Title: Assessment of junior doctors' perceptions of training difficulty and choice of medical specialty

Running Head: Assessment of medical specialty training programs

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Assessment of junior doctors' perceptions of difficulty of medical specialty training programs

Abstract

The demands placed on medical trainees by the different specialty training programs are important considerations when choosing a medical specialty. To understand these demands, 193 junior doctors completed a web-based survey, and (a) ranked medical specialties according to perceived level of training difficulty (incorporating entry difficulty, course difficulty, and length of training), (b) nominated their preferred medical specialty, and (c) completed a measure of medical values. To validate the hierarchical ranking of training programs, we tested the association between the difficulty ranking of doctors' own preferred medical specialty and medical values. Ophthalmology, surgery, dermatology, anaesthesiology and intensive care medicine were ranked as the most difficult specialties, and general practice, public health medicine, occupational medicine, medical administration, and rehabilitation medicine as the least difficult. Higher training difficulty specialties were seen as more prestigious and intellectually demanding, whereas lower training difficulty specialties were seen as consistent with lifestyle and service values. Having a hierarchical ranking of perceived difficulty level of medical specialty training programs will assist students and junior doctors when making career decisions, and assist medical workforce planners, educators, and the specialist colleges to formulate strategies to attract potential applicants to fields of medicine where workforce shortages exist.

Keywords: junior doctors; medical specialty; medical values; training difficulty

Assessment of junior doctors' perceptions of difficulty of medical specialty training programs

Medical education and training systems allow considerable individual choice by doctors, first, when they select a medical specialty for themselves, and second, regarding how and where they wish to practise within health systems. These choices are dependent on the different skills, talents, and interests needed for a specialty or subspecialty (Iserson 2003), and are related to the expected lifestyle associated with the specialty (Newton, Grayson, and Thompson 2005; Harris, Gavel, and Young 2005), the anticipated working arrangements (Burack et al. 1997), personal values (Hojat et al. 1998), personality (Borges and Savickas 2002), gender (Buddeberg-Fischer et al. 2003; van der Horst et al. 2010; Goodyear, Kennedy, and Wall 2007) and economic and family considerations (Rosenthal and Andrilla 2005), all of which influence decision-making around medical occupational direction.

The demands placed on trainees by the different specialty training programs have been identified as important considerations when choosing a medical specialty. Jarecky et al. (1991) found that length, mode, and stress of graduate medical training was a consideration that increased in importance over the years, but was significantly more important for those selecting primary care or controllable lifestyle specialties, such as anaesthesiology and dermatology, compared to those selecting surgery. Further, length of training has been found to be negatively associated with choosing a surgical career for both men and women (Brundage et al. 2005). Studies investigating the demand for flexible and part time training in specialties, such as surgery (Saalwachter et al. 2006) and paediatrics (Gordon et al. 2008), have been conducted to identify strategies that will make these fields of medicine more attractive to a wider range of applicants. As long hours and the need to balance career and family responsibilities are issues for both men and women, many specialist colleges have, in recent years, introduced training that is part time and flexible, with some allowing extended

periods of time off (Australian Medical Workforce Advisory Committee & Australian Institute of Health and Welfare 1996; Gray, Alexander, and Eaton 2004). Further, there is a significant trend in favour of specialties with shorter training programs (Dorsey, Jarjoura, and Rutecki 2005), with some medical specialty training programs, such as general practice, perceived to offer easier entry, a shorter training period and the opportunity to work flexible hours (Harris, Gavel, and Young 2005; Australian Medical Workforce Advisory Committee 2005; Lambert and Goldacre 2005). Thus, since different specialties have different attractions, it is reasonable to assume that an individual might choose a specialty based, at least in part, on the requirements of the training program.

Medical education training systems around the world differ according to health care needs and other factors (for comparison of the US, Canada, Australia, France, Germany, Sweden and the UK, see Modernising Medical Careers 2008). Until recently, the medical education system in Australia was similar to the UK system. However, since the introduction of the Modernising Medical Careers (MMC) program introduced in the UK in 2005, junior doctors there are required to choose a medical specialty and apply to the specialty college within 18 months of graduating from medical school. In Australia, graduates of the medical degree have more time in which to choose a specialty. They complete an intern year and then spend another one to two years of on-the-job training as a resident medical officer before seeking admission to a vocational training program run by one of the medical colleges. Vocational training usually takes between three and six years, depending on the specialty chosen, and most training is undertaken in the public hospital system with the exception of general practice training, which is undertaken in private general practices (Australian Medical Association 2011). The criteria to be accepted into a training program, the number of training places available, the number of years to complete the training, flexibility of training

arrangements, and examination requirements, are largely determined by the specialty college under the scrutiny of the accreditation body.

Personal values also have been shown to be an important guide to career-related decisions, and, in particular, have been shown to have a significant influence on medical specialty choice (Hojat et al. 1998; Schubot, Cayley, and Eliason 1996). For example, those valuing self-direction, power, occupational prestige and scholarly pursuits are more likely to choose a non-primary care specialty such as surgery (Schubot, Cayley, and Eliason 1996; Rogers and Searle 2009), those who place importance on social values are more likely to choose a people-oriented specialty (Hojat et al. 1998; Wright et al. 2004), and those who place a high value on lifestyle, such as working predictable hours and spending time with family and at leisure, are more likely to find general practice appealing (Thistlethwaite, Kidd, and Loader 2008). Specialties such as surgery, internal medicine, and intensive care medicine are perceived by medical students and junior doctors to be the most prestigious specialties, and dermatology, general practice, and public health medicine are considered the most lifestyle friendly (Creed, Searle, and Rogers 2010). Surgery is associated with respect, admiration and status (Album and Westin 2008), while specialties such as dermatology and anaesthesiology are viewed as leading to a more controllable lifestyle (Schwartz et al. 1990).

Female participation in medical workforces has been increasing in the UK, US, Canada and Australia over the past 30 years with women in most Western countries now comprising approximately 50% of medical school enrolments (Australian Institute of Health and Welfare 2009; Burton and Wong 2004; Barzansky and Etzel 2007; British Medical Association 2009). This feminization of the medical workforce has significant implications for workforce planning. Women remain under-represented in a number of fields of medicine such as surgery, and are over-represented in areas such as general practice and primary care fields where regular working hours and part-time positions fit in better with family

responsibilities (Australian Medical Workforce Advisory Committee & Australian Institute of Health and Welfare 1996; American Medical Association 1994; Goodyear, Kennedy, and Wall 2007; Reed and Buddeberg-Fischer 2001). Kilminster et al. (2007) have called for more detailed research as to the effects of the increasing number of women entering medical careers.

Well recognised doctor shortages globally (Cooper et al. 2002; Lefevre et al. 2010; Productivity Commission 2005) make it imperative to provide up-to-date information on factors influencing the career choices of doctors as this will help workforce planners to anticipate future service requirements. We found very little research that evaluated junior doctors' or students' perceptions of medical specialty training programs, and no studies were identified that ranked medical specialties according to the perceived difficulty of undertaking the specialty college training program. This is a significant gap in the literature given how much time, effort, and financial commitment is required to meet college training requirements.

The first goal of this study was to have junior doctors rank order available medical specialty training programs in terms of the difficulty of the program, which we operationalised as including entry difficulty, course difficulty, and length of training. The second goal was to validate these rankings by testing their association with doctors' self-identified values, and gender. Based on previous research that has tested associations between values and medical specialty choice, we expected positive associations between medical specialties with more difficult training programs and values that rate prestige and scholarly pursuits highly, and expected negative associations between medical specialties with less difficult training programs and personal values that valued lifestyle highly. Given that previous research has suggested that women are more concerned with careers that are more

controllable and family friendly, we expected also that women would be more likely to rank the less difficult training programs as more desirable.

Method

Participants

Participants were 193 junior doctors in postgraduate year 1 ($N = 91$, PGY1) and postgraduate year 2 ($N = 102$, PGY2) aged between 23 and 46 years ($M = 27.5$, $SD = 4.0$). The junior doctors were recruited to the study in 2007 and 2009 as part of a wider project tracking the career choices of medical students and junior doctors. The response rate, based on Time 1 (PGY1) and Time 2 (PGY2) participation in the larger cohort study, was 65% and 63%, respectively. The sample was predominantly Caucasian, with 68% percent women.

Materials

Perceived training difficulty. We provided an alphabetical list of medical specialties drawn from the Australian national medical schools data base (Medical Deans Australia and New Zealand 2005), and asked participants to rank the specialties according to level of training difficulty, from *Most Difficult* to *Least Difficult*, taking into consideration difficulty in being accepted into the program, difficulty with passing exams, and length of time involved in completing the training.

Preferred medical specialty. We asked participants to nominate their own preferred medical specialty from the same alphabetical list of medical specialties provided for the ranking exercise.

Medical values. Participants completed the Physician Values in Practice Scale short form (Rogers et al. 2011), which is a 30-item scale used to assess six core values: prestige, service, autonomy, lifestyle, management, and scholarly pursuits. The measure uses a 5-point scale with endpoints of 1 (*strongly disagree*) and 5 (*strongly agree*). Items are preceded by the statement, “In my medical practice, it will be important that I...”, with sample items of,

“work in a specialty area that is highly esteemed in medicine” (prestige), “volunteer in community groups” (service), “work independently” (autonomy), “work a predictable number of hours” (lifestyle), “supervise a health care team” (management), and “pursue scholarly research and writing” (scholarly pursuits). Internal reliability coefficients were .92 (scholarly pursuits), .86 (management), .83 (service), .82 (prestige), .81 (lifestyle) and .72 (autonomy).

Procedure and Analyses

Participants were recruited to the larger study when they were in their final year of medical school (PGY2 in 2007 and PGY1 in 2008), through posters, leaflets and emails distributed via the 11 participating medical schools. Participants received a personalised e-mail and were given the option of completing either a web-based survey or a postal survey. All participants chose to complete the web-based survey. To maximise the response rate from study members, the web-based questionnaire was short, taking approximately 10 minutes to complete, the design was simple, and up to three personalised reminder e-mails were sent to study members over a 10 week period (Umbach 2005). All who returned a completed survey were entered into a lotto style draw for the chance of winning a store voucher. Ethics approval was provided by the author’s Human Research Ethics Committee.

For the data analyses, first, we generated descriptive statistics to produce the mean scores of perceived training difficulty for each medical specialty, which were then rank ordered from most to least difficult. Second, as a validation process, we tested the associations between the doctors’ own preferred medical specialty and their scores on the six values scales and conducted a multiple regression analysis to test the relationship between preferred medical specialty according to level of training difficulty and the variables that were bivariately associated with training difficulty. In order to meet the assumptions of the

regression analysis, a square root transformation of training difficulty was computed and used.

Results

Training Difficulty Rankings

The ranked mean scores for perceived training difficulty are shown in Table 1. Ophthalmology was considered to have the most difficult training program, followed by surgery, dermatology, anaesthesiology, and intensive care medicine. The least difficult training programs were non-specialist hospital practice, general practice, public health medicine, occupational medicine, and medical administration. One-way analysis of variance applying a Bonferroni adjustment revealed that there were no significant differences between males and females on perceptions of training difficulty (all $p > .01$).

[Insert Table 1 here]

Medical Specialty Training Difficulty Predictors

We tested for correlates of training difficulty of participants' own preferred medical specialty choice. Preferred medical specialty difficulty was significantly, bivariately associated with the values of prestige, service, scholarly pursuits, lifestyle, and gender. We found no association with autonomy, management or age. Summary data and bivariate correlations among all variables are reported in Table 2.

[Insert Table 2 here]

A multiple regression analysis tested the relationship between the predictor variables that were significantly associated with the outcome variable of medical specialty training program difficulty. The predictors accounted for a significant 24% of the variance in training program difficulty, $F(5, 187) = 11.78$, $p < .001$. Significant individual predictors were prestige ($\beta = -.26$, $p < .01$, $sr^2 = 5.1\%$), lifestyle ($\beta = .23$, $p < .001$, $sr^2 = 5.1\%$), service ($\beta = .22$, $p < .01$, $sr^2 = 4.0\%$), gender ($\beta = -.15$, $p < .05$, $sr^2 = 2.1\%$), and scholarly pursuits ($\beta = -$

.17, $p < .05$, $sr^2 = 1.7\%$). This indicated that junior doctors who were choosing specialty programs of higher difficulty also had higher values for prestige and scholarly pursuits, lower values for lifestyle and service, and were more likely to be male. Summary data are presented in Table 3.

[Insert Table 3 here]

Discussion

This study showed that junior doctors perceived that the training programs for the various medical specialties differed in terms of training difficulty (operationalised as entry difficulty, course difficulty and length of training), and that there were no differences between male and female doctors on these perceptions. We were also able to demonstrate initial validation for these rankings by showing that junior doctors' own preferred medical specialties were associated with medical values in expected directions. Additionally, we found an effect for gender on preferred medical specialties consistent with the general medical career choice literature.

Consistent with the perceived training difficulty rankings, the two specialties ranked most highly in terms of difficulty (i.e., ophthalmology and surgery) are both procedure-oriented specialties that require highly skilled and specialized techniques, and require longer periods of training. In Australia, ophthalmology requires five years of graduate training, while surgery requires five to six years. In addition to this, both colleges restrict part-time training. The ophthalmology college will only approve this on a case-by-case basis, and the surgery college requires a formal request six months prior to commencement of the training program (Australian Government 2010). Another factor that may have influenced the junior doctors' rankings is the number of training positions available (Harris, Gavel, and Young 2005). Dermatology and anaesthesiology, while perceived to be relatively family friendly (Schwartz et al. 1990), were perceived to have a high level of difficulty and ranked 3 and 4

respectively. In Australia, there are fewer training positions on offer for dermatology compared to general practice, which is ranked 18 (Australian Government 2010). Similarly in the US, there are also fewer training positions available in dermatology, with the field being acknowledged as one of the more competitive (National Resident Matching Program and Association of American Medical Colleges 2009). Anaesthesiology, which is considered to be a technique-oriented specialty covering a broad medical spectrum, although not as competitive as surgery, is prestigious and growing in popularity (Buddeberg-Fischer et al. 2003; Creed, Searle, and Rogers 2010). In Australia, there are fewer training positions available in anaesthesiology compared to adult medicine and general practice (Australian Government 2010), and in Europe, there is a shortage of anaesthesiologists due to longer training programs, regulations on training, changes in working patterns and health-care reforms (Turner et al. 2005; Egger Halbeis and Macario 2006).

Also consistent with the rankings, the specialties ranked as the least difficult require a shorter length of training, for example, three years for general practice, medical administration and public health medicine, four years for occupational medicine and rehabilitation medicine, and no set training period for non specialist hospital practice, and all, except medical administration, allow part-time training (Australian Government 2010). The medical specialties ranked 3 to 13 require between five and six years of training (except for Rural Medicine, which is ranked 12, and requires four years of training), and all these colleges offer part-time training, only specifying a 20% or 50% full-time commitment (Australian Government 2010). This suggests that the provision for a part-time training option is an important factor in how some specialties are perceived according to the level of training difficulty.

Thus, the rankings given by junior doctors in this study are consistent with level of training difficulty with regard to length of program and provision for part-time training, as set

down by the medical colleges. The rankings also are remarkably similar for female and male junior doctors, suggesting that all junior doctors, irrespective of gender, have a similar view of the level of difficulty associated with different specialty career pathways.

Our findings are consistent with others who have found that prestige (e.g., desiring an esteemed specialty or being recognised for excellence in the field; Hojat et al. 1998; Scott et al. 2008), and scholarly pursuits (Rogers and Searle 2009) are associated with choosing challenging specialties such as surgery, which was ranked in our study as having a high level of training difficulty. Also consistent with other literature, we found that specialties with a low level of perceived training difficulty, such as general practice, were associated with values around social responsibility, service to the community (Hojat et al. 1998; Wright et al. 2004), and lifestyle values, such as having a predictable and stable work schedule (Thistlethwaite, Kidd, and Loader 2008; Newton, Grayson, and Thompson 2005). Further, our results have shown that women show a preference for specialties with a lower level of perceived training difficulty. This is consistent with the international literature in this area which has demonstrated that women doctors show a preference for lifestyle friendly specialties that provide flexible work arrangements, rather than demanding specialties, such as surgery and intensive care medicine, which were ranked 2 and 6 respectively on training difficulty (Australian Medical Workforce Advisory Committee & Australian Institute of Health and Welfare 1996; Williams and Cantillon 2000; McMurray et al. 2002; Australian Government 2010). These results support the initial validity of the rankings identified in this study.

The findings from this study have implications for medical training generally. While some medical students and junior doctors might not be concerned or influenced about the training difficulty associated with their chosen specialty, others will find these rankings of specialties useful when planning and making decisions about their career. As career planning

and exploration actions are an integral part of the career development process, it is expected that these rankings will stimulate exploration of medical specialty training options in regard to difficulty of being accepted into a program, the difficulty with passing exams, and the length and/or flexibility of the training program. In addition to this, these rankings will provide medical colleges with important information about how junior doctors perceive specialty training programs and assist colleges to develop interventions and policy changes to encourage selection of specialties where there are shortfalls and gender imbalances.

Whilst we acknowledge that the majority of participants in this study were women, which limits generalizability of the study's findings, we found no differences between males and females on perceptions of training difficulty, and the results, that women prefer medical specialties that have been ranked as having a lower level of training difficulty, are consistent with other research. As our sample only included junior doctors, future studies need to generate a set of rankings for medical students generally. This would allow researchers to determine if medical specialty choices made early in training are being influenced by perceived training difficulty, and if they are, whether the difficulty levels perceived by medical students are consistent with their more advanced colleagues, who are in the process of finalising their medical specialty training. Having rankings by senior physicians, who, by definition have completed their formal training, and who will have colleagues who have completed theirs, will be useful also, as they will provide perceptions from a different perspective and add to the validation of the measure from this study. Finally, our study was conducted in one country, and the results need to be confirmed in other countries.

Conclusion

Understanding junior doctors' perceptions about differences among medical specialties is important as doctors at this stage of their training are close to making definitive choices about which vocational specialty they will enter. While some specialties are clearly

more demanding than others, it is the perceptions of these demands that influence students and junior doctors when they decide on a specialty path. Generating a difficulty ranking of medical specialty training programs, therefore, provides a useful tool for students and junior doctors when exploring specialty career choice options. As no previous study has attempted to rank order and validate a measure of medical specialty training programs difficulty, this study makes a new contribution to our understanding in this field.

Importantly, this information also will assist medical workforce planners, medical educators and the specialist colleges to formulate strategies to attract potential applicants to fields of medicine where workforce shortages and imbalances exist.

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References

- Album, D., and S. Westin. 2008. Do diseases have a prestige hierarchy? A survey among physicians and medical students. *Social Science & Medicine* 66:182-188.
- American Medical Association. 1994. *Fact Sheet: Facts you can use about women in medicine*. Chicago, IL: AMA.
- Australian Government. 2010. Medical training review panel thirteenth report. Canberra: Department of Health and Ageing.
- Australian Institute of Health and Welfare. 2009. Medical labour force 2007: National health labour force series number 44. Canberra, ACT: Australian Institute of Health and Welfare.
- Australian Medical Association. 2011. Doctors in Training: Becoming a doctor and bonded medical school places - a guide for prospective medical students. Retrieved from <http://ama.com.au/>.
- Australian Medical Workforce Advisory Committee. 2005. Career decision making by postgraduate doctors. Sydney: AMWAC 2005.3.
- Australian Medical Workforce Advisory Committee & Australian Institute of Health and Welfare. 1996. Female participation in the Australian medical workforce. Sydney: AMWAC Report 1996.7.
- Barzansky, B., and S.I. Etzel. 2007. Medical schools in the United States 2006-2007. *Journal of the American Medical Association* 298:1071-1077.
- Borges, N.J., and M.L. Savickas. 2002. Personality and medical specialty choice: A literature review and integration. *Journal of Career Assessment* 10:362-380.
- British Medical Association. 2009. *Equality and diversity in UK medical schools*. London: BMA.

- Brundage, S.I., A. Lucci, C.C. Miller, A. Azizzadeh, D.A. Spain, and R.A. Kozar. 2005. Potential targets to encourage a surgical career. *Journal of the American College of Surgeons* 200:946-953.
- Buddeberg-Fischer, B., R. Klaghofer, T. Abel, and C. Buddeberg. 2003. The influence of gender and personality traits on the career planning of Swiss medical students. *Swiss Medical Weekly* 133:535-540.
- Burack, J.H., D.M. Irby, J.D. Carline, D.M. Ambrozy, K.E. Ellsbury, and F.T. Stritter. 1997. A study of medical students' specialty-choice pathways: Trying on possible selves. *Academic Medicine* 72:534 - 541.
- Burton, K.R., and I.K. Wong. 2004. A force to contend with: The gender gap closes in Canadian medical schools. *Canadian Medical Association Journal* 170:1385-1386.
- Cooper, R. A. , T. E. Getzen, H. J. McKee, and P. Laud. 2002. Economic and demographic trends signal an impending physician shortage: A new model of workforce projections, based on physician supply and utilization, predicts an impending physician shortage, which the nation cannot afford to ignore *Health Affairs* 21:140-154.
- Creed, P.A., J. Searle, and M.E. Rogers. 2010. Medical specialty prestige and lifestyle preferences for medical students. *Social Science & Medicine* 71:1084-1088.
- Dorsey, E.R., D. Jarjoura, and G.W. Rutecki. 2005. The influence of controllable lifestyle and sex on the specialty choices of graduating U.S. medical students, 1996-2003. *Academic Medicine* 80:791-796.
- Egger Halbeis, C.B., and A. Macario. 2006. Factors affecting supply and demand of anesthesiologists in Western Europe. *Current Opinion in Anaesthesiology* 19:207-212.

- Goodyear, H., C. Kennedy, and D. Wall. 2007. Career choices: Foundation year trainees' views on careers advice and information. *British Journal of Hospital Medicine* 68:211-215.
- Gordon, M.B., G.A. McGuinness, B.F. Stanton, S. Brooks, V.W. Chiang, R. Vinci, and T.C. Sectish. 2008. Part-time training in pediatric residency programs: Principles and practices. *Pediatrics* 122:e938-e944.
- Gray, S., K. Alexander, and J. Eaton. 2004. Equal opportunity for all? Trends in flexible training 1995-2001. *Medical Teacher* 26:256-259.
- Harris, M.G., P.H. Gavel, and J.R. Young. 2005. Factors influencing the choice of specialty of Australian medical graduates. *Medical Journal of Australia* 183:295-300.
- Hojat, M., T.P. Brigham, E. Gottheil, G. Xu, K. Glaser, and J.J. Veloski. 1998. Medical students' personal values and their career choices a quarter-century later. *Psychological Reports* 83:243-248.
- Iserson, K.V. 2003. *Iserson's getting into a residency: a guide for medical students (6th ed.)*. Tucson, AZ: Galen Press.
- Jarecky, R.K., R.W. Schwartz, J.V. Haley, and M.B. Donnelly. 1991. Stability of medical specialty selection at the University of Kentucky. *Academic Medicine* 66:756-761.
- Kilminster, S., J. Downes, B. Gough, D. Murdoch-Eaton, and T. Roberts. 2007. Women in medicine - is there a problem? A literature review of the changing gender composition, structures and occupational cultures in medicine. *Medical Education* 41:39-49.
- Lambert, T.W., and M.J. Goldacre. 2005. Progression of junior doctors into higher specialist training. *Medical Education* 39:573-579.
- Lefevre, J.H., M. Roupret, S. Kerneis, and L. Karila. 2010. Career choices of medical students: A national survey of 1780 students. *Medical Education* 44:603-612.

- McMurray, J.E., G. Angus, M. Cohen, P.H. Gavel, J. Harding, J. Horvath, E. Paice, J. Schmidtdiel, and K. Grumbach. 2002. Women in medicine: a four-national comparison. *Journal of American Medical Women's Association* 57:185-190.
- Medical Deans Australia and New Zealand. 2005. Medical schools outcomes database project: 2005 commencing medical students questionnaire (CMSQ). Retrieved from http://www.medicaldeans.org.au/MSOD_Webpages/msodcqs.html.
- Modernising Medical Careers. 2008. Aspiring to excellence: Findings and final recommendations of the independent inquiry into modernising medical careers. Retrieved from <http://www.mmcinquiry.org.uk/draft.htm>.
- National Resident Matching Program and Association of American Medical Colleges. 2009. Charting outcomes in the match: Characteristics of applicants who matched to their preferred specialty in the 2009 main residency match. Retrieved from <http://www.nrmp.org/data/index.html>.
- Newton, D.A., M.S. Grayson, and L.F. Thompson. 2005. The variable influence of lifestyle and income on medical students' career specialty choices: data from two U.S. medical schools, 1998-2004. *Academic Medicine* 80:809-814.
- Productivity Commission. 2005. Australia's Health Workforce. Research Report. Canberra: Productivity Commission
- Reed, V.A., and B. Buddeberg-Fischer. 2001. Career obstacles for women in medicine: An overview. *Medical Education* 35:139-147.
- Rogers, M.E., P.A. Creed, J. Searle, and P.J. Hartung. 2011. The physician values in practice scale-short form: Development and initial validation. *Journal of Career Development* 38:111-127.
- Rogers, M.E., and J. Searle. 2009. Factors influencing the practice choices of Australian medical students: A feasibility study. *Australian Journal of Rural Health* 17:107-108.

- Rosenthal, D.R., and C.H.A. Andrilla. 2005. The impact of U.S. medical students' debt on their choice of primary care careers: An analysis of data from the 2002 medical school graduation questionnaire. *Academic Medicine* 80:815-819.
- Saalwachter, A.R., J.A. Freischlag, R.G. Sawyer, and H.A. Sanfrey. 2006. Part-time training in general surgery. *Archives of Surgery* 141:977-982.
- Schubot, D.B., W. Cayley, and B.C. Eliason. 1996. Personal values related to primary care specialty aspirations. *Family Medicine* 28:726-731.
- Schwartz, R.W., J.V. Haley, C. Williams, R.K. Jarecky, W.E. Strodel, B. Young, and W.O. Griffen. 1990. The controllable lifestyle factor and students' attitudes about specialty selection. *Academic Medicine* 65:207-210.
- Scott, I.M., A.N. Matejcek, M.C. Gowans, M. Nut, B.J. Wright, and F.R. Brenneis. 2008. Choosing a career in surgery: Factors that influence Canadian medical students' interest in pursuing a surgical career. *Canadian Journal of Surgery* 51:371-377.
- Thistlethwaite, J., M.R. Kidd, and S. Loader. 2008. Enhancing the choice of general practice as a career. *Australian Family Physician* 37:964-968.
- Turner, G., M.J. Goldacre, T. Lambert, and J.W. Sear. 2005. Career choices for anaesthesia: National surveys of graduates of 1974-2002 from UK medical schools. *British Journal of Anaesthesia* 95:332-338.
- Umbach, P.D. 2005. Best practices in web surveys. In *Overcoming survey research problems. New Directions for Institutional Research*, edited by S. R. Porter, 23-38. San Francisco: Jossey-Bass.
- van der Horst, K., M. Siegrist, P. Orlow, and M. Giger. 2010. Residents' reasons for specialty choice: Influence of gender, time, patient and career. *Medical Education* 44:595-602.
- Williams, C., and P. Cantillon. 2000. A surgical career? The views of junior women doctors. *Medical Education* 34:602-607.

Wright, B., I. Scott, W. Woloschuk, and F. Brenneis. 2004. Career choice of new medical students at three Canadian universities: Family medicine versus specialty medicine. *Canadian Medical Association Journal* 170:1920-1924.

Table 1

Perceived Training Difficulty Rankings (N = 193)

Medical Specialty	Total Sample			Females (N = 134)			Males (N = 64)		
	Rank	M	SD	Rank	M	SD	Rank	M	SD
Ophthalmology	1	3.58	3.75	1	3.55	3.70	1	3.66	3.90
Surgery	2	3.67	3.64	2	3.64	3.60	2	3.73	3.74
Dermatology	3	5.46	4.26	5	5.97	4.46	3	4.39	3.62
Anaesthesiology	4	5.68	3.30	4	5.72	3.39	4	5.59	3.13
Intensive Care Medicine	5	5.76	3.24	3	5.70	3.26	5	5.88	3.22
Internal Medicine/Adult Medicine	6	6.48	3.42	6	6.40	3.39	6	6.67	3.50
Obstetrics/Gynaecology	7	6.81	2.78	7	6.70	2.98	7	7.05	2.32
Paediatrics/Child Health	8	7.38	2.71	8	7.34	2.72	8	7.48	2.71
Radiology	9	8.08	3.60	9	8.28	3.68	9	7.67	3.43
Emergency Medicine	10	9.74	3.52	10	9.70	3.57	10	9.83	3.44
Pathology	11	10.68	3.67	11	10.74	3.58	11	10.56	3.87
Rural Medicine	12	13.07	3.86	12	12.77	4.07	13	13.69	3.31
Psychiatry	13	13.37	3.20	13	13.23	3.18	12	13.67	3.24
Rehabilitation Medicine	14	13.75	2.74	14	13.68	2.67	14	13.89	2.91
Medical Administration	15	14.36	4.13	15	14.02	4.25	18	15.06	3.80
Occupational Medicine	16	14.71	3.21	17	14.79	3.20	15	14.55	3.27
Public Health Medicine	17	14.76	3.02	16	14.71	3.18	17	14.87	2.68
General Practice	18	14.77	3.69	18	14.86	3.69	16	14.58	3.70
Non-specialist Hospital Practice	19	16.93	3.47	19	17.18	3.26	19	16.41	3.84

Note: 1 = perceived to be most difficult training program; 19 = perceived to be least difficult.

Table 2

Summary Data and Bivariate Correlations between Preferred Medical Specialty and Medical Values; N = 193

Variable	<i>M</i>	<i>SD</i>	2	3	4	5	6	7	8	9
1. Preferred Medical Specialty	8.28	5.39	-.31**	.15*	.04	-.23**	-.14	.26**	-.01	-.19**
2. Prestige	13.47	3.52	-	.15*	.17*	.49**	.59**	.03	.01	.07
3. Service	16.73	3.27		-	.12	.40**	.41**	.05	-.15*	-.09
4. Autonomy	18.16	2.52			-	.01	.20**	.18**	.02	.11
5. Scholarly Pursuits	13.97	4.44				-	.43**	-.12	-.12	-.01
6. Management	14.36	3.67					-	-.03	-.01	.09
7. Lifestyle	17.77	3.03						-	-.08	-.02
8. Age	27.50	4.00							-	.25**
9. Gender	-	-								-

* $p < .05$, ** $p < .01$

Table 3

Summary of Multiple Regression Analysis for Variables Predicting Medical Specialty Training Difficulty (N = 193)

Variable	<i>B</i>	<i>SE B</i>	β	sr^2
Prestige	-0.07	0.02	-0.26**	5.1
Lifestyle	0.07	0.02	0.23***	5.1
Service	0.07	0.02	0.22**	4.0
Gender	-0.30	0.13	-0.15*	2.1
Males = 1, Females = 0				
Scholarly Pursuits	-0.04	0.02	-0.17*	1.7

* $p < .05$, ** $p < .01$, *** $p < .001$

Note: Standardized beta coefficients (β) with a negative sign indicate that the variable is associated with specialties that have been ranked as having a high level of training difficulty.