GP workforce participation in Tasmania

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BACKGROUND

Predicting future general practitioner workforce requires information about how demographic factors affect GP workforce participation. Regional differences might not be accounted for in national studies. The authors aimed to determine GP characteristics associated with workforce participation in Tasmania.

METHODS

A self administered census of Tasmanian GPs measured GP demographics and the number of 3.5 hour sessions worked in 1 week in 2005.

RESULTS

Four hundred and three GPs responded (76% response rate). Six percent of GPs were on leave at the time of the census. Age, gender and graduation outside of Australia, the United Kingdom or Ireland were associated with workforce participation, but rurality had no effect. The effect of age was modified by gender with women aged over 55 years being more likely to work full time (p=0.03).

DISCUSSION

Factors affecting workforce participation may vary across regions. Predictions based on national models may need to be interpreted in the context of local circumstances.

Workforce planning is important in ensuring adequate delivery of primary health care services.[1] Planning requires accurate data on the current general practitioner workforce[1] and information enabling prediction of workforce change.[2] As evidenced by the multiplicity of approaches which have been taken to date[2–5], there is no 'gold standard' for collecting GP workforce data. There are issues regarding both the accuracy[6] and currency of data, and each approach has strengths and weaknesses.[5]

Predictions based on national models are useful but may not account for regional variations. For example, modelling used for the recent Australian Medical Workforce Advisory Committee (AMWAC) report implicitly assumes that variables in the model such as age, gender and remoteness of the practice location affect workforce participation evenly across Australia.[2,7] To our knowledge, this assumption has not been tested, especially within Tasmania's unique geography and distribution of both population and GPs.

The aim of this study was to investigate the relationship between a range of GP characteristics and workforce participation.

Methods

A census approach was chosen to provide maximum power for comparisons by utilising the entire Tasmanian GP population, and to use a clear and recent reference period for the survey to minimise the potential for recall bias.

The online survey tool was developed by representatives from each Tasmanian division of general practice and the University of Tasmania, with extensive input from staff and GPs of each division. The survey collected basic demographic data and the number of 3.5 hour sessions worked in direct patient care in the census week (9–16 May 2005, a week free of public or school holidays). General practitioner workforce participation, which refers to the amount of time GPs spend providing direct patient care, was defined as either full time (nine or more sessions per week) or part time (fewer than nine sessions per week) – a cut-off chosen to meet the requirements of the participating GP organisations.

General Practice Tasmania Limited emailed a link to the online survey to all 532 GPs known to be practising in Tasmania, according to the database held by each Tasmanian division. The link was sent on the Monday after the census week, aiming to maximise the accuracy of

GPs' recall. Nonresponders were sent a further email 1 week later. General practitioners without an email address and nonresponders were sent a paper based survey. Nonresponders were followed up by phone.

Statistics

We performed univariable analyses to determine which factors were associated with working full time in general practice using Chi-square tests for categorical variables and unpaired t-test for continuous variables. We then used multivariable logistic regression to determine which factors were independently associated with working full time in general practice, including assessing possible interactions. We collapsed categories for Rural, Remote and Metropolitan Area (RRMA) classification,[8] GP type, and place of qualification where there were either very small GP numbers or where univariable analyses showed little difference between categories. As age and years since qualification were highly correlated, only age was included in the multivariable model. The variables included in the multivariable logistic regression model were GP age quartile, gender, place of qualification and RRMA classification of main practice.

Ethics approval was obtained from the Southern Tasmanian Human Research Ethics Committee (the combined ethics committee of the University of Tasmania and Department of Health and Human Services).

Statistical significance was set at $p<0.05$ (two-tailed) and any reported association is significant at this level.

Results

Four hundred and three GPs responded to the survey (response rate 76%). Characteristics of responders are given in *Table 1*. One hundred and sixty GPs (40%) responded to the survey online. There were no statistically significant age or gender differences between responders and nonresponders. Most GPs not working in general practice in the census week (n=26) were on leave (n=23, 6%); the remainder were not currently engaged in general practice.

Table 2 shows the GP characteristics associated with working full time in general practice. Older age, male gender and medical qualification outside of Australia, the United Kingdom or Ireland were associated with working full time in general practice. There was no association between rurality of practice location and workforce participation.

The effect of age was modified by both gender and place of qualification (*Figure 1, 2*). Age was not associated with GP workforce participation in male GPs (p=0.28 for trend), but women were more likely to work full time with increasing age (p=0.001 for trend)

Table 1. Characteristics of Tasmanian GPs (n=403)

Characteristic	n	(%)
Male	229	(57)
Age (years), mean (SD)	49.3	(10.1)
Place of qualification*		
Australia	274	(68)
United Kingdom/Ireland	57	(14)
Other countries	62	(15)
Vocationally registered	207	(89)
RRMA classification**		
1–4	292	(73)
5–7	106	(27)
Participation in GP workforce†		
Not working in general practice	26	(6)
Part time	226	(56)
Full time	151	(38)

* Missing data on 10 participants
** RRMA classification, missing data on five participants
† Full time participation defined as working nine or more sessions per week in direct patient contact

Table 2. GP characteristics associated with working full time

	Univariable		Multivariable*	
	OR	(95% CI)	OR	(95% CI)
Age quartile (years)				
<42	1.00		1.00	
42–49	**4.09**	**(2.01–8.15)**	**3.35**	**(1.54–7.30)**
49–55	**3.89**	**(1.92–7.83)**	**3.39**	**(1.54–7.43)**
>55	**3.21**	**(1.60–6.44)**	**2.12**	**(1.01–4.86)**
Gender				
Male	1.00		1.00	
Female	**0.16**	**(0.09–0.25)**	**0.17**	**(0.10–0.30)**
Place of qualification				
Australia, UK or Ireland	1.00		1.00	
Other overseas country	**2.36**	**(1.26–4.44)**	**2.84**	**(1.34–6.01)**
Rurality				
RRMA 1–4	1.00		1.00	
RRMA 5–7	0.99	(0.61–1.60)	0.95	(0.53–1.70)

* Adjusted for other items in table
OR = odds ratio
CI = confidence interval
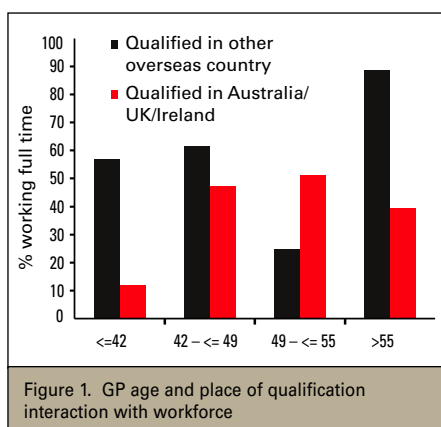Bold text denotes statistical significance

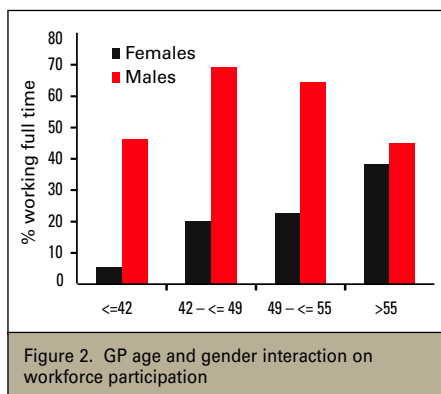Figure 1. GP age and place of qualification interaction with workforce

Figure 2. GP age and gender interaction on workforce participation

particularly in the oldest age quartile (age >55 years) (p=0.03). Age had no effect on workforce participation in GPs who qualified in Australia, the UK or Ireland, but GPs in the third age quartile (49–55 years) who graduated outside these countries were less likely to work full time than those in other age quartiles (p=0.02). There were no other statistically significant age or gender interactions.

Discussion

While workforce participation of Tasmanian GPs is affected by gender and age in ways similar to that described in other studies, rurality does not have the same impact on workforce participation seen national datasets. In addition, we report an interaction between gender and age. Over time, this interaction may reduce the impact of the increasing proportion of women in the GP workforce on general practice clinical hours worked.

Direct comparisons between different workforce participation assessments are difficult because of the differences in survey design and analysis. In particular, full time work has been variously defined. The Australian Institute of Health and Welfare[9] offered two alternative definitions for full time work: 35 hours or more per week worked (the general workforce 'standard') or 45 hours or more per week worked (close to the 'standard' or average worked by medical practitioners). Our study restricted the full time work definition to direct patient care, unlike other datasets which included indirect care.[9] Nonetheless, a discussion of the results of different studies may add to our understanding of factors affecting GP workforce participation.

Our findings regarding the impact of gender on workforce participation are consistent with other observations that women GPs are more likely to work part time than their male counterparts.[9–11] However, the association of increasing age with working full time in women to some extent counteracted the decrease in full time work due to gender. This has implications for predicting the effects of the current trend toward increased numbers of women in the GP workforce. The effect of age in women could be a cohort effect, ie. women who are currently aged over 55 years have been working a greater number of hours throughout their career. However, workforce data from 1993 suggests that this is not the case, although the data does not allow direct comparison.[12] A more likely explanation may be that as women GPs age, they choose to or become able to increase their working hours, and it is possible that the effects of increasing proportions of women in the GP workforce on GP supply may diminish over time. The lack of an association of age with workforce participation in men contrasts with the national trend for reduction in working hours in younger male GPs.[2] This may reflect regional variation in the effect of age on workforce participation. It could also reflect differences in the survey and data analysis methodologies.

We found that international medical graduates (IMGs) who trained outside of the UK and Ireland are more likely to work full time. One proposed explanation for this is that IMGs are in the age and gender group that worked relatively long hours.[2] However, even after adjusting for age and gender in our study, the effect of place of qualification persisted, suggesting that other factors might be involved. Moreover, we found that workforce participation in GPs aged 49–55 who graduated outside Australia, the UK or Ireland was less than those at other ages. The reasons for this remain unclear. In the AMWAC report the variables used in modelling did not include whether GPs were Australian or internationally trained.[7] This is an important gap, given that IMGs make up an estimated 25% of the Australian GP workforce.

Practice location (whether urban or rural) was not associated with GP workforce participation in Tasmania, in contrast to results from other studies.[1,2,9,13] This could be due to the methodological differences in these studies in quantifying full time work. It could also be because few Tasmanian GPs work in remote practice; only three respondents worked in RRMA 7 areas, and none worked in RRMA 6.

Our study has several limitations. It only assesses 1 week of GP workforce participation, which might vary seasonally. However, all methods of workforce assessment have strengths and weaknesses[5] and we decided to use a methodology which enabled us to gain timely information, with potentially less recall bias because of its short reference period.

Tasmania has fewer remote general practices compared to other states. Replicating this study in other states with a greater range of RRMA classifications is needed to see whether this result is generalisable to other areas. Our data only provides an estimate of the hours worked by GPs who work in excess of 10 sessions per week and does not allow us to describe the characteristics of those GPs. We did not attempt to quantify the amount of work performed outside of direct patient care, which may be substantial,[15,16] as our workforce planning required a focus on the delivery of direct patient care.

The online GP census provided timely demographic and workforce participation data to inform GP workforce planning in Tasmania, and provides a potential methodology that could be applied at a national level. Our findings support the usefulness of regional as well as national GP workforce assessments to help plan for future GP workforce needs.

Implications for general practice

- Not all associations used in modelling national GP workforce data may apply to different regional areas.
- State and regional variations need to be considered in workforce planning as local factors can influence workforce patterns.

Conflict of interest: none declared.

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