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Title

Australian medical students' desire to become a general practitioner: has it changed between 2009 and 2019?

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Summary

This paper examines the changes in medical student perceptions of general practice and why this may have occurred by making comparisons between student cohorts in 2009 and 2019.

Keywords

Academic Medicine; Career Development; Family Practice; General Practice; Health Planning; Medical Students

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Abstract

Background

There is major concern given the reduction in junior doctors applying for general practice training positions, which has considerably dropped in recent years. It is possible that medical student perceptions of a career in general practice influence the later decision to choose general practice as their first-choice specialty and apply for general practice training positions.

Aim

To examine the changes in Australian medical student perceptions of a career in general practice by a cross-sectional analysis of student cohorts in 2009 and 2019.

Methods

Two identical cross-sectional studies were administered in 2009 and 2019 via an online quantitative survey to understand medical student perceptions of a career in general practice.

Results

Almost 6% of all Australian medical students responded to the survey (1129 in 2019 and 1227 in 2009). Medical students' positive perceptions of a career in general practice increased by 6.5% from 2009 to 2019 ($p < 0.0001$). Over the same period, the proportion of respondents who agreed that general practice provides the opportunity to pursue diverse special interests increased by 12% ($p < 0.001$), while there was a 9.8% increase in respondents who agreed that general practitioners have a healthy work-life balance ($p < 0.001$). One in five respondents reported not knowing or feeling neutral towards the ability for general practitioners to earn a sufficient income. General practice was perceived to be as challenging as other specialties in both surveys.

Conclusion

Medical students' positive perceptions of holistic patient-centred care, ability to pursue special interests, and work-life balance are important in ensuring a sustainable primary care workforce. Further education regarding the ability of general practitioners to receive appropriate remuneration is crucial to encouraging medical students to pursue a career in general practice. Given the consistently high levels of interest from medical students, future interventions should shift to focus on promoting general practice to junior doctors.

Learning Points

- Medical student awareness of the benefits and rewards of a career in general practice is important to encourage increased uptake of general practice training positions.
- Medical students value holistic patient-centred care and a healthy work-life balance, both of which are offered by a career in general practice.
- General practice training organisations should be aware of the perceptions of medical students to ensure effective marketing strategies to maintain, and increase, positive perceptions of general practice amongst medical students.

Introduction

Health Workforce Australia forecasts predict that due to the aging demographic of the medical workforce, an increasing number of doctors across all specialties will retire from 2025, producing an estimated shortfall of 2500 doctors by 2025 and 5000 doctors by 2030 [1]. This is particularly concerning in general practice given the vital role that general practitioners (GPs) play in providing quality, holistic, and longitudinal care to the community, significantly reducing the burden on tertiary hospitals [2]. There has been a significant decrease in the number of junior doctors applying for general practice training in Australia since 2015 [3] with a 20% drop, equivalent to 443 applicants, since 2015 [3]. In both 2018 and 2019, there has been a deficit in the number of training positions filled within the Australian General Practice Training Program, resulting in 63 fully funded general practice training places across Australia remaining unfilled.

Only 15.4% of graduating medical students in 2019 chose general practice as their first-choice specialty [4]. Medical students spend much of their clinical time in tertiary care settings. This is incongruent with teachings around primary care being the front line of healthcare, and the importance of prevention over cure. Furthermore, the failure to recognise general practice as a specialty and the misconception regarding it as a second or later career preference for medical graduates, may be perpetuating negative perceptions of general practice [5]. Therefore, it is vital that the government invest in recruiting and developing GPs of the future to ensure the ongoing health needs of the Australian population are met.

There is no clear understanding of why there has been a reduction in the number of junior doctors entering general practice training. Current evidence suggests a shift away from general practice centres around poor remuneration and misconceptions about the intellectual rigour of the work fuelled by poor clinical experiences and stereotyping of this field [6,7]. This study aims to examine the changes in medical student perceptions of a career in general practice by a cross-sectional analysis of student cohorts in 2009 and 2019.

Methods

Two identical cross-sectional studies were undertaken in 2009 and 2019 via an online quantitative survey to compare Australian medical students' awareness, knowledge, and attitudes towards general practice. The survey was developed collaboratively by General Practice Students Network (GPSN), General Practice Registrars Australia (GPRA), and the University of Wollongong. The novel 2009 survey, conducted as an evaluation of the GPSN, benchmarked awareness, knowledge, and attitudes towards the GPSN and general practice amongst medical students. It was intended that future iterations of the survey would provide a measure of change in students' attitudes towards general practice. The survey tool and questions were developed based on important themes within the existing literature [8].

Data

The initial survey was undertaken over an 8-week period from May to July 2009, while the second survey was undertaken over an 8-week period from September to November 2019. Both were undertaken through an online survey platform (Survey Monkey). The same recruitment strategy and participant inclusion and exclusion criteria were applied across both surveys. Information was collected on participant demographics which included gender, age (categorical), year of university, and GPSN membership status. Participant attitudes towards general practice were obtained through a self-reported questionnaire assessing the following variables: career pathway, work-life balance, holistic patient care, career satisfaction, and remuneration. The survey questionnaire is included in Appendix A.

Participants

The survey was distributed through the GPSN membership database, as well as student newsletters, social media groups, and student ambassadors to increase participation across the wider medical student body and reduce selection bias. All medical students enrolled at an Australian university at the time of survey distribution were eligible to participate. In 2019, this included a total student body of 17 460 medical students, of which 8 938 were members of GPSN, while in 2009 this included a total student body of 14 611 medical students, of which 3 638 were members of GPSN [4].

Statistical Methods

Quantitative data analysis was performed using JMP SAS software. Chi-squared analysis and Fisher's exact tests were performed to compare responses from the two survey cohorts. Statistical significance was set at $p < 0.05$ and demographic data was expressed as mean \pm standard deviation (SD).

Survey questions utilised a five-point Likert scale (strongly agree – 5, agree, neutral, disagree, or strongly disagree – 1) or yes/no questions to assess participant attitudes. For Likert scale responses, strongly agree and agree responses were grouped together to represent positive attitudes towards general practice and the same was done with strongly disagree and disagree responses.

Ethics approval was received from University of Wollongong (HREC No. 2019/297) and the University of Notre Dame Australia (HREC No 2021-054F). Consent was obtained implicitly

by the participant beginning the survey. Data collection ensured all participant responses were anonymous.

Results

Participants

A total of 1 129 medical students completed the 2019 survey from 22 medical schools, while 1 270 medical students from 19 universities completed the 2009 survey. In 2019, the overall participation rate was 6.5% of all medical students, compared with 8.7% in 2009.

Demographic data of the respondents is presented in Table 1. A similar proportion of respondents were female in 2009 (65.4%) and 2019 (67.2%). In both surveys, most participants were aged 18 to 24 years of age, however, a significantly higher proportion of older participants were present in the 2019 survey (mean age 21.3 ± 4.7 years in 2019, 0.8 years older than the 2009 cohort [$p < 0.001$]). Most participants in the 2019 survey were in their third or later years of study (60%), compared to the 2009 survey where most participants were in their first or second year (53%). In 2019, 7.4% of respondents were GPSN members, who were personally involved in the organisation, compared to 3.5% in 2009. In both 2009 and 2019, one in three respondents were not members of GPSN, however, respondents who answered 'maybe' to this question were deemed to not be members of GPSN.

Table 1: Demographic Data for 2019 and 2009 Cohorts

General practice as a career choice

In 2019, 78.3% of respondents indicated they felt positive towards a career in general practice, a statistically significant increase of 6.5% from 2009 ($p < 0.0001$), as demonstrated in Table 2 (Question 1).

Table 2: Medical students' perceptions of general practice as a career choice

Career pathway

In 2019, 98% of respondents identified general practice as "a specialty in its own right", compared to 96.6% in 2009 ($p = 0.032$) (Question 2, Table 3). In 2019, 96.7% of respondents were aware that general practice requires further training after internship and residency, compared to 94.3% in 2009, a statistically significant increase ($p = 0.004$) (Question 3). In 2019, 85% of respondents agreed that general practice offers the opportunity to pursue diverse special interests during training and practice, compared to 73% of respondents in 2009, a statistically significant increase ($p < 0.001$) (Question 3, Table 4).

Table 3: Medical students' understanding of the general practice career pathway

Table 4: Opportunity to pursue diverse interests in general practice

Factors contributing to career choice

Medical students perceived that general practice provides an ongoing, holistic approach to healthcare for the community. This view was stable over the two surveys, with 90% of respondents in 2019, and 89% of respondents in 2009 ($p = 0.26$) agreeing that "an important

part of general practice is the continuity of care, and this is something that is lacking in other specialties” (Question 5, Table 5).

In 2019, 93.2% of respondents agreed that GPs have a healthy work-life balance, representing a statistically significant increase of 9.8% compared to 2009 ($p < 0.001$). The proportion of respondents who disagreed or strongly disagreed with this statement decreased from 3.7% to 0.7% ($p = 0.001$) (Question 6, Table 5).

The proportion of respondents who believed they could earn a sufficient income while training and working as a GP remained stable at 75.3% in 2019, compared to 76.6% in 2009 ($p = 0.77$) (Question 7, Table 5). In both 2019 and 2009, almost one in five respondents reported not knowing or feeling neutral towards the ability to earn a sufficient income while training and working as a general practitioner (18.1% and 19.2%, respectively).

Medical students in 2019 and 2009 indicated a similar understanding that general practice is as challenging as other specialties (79.7% and 78%, respectively, $p = 0.17$) (Question 8, Table 5). In both 2019 and 2009, almost all participants agreed that general practice is central to delivering quality healthcare in Australia (78.8% and 71.8%, respectively, $p = 0.094$) (Question 9, Table 5).

Table 5: Medical students’ perceptions of general practice affecting their career choice

Discussion

In survey data from 2009 and 2019, we demonstrated a significant increase in positive perceptions towards general practice as a career choice amongst participating medical students. Furthermore, there were significantly fewer negative attitudes towards general practice. Our findings contrast the decrease in junior doctors applying for the general practice training program in Australia [3]. This may suggest that as junior doctors progress along the career pathway, there is a change in sentiment away from general practice. There is extensive existing international literature suggesting that negative perceptions regarding work-life balance and financial remuneration when working as a GP are potential factors which may have contributed to such a shift [7,9,10].

Almost all respondents in both years identified general practice as a specialty, akin to other medical specialties. This recognition is critically important in dispelling misconceptions that devalue general practice as a backup career for those who did not want to or were unable to enter other medical specialist training programs. Building awareness of general practice in medical school is critical in attracting medical students towards a career in general practice [7]. A clear understanding of the career pathway, including understanding that general practice is a speciality, is an essential step in allowing medical students to make an educated decision regarding a career in general practice.

The number of medical students reporting that general practice offers the opportunity to pursue diverse special interests during training and practice increased over the decade. This may be due to increasing numbers of rural placements, where students observe GPs with diverse workloads, including rural generalists undertaking anaesthetics or obstetrics work [8]. Similarly, metropolitan and rural GPs often complete additional training, including but not limited to paediatrics, sexual health, palliative care, and addiction medicine. The Royal Australian College of General Practitioners (RACGP) also has special interest groups, allowing GPs to network and gain additional skills [11]. Special interest pathways and further training allow GPs the ability to gain expertise in topics relevant to their patient demographic. An increased appreciation of the opportunity to pursue special interests and gain extra skills during training and practice as a GP may lead to a more favourable opinion of general practice amongst medical students. Future marketing strategies by RACGP and The Australian College of Rural and Remote Medicine (ACRRM) should leverage the ability to pursue diverse special interests during training and practice to increase the desirability of a career in general practice.

There was a significant increase in respondents between 2009 and 2019 who agreed that a healthy work-life balance is possible as a GP. Recent marketing campaigns from a range of organisations, including GPSN, GPRA, RACGP, and ACRRM, promoting this as a beneficial aspect of a career in general practice may have contributed to this awareness [12]. Modern medical students have an increasing importance placed on work-life balance, which is a central factor in career planning [10]. Our results contrast the existing international and Australian literature demonstrating high levels of burnout and low levels of satisfaction with work-life balance amongst general practice registrars [13,14]. Therefore, a gap exists between the perceptions of medical students and the experiences of registrars regarding work-life balance within general practice training. These expectations should be managed for junior doctors considering entering training pathways and a career in general practice, while strategies to address high levels of burnout and lack of work-life balance should be pursued.

Medical students believe that general practice offers continuity and patient-focused holistic care. This sentiment was demonstrated in both years of our study and is consistent throughout general practice literature. The existing literature demonstrates that high levels of continuity of care results in positive patient experiences, greater patient satisfaction, increased treatment adherence, improved patient outcomes, and contributes to higher levels of GP satisfaction [15,16]. The holistic approach to healthcare that is offered by general practice, providing continuity of care and endearing relationships with patients, is often the focus of medical students' positive perceptions of a career general practice [17]. In seeking to attract medical students to general practice, future marketing campaigns should focus on the unique aspects of continuity of care offered by a career in general practice. Almost all respondents of both surveys agreed that general practice is central to delivering quality healthcare in Australia and were sufficiently aware of the benefits a career in general practice can bring. It is important that medical students maintain a positive impression of general practice, regardless of future career pathway, as it enables improved collaboration between hospital and community-based healthcare professionals to provide quality patient-centred care [18].

The comparatively inadequate income of GPs and trainees relative to hospital-based specialists is a key reason contributing to the negative perceptions towards general practice [19,20,21]. Consistent with the existing Australian literature [22], nearly one in four medical students in both surveyed years did not agree that GPs earned an adequate income whilst working and training. Interestingly, it remains unclear why approximately 20% of students across both survey cohorts were unsure or did not know if it was possible to earn a sufficient income whilst training and working as a GP. It is worth considering that the comparatively lower income of full time GPs relative to full time hospital-based specialists comes with increased ability for flexible working arrangements and work-life balance, as was recognised by respondents. Further, it is important to acknowledge that GP is still the sixth highest paid profession in Australia and promotional campaigns should leverage this as a strength of a career in general practice [23]. Clarity regarding earning potential as a GP is important to improve the perceptions of general practice and the number of students considering a career in general practice.

There is a common misconception that general practice is not intellectually challenging when compared to other specialties and this may be adversely affecting the desire of medical students' perceptions of general practice [5]. However, in both years, medical students indicated a similar agreement that general practice is as challenging as other specialties. GPs undertake numerous challenging tasks, including maintaining generalist skills and knowledge, managing multiple chronic conditions, and intimately understanding referral pathways within the Australian healthcare system. Further, the already challenging nature of general practice is often made more difficult when practitioners work in rural and remote areas. This study highlights that medical students are seeing beyond these negative commentaries and realising the importance of general practice.

Limitations

Our results must be interpreted in the context of several limitations. First, the cross-sectional nature of our study makes it difficult to demonstrate causality, as we only provided descriptive statistics at two specific points in time. Second, the survey was not validated, and therefore, the questions utilised may not have captured the breadth and depth of medical student opinions regarding general practice. This may suggest that the factors explored in this paper, although significant, are potentially not the source of the reduced interest in

applications for general practice training. Other potential factors should be explored and may be better generated through a qualitative methodology. Third, the small time-frame during which our survey was administered may have limited uptake by students. Fourth, the self-selected nature of participants may have introduced important selection bias, limiting the generalisability of results to the wider medical student population. While the surveys were open to all Australian medical students, those who were members of GPSN, and so have shown interest in a career in general practice, may have been more likely to participate. Further analysis should seek to assess the potential impact of GPSN membership as a confounding factor. Finally, limited demographic data was collected, and therefore we were unable to analyse the potential confounding nature of other variables that might influence knowledge of training pathways or decisions about careers to pursue. This includes, but is not limited to, university of study, metropolitan or regional and remote background of student, socioeconomic status, and ethnic background.

Future research directions

Future studies should examine a longitudinal cohort to examine changes in perceptions of general practice after the completion of medical studies. Administering serial surveys may allow identification of the critical period in a medical student's or junior doctor's career when they are most receptive to a career in general practice. Further studies should also incorporate multivariate analyses to enable complete analysis of respondent demographics and perceptions of general practice and career choice. Further studies could use a qualitative approach allowing researchers to capture the breadth of medical student opinions regarding general practice. With a shift towards postgraduate medical education in Australia, further studies should aim to identify the relationship between age and medical students' perceptions of general practice.

Conclusion

Medical students are aware of the benefits and rewards of a career in general practice, and there has been significant increases in key areas when comparing 2009 and 2019. We demonstrated a clear opportunity to develop and maintain the positive perceptions of medical students towards holistic care and work-life balance. A coordinated approach by key stakeholders is essential to maintain the desirability of general practice and increase the number of applicants to general practice training programs. This will ensure the provision of quality, holistic, and longitudinal care to our communities, whilst supporting the long-term economic viability of providing health care to the Australian population.

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Conflicts of Interest

All authors declare that they have no competing interests.

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None to declare.

Author Contribution

JB: Data analysis, writing of manuscript, submission of paper, approval of final paper

RH: Ethics approval, Study design, critical refinement of final manuscript, approval of final paper

AG: Ethics approval, Study designs, critical refinement of final manuscript, approval of final paper

Ethics Approval

Ethics approval was received from University of Wollongong (HREC No. 2019/297) and the University of Notre Dame Australia (HREC No 2021-054F).

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Table 1. Demographic Data for 2019 and 2009 Cohorts.

	2009	2019
Sex Number (%)		
<i>Male</i>	403 (32.8%)	385 (34.15)
<i>Female</i>	824 (67.2%)	738 (65.4%)
<i>Prefer not to disclose</i>	N/A	6 (0.5)
Age Number (%)		
<i>Under 18</i>	25 (2%)	1 (0.1%)
<i>18-24</i>	871 (71%)	695 (61.6%)
<i>25-30</i>	231 (18.8)	334 (29.6%)
<i>31-40</i>	78 (6.4%)	82 (7.3%)
<i>41-50</i>	20 (1.6%)	15 (1.3%)
<i>Over 50</i>	2 (0.2%)	2 (0.2%)
Member of GPSN		
<i>Yes – Member and Personally involved in the organisation</i>	79 (7.4%)	43 (3.5%)
<i>Yes</i>	628 (59.3%)	790 (63.9%)
<i>No *</i>	404 (32.3%)	357 (33.6%)

*Respondents who answered maybe were deemed to not be active members of GPSN

Table 2. Medical students' perceptions of general practice as a career choice.

		Strongly Agree	Agree	Total Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Total Disagree	Don't know/Not sure
Question 1: How would you rate your overall attitude towards General Practice as a career choice?	<i>2019</i>	25.5% (274)	52.8% (568)	78.3% (842)	14.3% (154)	5.9% (63)	1.1% (12)	7% (75)	0.4% (4)
	<i>2009</i>	19.9% (247)	51.9% (645)	71.8% (892)	18.3% (227)	7.9% (98)	1.0% (12)	8.9% (110)	1.0% (13)

Table 3. Medical students understanding of the general practice career pathway.

		Yes	No	Don't know/Not sure
Question 2: Is General Practice a specialty in its own right?	2019	98% (1053)	0.7% (7)	1.4% (15)
	2009	96.6% (1200)	1.6% (20)	1.8% (22)
Question 3: Does General Practice require further training after internship/residency?	2019	96.7% (1039)	1.2% (12)	2.1% (23)
	2009	94.3% (1171)	2.1% (26)	3.6% (45)

Table 4. Opportunity to practice diverse interests in general practice.

		Strongly Agree	Agree	Total Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Total Disagree	Don't know/Not sure
Question 4: General Practice offers the opportunity to pursue diverse special interests during training and practice	2019	34% (366)	51% (548)	85% (914)	8.5% (91)	2.7% (29)	0.3% (3)	3% (32)	3.5% (38)
	2009	27.5% (342)	45.9% (570)	73.4% (912)	15.4% (191)	4.6% (57)	0.2% (3)	4.8% (60)	6.4% (79)

Table 5. Medical students' perceptions of factors affecting general practice as a career pathway.

		Strongly Agree	Agree	Total Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Total Disagree	Don't know/Not sure
Question 5: An important part of General Practice is the continuity of care and this is something that is lacking in other specialties	2019	46% (494)	44% (473)	90% (967)	7% (75)	2.3% (25)	0.5% (5)	2.8% (30)	0.3% (3)
	2009	50.4% (626)	38.6% (480)	89% (1106)	7.2% (89)	3.1% (39)	0.3% (4)	3.4% (43)	0.3% (4)
Question 6; As a GP, you can enjoy a healthy work-life balance	2019	45.9% (493)	47.3% (509)	93.2% (1002)	5.4% (58)	0.6% (6)	0.1% (1)	0.7% (7)	0.7% (8)
	2009	39.9% (495)	43.5% (540)	83.4% (1035)	11% (137)	3.4% (42)	0.3% (4)	3.7% (46)	1.9% (24)
Question 7: You can earn a sufficient income while training and working as a GP	2019	28.8% (310)	46.5% (500)	75.3% (810)	13.1% (141)	5.5% (59)	1.1% (12)	6.6% (61)	4.9% (53)
	2009	27.5% (341)	49.1% (610)	76.6% (951)	12.6% (157)	3.8% (47)	0.3% (4)	4.1% (51)	6.7% (83)
Question 8: General Practice is just as challenging as other specialties	2019	37.2% (400)	42.5% (457)	79.7% (857)	10.8% (116)	7.3% (79)	1.5% (16)	8.8% (95)	0.7% (7)
	2009	39% (484)	39% (485)	78% (969)	13% (162)	6.6% (82)	1.1% (14)	7.7% (96)	1.2% (15)
Question 9: General Practice is central to delivering quality healthcare in Australia	2019	25.5% (274)	52.8% (568)	78.3% (842)	14.3% (154)	5.9% (63)	1.1% (12)	7% (75)	0.4% (4)
	2009	19.9% (247)	51.9% (645)	71.8% (892)	18.3% (227)	7.9% (98)	1.0% (12)	8.9% (110)	1.0% (13)

Appendix 1. Medical student questionnaire.

GP as a career choice

Question 1: How would you rate your overall attitude towards General Practice as a career choice?

General Practice Career pathway

Question 2: Is General Practice a specialty in its own right? (Yes/No)

Question 3: Does General Practice require further training after internship/residency? (Yes/No)

Question 4: General Practice offers the opportunity to pursue diverse special interests during training and practice

Factors affecting general practice as a career pathway

Question 5: An important part of General Practice is the continuity of care and this is something that is lacking in other specialties

Question 6: As a GP, you can enjoy a healthy work-life balance

Question 7: You can earn a sufficient income while training and working as a GP

Question 8: General Practice is just as challenging as other specialties

Question 9: General Practice is central to delivering quality healthcare in Australia

* Unless otherwise stated the questions utilised a 5-point Likert scale (Strongly agree – 5, agree, neutral, disagree, or strongly disagree – 1) to assess participant attitudes