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**PRE-REGISTRATION NURSING DEGREE STUDENTS IN
RURAL VICTORIA: CHARACTERISTICS AND CAREER
ASPIRATIONS**

ABSTRACT

This paper describes the preliminary phase of a longitudinal research project involving students enrolling in three different pre-registration nursing programs in two locations in rural Victoria, Australia. This initial report discusses the demographic characteristics, entry pathway, course choice and career aspirations of students enrolled in these programs at both the main rural campus and an outreach satellite school of a major Australian university. Demographic findings from this study demonstrate that most of participants were female, aged between 18 and 50 years. The majority of participants resided in non-metropolitan areas and were enrolled in the flagship Bachelor of Nursing Program, with a large number having entered their chosen course of study via a non-traditional pathway. Career projections reported by participants demonstrate the intention of those from non-metropolitan areas to remain in this location on completion of their studies. Participants indicated their preferred areas of future practice to be in midwifery, emergency and paediatrics. Overall the findings of this part of the study summarise the characteristics of students entering nursing courses via various mechanisms. Exploration and comparison of these characteristics raise a number of issues for discussion, particularly in relation to conversion of level 2 (enrolled) nurses to level 1 (registered) status, and intended career specialisation and location of practice for students of nursing in rural areas.

KEYWORDS

Alternative entry pathways; Career trajectory; Nursing education; Rural nursing; Student demographics

INTRODUCTION

Australian Government reports (Australian Health Ministers' Conference, 2004; Productivity Commission, 2005) have highlighted a national shortage of nurses particularly in rural areas. This trend is reflected internationally with recruitment and retention of nurses identified as a key contemporary issues for the profession as a whole (International Council of Nurses, 2006). Opportunities for enrolment into pre-registration nursing programs are often limited by the prescriptive requirements for entry into such courses. Factors unique to the rural environment further reduce opportunities for secondary school students to access a broad range of tertiary programs (Gum, 2007). The existence of various entry pathways and course opportunities provides an avenue for students who would otherwise be disadvantaged by factors such as age, location, previous study experience and poor levels of academic attainment in their efforts to undertake nursing degree studies.

This paper reports on part of a descriptive exploratory study and aims to describe the demographic characteristics, entry pathway, course choice and career aspirations of students enrolled in three different pre-registration nursing programs at a large rural campus and outreach satellite school of one Australian university. The research reported in this paper is the preliminary phase of a larger longitudinal study that traces the academic and clinical performance, study experience and career trajectory of students entering nursing as a career. The purpose of this initial phase is to describe the characteristics of students enrolled in three different pre-registration degree courses (Bachelor of Nursing; Bachelor of Nursing and Rural Health Practice; Bachelor of Nursing/Bachelor of Midwifery) and to identify how these characteristics may influence their career intentions. Students entered these courses through both traditional (school leaver) and non-traditional (alternative) entry pathways. One example of a non-traditional entry pathway is the Diploma of Tertiary Studies (DoTS), a program that enables students who do not meet the standard entry criteria to gain access to their chosen degree through an alternative mechanism. The characteristics of students entering courses via this pathway are also described in this paper as a foundation for exploration and comparison.

BACKGROUND

Existing literature relevant to the aims of this research focuses on demographic variables of nursing students, alternative entry pathways and career aspirations of students of nursing. This literature originates primarily from Australia, the United Kingdom and the United States. As the study described in this paper was set in a rural location, we will preface an exploration of this literature with consideration of how rurality can be defined.

Defining non-metropolitan status in Australia is complicated, with the literature about rural nursing divided over the appropriateness of common measures of remoteness from urban centres that provide tertiary health care services (Francis, Bowman, & Redgrave, 2002). Historically the Rural, Remote and Metropolitan Areas (RRMA) classification was used in studies discussing rural nursing and also to report workforce statistics (Australian Government Department of Health and Ageing, 2005; Hegney & McCarthy, 2002). More recently however, Australian Institute of Health and Welfare Nurses Labour Force statistics (Australian Institute of Health and Welfare, 2008) have been reported on using the Accessibility/Remoteness Index of Australia (ARIA) component of the Australian Standard Geographical Classification (ASGC). *Non-metropolitan* in this context refers to areas classified as *Outer Regional, Remote* and *Very Remote*.

Using the ARIA framework to define metropolitan and non-metropolitan in this study was problematic as the large majority of participants' postcode areas have an ARIA score of less than 2.4 (Australian Bureau of Statistics, 2007), which defines them as *metropolitan* even though participants consider themselves to be residents of a rural area. This is a common issue for research in Australian States and Territories that are geographically small in that the distance to a major urban centre, which is key to calculating an ARIA score, is relatively short. A different classification measure using postcodes relative to telephone area codes defined as metropolitan and non-metropolitan by the Australian Media and Communication Authority (Australian Government, 2007) was therefore employed in this research in order to better illustrate the context of this study.

Location of enrolment is of interest as a variable in this study, along with characteristics such as age and gender. Wright, Frew and Hatcher (1998) compared social and demographic variables such as gender, socioeconomic status, family size, mother's income and location of secondary schooling between young and mature aged nursing students in

Australian universities and found significant differences between these groups that have implications for university funding and policy making. In an earlier study from the United Kingdom, Winson (1995) identified differences in demographic variables including gender, age, educational background, course expectations and aspirations between diploma and degree nursing students. Two additional studies from the United States describe conflicting findings in relation to the ability of variables such as age, gender and ethnicity to predict success in a baccalaureate nursing program (Byrd, Garza, & Nieswiadomy, 1999) and national licensure examinations (Ostrye, 2001). Both of these studies did, however, find prior academic grades to be predictors of success.

Prior academic performance is not always an indicator of potential to perform well in tertiary study. Dobson and Skuja (2005) demonstrated through their research that tertiary entrance scores derived from secondary school grades were not reliable indicators of potential success in tertiary study. While such scores were effective at indicating performance in some cases, this was not true of health and education courses. Alternative entrance pathways for school leavers (such as the Diploma of Tertiary Studies described in this paper) provide a mechanism for entry into a variety of university courses wherein additional support is provided to students enabling them to successfully complete baccalaureate degree studies (Levy & Murray, 2005). In addition, access to higher education is available to mature aged students who enrol in tertiary programs via non-traditional pathways, often to address ‘unfinished business’ (Munns, Nanlohy, & Thomas, 2000), yet there nonetheless remains a dearth of literature on mature age students entering university courses via alternative entry programs (Cullity, 2007).

In the study reported in this paper, demographic variables and course entry pathways provide an interesting basis for examining the career trajectory of students enrolling in pre-registration nursing programs in a rural area. The question of professional aspirations held by nursing students was studied by Bartlett (1999) who compared career intentions of diploma and degree nursing students on completion of their courses in the United Kingdom. The findings of this study indicate differences in intended specialisation and location of practice between these cohorts, with baccalaureate nursing students more likely to aspire to study further and seek overseas work opportunities. Happell (1999) identified specific nursing specialisations as being more attractive to first year nursing students in one

Australian state. Midwifery, paediatrics and critical care areas proved more popular than specialisations such as aged care and mental health nursing. More recently, Muldoon and Reilly (2003) looked specifically at career aspirations of nursing diploma students in their first year of study and in particular the extent to which the perceived gendered nature of different specialisations determined intended career pathways. Gender stereotyping of nursing resulted in specialties such as midwifery being considered highly female and areas such as mental health nursing being viewed as highly male, which subsequently influenced the career choice of students.

It is interesting to note the number of studies originating from Scandinavia that explore nursing career preferences. Similar to the findings of Happell (1999), midwifery and paediatrics were popular options amongst first year students studied by Kloster, Hoie and Skar (2007), although medical/surgical and psychiatric nursing would become popular by the third year of study. Fagerberg, Ekman and Ericsson (1997) in a study that also examined student demographics, found a preference for working in critical and acute areas amongst their cohort of nursing students. Both of these studies support the finding of Fagerberg, Windblad and Ekman (2000) that aged care is not considered an attractive area of nursing practice. In a widely cited longitudinal study, Rognstad and Aasland (2007) explored whether nursing students change their career aspirations between commencement and completion of a baccalaureate nursing course. This research, while somewhat contradictory to the findings of Kloster et al. (2007), found that although job values changed over time, career preferences from commencement to completion of study remained the same.

METHOD

Existing literature provides an interesting background for this study, yet little recent work has been identified that addresses the unique population or the specific aim of this research. The larger longitudinal investigation of which this is the initial phase, aims to identify the extent to which entry pathway, location and course choice influence success and quality of experience in nursing degree programs in rural Australia. The phase of the study reported here specifically aims to describe demographic characteristics (age, gender and location of

enrolment), course enrolment information and career aspirations of student cohorts entering nursing degree programs via traditional and alternative pathways.

The student population eligible for inclusion in this study were comprised of those enrolled in the Bachelor of Nursing (n=86), an accredited three-year degree program that results in eligibility to register with local statutory registering authorities; the Bachelor of Nursing Rural Health Practice (n=20), a four-year program with a specialist focus that prepares nurses to work in rural settings; the Bachelor of Nursing/Bachelor of Midwifery (n=29), a double degree that enables graduates to register and work as both nurse and midwife; and, the Diploma of Tertiary Studies (articulating with the Bachelor of Nursing course, n=28) giving a total target population of (N=163). Participants were enrolled at either the main campus of the university or at an outreach satellite school that was especially established to provide greater access to nursing courses in a rural area.

Following approval from the university ethics committee, a survey questionnaire was administered on the first day of the first year of study. This questionnaire contained a total of six items designed to collect demographic data including residential postcode, entry pathway, location and course of enrolment. Items regarding intended career trajectory (clinical specialisations and location of practice) were also contained in the questionnaire. As age and gender subsequently became of interest to the researchers, this data was obtained from the university database with permission of the participants.

Statistical analyses of the data set for this first phase of the study were performed using SPSS 14.0 for Windows. Demographic characteristics (age, gender, place of residence and location of enrolment), enrolment data and career aspirations of students from both the rural campus and outreach satellite school were summarised using descriptive statistics. To detect any association between variables, cross-tabulation using chi-square was employed. P values equal to or less than 0.05 were considered statistically significant.

Longitudinal implementation of the larger study involves administration of a questionnaire at the end of the first semester of study and subsequently at the end of each academic year until course completion. Each successive questionnaire undergoes minor revisions in response to analytical outcomes and will include additional items relating to the student's experience of study. With the consent of participants, results from each study

period will be analysed and tracked for the purpose of identifying students' academic and clinical performance relative to entrance pathway and course of enrolment.

RESULTS

Demographic Data

Of the distributed questionnaires, 126 were returned, representing a response rate of 77.3%. Fourteen students from the outreach satellite school and 112 from the main campus participated. As expected, the majority of students (84.9%) lived in non-metropolitan areas with only a small percentage (15.1%) located in the metropolitan area. Table 1 show the percentage of students in the sample from each area of residence and their location of enrolment.

[TABLE 1]

Gender distribution of students indicated that 94.4% (n=119) were female and 5.6% (n=7) were male. The average age of the participants was 24 years ($SD = 8.07$, Range=32 with a minimum of 18 and a maximum of 50 years). The mean age for students at the main campus was 24.3 years ($SD = 8.35$) and at the outreach satellite school 22.2 years ($SD = 5.13$). However, the 75th percentile for the age distribution was 24.3 years for both locations.

Enrolment Data

Data regarding course of enrolment indicated that the majority of participants (59.5%) were enrolled in the Bachelor of Nursing course. Only eleven percent of the participants were enrolled in the Diploma of Tertiary Studies program, with the remainder split almost evenly between the Bachelor of Nursing Rural Health Practice and the Bachelor of Nursing/Bachelor of Midwifery double degree. Figure 1 shows the number of participating students contrasted against the number of students enrolled in each course for the year 2008. The majority of students from both metropolitan (74%) and non- metropolitan (57%) areas were enrolled in the Bachelor of Nursing course. A Chi-square goodness-of-fit test

indicated there was no significant difference in the proportion of students participating in the study from each course as compared with the percentage of students enrolled in each course (see data on students eligible for inclusion in the study), X^2 (3, n=126)= 4.77, $P>0.18$. Therefore, the sample is highly representative of the accessible population.

[FIGURE 1]

Participants were asked to indicate whether they had entered the course via traditional or non-traditional pathways. In Victoria, eligibility for entrance into university courses is determined by calculation of an Equivalent National Tertiary Entrance Rank (ENTER) score. This score aligns with those used in other Australian states with the exception of Queensland, for which a conversion table is available to calculate equivalence (Victorian Tertiary Admissions Centre, 2004). Less than half of the participants in this study indicated that they had gained enrolment via the traditional school leaver pathway with an ENTER score ranging from 51 to 93 [mean = 68.2, and SD=10.7]. The remaining 55.2% entered via non-traditional pathways as indicated in Table 2.

[TABLE 2]

The majority (53%) of students from the metropolitan area were qualified to enter as second level (or enrolled) nurses while the majority (51%) of the non-metropolitan students qualified for entry via the traditional Year 12 pathway. Of the non-metropolitan students only 13.2% were second level (or enrolled) nurses.

Career Aspirations

Students were asked to rank the three preferred areas of practice they hope to work in once registered. Of the participants who responded, 27%, 23%, and 17.5% chose midwifery, emergency, and paediatrics respectively for their first preference. Second preferences were indicated as 22%, 17.4%, 15.6%, 13.8%, and 12.8% for paediatrics, midwifery, emergency, general medical/surgical, and ICU respectively. The third option was 18.6%, 13.7%, and 11.8% for ICU, operating theatre, and general medical/surgical

respectively. Interestingly no males chose midwifery as a preference. Five students chose other areas including neonates, neonatal ICU, special care nursery, and oncology nursing. Of the 19 students in the Bachelor of Nursing/Bachelor of Midwifery eleven (58%) chose midwifery as their first preference, while the remaining participants preferred emergency, paediatrics, and other areas. Moreover, some students picked more than three choices. The insufficient expected counts for each level of the variable prevented the employment of a Chi square test for any association between the preferences.

Location of Future Practice

The final question asked participants to indicate the location in which they intended to practice on completion of their course. Participants were given the option of selecting one or more responses. Results revealed that 38.9% would choose to practice in metropolitan areas, 47.6% in non-metropolitan (regional/rural/remote) and 21.4% wish to travel overseas. However, 21.4% indicated that they were unsure about the location of intended practice. Approximately 20%, 32%, & 6% respectively chose only metropolitan, non-metropolitan, or overseas. Furthermore, 5.6% of the students chose all three locations, while almost 20% chose none of them. All males (n=7) were from non-metropolitan area, with only one indicating a preference to practice in the metropolitan area on completion of his studies.

Given the nominal nature of the data included in this analysis, the Chi-square test for independence was employed to detect any association between studied variables. Students' choices of future location of practice were cross-tabulated and results showed a significant association between their choices of metropolitan and non-metropolitan areas $\chi^2(1, n=126) = 6.252, P< 0.05$. Phi coefficient was calculated to explore the relationship between the two variables ($\Phi=-0.24, n=126, P<0.01$) indicating a small negative relationship between the two choices. The proportion of students living in the metropolitan area who wish to practice in the metropolitan area was significantly different from students living in non-metropolitan area who wish to practice in the metropolitan area $\chi^2(1, n=126) = 9.74, P<0.01$ with medium positive effect size $\Phi= 0.3$ (see Table 3). Similarly, the proportion of students from the metropolitan area who wish to practice in non-metropolitan area was significantly different from those from non-metropolitan area who wish to practice in non-metropolitan

area $X^2(1, n=126) = 10.7, P<0.001$ with medium negative effect size Phi=-0.31 as indicated in Table 3.

This analysis indicates that students who are metropolitan residents were more likely to choose a metropolitan area for their future career rather than a non-metropolitan area; likewise students from a non-metropolitan area were more likely to choose a non-metropolitan area and not a metropolitan area. Students who reported intention to work in a metropolitan area were less likely to report intention to work in non-metropolitan area.

[TABLE 3]

DISCUSSION

The findings of this study summarise the characteristics of students entering nursing courses via various mechanisms at the rural campus and outreach satellite school of one Australian university. Exploration and comparison of these characteristics raise a number of interesting issues that warrant discussion. In particular, it is of value to explore in more detail findings relating to upgrading of second level nurses in non-metropolitan areas; career aspirations relative to gender and course of enrolment; and, intended location of practice relative to location of current residence.

Findings from this study demonstrate that the large majority of respondents were from non-metropolitan areas, with just over half of these being school leavers. Of the cohort only 15% were from metropolitan areas, of whom 53% were second level (enrolled) nurses seeking to convert to first level (registered) nurse status. This is very high compared to the non-metropolitan participant component of the cohort, of whom only 13.2% were second level nurses.

The predominance of metropolitan based students being admitted to a nursing program of study because of prior learning and experience gained as enrolled nurses is a finding that diverges from the current literature. Unlike this study, previous studies that have investigated the experience of enrolled nurses seeking to convert to registered nurse status have highlighted rurality as a predisposing factor (Kenny & Duckett, 2005; Rapley, Davidson, Nathan, & Dhaliwal, 2008). Rapley et al's (2008) findings indicated an unmet need in rural or non-metropolitan areas generated by enrolled nurses wanting to convert to

registered nurse status. This outcome is supported by a recent Australian Health Workforce Institute report that indicates a concomitant increase in the number of enrolled nurse in workplaces the further away they are from a major city (Sheumack, Turner, Brooks, & Moloney, 2008). Kenny & Duckett's (2005) study of enrolled nurses who were converting to registered nurse status found that the breadth of rural nursing practice had required participants to broaden their knowledge and skill base in order to meet client and community need. In Kenny and Duckett's study, enrolled nurses working in rural health workplaces felt undervalued and that their broader role was not necessarily identified and supported. A result of this was the desire to actually become a registered nurse in order to legitimise their current practice.

The reason why the majority of metropolitan students admitted to the cohort of participants investigated were enrolled nurses is unknown. A possible conjecture is that the admission requirements for a rural campus versus a metropolitan campus are easier to meet, given the higher numbers of school graduates at the latter with whom enrolled nurses must compete for places. This finding raises the question: Is there an unmet need for enrolled nurses in metropolitan areas who want to convert to registered nurse status?

Career aspirations of participants in this study to work in midwifery, paediatrics, and emergency nursing, were reflective of the literature reviewed in the first part of this paper. Of the small number of male participants in the study, none chose midwifery as a career aspiration, which is congruent with previous research that found males are typically attracted to more technical areas of nursing such as intensive care and emergency (Stott, 2007).

Of note in this study were the career aspirations of participants enrolled in the Bachelor of Nursing/Bachelor of Midwifery program. Only 58% chose midwifery as their first preference as a career choice after graduation. Midwifery has long been considered a pre-requisite for working in rural and remote or isolated (non-metropolitan) areas, alongside emergency nursing experience (Mills, Birks, Francis, Coyle, & Al-Motlaq, 2008). We postulate that the reason why non-metropolitan students would chose to undertake a double degree such as this is to prepare themself for the breadth of the nurse's role in rural, remote or isolated areas which is different to that of a nurse working in a metropolitan area. Another influence on undergraduates enrolling in a Bachelor of Nursing/Bachelor of

Midwifery degree is how the media portrays nurses working in non-metropolitan areas needing to respond to emergencies, including birthing babies as a part of their daily work (Tudball, 2002).

In this study, it was clear that the place where participants lived influenced where they planned to practice upon completion of their program of study and subsequent registration as a nurse. There is a large body of evidence from Canada (Dalton, Routley, & Peek, 2008), and a growing number of studies in Australia, that defend the importance of “growing your own” in rural areas. “Growing your own” is dependent upon enrolling non-metropolitan students and developing systems for effective, positive clinical placements in local health care facilities. Even though newly registered clinicians may often move temporarily to a metropolitan centre to gain experience, in general they return to their home district to establish careers and live on a long-term basis. Having a rural identity that comes with growing up in a non-metropolitan area is a key element in the retention of staff in these areas (Hegney & McCarthy, 2000; Hegney, McCarthy, Rogers-Clark, & Gorman, 2002a, 2002b; Hegney, Rogers-Clark, Gorman, Baker, & McCarthy, 2001). The findings of this study defend the notion that rural campuses of universities, through their support of local people, can capacity build communities and subsequently succession plan for a local workforce.

IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS

Students enter nursing as a career from a broad range of backgrounds. This fact has been evidenced in the findings of this study where the stereotypical school leaver was not prominent. The majority of students entering nursing programs in this setting did so via non-traditional pathways, a situation that has implications for curriculum development and delivery in nursing. The need to cater for students with a great variety of learning needs and life experiences is emphasised when awareness is raised of the diversity of demographic characteristics of students through studies such as this. While it is heartening to note the intention of students from non-metropolitan areas to remain in the local setting, the desire of students to enter midwifery, high acuity and paediatric settings is of concern given the aging population in Australia and around the globe. Efforts to attract students of

nursing to the important specialisations of aged and chronic care are needed to ensure that the health priorities of society are met in coming decades.

The relatively high response rate from the target population of this first phase has aided in the generation of findings that will address the aims of the study longitudinally. The small population of participants located at the outreach satellite school has limited the ability of the findings from that cohort to provide a strong subset for comparison of data with the main campus. Broadening the focus of this study to different institutions in various locations may contribute a more comprehensive set of data that would prove profitable in both understanding the means by which students gain access to the nursing profession and how their intentions in regard to practice are influenced by the demographic variables examined in this research. Many of the limitations of this research will be reduced as the study progresses through subsequent longitudinal phases.

CONCLUSION

Workforce shortages in the health professions, and particularly nursing, remain a global concern. The research presented in this paper, as part of a larger, longitudinal study, serves to aid in understanding the demographic characteristics of students who seek to enter the nursing profession. Knowledge of the great diversity of these characteristics, along with the career intentions of those who embark upon this path, provides a foundation upon which educational programs can be developed and implemented with greatest effect.

Table 1: Place of residence (Metropolitan or Non-metropolitan) and place of course enrolment (Main or Outreach Satellite School)

	Metropolitan	Non-Metropolitan	Total
Main campus	18 (14.3%)	94 (74.6%)	112 (88.9%)
Satellite school	1 (0.8%)	13 (10.3%)	14 (11.1%)
Total	19 (15.1%)	107 (84.9%)	126 (100%)

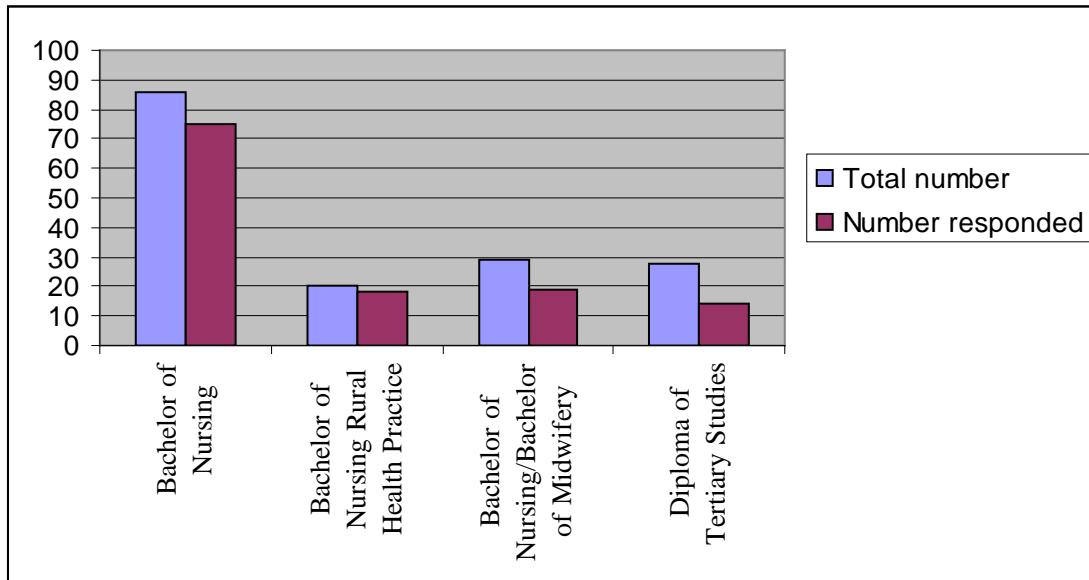


Figure 1: Response Rate by Course of Enrolment

Table 2: Qualifications for entry

Qualification	Frequencies	Valid percent
Year 12	56	44.8
Non Year 12	17	13.6
Registered Nurse Division 2	24	19.2
Other*	28	22.4
Total responded	125	100

* Such as existing baccalaureate degrees, technical and tertiary bridging courses

Table 3: Cross tabulation of location of residence with location of intended practice

		<u>Area of residence</u>	
		<u>Metropolitan</u>	<u>Non- Metropolitan</u>
<u>Location of practice</u>			
Metropolitan	Yes	14 (73.7%)	35 (32.7%)
	No	5 (26.3%)	72 (67.3%)
Non- Metropolitan	Yes	2 (10.5%)	58 (54%)
	No	17 (89.5%)	49 (46%)

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