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Madhan Balasubramanian, A John Spencer, Stephanie D Short, Keith Watkins, Sergio Chrisopoulos and David S Brennan

**Job satisfaction among 'migrant dentists' in Australia: implications for dentist migration and workforce policy**

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**Job satisfaction among ‘migrant dentists’ in Australia: implications for dentist migration and workforce policy**

**Authors:**

Madhan Balasubramanian <sup>1</sup>

A John Spencer <sup>1</sup>

Stephanie D Short <sup>2</sup>

Keith Watkins <sup>3</sup>

Sergio Chrisopoulos<sup>1</sup>

David S Brennan<sup>1</sup>

**Author’s affiliation:**

<sup>1</sup> Australian Research Centre for Population Oral Health, School of Dentistry, The University of Adelaide, South Australia, Australia. <sup>2</sup> Faculty of Health Sciences, the University of Sydney. <sup>3</sup> Australian Dental Council, Melbourne

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## **Correspondence:**

<sup>1</sup>122 Frome Street, Adelaide, SA 5005

Tel: 08 8313 5027 Fax: 08 8313 3070

Email: madhan.balasubramanian@adelaide.edu.au

**Running Head:** Job satisfaction among migrant dentists in Australia

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## **Ethical considerations**

The study was approved by the Human Research Ethics Committee of the University of Adelaide and was conducted in accordance with the Declaration of Helsinki. The study was conducted as a mailed self-complete survey; consent was implied through the return of completed surveys.

## Conflict of interest

None declared.

## Abstract

**Background:** Migrants occupy a significant proportion of the dental workforce in Australia.

The objectives of this study were to assess the level of job satisfaction of employed migrant dentists in Australia, and to examine the association between various migrant dentist

characteristics and job satisfaction. **Methods:** All migrant dentists resident in Australia were surveyed using a five-point Likert scale that measured specific aspects of job, career, and

satisfaction with area and type of practice. **Results:** A total of 1022 migrant dentists

responded to this study; 974 (95.4%) were employed. Responses for all scales were skewed

towards strongly agree (scores  $\geq 4$ ). The overall scale varied by age group, marital status,

years since arrival to Australia, and specialist qualification (Chi square,  $p < 0.05$ ). In a

multivariate logistic regression model, there was a trend towards greater satisfaction amongst

older age groups. Dentists who migrated through the examination pathway (mainly from low- and middle-income countries) had a lower probability of being satisfied with the area and

type of practice (OR=0.71; 0.51 – 0.98), compared with direct-entry migrant dentists (from

high income countries). **Conclusion:** The high-level of job satisfaction of migrant dentists

reflects well on their work-related experiences in Australia. The study offers policy

suggestions towards support for younger dentists and examination pathway migrants, so they

have appropriate skills and standards to fit the Australian health care environment.

**Keywords:** dental workforce; health policy; job satisfaction; migrant dentists; settlement issues

## Introduction

Over the last decade, there has been a significant increase in the number of dentists migrating to Australia.<sup>1-3</sup> A large proportion of migrant dentists (trained in an overseas institution) to Australia continue to be from high-income countries such as the United Kingdom, Republic of Ireland and New Zealand.<sup>4,5</sup> The more recent increase in dentists coming from low- and middle-income countries, such as India, South Africa, Iran, Malaysia, Indonesia and Philippines, raises several policy challenges both for 'source' countries and Australia.<sup>6-9</sup> Many source countries are interested in identifying methods to reduce brain drain and attract emigrants back home.<sup>8</sup> A key issue for policy makers in Australia is to improve self-sufficiency in the local dental workforce by reducing the level of dependence on migrant dentists.<sup>10</sup> The current environment of improved cross-border mobility of health professionals also brings ethical obligations and a global responsibility to seek a better understanding on the settlement experiences, including job satisfaction, of migrant dentists in Australia.<sup>11,12</sup>

In general, job satisfaction can be described as a pleasurable or positive state of mind resulting from the appraisal of an individual's job or job-related experiences.<sup>13</sup> Job satisfaction is linked with various aspects such as stress, turnover, burnout, team work, patient care, organizational functioning and health system outcomes.<sup>14-17</sup> Being satisfied with the job can be argued as vital for a dentist's performance. In addition, job satisfaction is closely related to general life satisfaction, as they both reciprocally contribute to an individual's happiness and overall wellbeing in the community.<sup>18,19</sup> The issue of job satisfaction among dentists has been reported from at least a dozen different countries.<sup>17,20-23</sup> It is suggested that dentists in Australia and elsewhere in the world experience high to very high levels of overall job satisfaction.<sup>23</sup> However, very little is known about such migrant dentist experiences in a new country.

Migrant doctors and nurses have reported low-pay, excessive workload, bad working

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conditions and discrimination at work, amongst some of the issues that can affect satisfaction towards work.<sup>11,24,25</sup> As migrants arrive from diverse cultural and professional backgrounds, they are at risk of several settlement problems in the new country that in turn can affect their work. Qualitative studies on migrant dentists' settlement experiences in Australia<sup>26</sup> and New Zealand<sup>27</sup> have stressed the importance of support structures, especially for migrants from low-and middle-income countries. A survey on job-related stressors in New Zealand has also suggested that migrant dentists feel professionally isolated in work.<sup>28</sup>

To date, there is no evidence that specifically relates to job satisfaction of migrant dentists in Australia. Prior job satisfaction surveys in Australia have not reported disaggregated data on migrant dentists.<sup>20,29</sup> The attraction of Australia as a favourable destination with modern dental technology, high levels of professional development and networking opportunities, and an enviable lifestyle has encouraged dentists (from both developing and developed countries) to migrate to Australia.<sup>8</sup> Currently, one in four of every practising dentist in Australia is a migrant dentist.<sup>30</sup> A better understanding of the job satisfaction of migrant dentists will provide evidence to reflect upon current immigration and pathways to practice in Australia.<sup>20</sup> Uncovering differences in levels of job satisfaction based on dentists' background and country of origin would inform future dental workforce policy and planning in Australia. Further, it will provide evidence on Australia's global responsibility towards the World Health Organization's Global Code of Ethical Recruitment of Health Personnel that calls for a positive work environment for migrant professionals, so as to assist them realise their professional goals and career aspirations.<sup>12</sup>

The aim of this study was to assess the level of job satisfaction of employed migrant dentists in Australia, and to examine the association between various migrant dentist characteristics and job satisfaction.

## Methods

### Data collection

All migrant dentists resident in Australia and registered with the Australian Dental Association (ADA) (n=1872) or enrolled as a graduate student in any of the nine dental schools in Australia (n=105) were surveyed between January and May 2013. Dentists were asked to complete a self-administered questionnaire. The ADA component involved three postal mailouts followed by an online survey. Migrant dentists enrolled as graduate students in dental schools were surveyed through the Australasian Council of Dental Schools (ACODS), the peak body representing tertiary education, training and research in dentistry across Australia and New Zealand. This involved one handout followed by an online survey. A broad range of data including demographic, migration and residence characteristics, practice profiles, job satisfaction and life-story experience were collected. Further details on the study design, data collection and data preparation procedures are described elsewhere.<sup>5</sup> The focus of this study is limited to understanding the job satisfaction of migrant dentists.

### Data items

Job satisfaction was collected using a 12 item global scale, primarily developed for use among US general medical practitioners<sup>31</sup> but adapted to reflect general dental practice in Australia.<sup>20,29</sup> Global measures of job satisfaction are more frequently used than facet-based measures and have been widely used in different organisational contexts.<sup>32</sup> Measurements of job satisfaction would also require to consider the health system in which the professional works.<sup>22</sup> Therefore, it was necessary to use a scale that has been adapted to an Australian dental practice environment. .

The scale used for the study consisted of three conceptual and empirical subscales that measured specific aspects of job (5 items), career (4 items) and satisfaction with area and type of practice (3 items). These items were presented as statements relating to the respondents' overall experience with dentistry.<sup>20</sup> Respondents' were asked to indicate their level of agreement with each statement using a five-point Likert scale with '1' indicating strong disagreement (and hence strong dissatisfaction) and '5' indicating strong agreement (and hence strong satisfaction). Both positively and negatively worded statements were used to minimize the effect of response set.

### **Data analysis**

All negatively worded items in the job satisfaction scale were first corrected for direction of response in the analysis. Scale scores, both for subscales and the overall scale, were then calculated by summing responses to individual items and dividing by number of items in a scale. This results in a scale that is consistent with the Likert range with all items contributing equally.<sup>33</sup> The distribution of the scale scores was expressed as percentages, along with measures of central tendency and dispersion. Reliability of the scales was assessed by Cronbach's alpha coefficient of inter-item reliability, with the minimum recommended level being 0.70.<sup>33</sup>

Migrant dentists were classified into three mutually exclusive groups: Direct Recognition, ADC Successful and Alternative Pathway.<sup>5</sup> Dentists with a primary dental qualification from New Zealand, the United Kingdom, Republic of Ireland and Canada were classified as Direct Recognition (Direct recognition candidates can practice dentistry in Australia without having to take an assessment and examination conducted by the Australian Dental Council (ADC)).<sup>5,26</sup> Dentists having participated and successfully completed the ADC



examination process were classified as ADC Successful (The ADC examination is a three stage examination process involving an English test, written test and practical clinical test.

Migrant dentists from all other countries, except UK, Republic of Ireland, New Zealand and Canada, are required to complete the ADC examination).<sup>5,26</sup> The Alternative Pathway group comprised of dentists working in the public sector employment scheme, or as academics/researchers or specialists (these dentists are provided conditional registration to practice under supervision) or having migrated to Australia at a time when mutual qualifications from other countries were recognised.<sup>5</sup> Further, the country of primary dental qualification was linked with World Health Organization (WHO) Regions<sup>34</sup> and World Bank (WB) Income Groups<sup>35</sup> data to derive two new variables based on their region or group.

Date of birth was used to derive average age and age groups. Number of hours worked in a week in all practice locations was used as a basis for deriving average hours worked per week, and to classify dentists into groups based on hours worked. The postcode of main practice location was linked with Australian Standard Geographic Classification (ASGC) Remoteness Areas<sup>36</sup> and Socio-Economic Indexes for Areas (SEIFA) – Index of Relative Socio-Economic Disadvantage data<sup>37</sup> in order to provide variables relevant to the relative remoteness and socioeconomic status of practice location respectively.

The analysis was restricted to practising dentists as this was the primary intention of the study. All global job satisfaction scales were dichotomised into two groups using mean scores less than 4 as the cut-off and coded as indicator variable with values greater than or equal to 4 coded as 1 (indicating strong agreement) and values less than 4 coded as 0 (other). This cut off point was chosen based on conceptual grounds so as to identify dentists, who at the minimum had agreed to a scale (i.e. 4 or above). Prior studies have also used similar cut off points.<sup>38,39</sup> Dichotomised scales were then examined by migrant dentist characteristics using chi-square tests, and a level of significance set at  $p < 0.05$ . Thereafter, migrant dentist

characteristics found significantly associated with any subscale or overall scale were entered as covariates in a series of multivariate logistic regression models. The dichotomised scales were treated as dependent variables. Entry of variables in the model was tested to establish the most parsimonious model with as few terms as possible<sup>40</sup>, both conceptually relevant and able to explain the predicted job satisfaction of migrant dentists. Adjusted odds ratios were generated. Data were analysed using IBM SPSS Version 20.<sup>41</sup>

### **Ethical considerations**

Ethical approval was obtained from an approved Human Research Committee in Australia, and the study was conducted in accordance with the Declaration of Helsinki.

### **Results**

A total of 1022 migrant dentists responded to this study (response rate = 54.5 %); 974 dentists (95.4%) were currently practising in Australia.

### **Sample characteristics**

Table 1 presents the percentage of respondents by characteristics of migrant dentists and practice variables. The largest proportion of dentists' were from the direct recognition group (48.5%), followed by the ADC successful group (40.1%) and the alternative pathway group (11.4%). Overall, there were 407 female dentists (41.8%) and 567 male dentists (58.2%). Over half of the respondents (51.1%) were aged 45 years or older, and a larger proportion (58.5%) had arrived to Australia ten or more years ago. A majority of the respondents (51.8%) worked between 35-44 hours per week; over three-quarters (76.1%) practised in the major cities, and 88.5% mainly in private clinics.

### **Distribution of job satisfaction items**

The distribution of scale scores of the full set of 12 job satisfaction items is presented in Table 2. Responses ranged from 1 (strongly disagree) to 5 (strongly agree) for each particular item. The direction of responses was reversed for items 4, 5, 6, 8 and 11 in subsequent analyses. These five items were skewed towards 1 (strongly disagree). All the remaining items were skewed towards 5 (strongly agree). A low number of respondents with missing data for the individual items, and subsequent scales were also noted.

Table 3 presents the distribution of the global job satisfaction scales. These scales are treated as continuous variables, ranging from 1 (strongly disagree) to 5 (strongly agree). Scores greater than or equal to 4 represent agreement with job satisfaction measured by the particular scale. The mean value of the overall scale was 3.94, with more than half of the respondents (52.7%) in agreement with the scale. A larger proportion of the respondents were in agreement with the “job satisfaction” (61.9%) and “career satisfaction” (59.7%) in comparison with “satisfaction with area and type of practice” (47.7%). All scales had Cronbach alpha coefficient greater than 0.70, hence high inter-item reliability.

### **Job satisfaction scales by migrant dentist characteristics**

Table 4 presents bivariate associations between the dichotomized global job satisfaction scales and migrant dentist characteristics. The total number of respondents (n) and proportion in agreement with each scale are presented. The overall scale was associated with age group, marital status, years since arrival to Australia and being qualified as a specialist (Chi square,  $p < 0.05$ ). The “job satisfaction” and “satisfaction with area and type of practice” subscale was associated with migrant dentist groups and WHO Regions. In addition, “satisfaction with area and type of practice” subscale was also associated with WB Groups. Gender, children, remoteness and socio-economic area of main practice, hours worked group were not associated with any of the job satisfaction scales.

Logistic regression analysis between the dichotomized global job satisfaction scales and migrant dentist characteristics is presented in Table 5. Adjusted models for selected characteristics are presented for each scale. There was a significant trend towards greater agreement in the overall scale amongst older age groups. Compared to the reference category of age <35 years, the odds ratio for the 55+ years old age group was also the highest for “job satisfaction” subscale (2.15; 1.16-3.97). Migrant groups varied in the “satisfaction with area and type of practice”, with the ADC successful group having a lower odds ratio (0.71; 0.51 – 0.98) in comparison with the reference group (direct recognition), implying less satisfaction with area and type of practice.

## **Discussion**

The findings from the study provide a better understanding on the job satisfaction of employed migrant dentists in Australia and offer avenues to reflect upon dentist migration and workforce policy in Australia. The sampling frame for the survey was based on migrant dentists registered with the ADA, and graduate students enrolled in dental schools. This approach was adopted, as the national registration data from the Australian Health Practitioner Regulation Agency<sup>42</sup> was not available for research purposes. As over 90% of all employed dentists were also ADA members,<sup>43</sup> it was expected that the survey would adequately represent employed migrant dentists in Australia. The overall response yield for the study (1022 migrant dentists; 934 employed) provided sufficient numbers for analysis. In a previous publication, non-response bias was examined by comparing selected characteristics of employed migrant dentists with national dentist workforce data.<sup>5</sup> Even though, we argue that the survey brings the best available evidence of migrant dentists in Australia, caution should be exercised in using the findings to generalise about migrant dentist groups that could have been underrepresented in this survey.<sup>5</sup> We studied only

migrant dentists currently active in the Australian dental workforce. As suggestive in the wider health workforce and organizational behaviour literature, it is possible those unsatisfied with the job could have exited the profession or even migrated elsewhere.<sup>44,45</sup> Future research on job satisfaction would benefit from a multicountry approach, so as to account for global mobility of dentists and the views of migrant dentists who emigrated Australia also can be understood.

Job satisfaction was assessed through a 12 item global scale, which was a general assessment of satisfaction with job, career, area and type of practice. Global measures provide an “all-encompassing viewpoint”<sup>20,46</sup>, and offer greater content validity and temporal reliability in comparison to facet-based measures.<sup>47</sup> While global measures are less likely to offer in-depth information on individual attitudes and organisational factors that can indirectly influence job satisfaction<sup>32</sup>, they still offer valuable insights into these issues.

The migrant dentists’ study has reported a high overall job satisfaction score, which was similar to a national survey for all dentists in Australia.<sup>20</sup> Australia is believed to be witnessing a ‘golden age’ in dentistry due to technological advances, research and teaching infrastructure, enviable lifestyle and attractive salaries.<sup>48</sup> Prior qualitative studies have highlighted that migrant dentists held in high regard the quality of dentistry in Australia that contributed to their desire to migrate to Australia in the first place.<sup>8</sup> Migrant dentists have also expressed dissatisfaction with their home country systems,<sup>8</sup> and appear to have migrated for better opportunities.<sup>5</sup> The high levels of overall job satisfaction possibly indicate migrants appreciate practising dentistry in Australia, and are able to realise their aspirations in work and life.

The bivariate analysis found no significant association between overall job satisfaction levels and migrant dentist groups. Migrants from the ADC and alternative pathway are mainly from low- and middle-income countries such as India, South Africa, Iran, the Philippines and Egypt. Prior studies have reported ongoing problems in dental workforce planning, dental education and political situation in these countries that encourages dentists to perceive migration as an essential progression in their work and life.<sup>8,49-51</sup> Further success in the tough dental training and assessment process to enter dental practice in Australia could be seen as an achievement,<sup>6</sup> contributing to their overall satisfaction. Direct recognition candidates and dentists from developed OECD countries, who migrate for somewhat different reasons, such as adventure and lifestyle,<sup>5</sup> also experienced similar levels of satisfaction compared to other migrant dentist groups. While the migrant dentists' study leads to a preliminary argument that country of origin does not necessarily determine overall job satisfaction, it is inappropriate to make such a conclusion without an understanding of the broader life-stories of these dentists. Further research on the settlement experience of these dentists will help us understand factors that enable migrants to develop an affinity towards work and life in Australia.

The adjusted models, controlled for other migrant dentist characteristics, found age as the only significant predictor of overall job satisfaction. This supports studies in dental and indeed in the broader health workforce literature that provide evidence of job satisfaction increasing with age.<sup>16,20,28,29,52</sup> Younger dentists could be in the process of establishing their dental practice, facing added demands in their work and life.<sup>20</sup> Migrant dentists might face extra problems due to their relative newness to Australian practice culture that in turn can influence their approach to work and thereby success in life.<sup>6,27</sup> This study offers suggestions towards improved support for younger migrant dentists in Australia, so they have an opportunity to better understand the Australian practice culture, and gain appropriate skills

and standards to fit into the workplace. This will enhance their value to the Australian dental system.

The satisfaction score for all subscales (mean) were similar in comparison to a national estimate for all dentists in Australia.<sup>20</sup> In the bivariate analysis, satisfaction with job and area and type of practice subscales varied by migrant dentist groups. However, when controlled for other characteristics, the statistical regression models showed the associations appear prominent only in the area and type of practice subscale. The ADC pathway group were least satisfied. Prior research has suggested that a larger proportion of migrant dentists through the ADC pathway work in disadvantaged areas in Australia.<sup>5</sup> Rural/remote locations are somewhat less competitive compared with metropolitan areas<sup>53</sup>, which might have forced the ADC pathway group to be less selective in choosing their area and type of practice.

Nevertheless, practitioners working in rural and remote areas can face issues such as professional and social isolation (both for individual and families); poor local amenities and infrastructure; limited training and professional development opportunities.<sup>54,55,56</sup> The low job satisfaction levels of the ADC pathway group, is a possible clue that migrant dentists could face similar issues and require more support. Further research on settlement issues faced by migrant dentists working in these areas can help us understand the broader social and family issues that in turn affect job satisfaction. The argument of improving support for practitioners working in more disadvantaged areas in Australia has also been raised in regard to physicians and nurses.<sup>2,54</sup> This finding has implications for policy development to address support structures for migrant dentists practising in disadvantaged areas in Australia.

The World Health Organization's Global Code of Practice of Ethical Recruitment of Health Personnel (Article 4) stresses the importance for member states and stakeholders to provide a positive work environment for migrant professionals so as to help them realise their

professional goals and career aspirations.<sup>12</sup> The Code also identifies the urgent need for strengthening data gathering and research (Article 6) on migrant health professionals.<sup>12</sup> This study of job satisfaction among migrant dentists is consistent with Australia's global responsibility in this regard.

### **Conclusions**

The high levels of overall job satisfaction among employed migrant dentists in Australia suggest that migrants appreciate practising dentistry in Australia, and are able to realise their aspirations in work and life. Age is a significant predictor of overall job satisfaction, with younger migrant dentists more likely to face additional demands in dental practice in Australia. The examination pathway group of migrants (mainly from low- and middle-income countries) were least satisfied with the area and type of practice. The study offers policy suggestions towards support for younger dentists and examination pathway migrants, so they have appropriate skills and standards to fit the Australian health care environment. Further research on the settlement experience of migrant dentists is required to better understand the factors that enable migrants to develop a positive affinity towards work and life in Australia.

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**Table 1: Sample characteristics**

| Variable  | Study sample <sup>[a]</sup> |         |
|---|-----------------------------|---------|
|   | Count                       | Percent |
| <b>Migrant dentist group (n=974)</b>            |                             |         |
| Direct recognition                              | 472                         | 48.5    |
| ADC successful                                  | 391                         | 40.1    |
| Alternative pathway                             | 111                         | 11.4    |
| <b>Gender (n=974)</b>                           |                             |         |
| Male  | 567                         | 58.2    |
| Female  | 407                         | 41.8    |
| <b>Age (n=971)</b>                              |                             |         |
| Less than 35 yrs                                | 213                         | 21.9    |
| 35 to 44 yrs                                    | 262                         | 27.0    |
| 45 to 54 yrs                                    | 226                         | 23.3    |
| 55 to 64 yrs                                    | 189                         | 19.5    |
| 65+ yrs   | 81                          | 8.3     |
| <b>Marital status (n=959)</b>                   |                             |         |
| Single  | 140                         | 14.6    |
| Married   | 756                         | 78.8    |
| Other   | 63                          | 6.6     |
| <b>Years since arrival to Australia (n=842)</b> |                             |         |
| Less than 10 yrs                                | 349                         | 41.4    |
| 10 to 29 yrs                                    | 347                         | 41.2    |
| 30+ yrs   | 146                         | 17.3    |
| <b>Type of main practice (n=897)</b>            |                             |         |
| Public  | 103                         | 11.5    |
| Private   | 794                         | 88.5    |
| <b>Remoteness area of main practice (n=907)</b> |                             |         |
| Major city                                      | 690                         | 76.1    |
| Rest of state                                   | 217                         | 23.9    |
| <b>Specialist qualification (n=964)</b>         |                             |         |
| Specialist                                      | 249                         | 25.8    |
| Not a specialist                                | 715                         | 74.2    |
| <b>Hours worked per week (n=866)</b>            |                             |         |
| Less than 25 hrs                                | 126                         | 14.5    |
| 25 to 34 hrs                                    | 174                         | 20.1    |
| 35 to 44 hrs                                    | 449                         | 51.8    |
| 45+ hrs   | 117                         | 13.5    |

<sup>[a]</sup> The estimates for the study sample only include employed dentists (n=974).



**Table 2: Distribution of 'global job satisfaction' items ranging from 1 (strongly disagree) to 5 (strongly agree)**

| Item | Description of item  | n   | Distribution of responses (%) |      |      |      |      | Skew  | Mean | (SD)   |
|------|--|-----|-------------------------------|------|------|------|------|-------|------|--------|
|      |  |     | 1                             | 2    | 3    | 4    | 5    |       |      |        |
| 1    | I find my present clinical work very rewarding   | 948 | 0.9                           | 3.0  | 15.1 | 44.0 | 37.0 | -0.94 | 4.13 | (0.84) |
| 2    | Overall, I am pleased with my work   | 949 | 0.7                           | 1.5  | 9.9  | 52.2 | 35.7 | -1.02 | 4.21 | (0.74) |
| 3    | Overall, I am satisfied with my current practice   | 947 | 1.4                           | 4.0  | 14.1 | 50.6 | 29.9 | -1.00 | 4.04 | (0.85) |
| 4    | My current work situation is a major source of frustration*                                  | 943 | 34.1                          | 38.8 | 19.2 | 5.8  | 2.0  | 0.85  | 2.03 | (0.97) |
| 5    | My work in current practice has not met my expectations*                                     | 944 | 32.7                          | 38.1 | 16.6 | 9.0  | 3.5  | 0.87  | 2.12 | (1.07) |
| 6    | If I were to choose over again, I would not become a dentist*                                | 944 | 48.6                          | 23.3 | 15.8 | 6.5  | 5.8  | 1.10  | 1.98 | (1.20) |
| 7    | All things considered, I am satisfied with my career as a dentist                            | 946 | 2.4                           | 1.7  | 10.5 | 44.3 | 41.1 | -1.43 | 4.20 | (0.87) |
| 8    | In general, my dental career has not met with my expectations*                               | 943 | 35.3                          | 38.7 | 16.0 | 7.5  | 2.4  | 0.93  | 2.03 | (1.02) |
| 9    | I would recommend dentistry to others as a career  | 947 | 4.6                           | 9.2  | 25.3 | 36.9 | 24.0 | -0.63 | 3.66 | (1.08) |
| 10   | If I were to start my career over again, I would choose my current area and type of practice | 946 | 3.7                           | 13.1 | 24.4 | 35.5 | 23.3 | -0.49 | 3.62 | (1.09) |
| 11   | My area and type of practice no longer has the appeal to me as it used to have*              | 943 | 29.6                          | 38.2 | 19.8 | 9.5  | 2.9  | 0.73  | 2.18 | (1.05) |
| 12   | I would recommend my area and type of practice to a dental student seeking advice            | 946 | 3.3                           | 7.8  | 26.6 | 42.2 | 20.1 | -0.64 | 3.68 | (0.99) |

\* Negatively worded questions. Direction reversed in subsequent analyses.

**Table 3: Distribution and internal consistency of global job satisfaction scales**

| Description of scale  | n   | Distribution of responses (%) |          |          |          |          | Skew  | Mean | (SD)   | Cronbach<br>$\alpha$ | Strongly<br>agree/Agree<br>% |
|---|-----|-------------------------------|----------|----------|----------|----------|-------|------|--------|----------------------|------------------------------|
|   |     | $\leq 1$                      | $\leq 2$ | $\leq 3$ | $\leq 4$ | $\leq 5$ |       |      |        |                      |                              |
| Job satisfaction (Items 1, 2, 3, 4*, 5*)                        | 937 | 0.1                           | 1.0      | 9.2      | 54.2     | 100.0    | -0.67 | 4.05 | (0.70) | 0.836                | 61.9                         |
| Career satisfaction (Items 6*, 7, 8*, 9)                        | 939 | 0.4                           | 2.4      | 14.7     | 55.8     | 100.0    | -0.78 | 3.97 | (0.78) | 0.734                | 59.7                         |
| Satisfaction with area and type of practice (Items 10, 11*, 12) | 940 | 0.5                           | 3.8      | 25.1     | 70.5     | 100.0    | -0.45 | 3.71 | (0.83) | 0.714                | 47.7                         |
| Overall scale (All items)                                       | 923 | 0.0                           | 0.3      | 8.7      | 54.7     | 100.0    | -0.60 | 3.94 | (0.63) | 0.868                | 52.7                         |

\* Items corrected for reversals

**Table 4: Bivariate analysis of global job satisfaction scales and sample characteristics**

| Variable                      | Job satisfaction |                        | Career satisfaction |                        | Satisfaction with area and type of practice |                        | Overall scale |                        |
|-------------------------------|------------------|------------------------|---------------------|------------------------|---|------------------------|---------------|------------------------|
|                               | n                | Strongly Agree/Agree % | n                   | Strongly Agree/Agree % | n   | Strongly Agree/Agree % | n             | Strongly Agree/Agree % |
| <b>Migrant dentist groups</b> |                  | *                      |                     |                        |   | *                      |               |                        |
| Directly Recognition          | 454              | 66.1                   | 458                 | 59.2                   | 457   | 52.5                   | 451           | 53.4                   |
| ADC Successful                | 374              | 56.7                   | 372                 | 60.5                   | 375   | 43.2                   | 365           | 50.4                   |
| Alternative Pathway           | 109              | 63.3                   | 109                 | 59.6                   | 108   | 43.5                   | 107           | 55.1                   |
| <b>Gender</b>                 |                  |                        |                     |                        |   |                        |               |                        |
| Male                          | 547              | 63.6                   | 553                 | 60.4                   | 553   | 49.0                   | 545           | 53.8                   |
| Female                        | 390              | 59.7                   | 386                 | 58.8                   | 387   | 46.0                   | 378           | 50.5                   |
| <b>Age group</b>              |                  | *                      |                     |                        |   |                        |               | *                      |
| Less than 35yrs               | 204              | 49.5                   | 205                 | 56.6                   | 205   | 47.8                   | 201           | 41.3                   |
| 35 to 44 yrs                  | 253              | 59.3                   | 252                 | 57.9                   | 253   | 47.8                   | 249           | 50.2                   |
| 45 to 54 yrs                  | 216              | 66.7                   | 219                 | 60.7                   | 219   | 48.9                   | 216           | 56.5                   |
| 55 to 64 yrs                  | 184              | 69.6                   | 183                 | 59.6                   | 183   | 46.4                   | 178           | 57.9                   |
| 65+ yrs                       | 77               | 72.7                   | 77                  | 71.4                   | 77  | 46.8                   | 76            | 64.5                   |
| <b>Marital status</b>         |                  | *                      |                     |                        |   |                        |               | *                      |
| Single                        | 129              | 47.3                   | 129                 | 51.2                   | 130   | 41.5                   | 126           | 39.7                   |
| Married                       | 731              | 64.2                   | 733                 | 61.1                   | 733   | 49.1                   | 720           | 55.1                   |
| Other                         | 62               | 61.3                   | 62                  | 59.7                   | 62  | 45.2                   | 62            | 45.2                   |
| <b>Children</b>               |                  |                        |                     |                        |   |                        |               |                        |
| Have children < 18 yrs        | 444              | 65.5                   | 447                 | 62.6                   | 447   | 51.0                   | 439           | 55.8                   |
| No children < 18 yrs          | 381              | 61.9                   | 379                 | 58.3                   | 380   | 48.2                   | 374           | 52.9                   |
| <b>Years since arrival</b>    |                  | *                      |                     | *                      |   |                        |               | *                      |
| Less than 10 yrs              | 172              | 51.8                   | 191                 | 56.8                   | 155   | 46.5                   | 152           | 46.2                   |
| 10 to 29 yrs                  | 233              | 69.3                   | 203                 | 60.4                   | 161   | 47.8                   | 188           | 56.8                   |
| 30+ yrs                       | 101              | 72.1                   | 93                  | 66.4                   | 73  | 52.1                   | 87            | 63.5                   |
| <b>WHO Regions</b>            |                  | *                      |                     |                        |   | *                      |               |                        |
| African                       | 49               | 61.2                   | 46                  | 57.5                   | 32  | 40.0                   | 41            | 51.9                   |
| American                      | 14               | 73.7                   | 13                  | 68.4                   | 8   | 42.1                   | 13            | 68.4                   |
| Eastern Mediterranean         | 31               | 49.2                   | 38                  | 58.5                   | 23  | 35.9                   | 24            | 39.3                   |
| European                      | 229              | 68.0                   | 209                 | 61.7                   | 191   | 56.5                   | 187           | 56.0                   |
| South Asian                   | 114              | 60.0                   | 116                 | 62.4                   | 87  | 46.3                   | 100           | 54.6                   |
| Western Pacific               | 144              | 58.1                   | 139                 | 55.6                   | 108   | 43.0                   | 119           | 48.2                   |
| <b>WB Income Groups</b>       |                  |                        |                     |                        |   | *                      |               |                        |
| Low & Lower-middle            | 138              | 60.5                   | 146                 | 64.6                   | 104   | 45.8                   | 122           | 55.0                   |
| Upper-middle income           | 94               | 56.0                   | 93                  | 55.0                   | 62  | 36.9                   | 78            | 47.3                   |
| High income                   | 22               | 61.1                   | 20                  | 54.1                   | 15  | 40.5                   | 17            | 47.2                   |
| High income OECD              | 327              | 64.8                   | 302                 | 59.6                   | 268   | 52.8                   | 267           | 53.4                   |

\*p<0.05, Chi-square test

**Table 4: Bivariate analysis of global job satisfaction scales and sample characteristics (Cntd.)**

| Variable                                    | Job satisfaction |                        | Career satisfaction |                        | Satisfaction with area and type of practice |                        | Overall scale |                        |
|---|------------------|------------------------|---------------------|------------------------|---|------------------------|---------------|------------------------|
|   | n                | Strongly Agree/Agree % | n                   | Strongly Agree/Agree % | n   | Strongly Agree/Agree % | n             | Strongly Agree/Agree % |
| <b>Type of main practice</b>                |                  | *                      |                     |                        |   |                        |               |                        |
| Public                                      | 98               | 51.0                   | 98                  | 56.1                   | 98  | 41.8                   | 95            | 44.2                   |
| Private                                     | 770              | 63.9                   | 772                 | 60.1                   | 773   | 48.3                   | 759           | 53.0                   |
| <b>Remoteness area of main practice</b>     |                  |                        |                     |                        |   |                        |               |                        |
| Major city                                  | 665              | 61.4                   | 664                 | 60.1                   | 665   | 46.9                   | 651           | 51.9                   |
| Rest of state                               | 210              | 63.8                   | 212                 | 57.5                   | 212   | 49.5                   | 210           | 53.3                   |
| <b>Socio-economic area of main practice</b> |                  |                        |                     |                        |   |                        |               |                        |
| Most disadvantaged                          | 75               | 54.7                   | 75                  | 56.0                   | 76  | 40.8                   | 73            | 47.9                   |
| 2   | 124              | 57.3                   | 125                 | 64.0                   | 124   | 50.0                   | 123           | 53.7                   |
| 3   | 200              | 62.5                   | 198                 | 57.6                   | 198   | 48.5                   | 196           | 51.5                   |
| 4   | 189              | 66.1                   | 187                 | 58.8                   | 187   | 47.1                   | 185           | 54.1                   |
| Least disadvantaged                         | 245              | 66.1                   | 249                 | 59.0                   | 249   | 49.4                   | 243           | 54.7                   |
| <b>Specialist qualification</b>             |                  |                        |                     |                        |   |                        |               | *                      |
| Specialist                                  | 239              | 64.0                   | 238                 | 60.1                   | 240   | 52.1                   | 235           | 58.3                   |
| Not a specialist                            | 688              | 61.3                   | 692                 | 59.7                   | 690   | 46.4                   | 679           | 50.4                   |
| <b>Hours worked group</b>                   |                  |                        |                     |                        |   |                        |               |                        |
| Less than 25 hrs                            | 121              | 57.0                   | 121                 | 57.0                   | 121   | 46.3                   | 119           | 46.2                   |
| 25 to 34 hrs                                | 168              | 65.5                   | 167                 | 59.3                   | 169   | 49.7                   | 165           | 52.7                   |
| 35 to 44 hrs                                | 434              | 62.0                   | 440                 | 61.8                   | 437   | 46.5                   | 431           | 53.4                   |
| 45+ hrs                                     | 114              | 65.8                   | 112                 | 58.0                   | 112   | 49.1                   | 111           | 55.9                   |

\*p<0.05, Chi-square test

Table 5: Logistic regression analysis (adjusted model) of job satisfaction by sample characteristics

| Variable                        | Job satisfaction |           | Career satisfaction |           | Satisfaction with area and type of practice |           | Overall scale |           |
|---------------------------------|------------------|-----------|---------------------|-----------|---|-----------|---------------|-----------|
|                                 | Odds Ratio       | 95% CIs   | Odds Ratio          | 95% CIs   | Odds Ratio                                  | 95% CIs   | Odds Ratio    | 95% CIs   |
| <b>Migrant dentist groups</b>   |                  |           |                     |           |   |           |               |           |
| Direct recognition              | Ref.             |           | Ref.                |           | Ref.  |           | Ref.          |           |
| ADC successful                  | 0.82             | 0.58-1.15 | 0.97                | 0.70-1.36 | 0.71 *                                      | 0.51-0.98 | 1.04          | 0.74-1.45 |
| Alternative pathway             | 0.74             | 0.45-1.25 | 0.92                | 0.56-1.50 | 0.73  | 0.45-1.19 | 0.94          | 0.57-1.53 |
| <b>Age group</b>                |                  |           |                     |           |   |           |               |           |
| Less than 35yrs                 | Ref.             |           | Ref.                |           | Ref.  |           | Ref.          |           |
| 35 to 44 yrs                    | 1.43             | 0.89-2.30 | 1.29                | 0.81-2.07 | 0.94  | 0.59-1.52 | 1.44          | 0.89-2.31 |
| 45 to 54 yrs                    | 1.78 *           | 1.02-3.09 | 1.31                | 0.76-2.25 | 0.90  | 0.53-1.55 | 1.77 *        | 1.02-3.07 |
| 55+ yrs                         | 2.15 *           | 1.16-3.97 | 1.66                | 0.91-3.01 | 0.80  | 0.44-1.44 | 2.18 *        | 1.20-3.96 |
| <b>Years since arrival</b>      |                  |           |                     |           |   |           |               |           |
| Less than 10 yrs                | Ref.             |           | Ref.                |           | Ref.  |           | Ref.          |           |
| 10+ yrs                         | 1.45             | 0.94-2.21 | 0.96                | 0.63-1.46 | 1.15  | 0.76-1.74 | 1.11          | 0.73-1.68 |
| <b>Type of main practice</b>    |                  |           |                     |           |   |           |               |           |
| Public                          | Ref.             |           | Ref.                |           | Ref.  |           | Ref.          |           |
| Private                         | 1.26             | 0.78-2.05 | 1.09                | 0.67-1.75 | 1.36  | 0.84-2.20 | 1.19          | 0.73-1.93 |
| <b>Specialist qualification</b> |                  |           |                     |           |   |           |               |           |
| Specialist                      | Ref.             |           | Ref.                |           | Ref.  |           | Ref.          |           |
| Not a specialist                | 0.97             | 0.68-1.39 | 1.00                | 0.71-1.41 | 0.75  | 0.53-1.05 | 0.78          | 0.56-1.11 |

\*(P<0.05)