Title: An Exploratory Study of Perfectionism, Professional Factors and Psychological Wellbeing of Dentistry Academics

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This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the [Version of Record](#). Please cite this article as [doi: 10.1111/ADJ.12816](#)

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Article type : Scientific Article

Abstract

Background: Wellbeing may be lower among dentistry professionals than other health professionals, and differ by personal, professional, and sociodemographic factors. Few studies considered dentistry academics who have different work roles and functions than clinicians. This exploratory study focused on wellbeing among dentistry academics and aimed to explore associations with perfectionism, professional factors and sociodemographics.

Method: An online survey was conducted with academic staff in Dentistry and Oral Health departments of nine Universities in Australia and New Zealand. Wellbeing was assessed using the 22-item Psychological General Well-Being Index, with a maximum score of 110 indicating good wellbeing. Perfectionism was assessed using the 8-item Short Almost Perfect Scale, with a maximum score of 56, and a higher score indicating perfectionism. 20 items were used to assess professional and 7 items assessed sociodemographic factors. Associations were explored using correlation and multiple linear regression.

Results: There was no significant bivariate association between perfectionism and wellbeing. Multiple linear regression indicated a significant association between hours of undergraduate teaching and psychological wellbeing, after adjustment for age, gender, income, and overall health.

Conclusion: This exploratory study demonstrated poor wellbeing among dentistry academics, particularly in those teaching undergraduate students for more than six hours/week.

Introduction

Dentistry professionals experience significantly worse wellbeing than the general population¹⁻³ and other health professionals.⁴⁻⁵ Studies have demonstrated that just under one third of dentists report high levels of stress⁶ or display high levels of minor psychiatric symptoms.⁷ One study found that 55% of dentists had problematic stress, 43% had problematic depression and 13% had problematic anxiety.³ Occupational mental health-related conditions were the main reason for dentists being referred to health services in the United Kingdom (UK) between 2009-10.⁸ This poor wellbeing can adversely impact on psychological health,⁹⁻¹¹ interpersonal relationships,¹²⁻¹³ physical health,¹⁴⁻¹⁶ quality of life^{3, 17} and work performance.¹⁸⁻¹⁹ To inform interventions, more research is required to understand the factors associated with wellbeing in this discipline.

Dentistry as a discipline attracts people with personality traits such as perfectionism, compulsiveness, controlled emotions, unrealistic expectations, and dependence on social approval and prestige,^{10, 20-21} which may all contribute to poor wellbeing. Perfectionism is a multidimensional construct that elicits a drive to extremely high standards of performance combined with a critical self-appraisal of one's behaviour, and with distorted perceptions of consequences for not achieving those standards.²² Perfectionism is positively associated with stress²³⁻²⁵ and impacts adversely on personal wellbeing leading to stress-related diseases.²⁶⁻²⁷ Perfectionism can cause psychological distress²⁸⁻³⁰ and lead to social or relational difficulties.³¹ Longitudinal research has found that perfectionism predicted increases in occupational stress in healthcare service workers over time.³² Other research has demonstrated positive associations between perfectionism and occupational stress in medical practitioners³³ and dental students.³⁴⁻³⁵

Wellbeing among dentists may differ by a range of professional factors. In New Zealand, overseas-trained dentists have poorer wellbeing than domestically-trained dentists.³⁶ In a survey of migrant dentists in Australia (N=1022, 54.5% response rate), Balasubramanian et al.³⁷ found that those who trained in developing countries face greater challenges than dentists who trained in developed countries and obtained direct recognition of their qualifications, which increased risk of stress. However, older migrant dentists have previously been shown to have higher levels of job satisfaction than younger migrant dentists.³⁸ Dentists without postgraduate qualifications and without a speciality have poorer wellbeing than their counterparts.³⁹ A teaching role may contribute to poor wellbeing,³⁹ although Rutter et al.⁴⁰ reported that teaching might mitigate stress because of lessened

isolation, increased self-esteem and autonomy, and added interest in patients as a source of teaching opportunities. Less experienced dentists have poorer wellbeing than more experienced dentists.⁴¹ The relationship between wellbeing and other professional factors such as employment type, practice location, intention to remain in the profession, combination of work and study, and registration requirements among dentists is, however, unclear.

Wellbeing among dentistry professionals may also differ by sociodemographic factors. Female dentists have been reported to have a higher prevalence of occupational health-related conditions, including anxiety and depression, than male dentists.^{9, 42-45} Younger dentists have been reported to have poorer wellbeing than older dentists,^{9, 38, 46-47} with one study attributing this to differences in experience.⁴¹ Dentists who are single, divorced, separated, or widowed have poorer wellbeing than their counterparts.^{3, 47} Dentists with low-income report poorer wellbeing than those in the middle- and high-income groups.³

Most of this research on wellbeing has focused on dentistry clinicians, and less research has considered dentistry academics who have different work roles and functions. One study with university academics across different disciplines demonstrated a strong association between perfectionism and wellbeing.⁴⁸ However, less is known about the associations of other personal and professional factors and wellbeing in dentistry academics. Therefore, this exploratory study focused on wellbeing among dentistry academics and aimed to explore associations with perfectionism, professional factors and sociodemographics.

Methods

Sampling and data collection

This exploratory study comprised a cross-sectional online survey, in nine tertiary educational institutions, eight Universities in Australia and one in New Zealand. A convenience sampling approach was used to recruit individuals with an academic appointment in a University School of Dentistry or Oral Health. The study invitation and survey link were emailed to Heads of School with the request to forward to academic staff. Individuals were provided with study information on the introductory page of the survey. Consent was indicated by clicking on the “agree” button in the consent form. The survey took approximately 15-20 minutes to complete, was open for one month and two study prompts were emailed to Heads of School, with the request to forward to their academic staff.

Data items

Psychological Wellbeing

The primary outcome was wellbeing which was assessed using the Psychological General Well-Being Index (PGWBI).⁴⁹ The PGWBI is a 22-item instrument with six dimensions to determine self-representations of general wellbeing exclusive of physical health: anxiety, depressed mood, positive wellbeing, self-control, general health, and vitality⁴⁹ with responses provided on a 6-point end-defined response scale. Scores for each dimension are obtained by the sum of the relevant items, and a global wellbeing score is obtained by summing the six dimension scores. All scores are then normalised to range from 0 to 100, with higher scores indicating better wellbeing.⁴⁹ In a report of 8536 patients across a range of conditions and countries from 11 studies, the mean PGWBI score was 73.0 ± 15.6 .⁴⁹ The global wellbeing scale has satisfactory internal construct validity in people being treated for stress-related exhaustion⁵⁰ and Cronbach alpha for each of the dimensions has been reported as ranging from 0.70 to 0.85.⁴⁹

Perfectionism

The Short Almost Perfect Scale (SAPS) is a 8-item measure⁵¹ scored on a 7-point end-defined agreement response scale. A total perfectionism score is obtained by summing across items, with a possible range between 8 and 56, and a higher score indicating higher perfectionism. SAPS possesses good psychometric features with strong item-factor loadings, score reliability, measurement invariance, and convergent, discriminant and criterion-related validity.⁵¹

Professional Factors

Participants were asked questions about country of qualifications and registration, level of education and specialisation, years of experience, employment status, practice location, intention to remain in the profession, study, and registration requirements. Participants were also asked about hours/week of contact with undergraduate and postgraduate students for each of teaching, clinical supervision, and research supervision; and hours/week of University work done outside of usual business hours. Participants were also asked if they ever worked as clinicians and if so, additional questions including years of experience as clinicians and hours of weekly patient contact.

Sociodemographic and Health Factors

Participants were asked about age, gender, living arrangement, income management, overall health status, and impact of stress on everyday activities.

Data analysis

Descriptive statistics were used to summarise participants' sociodemographic and professional factors. Bivariate analyses were used to examine potential relationships between perfectionism, professional variables, and sociodemographic variables with psychological wellbeing. Pearson correlation coefficients were used to examine bivariate associations between continuous variables. Point-biserial correlations were used to examine bivariate associations between categorical dichotomous variables. One-way ANOVAs were used to examine bivariate associations between categorical trichotomous variables and psychological wellbeing. Significance was established at 5%. Those variables found to have a significant bivariate association with wellbeing were then analysed to check assumptions of normality, linearity, multicollinearity, and homoscedasticity. Multiple linear regression was used to explore associations between variables and psychological wellbeing.

Ethical considerations

Ethical approval for this study was obtained from The University of Queensland School of Human Movement and Nutrition Science Ethics Committee (HMS17/39).

Results

A total of 119 people consented to the online survey, with 107 (89.9%) providing some data, and 94 (78.9%) providing complete data. Those with missing data on all variables were deleted (N=12) and not used in analyses. Of those who provided some data, most missing data were for the sociodemographic and professional factors (12.0%), but still used in perfectionism analyses. Items assessing health were placed early in the survey which may explain the different number of respondents (N=92) than for items assessing personal factors (N=88) which were later in the survey. A summary of participants who provided sociodemographic data is provided in Table 1. Average age was 50 (± 11.7) years with a range from 23-75 years, and 56.8% were men.

TABLE 1 ABOUT HERE

Psychological Wellbeing

The summary of results from the PGWBI is provided in Table 2. Lower scores were obtained on dimensions of vitality (58.3 ± 19.4), anxiety (62.0 ± 16.9) and positive wellbeing (62.2 ± 17.2) than other dimensions.

TABLE 2 ABOUT HERE

Perfectionism

The mean score and standard deviation from the SAPS was 39.4 ± 7.7 ($N=99$), with scores ranging from 19 to 56 (higher score indicating higher perfectionism).

Professional Factors

A summary of the professional factors of participants is provided in Table 3. The majority (85.2%) had professional experience as clinicians, and over a third of these respondents (37.3%) had 31+ years' clinical experience. Almost all participants (93.2%) had contact with undergraduate students and of these, 48.7% were teaching 6+ hours per week.

TABLE 3 ABOUT HERE

Bivariate associations

There was no statistically significant correlation between perfectionism and psychological wellbeing, $r(92) = -.080$, $p = .443$. There were statistically significant associations between professional experience $r_{pb}(86) = -.255$, $p = .017$, undergraduate teaching $r_{pb}(92) = -.288$, $p = .005$, age $r(84) = .315$, $p < .005$, overall health $r(90) = .597$, $p < .001$, and gender $r_{pb}(86) = -.263$, $p = .013$, and psychological wellbeing. Statistically non-significant results were found for bivariate relations between wellbeing and all other variables.

Multivariate modelling

Linearity for variables of years of professional experience and undergraduate teaching was assessed by inspection of partial regression plots and a plot of studentised residuals against the predicted values, which indicated no violations to linearity. The data met the assumption of independence (Durbin-Watson statistic = 1.64). Inspection of a plot of studentised residuals versus unstandardized predicted values revealed homogeneity of variance in the model. All model predictors were observed to have tolerance values less than

0.1, indicating little evidence of multicollinearity. There was no undue influence in the model as indicated by a criterion of studentised deleted residuals within standard deviations, leverage values greater than 0.2, and values for Cook's distance above 1. The assumption of normality was met, as assessed by a Q-Q plot.

A multiple linear regression was conducted to explore associations between professional experience and undergraduate teaching with psychological wellbeing, with adjustment for age, gender, income, and overall health. The model significantly predicted psychological wellbeing, $F(6,79)=19.651$, $p<.001$, $\text{adj.}R^2=.56$. Table 4 provides the coefficient values of all predictors in the model. Undergraduate teaching was significant at the $\alpha=.001$ level, with teaching 6+ hours/week associated with poorer wellbeing.

TABLE 4 ABOUT HERE

Discussion

Dentistry professionals can experience poorer wellbeing than other health professionals,⁴⁻⁵ and to inform associated interventions, more work is needed to understand the factors associated with poor wellbeing. However, most research in this area has focused on clinicians, and so results may not generalise to other types of dentistry professionals who have different occupational settings and roles. This exploratory study assessed associations between perfectionism and professional factors and the psychological wellbeing of dentistry academics.

This study confirmed poor wellbeing among this group of dentistry academics. The average score (67.0 ± 14.1) was lower than in other wellbeing research using the same questionnaire with patient populations (73.0 ± 15.6).⁴⁹ In particular, respondents in the current study had low vitality which related to levels of strength and energy. These results are consistent with other studies demonstrating poor wellbeing of dentists.¹⁻⁷ Among respondents, 15.2% reported accomplishing less than they wanted to all or most of the time, and 7.6% reported difficulty doing everyday activities because of stress all or most of the time. This is consistent with other research indicating the adverse impact of stress in dentists.^{3, 17-19}

There was no statistically significant bivariate correlation between perfectionism and psychological wellbeing, which contradicts other studies reporting that perfectionism is positively associated with stress,^{23-25, 32-35} poor personal wellbeing,²⁶ psychological distress,²⁸⁻

³⁰ and social or relational difficulties³¹ in healthcare professionals and students. While dentistry may attract people with perfectionistic traits,^{10, 20-21} this did not seem to contribute to poor wellbeing among this group of dentistry academics. This may be because the potential implications of perfectionism are not as relevant to academics as they are for clinicians engaging in patient care. In many cases clinicians are solely responsible for the care of their patients, whereas academics can be supported by university infrastructure.

The results of this study indicated that higher levels of undergraduate teaching (6+ hours/week) was associated with poorer wellbeing. These results are comparable with an Australian study which identified increased workloads as the main cause of job stress, which was not attributable to workload associated with overtime, and time spent treating patients intra- and extramurally and wellbeing.⁵² Aspects of undergraduate teaching that could contribute to poor wellbeing include interpersonal relationships with students needing counselling, course advice, marking of exams and collation of results.^{40, 53}

Results demonstrated significant associations between age, income, and health with psychological wellbeing among this group of dentistry academics. Younger participants reported poorer wellbeing than their older colleagues, which is consistent with other research of dentists,^{9, 46-47} with one study attributing this to differences in experience.⁴¹ Those reporting poorer health also reported lower wellbeing than their counterparts, which is intuitively understandable given that health is considered a dimension of wellbeing.⁵⁴ Participants reporting lower income reported poorer wellbeing than those reporting higher income, which is consistent with other research on financial difficulties and wellbeing,⁵⁵ and may reflect lower levels of autonomy among junior staff.

Contrary to findings from previous research on country of qualifications,³⁶⁻³⁷ and level of education and specialisation,³⁹ there was no significant association between these professional factors and stress in this study. Other research in New Zealand showed that overseas-qualified dentists felt more isolated than domestically-trained dentists, and attributed this to the public's negative reactions to overseas-trained clinicians.⁵⁶ It may be that university academics however are more accepting of overseas-trained staff because of the value of internationalisation within universities. Previous research indicating a significant positive association with level of education and specialisation and wellbeing also focused on clinicians and argued that professional isolation was a factor in those findings, with specialist clinicians more cut off from colleagues.³⁹ Academics, however, may

experience less professional isolation resulting from higher levels of education and specialisation than clinicians.⁴⁰ Country of qualifications, level of education and specialisation may therefore, be less relevant for the wellbeing of dentistry academics.

Results of this study should be considered within the methodological context. The data collection used a self-report online survey and online surveys can have a lower response rate than in-person surveys,⁵⁷ which in turn contributes to response bias and constrains sample representativeness and the generalisability of the findings.⁵⁸ This study was conducted with a small convenience sample of Australian and New Zealand academics, and so findings may not be relevant to other countries. The study invitation and reminders were emailed to Heads of School with the request to forward to their academic staff. It was not possible therefore, to determine how many people received the email and calculate the response rate. It may be that different Heads of Schools made different decisions about which staff to invite to the study, in terms of dental prosthetists, oral health therapists, dental therapists, dental hygienists, or dental technicians.

Conclusion

This exploratory study explored dentistry academics as a previously understudied occupational group and found low levels of psychological wellbeing. In this sample, dentistry academics teaching more than six hours per week had poorer wellbeing than their counterparts, suggesting that this group may be a priority target for interventions to improve wellbeing. More research is needed to explore how teaching contributes to poor wellbeing. More rigorous research with a larger randomly selected and representative sample of dentistry academics is needed to confirm study findings. Evidence on the personal, professional, and sociodemographic factors associated with poor wellbeing can be used to inform interventions to reduce the adverse impacts on interpersonal relationships, physical health, quality of life and work performance.

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Table 1. Summary of Participants' Sociodemographic and Health Factors.

	N	Percent
Gender (N=88)		
Men	50	56.8
Women	37	42.0
Other	1	1.1
Living arrangement (N=88)		
Living alone, with no children	10	11.4
Single, living with children, friends or relatives	6	6.8
Couple (married or de facto), living with no children	28	31.8
Couple (married or de facto), living with one or more children	41	46.6
Other	3	3.4
Ability to manage on available income (N=88)		
Difficult	21	23.8
Not too bad	48	54.5
Easy	19	21.6
Health – overall (N=92) ^a		
Good	75	81.5
Poor	17	18.5
Sleep quality (N=92) ^a		
Good	48	52.1
Poor	44	47.8

Note. “Single, living with children, friends or relatives” included “single parent, living with one or more children” and “single, and living with friends or relatives”. Income management included five response categories which were collapsed into three categories of “difficult” (“it is impossible”, “it is difficult all the time” and “it is difficult some of the time”), “not too bad”, and “easy”. Overall health status contained five response categories which were collapsed into two categories of “good” (“excellent”, “very good” and “good”), and “poor”

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(“fair” and “poor”). Sleep quality included five response categories which were collapsed into two categories of “good” (“excellent”, “very good” and “good”), and “poor” (“fair” and “poor”).

Table 2. Psychological Wellbeing (PGWBI) Global Score and Scores by Dimension (N=94).

	Mean	Std. Dev
Vitality	58.3	19.4
Anxiety	62.0	16.9
Positive wellbeing	62.2	17.2
General health	68.7	16.4
Self-control	79.1	18.0
Depressed mood	79.6	16.4
Global score	67.0	14.1

Note. No missing data for all dimensions. Higher scores indicate higher wellbeing.

Table 3. Summary of the Professional Factors of Respondents.

	N	Percent
Worked in clinical practice outside of University (N=88)		
No	13	14.8
Yes	75	85.2
Employment (N=90)		
Full time	67	74.4
Part time	23	25.6
Appointment type (N=90)		
Fixed term	25	27.8
Continuing	65	72.2
University location (N=90)		
Metropolitan	75	83.3
Regional	15	16.7
Registration type (N=88)		
Limited or not registered	17	19.3
General	38	43.2
Specialist	33	37.5
Highest level of education (N=90)		
Undergraduate	23	25.6
Postgraduate	67	71.3
Country of qualifications (N=90)		
Australia	41	45.6
New Zealand	18	20.0
Other	31	34.4
Undergraduate teaching (hours/week) (N=82)		

0-5	42	51.2
6+	40	48.7
Undergraduate clinical supervision (hours/week) (N=82)		
0-5	44	53.6
6+	38	46.3
Undergraduate research supervision (hours/week) (N=82)		
0-5	74	90.2
6+	8	9.8
Postgraduate teaching (hours/week) (N=55)		
0-5	42	76.3
6+	13	23.7
Postgraduate clinical supervision (hours/week) (N=55)		
0-5	39	70.9
6+	16	29.1
Postgraduate research supervision (hours/week) (N=55)		
0-5	40	72.7
6+	15	27.2

Note. Hours/week of undergraduate student teaching and clinical supervision were collapsed into four categories of “0”, “1-5”, “6-10”, and “11+”, and the undergraduate research supervision was collapsed into three categories of “0”, “1-5”, “6+”. Hours/week of postgraduate student teaching and the clinical supervision contact were collapsed into three categories of “0”, “1-5”, and “6+”, and the postgraduate student research supervision was collapsed into four categories of “0”, “1-5”, “6-10”, and “11+”.

Table 4. Summary of Multiple Regression Analysis (N=86).

Variable: Psychological Wellbeing	<i>B</i>	95% <i>CI</i> for <i>B</i>		<i>SE_B</i>	<i>β</i>
		LL	UL		
Age	0.227	0.043	0.411	0.093	0.186*
Gender	-1.808	-5.919	2.304	2.066	-0.066
Income	2.706	1.203	4.210	0.755	0.272**
Health	7.327	5.155	9.499	1.091	0.491**
Professional experience	-5.145	-11.115	0.825	2.999	-0.129
Undergraduate Teaching	-6.986	-11.147	-2.825	2.091	-0.244**

Note. * $p < .05$; ** $p < .001$; *B*=regression coefficient; *CI*=confidence interval; *LL*=lower limit; *UL*=upper limit; *SE_B*=standard error of coefficient; *β*=standardised regression coefficient.