%) also wanted to obtain better academic skills. They were generally satisfied that the course gave them a greater understanding of the academic foundations of general practice, the science of medicine, an understanding of the health care system and the workings of the consultation. The program encouraged a majority of students to continue with higher education activities.

However, the main interest in this study was to see if the course had an impact on career change, particularly in encouraging GPs to take up non-clinical appointments, especially university ones. The data show that there was indeed a significant change in career activities involving non-clinical work. Unfortunately, a survey completed at a single point in time cannot distinguish between the course influencing subsequent career choice or whether those who had already decided to pursue other career options then decided they needed further study. However, the graduates themselves, by and large, agreed that the course had taught them useful 'academic' skills, and two thirds thought that it had increased their career opportunities.

The extent of career changes should be considered in the context of the average age group of the students. There are few 'young' graduates (see Table 1) and indeed none under the age of 40 in the research group. It might be unrealistic to expect many of those in mid-career to opt out of clinical practice and take up full time academic posts.

The second study aim was to see if there was a differential effect on careers between the two groups (Research and Clinical Masters). The findings here are not clear cut, although there were a few results that were fairly predictable. For example, the Clinical Masters group was particularly motivated to increase their clinical skills, and the Research group was more likely to be involved in research, at least while they were studying.

However, other areas did not show differences, such as the interest in pursuing doctoral studies. One possible reason is a flaw in the assumption that the Clinical Masters is less 'academic' than the Research version. The Clinical Masters students also undertook 'academic' subjects, namely Learning and Teaching and Principles of General Practice, as well as Introduction to Research Methods.

**Table 5.** Pre- and post-graduate professional activities (achievements).

| | Clinical Masters | | Research Masters | |
|---|---|---|---|---|
| Attitudes | Before degree (valid%)[1] | After degree (valid%) | Before (valid%) | After degree (valid%) |
| Have you been employed in a non-clinical position? | | | | |
| Yes | 24 (25.0) | 36 (38.3) | 14 (51.9) | 7 (70.8) |
| No | 72 (75.0) | 58 (61.7) | 13 (48.1) | 7 (29.2) |
| If yes, was it at[2] | | | | |
| A university | 11 (55.0) | 25 (89.3) | 7 (50.0) | 16 (88.9) |
| A college | 10 (55.6) | 3 (18.8) | 2 (20.0) | 7 (58.3) |
| DGP | 9 (52.9) | 15 (71.4) | 3 (30.0) | 8 (72.7) |
| Government | 7 (46.7) | 10 (52.6) | 0 (0) | 1 (14.3) |
| Other | 4 (44.4) | 9 (69.2) | 2 (50.0) | 2 (50.0) |
| How many research projects have you completed? | | | | |
| 0 | 73 (75.3) | 58 (67.4) | 17 (65.4) | 4 (16.7) |
| 1 | 10 (10.3) | 16 (18.6) | 5 (19.2) | 8 (33.3) |
| 2–3 | 9 (9.3) | 9 (10.5) | 4 (15.4) | 5 (20.8) |
| Over 3 | 5 (5.2) | 3 (3.5) | 0 (0) | 7 (29.2) |
| How many research grants have you received? | | | | |
| 0 | 89 (95.7) | 77 (91.7) | 21 (75.0) | 13 (54.2) |
| 1 | 2 (2.2) | 3 (3.6) | 1 (3.6) | 6 (25.0) |
| 2–3 | 1 (1.1) | 2 (2.4) | 0 (0) | 0 |
| Over 3 | 1 (1.1) | 2 (2.0) | 1 (3.6) | 5 (20.8) |
| How many publications in refereed journals have you had? | | | | |
| 0 | 78 (83.0) | 70 (82.4) | 13 (56.5) | 8 (32.0) |
| 1 | 7 (7.4) | 3 (3.5) | 4 (17.4) | 7 (28.0) |
| 2–3 | 4 (4.3) | 7 (8.2) | 5 (21.7) | 3 (12.0) |
| Over 3 | 5 (5.3) | 5 (5.9) | 1 (4.3) | 7 (28.0) |
| How many conference presentations have you made? | | | | |
| 0 | 67 (73.6) | 51 (58.6) | 16 (69.6) | 9 (36.0) |
| 1 | 6 (6.6) | 11 (12.6) | 2 (8.7) | 1 (4.0) |
| 2–3 | 9 (9.9) | 10 (11.5) | 4 (17.4) | 4 (16.0) |
| Over 3 | 9 (9.9) | 15 (17.2) | 1 (4.3) | 11 (44.0) |

[1]Percentages are rounded to first decimal point and refer to valid responses only.
[2]Multiple responses allowed.

There are several possible limitations to this study. One has already been referred to, namely, the difficulty in determining a cause and effect relationship between higher degree studies and career change.

Second, there were too few in the study to assess whether particular sub-groups were more likely to make career changes as a result of the course. It should be noted that a previous study has shown that the majority of Australian-based graduates from this course (which, in this survey, comprise 86 out of 130, or 66%) are mid-career and wanting other benefits from the course, in particular professional satisfaction and revitalisation (Piterman et al. 2000b). However, this is unlikely to be true for Hong Kong doctors (26 out of 130 in this study, or 20%) who are younger and more interested in clinical mastery. The individual doctor's work ethic and cultural attributes will also influence their career choices, but these factors were not studied.

Third, the study relies on self-report. It is difficult to know how candid the respondents were. For example, the students' responses might have been artificially positive toward the course in order to reassure themselves that they had not wasted 4 years of their valuable time. The fact that more than half of all students indicated that they wished to pursue a doctorate, but only a hand-full have actually enrolled,

suggest that enthusiastic intentions are not always fulfilled. However, it is possible that a further follow-up in 5 years time would demonstrate some additional career changes.

What is the significance of this study? The Masters program explicitly aimed 'to enlarge the pool of potential general practice teachers and researchers which will help enhance the quality and status of general practice teaching and research among professionals and in the wider community; and to provide candidates with research and teaching skills to equip them for potential part-time or full-time careers in academic general practice' (Piterman et al. 2000a). Similar calls for academic training and higher degrees have been made in the United Kingdom (Lester et al. 1998; Hilton et al. 2000).

Whether a course such as the Monash one is capable of achieving these aims is therefore of considerable interest to the profession (Allison et al. 1995; Wilson et al. 2001). This study suggests that this type of course may have a role in increasing the number of GPs taking up academic positions, although further insight would be gained by in-depth interviews with representation from the various groups of graduates.

It is, however, of some concern that students believed that the Masters degree had limited standing in academia, i.e. only doctorates 'count'. It therefore seems important to be able to identify those who truly wish to pursue an academic career pathway and cater better for them (Hilton et al. 2001). If this still means doing a Masters degree first, then there should be a more flexible approach to obtaining higher degrees (i.e. MDs and PhDs) and, in addition, there should be further improvements in the distance supervision of students (Piterman et al. 2000c; Schattner et al. 2000).

## Acknowledgements

Our thanks to Ms Stephanie Louise who was the research assistant for the project. We greatly appreciate the time taken by our former students in responding to our questionnaire.

## Notes on contributors

The authors are academics in a department of general practice at Monash University, Australia. All are involved in teaching in a masters of family medicine degree which is a distance education program.

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