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## **Attitudes of advanced Australian medical oncology trainees to rural practice**

### **Introduction**

There has long been a concept that life in rural Australia is healthier than the hectic city life: less stress, less traffic, and clean, fresh air.<sup>1</sup> However, those who live in the country have higher mortality rates, and overall decreased life expectancy.<sup>2</sup> There is now good evidence that rural cancer sufferers have inferior outcomes when compared to those in metropolitan areas.<sup>3,4,5</sup> Recent data has shown inferior survival after a diagnosis of cancer in the country, which increases with the degree of remoteness, and exists for all main cancer types. Given more than a third of Australians live outside major cities, with 3% living in remote or very remote areas<sup>6</sup>, this is an important public health issue. Whilst it has been shown that rural cancer patients present with later stage disease, the poorer survival statistics remain when this taken into account.<sup>3</sup> It appears that screening, diagnosis, and treatment deficiencies may all contribute to outcome in remote areas.

Recent research performed by the Clinical Oncology Society of Australia (COSA) Regional and Rural Oncology Group, has identified areas of weakness in the provision of cancer services to rural patients.<sup>7</sup> Arising from this, recommendations have been put forward to expand services in rural areas. This has included the concept of developing Regional Oncology Centres of Excellence, based around pre-existing radiotherapy centres. If cancer services in regional areas are to be expanded, increasing numbers of medical and radiation oncologists will be required in these areas. Attracting medical practitioners to work in rural areas continues to prove very difficult, and the specialty of oncology is no exception.

The primary aim of this study was therefore to document the attitudes of current Australian oncology trainees to rural training and practice, and to identify factors that may enhance recruitment.

### **Methods**

Using a database of all current Australian advanced trainees in oncology held by the Medical Oncology Group of Australia (MOGA), a covering letter, questionnaire, and reply-paid envelope were then mailed to all 96 names provided. A numbering system was used to identify non-responders and allow a reminder to enhance response rate, whilst maintaining confidentiality. Two additional attempts were made to contact non-responders.

The 72-item questionnaire was divided into 5 parts. Section A requested basic demographic information. Section B asked trainees whether they had ever considered rural practice, and asked questions regarding perceived advantages and disadvantages to rural practice, and attitudes to working in public and private practice. Section C and D involved feedback from previous rural rotations, both in oncology and other areas of medicine. Section E aimed to identify potential incentives to enhance recruitment to rural areas.

## Analyses

Reliability analyses were performed to assess internal consistency. The Cronbach co-efficient (alpha) was calculated separately for advantages and disadvantages, with co-efficients of 0.7 or higher regarded as acceptable. Attitude scores were calculated by computing each individual's mean score for advantages (a), and for disadvantages (d), and by subtracting d from a. The distribution of attitude scores was inspected. An independent samples t-test was used to assess the validity of this attitude measure. Finally, chi-square analyses were performed to determine associations between several demographic factors and attitudes to rural practice.

## Results

### *Respondents*

Of the 96 surveys posted, 21 were excluded from the study (10 were found to be paediatric trainees, 11 were either overseas fellows or no longer trainees). Therefore there were 75 eligible current Australian trainees. Of these, 45 (60%) responses were received.

### *Demographics*

Demographic results are presented in Table 1. All year levels of advanced training were well-represented.

### *Overall attitudes to rural practice*

58% trainees had considered rural practice, 29% had not, and 13% were undecided. As expected, respondents who reported considering a rural career, also reported significantly more positive attitudes ( $M = 0.32$ ) to rural practice than those who reported not considering a rural career ( $M = -0.11$ ),  $t(36) = 2.30$ ,  $p = 0.027$ . This supports the validity of the data and the attitude measure. There was a strong trend towards those with a rural background being more likely to consider rural practice ( $p=0.06$ ), as shown in Table 2. There was also a trend towards females being less likely to consider rural practice than males, ( $p=0.116$ ) (see Table 3).

Responses to items about perceived disadvantages and advantages to rural practice revealed good reliability (alpha = 0.70 and 0.81 respectively). As total attitude scores were obtained by subtracting mean scores for disadvantages from mean scores for advantages, the possible range of these scores was -4 to +4, with zero reflecting a neutral attitude and scores greater than zero reflecting a positive attitude. The distribution of these total scores revealed a slightly positive attitude to rural practice overall, (See Figure 1).

Attitudes to listed disadvantages of rural practice are shown graphically in Figure 2. Lifestyle factors appeared particularly important to respondents, specifically distance from the city (89% agree or strongly agree), distance from peer groups (91% agree or strongly agree), and lack of holiday cover (82% agree or strongly agree). There were mixed responses regarding career factors (eg. opportunity to be on review boards, and national / international recognition). Reduced opportunities to discuss difficult patients with colleagues was seen as a disadvantage by 69%.

The item, 'lack of, or changing schools, for children' was a lifestyle factor that was explored further using the demographic data. As expected, there was a statistically significant association between having children and agreeing that lack of education opportunities for children was a clear disadvantage of rural practice ( $\chi^2(3) = 13.65$ ,  $p = 0.003$ ).

Attitudes to listed advantages of rural practice are shown graphically in Figure 3. Reduced travel times to work (91%), less traffic (91%), a more relaxed lifestyle (81%), and a more affordable cost of living (84%), were all seen as advantages of rural practice. 67% felt that exposure to a broader range of patient conditions was an advantage, and 62% believed they would be able to establish a private practice more quickly in the country.

A majority of respondents believed rural practice to involve a predominance of public work (67%), and 80% envisaged working in a mixture of the public and private health systems. The vast majority stated that the size of an area would influence a decision to work there (91%), and would prefer a regional to a rural area (91%). 100% of respondents said they would prefer to work in a practice with more than one oncologist.

#### *Previous rural experience*

87% respondents had previously worked on a rural rotation, however only 36% (16 of the 45 respondents) had experience in rural oncology. Only 4 of these 16 trainees had been accompanied by their partner or family. Specific rotations included Ballarat, Bendigo, Geelong (VIC), Wollongong, Albury (NSW), Nambour, Townsville (QLD), and Kalgoorlie (WA). Although Geelong, Victoria, was not strictly a rural area by the definition given in the survey, it was included in this analysis as respondents felt they were able to comment on all related questions from their experience.

Previous experience regarding opportunities for professional education in these areas was mixed, see Figure 4. In general, it was seen as difficult to attend journal clubs and educational meetings (69%), and overcoming distance to attend these was seen as an issue (69%). Cost was not seen to be a limiting factor in most cases, with costs generally shared between trainees, hospitals, practice groups, and pharmaceutical companies. Access to teleconferencing was also seen as difficult (69%). Workloads in these rural rotations were seen as adequate in 56% cases, and excessive in 31%.

Despite these results, 94% trainees had found their rural rotation to be a positive experience overall, and 63% described being more likely to consider rural practice following their rotation.

#### *Incentives*

Most respondents agreed that all the incentives listed would potentially enhance recruitment of medical oncology registrars to rural areas – see Figure 5. Specific incentives that were considered likely to enhance consultant recruitment to rural areas, included improve locum cover for leave (98%), improved access to multidisciplinary clinics (92%), and improved access to clinical trials (92%) – see Figure 6.

## **Discussion**

This survey provides an insight into the attitudes of Australian medical oncology trainees to rural practice. The sampling frame for this study included every oncology advanced trainee in Australia and each year level was well represented in the participant group. Thus, this study has assessed factors that may influence trainees' decisions about rural work at the stage of their career when such decisions will soon be made. Notably, the career decisions made by this group of respondents will influence the urban/rural profile of delivery of care in oncology throughout Australia over the next 40 years.

60% of surveys were returned. It is possible that those who responded to the survey may have had more interest in rural practice than those who did not, introducing potential bias to the results. Despite the small sample size however, important insights into trends of attitudes to rural practice were seen.

Although 58% of trainees have considered a rural career, and overall attitudes towards rural practice were generally positive, this has not previously translated into trainees choosing a future in rural oncology. The question therefore arises as to why there is this inconsistency? The main perceived disadvantages to rural practice were lifestyle factors such as distance from the city, and separation from peers. These lifestyle factors are not easily modified. Career factors seemed to be less of a concern to trainees. Paradoxically, the main advantages of rural practice were also seen to be lifestyle issues, such as less traffic, a more relaxed lifestyle, and a lower cost of living. It is clear therefore, that incentives *are* likely to be important to increase recruitment of medical oncologists, and trainees, to rural areas. Perhaps this questionnaire would have been more informative if it had asked respondents to rank order (rather than simply endorse) the potential incentives relating to rural oncology work. Further study in this area would be of interest. Factors that are able to be modified, and may provide incentives to enhance rural recruitment, include improving locum cover for leave, and improved access to multidisciplinary clinics and clinical trials.

There was a trend towards females being less likely than males to consider a rural career. Given almost two thirds of respondents were female, this trend (although not quite reaching statistical significance) could represent serious implications for the delivery of health care to rural areas, particularly given the increasing numbers of female trainees.

The association between growing up in a rural area and later practicing in a rural centre has been well-demonstrated in the past.<sup>8-15</sup> Our results are consistent with these previous findings

Only 31% of respondents had children. It is possible that questions regarding concerns of availability of schooling may be under-represented, or may become more important for oncologists at later stages in their career.

There were perceived deficiencies in opportunities for professional education in rural registrar posts, including difficulty attending journal clubs, and difficulty accessing teleconferencing facilities. Despite this, these rotations were seen as positive overall, and the majority of trainees were more likely to consider a rural career following their rural rotation. If these education opportunities could be optimized, overall attitudes to rural practice may improve.

Of note, all respondents preferred to work with other oncologists, rather than in a single practitioner practice. This may relate to concerns regarding lack of locum cover for leave.

One omission from the survey was the lack of questions relating to the spouse or partner of the trainee. Several respondents made an additional comment that lack of employment opportunities for their spouse would preclude them ever considering a rural career. This is yet another lifestyle barrier that is very difficult to modify.

## **Conclusions**

Despite some positive attitudes to rural oncology practice, lifestyle factors that are difficult to modify were perceived as barriers to improving recruitment to rural areas. Strategies to enhance recruitment should utilize the evidence that those with a rural family background are more likely to consider rural practice, as are those having rotated to a rural oncology training position. Additional incentives are also likely to be required, and improving access to locum cover may be an important factor. Improved educational opportunities for registrars in rural medical oncology rotations is also required, and may also enhance recruitment in the future.

2,036 WORDS

## Tables and figures

| <b>Characteristic</b>            | <b>Number</b> | <b>Percentage</b> |
|----------------------------------|---------------|-------------------|
| <b>Gender</b>                    |               |                   |
| Male                             | 17            | 37.78             |
| Female                           | 28            | 62.22             |
| <b>Age</b>                       |               |                   |
| 26-29                            | 9             | 20.00             |
| 30-33                            | 25            | 55.56             |
| 34-37                            | 8             | 17.78             |
| 38-40                            | 1             | 2.22              |
| no answer                        | 2             | 4.44              |
| <b>Year of advanced training</b> |               |                   |
| 1                                | 17            | 37.78             |
| 2                                | 9             | 20.00             |
| 3                                | 17            | 37.78             |
| other                            | 2             | 4.44              |
| <b>Marital status</b>            |               |                   |
| Single                           | 12            | 27.67             |
| Married / de facto               | 33            | 73.74             |
| <b>Children</b>                  |               |                   |
| Yes                              | 14            | 31.11             |
| No                               | 31            | 68.89             |
| <b>Rural family background</b>   |               |                   |
| Yes                              | 9             | 20.00             |
| No                               | 36            | 80.00             |
| <b>Religion</b>                  |               |                   |
| Christian                        | 10            | 22.22             |
| Buddhist                         | 2             | 4.44              |
| Hindu                            | 1             | 2.22              |
| Jewish                           | 2             | 4.44              |
| None / no response               | 29            | 64.44             |

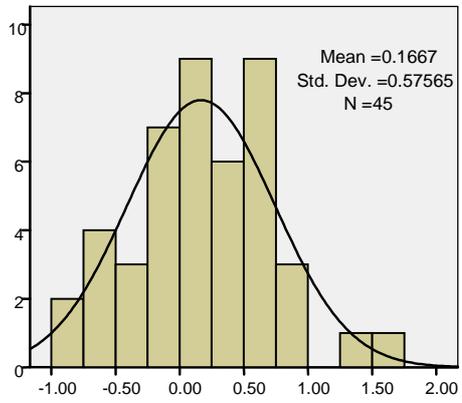
**Table 1: Demographics ( n = 45)**

| Considered rural career | Rural background  |                  |
|-------------------------|-------------------|------------------|
|                         | YES<br>Number (%) | NO<br>Number (%) |
| YES                     | 8 (88.9%)         | 17 (47.2%)       |
| NO                      | 0 (0%)            | 13 (36.1%)       |
| UNDECIDED               | 1 (11.1%)         | 6 (16.7%)        |
| Total:                  | 9 (100%)          | 36 (100%)        |

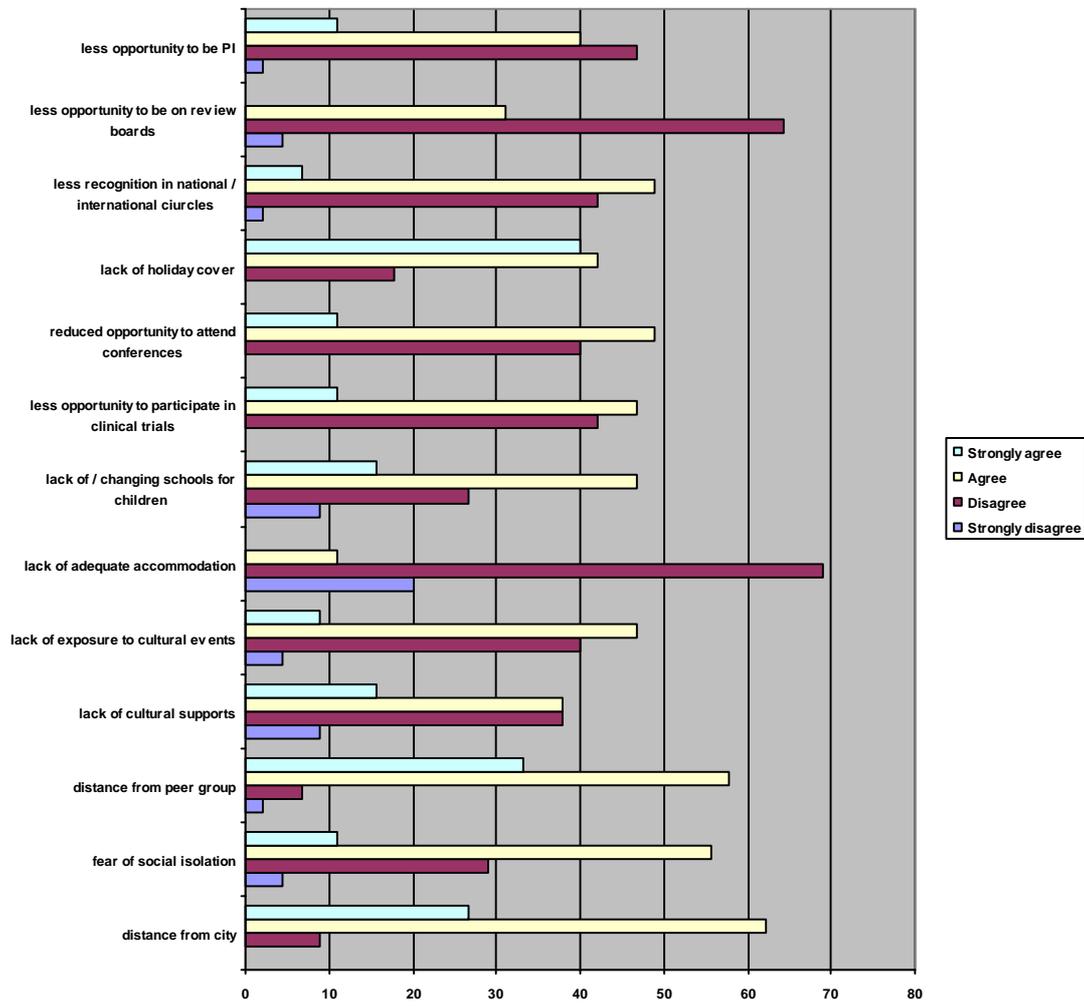
**Table 2: Rural family background and considering rural career: raw frequencies and column percentages**

| Considered rural career | Gender             |                      |
|-------------------------|--------------------|----------------------|
|                         | MALE<br>Number (%) | FEMALE<br>Number (%) |
| YES                     | 11 (64.7%)         | 14 (50.0%)           |
| NO                      | 2 (11.8%)          | 11 (39.3%)           |
| UNDECIDED               | 4 (23.5%)          | 3 (10.7%)            |
| Total:                  | 17 (100%)          | 28 (100%)            |

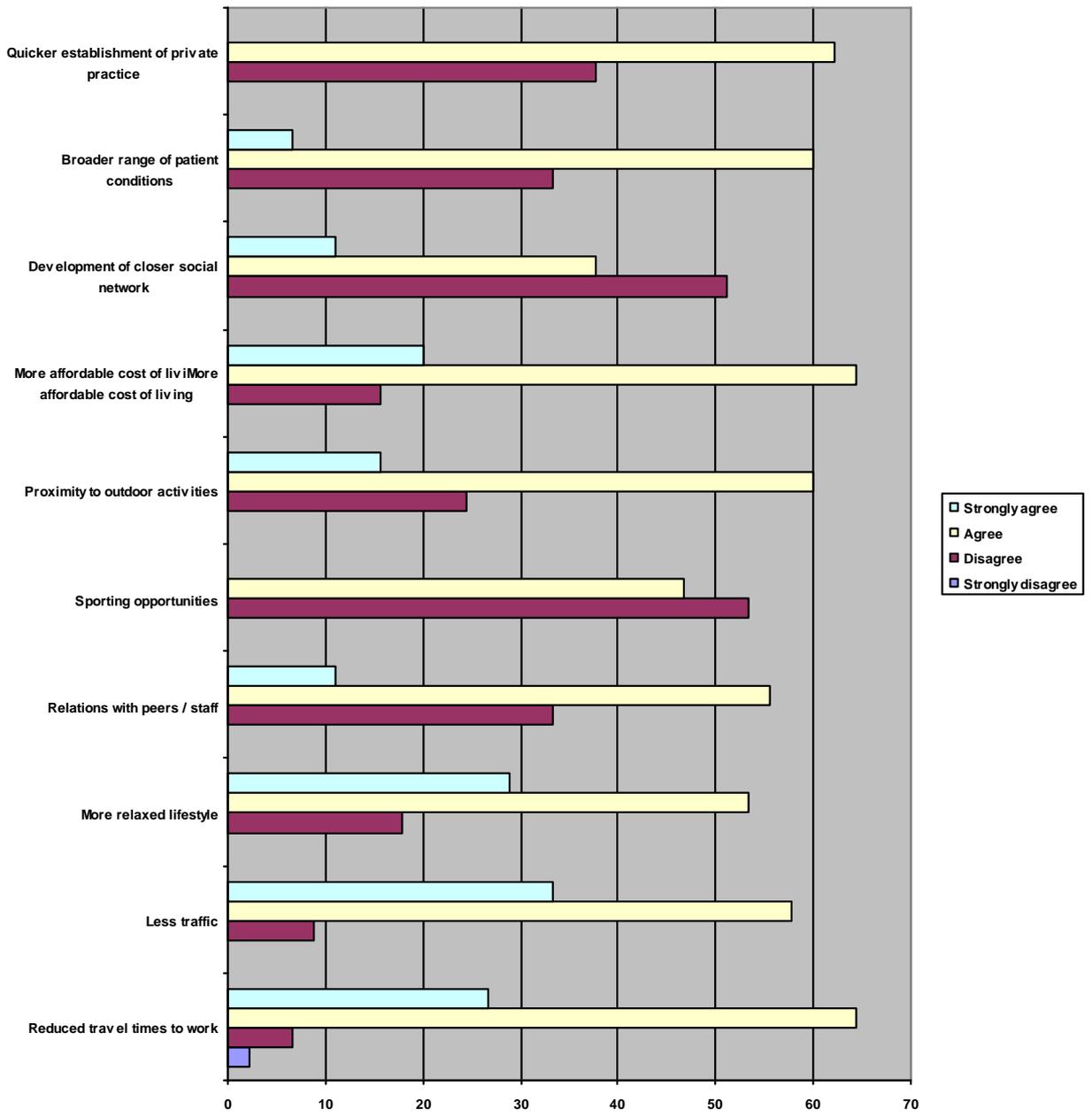
**Table 3: Gender and considering rural career: raw frequencies and column percentages**



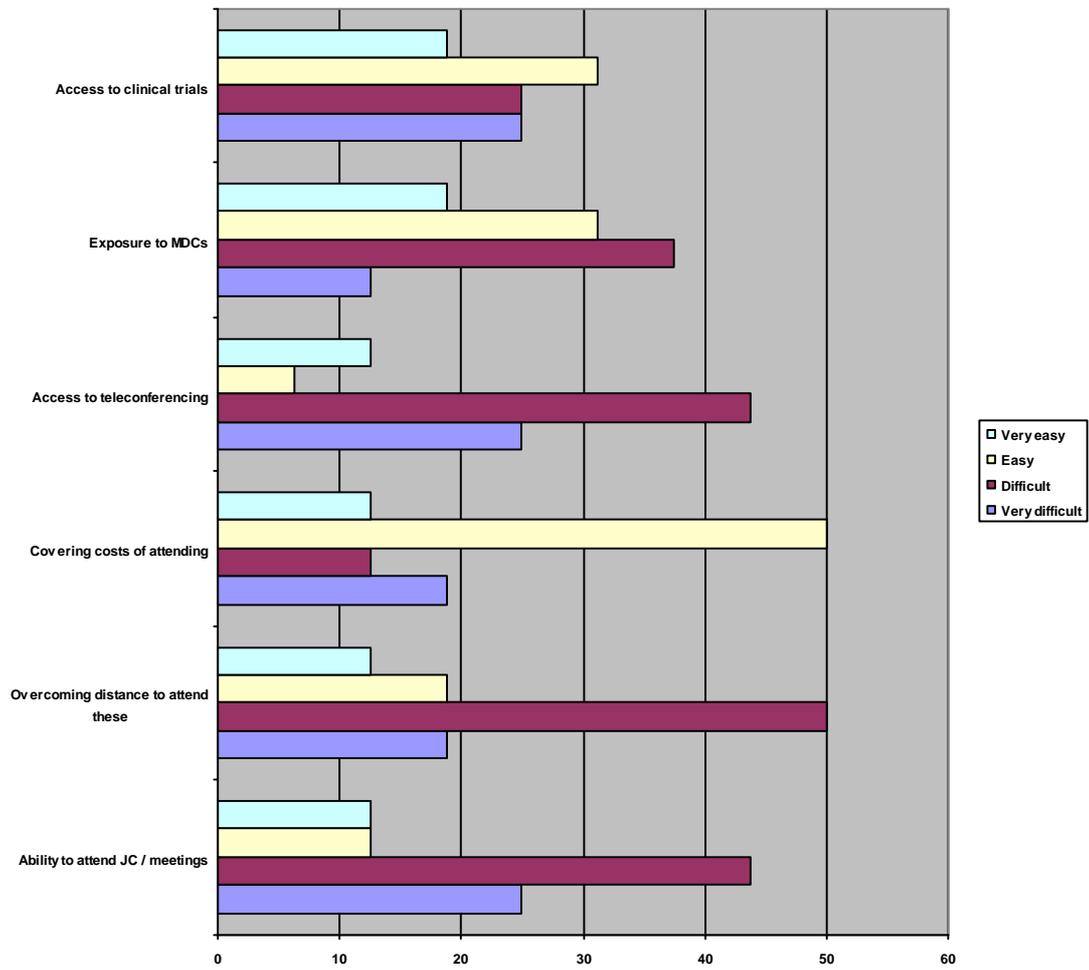
**Figure 1: Overall attitude to rural practice: advantages less disadvantages**



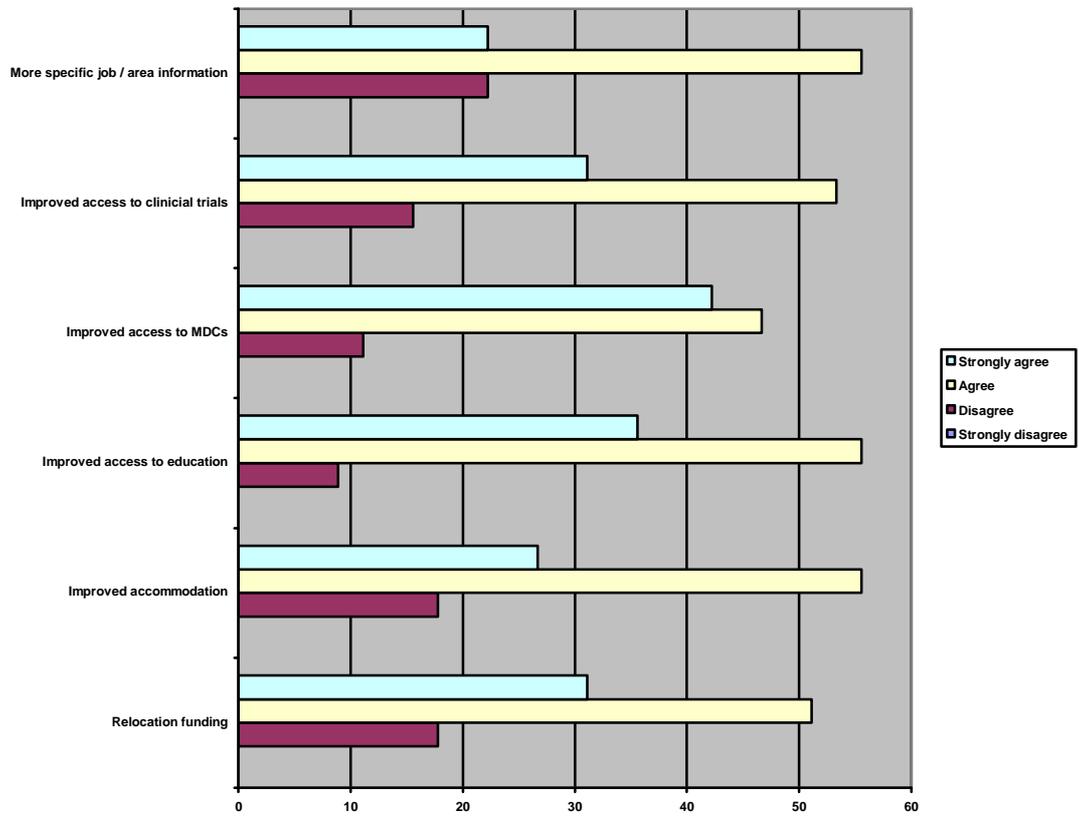
**Figure 2 Perceived disadvantages of rural practice: percentage frequencies**



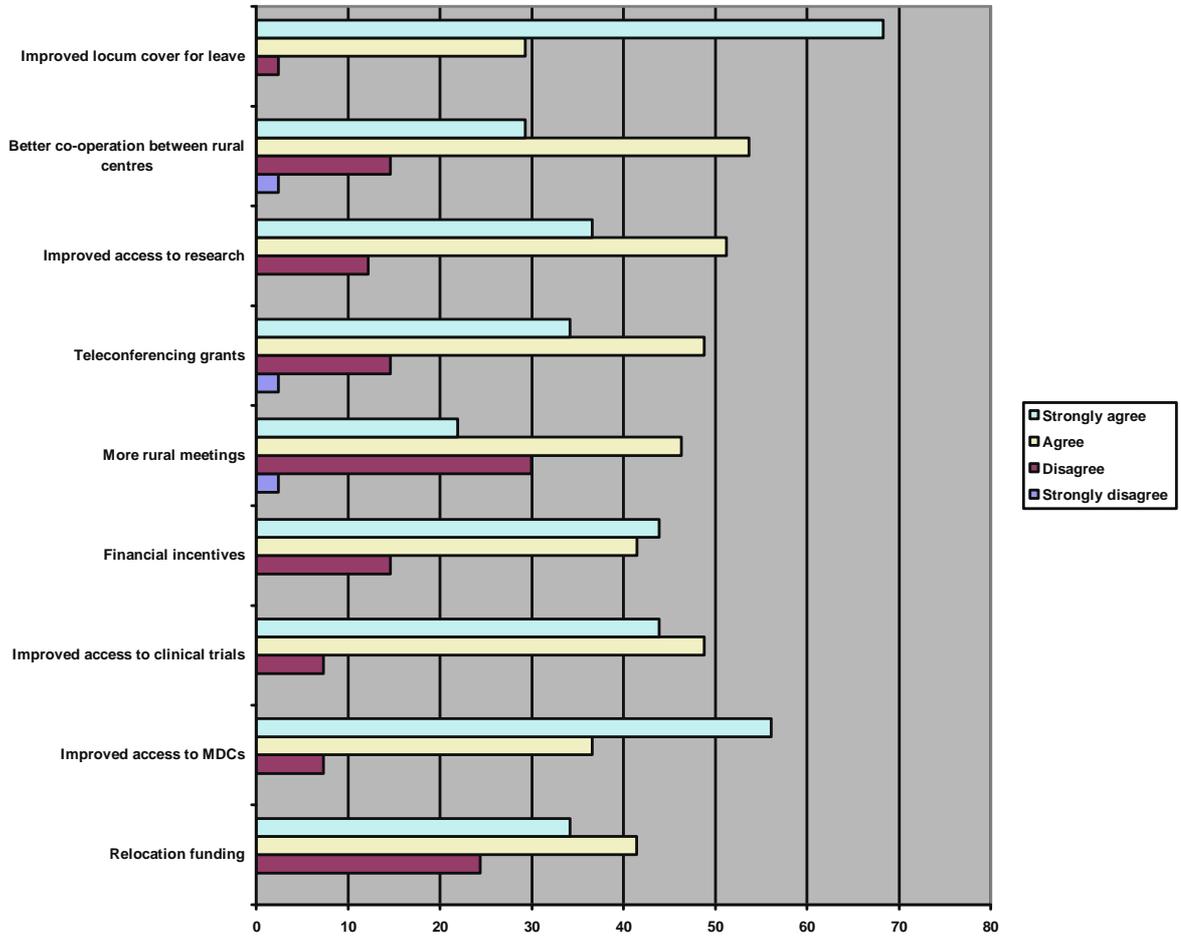
**Figure 3– Perceived advantages of rural practice**



**Figure 4: Education opportunities in previous rural oncology rotations**



**Figure 5: Perceived incentives as a registrar**



**Figure 6: Perceived incentives to enhance consultant recruitment**

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